SINGULUS

INNOVATIVE TECHNOLOGIES

Annual Report 2018 of the SINGULUS TECHNOLOGIES AG

SINGULUS TECHNOLOGIES

Innovations for new technologies

SINGULUS TECHNOLOGIES develops and assembles innovative machines and systems for efficient and resource-saving production processes, which are used worldwide in the solar, semiconductor, medical technology, consumer goods and optical disc sectors.

The company's core competencies include various processes of coating technology, surface treatment and wet-chemical and thermal production processes.

At a Glance

Consolidated Key Figures 2018-2017

		2018	2017
Sales	EUR million	127.5	91.2
Order intake	EUR million	86.8	88.0
Order backlog (Dec. 31)	EUR million	66.0	106.7
EBIT	EUR million	6.8	-1.2
Earnings before taxes	EUR million	4.8	-2.8
Net profit/loss	EUR million	0.8	-3.2
Operating cash flow	EUR million	2.5	-14.1
Shareholders' equity	EUR million	19.7	20.2
Balance sheet total	EUR million	104.1	87.9
Research & development expenditures	EUR million	13.4	8.6
Employees (Dec. 31)		343	315
Weighted average shares outstanding, basic	shares	8,896,527	8,896,527
Earnings per share, basic	EUR	0.09	-0.39

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ADDITIONAL INFORMATION

ANNUAL REVIEW 2018

SINGULUS TECHNOLOGIES

Q1

1ST QUARTER - 2018

- China National Building Materials (CNBM) signs legally binding purchase contracts for a minority interest in SINGULUS TECHNOLOGIES
- Order intake for a DECOLINE II production line from the automotive sector
- SINGULUS TECHNOLOGIES reports consolidated financial statements on March 28, 2018
- Fairs/exhibitions in the 1st quarter
  - PCD Paris 2018, Paris, France
  - MD&M West 2018, Anaheim, USA
  - PV Cell Tech 2018, Penang, Malaysia
  - SEMICON China, Shanghai, China

Q2

2ND QUARTER - 2018

- Report for the 1st quarter 2018 published on May 15, 2018
- SINGULUS TECHNOLOGIES receives repeat order for medical technology
- Order intake for the delivery of a vacuum coating machine of the TIMARIS type from a leading manufacturer of semiconductor production equipment
- SINGULUS TECHNOLOGIES receives development order for new CIGS production machine
- The Annual General Meeting of the company is held on June 28, 2018
- Fairs/exhibitions in the 2nd quarter
  - PaintExpo, Karlsruhe, Germany
  - Intermag 2018, Singapore
  - SVC 2018 TechCon Exhibit, Orlando, USA
  - MEDIA-TECH Conference, Eindhoven, Netherlands
  - SNEC 2018 PV POWER EXPO, Shanghai, China
  - WCPEC-7, 7th World Conference on Photovoltaic Energy Conversion, Hawaii, USA
  - Intersolar Europe, Munich, Germany

Q3

3RD QUARTER - 2018

- SINGULUS TECHNOLOGIES reports high order backlog and expects significant increase in sales for 2018
- Financial key figures for the 1st half 2018 reported on August 14, 2018
- On September 21, 2018 the acquisition of 13.11 % of the shares of the SINGULUS TECHNOLOGIES AG by China National Building Materials (CNBM) completed
- Fairs/exhibitions in the 3rd quarter
  - Intersolar North America 2018, San Francisco, USA
  - SEMICON West 2018, San Francisco, USA
  - Intersolar South America 2018, São Paulo, Brazil
  - MEDICAL MANUFACTURING ASIA 2018, Singapore
  - PSE 2018, Garmisch-Partenkirchen, Germany
  - Renewable Energy India Expo, Greater Noida, India
  - 35th EU PVSEC 2018, Brussels, Belgium

Q4

4TH QUARTER - 2018

- SINGULUS TECHNOLOGIES signs several letters-of-intent for the delivery of production machines for the manufacturing of CIGS thin-film solar modules in the course of the China Import Expo Show (CIIE)
- The key financial results for the first nine months 2018 are reported on November 15, 2018
- Fairs/exhibitions in the 4th quarter
  - China International Import Expo, Shanghai, China
  - Compamed 2018, Dusseldorf, Germany
  - SEMICON Europe, Munich, Germany

VISTARIS

INLINE COATING SYSTEM FOR LARGE GLASS SUBSTRATES

The VISTARIS system was designed for the deposition of large glass substrates for thin-film solar as well as display and architectual glass

REPORT OF THE SUPERVISORY BOARD

To the Shareholders of SINGULUS TECHNOLOGIES AG

Dear Shareholders!
Our company was able to further develop dynamically in the business year 2018. Compared with 2017, sales were increased by 39.8 % to EUR 127.5 million. This results in positive operating earnings (EBIT) in the amount of EUR 6.8 million. The forecast for the business year 2018 was completely met and the company is confident that it will - then for the third consecutive time - continue to expand in the business year 2019 as well. All divisions within our company experienced a positive trend in the past business year. In particular in our key segment Solar we were very successful in 2018. In a globally expanding energy market, which due to the imminent climate change is increasingly positioning towards photovoltaics as a promising and cost-efficient energy resource of the future, we still see attractive growth potential for our company. In addition, we were also able to successfully position ourselves in the market with our products and new orders in the new work areas Semiconductor, Decorative Coatings as well as Medical Technology.

Development of the company

SINGULUS TECHNOLOGIES' profitable growth in the business year 2018 was once again a result of the successes in the Solar division. Here, SINGULUS TECHNOLOGIES was and is successful in the business activities for production machines for thin-film modules on the basis of CIGS technology. With the customer China National Building Materials, Beijing, China (CNBM), the company did not only work on the current major orders. Furthermore, in November 2018 several letters-of-intent (LOI) for the delivery of additional production machines for CIGS thin-film solar modules were signed. These LOIs point the way to the near future and the production and delivery of the machines are scheduled to a large extent for the years 2019 and 2020.

At the same time, the company works on introducing new machine concepts to the solar market during the course of 2019, which are targeting the area of state-of-the-art, highly-efficient crystalline solar cells, for example based on heterojunction technology (HJT).

Also in other work areas, and here predominantly in the new business areas, key orders were won. For example, SINGULUS TECHNOLOGIES received a trend-setting order from the automotive sector for a production line of the DECOLINE II type for the finishing of three-dimensional plastic parts and of decorative elements of car interiors.

SINGULUS TECHNOLOGIES had also expanded its activities to the work area Medical Technology at the end of 2017 and received a first order in excess of EUR 10 million in November 2017 for the sale of production machines for the treatment of contact lenses. At the beginning of June 2018 another order for such a machine was received and the company sees potential for additional customers and orders for Medical Technology here.

For a detailed description of the development of the company please refer to the detailed information provided in the presented Status Report. Overall, the Supervisory Board recognizes that SINGULUS TECHNOLOGIES consistently continues to pursue the path taken in the past years and that the company is thus on the right way for a successful future.

Activities of the Supervisory Board in the Business Year 2018

On the following pages, the report of the Supervisory Board informs about the focus of the activities of the Supervisory Board in the past business year.

In the business year 2018 the Supervisory Board attended to all legal and statutory duties and adhered to the guidelines of the bylaws of the Supervisory Board. The Supervisory Board advised the Executive Board on the management of the company and monitored the activities of the Executive Board in the business year 2018. The Executive Board of the SINGULUS TECHNOLOGIES AG timely updated the Supervisory Board with regards to all significant decisions and processes. It also informed the Board about all relevant proceedings. There were no objections on part of the Supervisory Board regarding the conduct of business in the course of the business year 2018 by the Executive Board of the SINGULUS TECHNOLOGIES AG at any time.

During the business year 2018 eight meetings of the Supervisory Board were convened: there were five meetings in presence and three conference calls. Except for one meeting, all Supervisory Board meetings in the year 2018 were attended by all members of the Supervisory Board.

- Meeting in presence on January 25, 2018
- Meeting in presence on March 20, 2018
- Conference call on May 9, 2018
- Meeting in presence on June 27, 2018
- Conference call on August 9, 2018
- Meeting in presence on September 11, 2018
- Conference call on November 12, 2018
- Meeting in presence on November 28, 2018

From left to right: Christine Kreidl, Deputy Chairperson of the Supervisory Board, Dr.-Ing. Wolfhard Leichnitz, Chairman of the Supervisory Board, Dr. rer. nat. Rolf Blessing, Member of the Supervisory Board

Presence of the Supervisory Board in 2018

	01/25 Presence	03/20 Presence	05/09 Call	06/27 Presence	08/09 Call	09/11 Presence	11/12 Call	11/28 Presence
Dr.-Ing. Wolfhard Leichnitz	•	•	•	•	•	•	•	•
Dr. Rolf Blessing	•	•	•	•	•	•	•	•
Christine Kreidl	•	•	•	–	•	•	•	•

There were no changes in the composition of the Supervisory Board in the business year 2018.

Advisory and Monitoring of Executive Board by the Supervisory Board

During the course of all of its meetings, the Supervisory Board attended to the business trends of the SINGULUS TECHNOLOGIES AG during the business year 2018 and discussed and evaluated these developments with the Executive Board. The Executive Board regularly reported to the Supervisory Board about the key figures concerning the course of order intake, sales and earnings trends. The underlying trends were also discussed. The Executive Board informed the Supervisory Board through monthly reports on the current course of business and backlog as well as other key financial indicators. The course of the business in the year 2018 was compared with the company's forecasts for the business year 2018. All deviations were documented and the required measures for potential adjustments were discussed with the Executive Board. Additional written and oral reports of the Executive Board, by other employees, the auditors as well as by external consultants supplemented the reporting.

The Executive Board provided the Supervisory Board with the interim reports as well as the half-year report for the business year 2018 in a timely manner ahead of the publication. The reports were presented by the Executive Board and important key figures and statements explained in detail. In particular, the Supervisory Board had the profit-and-loss statements, the liquidity situation and the trend in shareholders' equity as well as other selected balance sheet positions explained in detail. The recommendations of the Supervisory Board with regards to individual interim reports as well as to the half-year report were implemented by the Executive Board.

The development of the shareholders' equity of the SINGULUS TECHNOLOGIES Group (IFRS), the development of the shareholders' equity of the SINGULUS TECHNOLOGIES Aktiengesellschaft (HGB) as well as the liquidity situation within the Group were a topic of each of the meetings of the Supervisory Board. The liquidity of the company was documented and continuously monitored during the entire course of the year. Furthermore, the Chairman of the Supervisory Board regularly discussed the situation of the company and its future development in individual talks with the Executive Board. At all times, the other members of the Supervisory Board were informed about these meetings thereafter.

The further development of strategic positioning of the company was agreed between the Executive Board and the Supervisory Board and its implementation discussed at regular intervals. The required capital expenditure plans were analyzed and decided within the scope of the resolved strategy. The Supervisory Board has assured itself of the legitimacy, expediency and compliance of the presented business events under the particular consideration of the economic situation of the company.

Business activities that had to be approved or were required to be discussed by the Supervisory Board due to company interests were discussed and reviewed by the Supervisory Board. In particular, these also included new projects concerning the extension of the current range of products and services offered. The Supervisory Board was directly involved in all decisions, which were significant for the company's course of business.

Supervisory Board Matters

There were no elections to the Supervisory Board during the business year 2018.

In the business year 2018 the Supervisory Board continued to refrain from forming audit, nomination and other Supervisory Board committees, since a proper attainment of the tasks of the Supervisory Board is given for the full Supervisory Board with a three-member Supervisory Board. The Supervisory Board is continuously reviewing its efficiency and identifies potential improvements. Required improvements were discussed and resolved in the course of the meeting on September 11, 2018.

Conflicts of Interest

In the past business year there were no conflicts of interest of members of the Executive or Supervisory Boards, which have to be disclosed to the Supervisory Board immediately and which the Annual General Meeting has to be informed about.

Shareholdings of Supervisory Board Members

The stock holdings of Supervisory Board members are published in this Annual Report as well as on the internet (for a detailed presentation please refer to the annotations on page 27 of this Annual Report 2018).

Corporate Governance

The SINGULUS TECHNOLOGIES AG and its Supervisory Board subscribe to the principles of proper and responsible corporate governance. The Executive Board and the Supervisory Board have made a declaration of conformity pursuant to Art. 161 AktG and Art. 3.10 of the German Corporate Governance Code (the Code), according to which the company adheres to the recommendations of the German Corporate Governance Code except for the mentioned and explained deviations. The declaration of conformity was published on the company's website in March 2019. For a detailed representation of the Corporate Governance Report as well as the current Declaration of Conformity, please refer to page 19 of the Annual Report 2018.

Executive Board Matters

During its meeting on January 25, 2018, the Supervisory Board reviewed the remuneration of the Executive Board, discussed target agreements for the business year 2018 with the Executive Board and resolved these as well as resolved the review of the remuneration of the Executive Board by an external advisor. The results of the review were presented in the course of the Annual General Meeting in June 2018 in detail. The target agreements as of January 25, 2018 form the basis for the determination of the variable compensation components of the Executive Board members. In its meeting on March 20, 2019 the Supervisory Board resolved the level of target achievements for both members of the Executive Board for the business year 2018 on the basis of the annual results. For this purpose the Supervisory Board assessed all personal targets individually and reviewed the respective levels of target achievement. Overall, the Supervisory Board recognized the achievements of the Executive Board and made positive representations about the dedication, commitment and the qualitative results.

Risk Management

According to relevant regulations of stock corporation and commercial laws, the SINGULUS TECHNOLOGIES AG is subject to special requirements with respect to an internal risk management system. The relevant monitoring system is adjusted to the respective current developments. During its meeting on November 28, 2018 the Supervisory Board was presented the system as well as results of the internal risk management system in detail. The Supervisory Board regards the monitoring system of the SINGULUS TECHNOLOGIES AG as constructive and satisfactory and shares the risk assessment of the Executive Board in all aspects (the Risk Report can be found on page 60 of the Annual Report 2018).

Annual and consolidated financial statements as well as Status Report

The audited financial accounts of the SINGULUS TECHNOLOGIES AG, the audited consolidated financial statements as well as the combined status report as of December 31, 2018 were subject of the Supervisory Board meeting on March 20, 2019 concerning the adoption of the financial statements. The Executive Board has drawn up the financial statements and the status report of the SINGULUS TECHNOLOGIES AG for the business year 2018 pursuant to the regulations of the German Commercial Code (HGB) and the German Stock Corporation Act (AktG). The consolidated financial statements were drawn up pursuant to the International Financial Reporting Standards (IFRS). The consolidated financial statements were supplemented by a respective consolidated status report, which was combined with the status report of the individual financial results pursuant to Art. 315 Para. 5 read in conjunction with Art. 298 Para. 2 Sent. 1 HGB. The auditor KPMG AG Wirtschaftsprüfungsgesellschaft (KPMG), Frankfurt am Main reviewed the financial statements and the consolidated financial statements as well as the combined status report considering the accounting principles and approved them without reservation. The members of the Supervisory Board were provided with the audited financial results, the combined status report as well as the audit report of KPMG for review in a timely manner. During the meeting on March 20, 2019 the responsible auditors were present. They explained the results of the audit and answered the questions of the Supervisory Board members in detail.

The Supervisory Board extensively continued to discuss the financial statements, the consolidated financial statements, the combined status report as well as the audit by the auditor and did not have any objections. The assumptions, on which the going-concern assumption rested, as well as the conclusions drawn by the Executive Board and KPMG, were discussed. Requests by members of the Supervisory Board were answered by the Executive Board and by present auditors with due elaborateness.

There were no objections on part of the Supervisory Board regarding the annual accounts of the SINGULUS TECHNOLOGIES AG, the consolidated financial statements and the combined status report as of December 31, 2018 as well as regarding the audit by KPMG.

In its meeting on March 20, 2019 the Supervisory Board approved the financial statements of the SINGULUS TECHNOLOGIES AG drawn up by the Executive Board, the consolidated financial statements and the combined status report. The annual accounts have thus been finalized.

The Supervisory Board would like to thank the Executive Board and all employees for their commitment in the past business year 2018 and wishes success for the business year 2019.

Kahl am Main, March 2019

Dr.-Ing. Wolfhard Leichnitz
Chairman of the Supervisory Board

LETTER TO SHAREHOLDERS

THE EXECUTIVE BOARD

Dear shareholders of the SINGULUS TECHNOLOGIES AG, dear Ladies and Gentlemen!
In 2018 our company continued to gain momentum and completed the business year on a positive note. SINGULUS TECHNOLOGIES recorded significant growth in the key work areas. This holds especially true for the Solar division. It was also particularly pleasing to see that the work areas Semiconductor, Decorative Coatings as well as Medical Technology made a contribution to this development. Sales and the operating result (EBIT) continued to improve pursuant to our forecast. Sales were increased by more than 39 %. The net profit amount to EUR 6.8 million. Therefore, the forecast for the business year 2018 was completely achieved.

Profitable growth

In the Solar segment we were once again very successful in the business year 2018. In a globally expanding energy market we see promising growth potential here for our company in the next couple of years. In addition, we were also able to position ourselves very well in the market with our products and respective orders in the Semiconductor division and the new work areas Decorative Coatings as well as Medical Technology.

The solar market will remain the most important market for SINGULUS TECHNOLOGIES in the medium-term. In the course of the climate discussion during the COP24, the annual conference of the UN Framework Convention on Climate Change (UNFCCC), a report was published in November 2018 explaining the feasibility of a European climate change based on 100 % renewable energy sources. The new scientific study shows that a transition towards 100 % renewable energies would be economically competitive compared with today's conventional, fossil-nuclear system and that green house gas emissions could be reduced to zero even before 2050. In this scenario, solar energy would provide the biggest share with 62 % of the energy generation. In fact, photovoltaics today is already the most cost-efficient technology for electricity generation in the world and a sharp increase in the expansion of solar power capacities are recorded worldwide.

Against this background we rely on the ever increasing deployment of renewable energies with a focus on photovoltaics. We are confident for the future and we are on a path to further increase the market leadership for CIGS production machines. In addition to the already pending projects, we were able to sign several letters-of-intent (LOI) in November 2018 for the delivery of production machines for the manufacturing of CIGS thin-film solar modules were signed with the customer China National Building Materials, Beijing, China (CNBM). The production and delivery of the machines are mainly scheduled for the years 2019 and 2020. In the area of highly efficient, crystalline solar cells, e.g. based on the heterojunction technology (HJT), we are working on the introduction of additional, new machines concepts for the solar market and also see great potential here for our company in the future.

In 2018, SINGULUS TECHNOLOGIES received an order for the construction of a complex TIMARIS vacuum coating machine from a leading European manufacturer of semiconductor production machines. We see this as a confirmation for the productivity of our machines as well as for the potential in the semiconductor market.

The future of our company

Our company is mainly focused on the five sales markets solar, semiconductor, medical technology, consumer goods, and optical disc. Here, we focus on the sectors vacuum coating technology, wet-chemical processes, surface technology as well as thermal processing technology. SINGULUS TECHNOLOGIES' strategy is to take advantage of the existing know-how and to gain market share in existing markets as well as to transition this expertise to other markets and to win new customers.

In the past couple of years we have developed innovative machines concepts for the photovoltaic sector and for the new work areas decoration coatings as well as medical technology and subsequently introduced these machines to the market. In 2018, we received an order from the automotive sector for a complete production line of the DECOLINE II type for the finishing of three-dimensional plastic parts of car interiors. In medical technology we had received a first order exceeding EUR 10 million for the sale of processing machines for the treatment of contact lenses. At the beginning of June 2018, a follow-up order for such equipment was already received. For the business year 2019 we are expecting further sales success for these new production machines.

We intend to win new customer for the existing sales market and to increase our market shares here as well as to expand to new markets on the basis of our technologic know-how. The extensive marketing of our existing as well as of the new production systems should for the basis for a stable growth path.

We will consistently continue this entered path towards a product and market diversification with new machines types on the basis of our core competencies with a simultaneous expansion of market shares in the developed work areas in the coming years.

For the business year 2019 SINGULUS TECHNOLOGIES forecasts an increase in sales and earnings for the Group compared with the previous business year 2018. Based on the full-year forecast, the company expects sales in the business year 2019 to be significantly higher than in the prior year and the operating result to also improve further. The key sales and earnings drivers will continue to originate from the Solar division and here from large project orders for investment in CIGS production lines. We still expect that the new work areas will also make positive sales and earnings contributions in the business year 2019.

At this point, we would like to cordially thank our employees for the continuing efforts and their personal commitment.

Our gratitude also extends to our customers and suppliers for the productive, long-term and trustful cooperation as well as to our shareholders for their trust in our company.

Kahl am Main, March 2019

Best regards,

SINGULUS TECHNOLOGIES AG

Dr.-Ing. Stefan Rinck
Chief Executive Officer, CEO

Dipl.-Oec. Markus Ehret
Chief Financial Officer, CFO

Dr.-Ing. Stefan Rinck

With effect from September 1, 2009 Dr.-Ing. Stefan Rinck was appointed as member of the Executive Board of the SINGULUS TECHNOLOGIES AG. Since April 1, 2010 he has been Chief Executive Officer and is responsible for the departments Production, Marketing & Sales, Technology, Research & Development as well as Strategy and International Activities. In addition, Dr.-Ing. Stefan Rinck is a member of the Main Executive Board of the VDMA and Chairman of the Committee for Research and Innovation.

Dipl.-Oec. Markus Ehret

Dipl.-Oec. Markus Ehret was appointed Chief Financial Officer of the SINGULUS TECHNOLOGIES AG as of April 19, 2010. He heads the departments Finance, Controlling, Investor Relations, Human Resources, Purchasing and IT.

CORPORATE GOVERNANCE REPORT

of the SINGULUS TECHNOLOGIES AG and Corporate Governance Declaration pursuant to Art. 289f HGB

The SINGULUS TECHNOLOGIES AG highly values proper and responsible corporate governance within the context of the guidelines of corporate governance.

For the Executive and Supervisory Boards this means leadership and management of the company aligned for the long-term success. Corporate governance aims to safeguard a targeted and efficient cooperation between Executive Board and Supervisory Board, the respect for the interests of our shareholders and employees, the suitable handling of risks and transparency as well as a responsibility for all corporate decisions. The Executive and Supervisory Boards regard corporate governance as a process integrated into the company's development, which is constantly progressed.

The Executive Board and the Supervisory Board of the SINGULUS TECHNOLOGIES AG deliver the corporate governance report, which is to be submitted pursuant to Art. 3.10 of the German Corporate Governance Code in its currently effective version as of February 7, 2017 (Code), and the declaration of corporate governance pursuant to Art. 289f German Commercial Code (HGB) in unison with Art. 3.10 of the code in the following.

1. Declaration of Conformity 2019 to the German Corporate Governance Code

The last declaration of conformity was published in November 2018 on the basis of the German Corporate Governance Code (the "Code") amended as of February 7, 2017. Since submitting this declaration the SINGULUS TECHNOLOGIES AG (the "Company") adhered and adheres to the recommendations of the Code in this version subject to the following exceptions:

1. As long as the Supervisory Board is comprised of three members, there were and will not be committees (cf. Art. 5.3.1, 5.3.2 and 5.3.3 of the Code), since a proper fulfillment of the tasks of the Supervisory Board can only be achieved in a plenary meeting of the three-person Supervisory Board. In this case, committees will neither provide enhancements in efficiency nor an improved handling of complex subject matters nor a more efficient or improved fulfillment of the duties of the Supervisory Board with respect to issues regarding accounting principles, risk management or auditing can be expected from such committees. In addition, corporate law provides that decision-making Supervisory Board committees have to consist of at least three Supervisory Board members. For this reason a delegation of tasks is not reasonable, either.

2. The Supervisory Board does not set a statutory limit for the time of membership to the Supervisory Board (cf. Art. 5.4.1 Para. 2 of the Code). The Supervisory Board does not deem a limit to be reasonable. The members of the Supervisory Board should exclusively be appointed based on expertise and qualification. The members are to advise and monitor the Executive Board in a competent and efficient manner. The company shall also have at its disposal the expertise of experienced and reliable members of the Supervisory Board. A statutory limit for the time of membership would unduly restrict the flexibility with respect to appointments and the number of potential candidates. .

Except for the aforementioned deviations the SINGULUS TECHNOLOGIES AG adheres to the recommendation of the German Corporate Governance Code as amended as of February 7, 2017 and will adhere to them in the future as well.

Kahl am Main, March 2019

Dr.-Ing. Wolfhard Leichnitz
Chairman of the Supervisory Board

Christine Kreidl
Deputy Chairwoman of the Supervisory Board

Dr. rer. nat. Rolf Blessing
Member of the Supervisory Board

Dr.-Ing. Stefan Rinck
Chief Executive Officer, CEO

Markus Ehret
Chief Financial Officer, CFO

2. Relevant information with regards to corporate governance

Management structure

The SINGULUS TECHNOLOGIES AG as a German corporation is subject to German Corporate Law and is thus comprised of a two-tiered management and monitoring structure consisting of Executive Board and Supervisory Board. The Executive Board manages the company and is responsible for the company's strategy, accounting, finances and development. It is advised and monitored by the Supervisory Board.

On the basis of the reports by the Executive Board the Supervisory Board discusses the business trends and planning, the corporate strategy and its implementation. Significant decisions by the Executive Board such as major acquisitions and financing measures are subject to the Supervisory Board's approval according to the bylaws for the Executive Board. It issues the audit mandate for the auditor elected at the Annual General Meeting and is informed about the audit. After its own review the Supervisory Board adopts the annual reports and the consolidated financial statements.

The Executive Board currently consists of two members, the Supervisory Board of three members. The SINGULUS TECHNOLOGIES AG is not subject to the Co-Determination Act. Due to the company's size and to ensure efficient work, both boards currently only meet the legally required minimum in terms of members.

Risik Management

SINGULUS TECHNOLOGIES AG considers efficient and forward-looking risk management as an important and value-adding task. Risk management is one of the core functions of entrepreneurial endeavors and is a material element for the success of our business activities.

Specifically, risk management supports achieving the company's goals by creating transparency about the risk situation of the company as the basis for risk-aware decisions, the identification of potential threats to the assets, financial and earnings situation of the company as well as prioritizing risks and the respective requirements to act. In addition, risk management safeguards the explicit management of risks by respective measures and their monitoring. Furthermore, the risks should be limited to an acceptable level as well as the costs of risks optimized.

The risk management organization is integrated into the existing organization of the SINGULUS TECHNOLOGIES AG. It is not an independent structure. The respective heads of the departments, supported by the risk manager and the Chief Financial Officer, are responsible for the risk management organization at the SINGULUS TECHNOLOGIES AG. The Chief Financial Officer coordinates all activities in connection with the risk management of the SINGULUS TECHNOLOGIES AG with the Chief Executive Officer.

The detailed risk management report is publicly available on the website of the SINGULUS TECHNOLOGIES AG under www.singulus.de/de/investor-relations/corporate-governance.

Ethics Code

Integrity characterizes the interaction of the SINGULUS TECHNOLOGIES AG with its business partners, employees, shareholders and the public. Respectful, loyal and fair interaction within the company and with our business partners goes without saying for the SINGULUS TECHNOLOGIES AG. The fundamental statement is the basis for the self-imposed ethics code of the SINGULUS TECHNOLOGIES AG. It includes binding internal rules, which are subject to high ethical and legal standards. In this context, the Ethics Code focuses on integrity in the conduct with business partners, employees, shareholders and the public and describes the company-wide applied management practices. The Ethics Code was adopted by the Executive and Supervisory Boards in spring 2015 and since then has been implemented group-wide in several steps. The content is disseminated to various groups of employees in regular internals in the course of partially electronic training programs.

The goal of the Ethics Code is to inform the employees of the SINGULUS TECHNOLOGIES Group about the key compliance issues (competition regulations, corruption, handling of conflicts of interest, money laundering, embargo and trade restriction rules, data security, media and public affairs, workplace safety). This Ethics Code is supported by action guidelines to the Ethics Code, which amongst others includes rules regarding the granting and acceptance of gifts, and action guidelines for whistle-blowers, which governs specifics with regards to reporting of misdemeanor and illegal, immoral or inappropriate activities within the SINGULUS TECHNOLOGIES Group.

The complete ethics code is publicly available on the website of the SINGULUS TECHNOLOGIES AG under www.singulus.de/de/investor-relations/corporate-governance.html.

Compliance Management

For the Executive Board and the Supervisory Board of the SINGULUS TECHNOLOGIES AG, the adherence to extensive compliance is an essential prerequisite for a sustainable economic success. As part of the risk management, compliance risk matters are analyzed and managed. In this connection there are quarterly reports to the Chief Financial Offices and annually to the Supervisory Board. In addition, extraordinary events and matters are directly reported to the Chief Financial Officer.

In case of actual or assumed compliance breaches, employees can – if wanted, also anonymously - contact their superiors, the Compliance officer or the SINGULUS TECHNOLOGIES ombudsperson.

3. Composition and work processes of Executive and Supervisory Boards

Close cooperation of Executive and Supervisory Boards

Executive and Supervisory Boards work closely together for the benefit of the company. The Executive Board reports regularly, timely and in detail to the Supervisory Board about the relevant issues of corporate planning, the strategic development, the course of business activities and the overall situation of the Group.

The basis of the information and monitoring activities of the Supervisory Board is the detailed monthly reporting. Additional, written and oral reports of the Executive Board, by other employees, the auditors as well as by external consultants supplement the reporting. Furthermore, the Chairman of the Supervisory Board regularly discusses the situation and the future development of the company during individual talks with the Executive Board and subsequently informs the other members of the Supervisory Board about these discussions. The reports are reviewed and discussed within the Supervisory Board and also jointly with the Executive Board. According to the bylaws of the Executive Board, significant business decisions are subject to the approval by the Supervisory Board. Overall, there were eight Supervisory Board meetings in the business year 2018, of which five were meetings in present.

Members and work of the Executive Board

The Executive Board of the SINGULUS TECHNOLOGIES AG is currently comprised of two members. It is the management body of the company. In managing the company the Executive Board is solely obligated to the interests of the company and follows the goal of a sustainable increase in the enterprise value as well as the interests of the shareholders and of the employees.

The current members of the Executive Board are Dr.-Ing. Stefan Rinck and Mr. Markus Ehret. Since April 1, 2010 Dr.-Ing. Stefan Rinck is the Chief Executive Officer, Mr. Markus Ehret is member of the Executive Board of the SINGULUS TECHNOLOGIES AG since April 19, 2010. The employment contract of Dr.-Ing. Stefan Rinck expires on August 31, 2022, Mr. Markus Ehret's contract has a term until December 31, 2019.

As Chief Executive Officer Dr.-Ing. Stefan Rinck is responsible for the departments Production, Marketing & Sales, Technology, Research & Development as well as Strategy and International Operations. Mr. Markus Ehret is responsible for the areas Finance, Controlling, Investor Relations, Human Resources, Purchasing and IT.

Members and work of the Supervisory Board

The Supervisory Board of the SINGULUS TECHNOLOGIES AG is comprised of three members. No employee representative is a member of the Supervisory Board. The cooperation of the Supervisory Board was characterized by efficiency, professional competence and trust.

The Supervisory Board is currently comprised of Dr.-Ing. Wolfhard Leichnitz, Ms. Christine Kreidl WP/StB and Dr. rer. nat. Rolf Blessing. There were no elections to the Supervisory Board during the business year 2018. The Supervisory Board continued to refrain from forming an audit committee or other committees in the fiscal year 2018, because according to its assessment there is neither an increase in efficiency to be expected nor an improved handling of complex issues nor a more efficient or improved execution of tasks of the Supervisory Board in connection with issues about accounting principles, risk management or the audit. In addition, corporate law provides that decision-making Supervisory Board committees have to consist of at least three Supervisory Board members. For this reason a delegation of tasks is not reasonable, either. The possibility for a Supervisory Board member to be appointed for a shorter tenure than the completion of the Annual General Meeting, which resolves on the discharge for the fourth business year after the start of the tenure, is still provided for and stated in the statutes of the company. The Supervisory Board met in eight meetings in the business year 2018.

The Supervisory Board regularly reviews the efficiency of its work. During the course of the meeting on September 11, 2018, the Supervisory Board reviewed its efficiency through the realization of the catalog of measures drafted by the Supervisory Board in the business year 2017 and identified additional recommendations to improve the efficiency of the Supervisory Board, which the Supervisory Board intends to implement in 2019. In particular, these recommendations include the flow of information between the Executive Board and the Supervisory Board as well as the flow from the Executive Board to subordinated management levels. For detailed information about the work of the Supervisory Board in the business year 2018 please refer to the Report of the Supervisory Board on pages 8 to 13 of the Annual Report.

There were no advisory or other services or work contracts in place between the members of the Supervisory Board and the company in the past business year.

All three members of the Supervisory Board are independent in the meaning of the Code.

According to the bylaws of the Supervisory Board, the Supervisory Board members are obligated to immediately disclose to the Chairperson of the Supervisory Board potential conflicts of interest, which could for example results from an advisory or board function for customers, garantors, creditors or other business partners of the SINGULUS TECHNOLOGIES AG. No conflicts of interests of members of the Supervisory Board arose during the period under review.

4. Reporting pursuant to Art. 289f Para. 2 No. 4 HGB

As an exchange-listed and non-codetermination stock corporation, the SINGULUS TECHNOLOGIES AG is obligated to resolve specific targets for the company with regards to the women's quota and as well as to publish them as part of the Status Report for the business year. The target for the Supervisory Board and the Executive Board has to be determined by the Supervisory Board pursuant to Art. 111 Para. 5 AktG and the targets for the management levels below these boards by the Executive Board pursuant to Art. 76 Para. 4 AktG. To determine the targets, the Supervisory and Executive Boards have to set deadlines, which cannot be more than five years into the future.

The Executive Board and the Supervisory Board have extensively deliberated on this matter. At the time of the determination and also currently, the Executive Board of the SINGULUS TECHNOLOGIES AG is comprised of two members with no female member. Against the background that the Supervisory Board does not intend any personnel changes with regards to the composition of the Executive Board nor to increase the number of members of the Executive Board, the target for the share of women on the Executive Board was set at zero percent until December 31, 2019. During the past and the current business year, there were no changes regarding this assessment and target. At the time of the determination of the target and also currently, the Supervisory Board of the SINGULUS TECHNOLOGIES AG is comprised of three members with one female member. The women's quota of the Supervisory Board of 33 % has not changed during the past business year and the new target for the women's quota for the Supervisory Board was also set at 33 % again for the subsequent period until December 31, 2019.

The Executive Board has set the target for the women's quota for the first management level below the Executive Board to 33 % and to 20 % for the second management level below the Executive Board until June 30, 2022. The target of 33 % with respect to the women's quota for the first management level below the Executive Board was missed slightly with 30 % during the year under review. This is a result of a reduction of working hours of one female manager. The target of 20 % with respect to the women's quota for the second management level was not achieved with a share of around 11 % during the year under review. This development is based on the personnel-organizational changes for the second management level below the Executive Board. On the one hand, this was due to the merger of the SINGULUS Stangl, Solar GmbH to the SINGULUS TECHNOLOGIES AG. As a result of the merger, the management position for data protection and quality assurance at the SINGULUS Stangl Solar GmbH, which was occupied by a female manager, was combined with an existing position and also occupied by a female manager of the SINGULUS TECHNOLOGIES AG. In addition, two positions at the second management level below the Executive Board, which were already vacant in the preceding business year and which were occupied by female managers, have become obsolete in the course of personnel-organizational changes. The Executive Board intends to meet the set targets for women's quotas for the first and second management level below the Executive Board by June 30, 2022 at the latest.

5. Competence profile and diversity concept

The Supervisory Board has anchored the competence profile and diversity concept of its composition with respect to for example age, gender, educational and occupational background in the bylaws. Accordingly, the Supervisory Board should not recommend anyone for appointment to the Supervisory Board for a tenure exceeding the person's age of 70. Candidates recommended to the Annual General Meeting for appointment to the Supervisory Board should have the following expertise and experience (while not all of the criteria have to be met): (i) know-how of the core business areas, in particular the competitive situation and requirements of customers, (ii) professional expertise with regards to technologic challenges, which are connected with the development of new machines, (iii) experience with complex development projects, (iv) international business experience, also outside of Europe, (v) experience with national and international marketing sales structures, (vi) expertise in the areas capital markets and investor relations and (vii) expertise in the area of mergers & acquisitions. At least one member of the Supervisory Board must possess professional know-how in the areas of accounting or auditing. In its entirety the members have to be familiar with the sector, in which the company is operating. Members should display personality, integrity, professionalism, willingness to perform and independence. Nationality should not play a role in the selection of a candidate. In addition, the Supervisory Board should be comprised of at least two independent members. The Supervisory Board continues to set a women's quota for the Supervisory Board (page 24).

The Supervisory Board is convinced that the described competence profile and diversity concept is already met by the tenure of one female and two male members and due to their age, educational and professional backgrounds. Furthermore, there were no elections to the Supervisory Board scheduled for the business year 2018. Insofar, no additional measures were indicated for the business year.

Requirements for the diversity concept with respect to the Executive Board are also fixed in the bylaws of the Supervisory Board. Accordingly, the Chairperson of the Supervisory Board coordinates the long-term succession planning for the Executive Board, while a maximum age of 65 years is intended for the members of the Executive Board. For the appointment of the Executive Board, the Supervisory Board is also urged to consider diversity aspects. This is implemented on a case-by-case basis.

6. Additional corporate governance information

Transparency and communications

The Executive Board publishes potentially share price-relevant information concerning the SINGULUS TECHNOLOGIES AG immediately unless the company is exempted in individual cases.

The SINGULUS TECHNOLOGIES AG makes sure that the shareholders of the company are able to gain timely and extensive access about the situation of the company through the information provided on its internet website. The SINGULUS TECHNOLOGIES AG reports about its business trends and the financial and earnings situation to its shareholders four times during the business year. All financial reports, current company presentations, the corporate calendar as well as announcements, Directors' Dealings pursuant to Art. 19 MAR and voting right announcements pursuant to Art. 33ff. Wertpapierhandelsgesetz (WpHG) are published under www.singulus.de in the segment Investor Relations. To improve transparency and to promote the shares of the SINGULUS TECHNOLOGIES AG held several analyst conferences and numerous one-on-one discussions with investors.

Also, all reports and documents concerning corporate governance including the declaration of conformity to the German Corporate Governance Code, an internet link to the full text of the code itself and the articles of the SINGULUS TECHNOLOGIES AG as well as the invitations to the Annual General Meetings and resolution results can be accessed through SINGULUS TECHNOLOGIES' website under "Investor Relations". The Annual General Meeting of the SINGULUS TECHNOLOGIES AG is usually held during the first half of the year. The ordinary Annual General Meeting of the SINGULUS TECHNOLOGIES AG in the business year 2018 took place on June 28, 2018. The deadline of eight months after the conclusion of the fiscal year for holding an annual general meeting pursuant to Art. 175 Para. 1 Sent. 2 AktG was thus complied with.

With the use of electronic forms of communication, in particular the internet and email, the Executive Board facilitates the shareholders' participation in the Annual General Meeting and enables them to exercise their voting rights by representatives. In addition, the Executive Board may allow the shareholders to exercise the voting rights in written form and through electronic media without having to participate in the Annual General Meeting in person. All reports, annual financial reports and other documents, which have to be provided to the Annual General Meeting, as well as the agenda of the Annual General Meeting and counter-motions, if applicable, can be downloaded via the internet.

Accounting principles and audit of financial accounts

The consolidated financial statements and the interim reports of the SINGULUS TECHNOLOGIES Group are drawn up in accordance with IFRS as well as pursuant to applicable commercial law regulations pursuant to Art. 315e Para. 1 HGB. The individual financial statements of the SINGULUS TECHNOLOGIES AG are drawn up according to HGB and AktG principles as well as supplementary requirements according to the bylaws. The annual financial statements and consolidated statements for the business year 2018 drawn up by the Executive Board were audited by the auditor KPMG AG, Frankfurt am Main. The Supervisory Board reviewed the statements and the audit and adopted them. Important aspects were discussed with the Supervisory Board and the reports were approved by the Board before publication.

Interim reports are published within 45 days after the respective end of the quarter. The consolidated financial statements and the annual financial statements are made publicly accessible within 90 days after the end of the respective business year. Half-year and quarterly financial reports are not subject to an audit.

The Annual Report for the business year 2018 and the interim reports are published on SINGULUS TECHNOLOGIES AG's website.

Compensation of Executive and Supervisory Board members

Similar to the past years, SINGULUS TECHNOLOGIES individually reports the fixed and variable components of the compensation as well as the compensation components with long-term share-based incentives for the members of the Executive Board. In addition, also the contributions to pensions, which are based on a defined contribution scheme, are disclosed individually. The details are set forth in the Compensation Report, which is part of the Status Report and supplements this Corporate Governance Report. The Compensation Report lays out the compensation and the compensation scheme for the Executive Board in detail and also explains the design of the compensation components with long-term incentives. In addition, the remuneration of the members of the Supervisory Board is stated individually. The Compensation Report can be found on pages 76 to 87 of this Annual Report.

Shareholdings as well as reportable securities' dealings of Executive and Supervisory Board Members

1. Shareholdings of Executive and Supervisory Board members

No member of the Executive or Supervisory Board holds directly or indirectly a share of the nominal capital of the company exceeding 1 %.

The following members of the Executive and Supervisory Board held directly or indirectly shares in the SINGULUS TECHNOLOGIES AG as of December 31, 2018:

Shareholdings of Executive and Supervisory Board members

	December 31, 2018	December 31, 2017
Supervisory Board		
Dr.-Ing. Wolfhard Leichnitz, Chairman of the Supervisory Board	245	245
Executive Board members		
Dr.-Ing. Stefan Rinck, CEO	122	122
Dipl.-Oec. Markus Ehret, CFO	43	43

The sitting members of the Executive and Supervisory Boards did not hold subscription rights through stock options or convertible bonds as of December 31, 2018.

2. Directors' Dealings

Pursuant to Art. 19 MAR, member of the Executive and Supervisory Boards or related persons were obligated in the business year 2018 to report transactions with shares or debt instruments of the company or related derivatives or with other related financial instruments, if the total volume of the activities within one calendar year exceeds a total volume of EUR 5,000. The company was not notified of any relevant transactions for the business year 2018.

SINGULUS TECHNOLOGIES ON THE CAPITAL MARKET

General Environment

The global economy continues to remain in an expansion stage. However, the momentum has declined and during the course of the year the forecasts were further reduced. The International Monetary Fund (IMF) published that it expected a growth of the German economy of only 1.3 % for the year 2018. The prior projections had amounted to more than 2 %. At the same time, the IMF reduced the global growth forecast by 0.2 percentage points to 3.7 %. A growth rate at this level is also forecast for 2019.

In addition, in 2018 many political topics took center stage on the international capital markets. An escalating trade dispute of the US with China and also with other developed countries weighed on the general capital market sentiment. In Europe, the still uncertain exit of Great Britain from the EU is still a burdening factor. If no final agreement will be reached, the United Kingdom will leave the economic union on March 29, 2019 without any transition regulations.

The interest hike cycle of the US central bank FED was continued in the year 2018. Here, in particular towards the end of the year, opinions emerged demanding a more easing conduct by the central bank, to not tighten the monetary policy more than required. In contrast, the central bank rates in Europe and Japan remained at historically low levels. However, the ECB announced that it would stop the bond purchase program as per the end of 2018.

In this environment characterized by uncertainties, stock markets around the world recorded losses. Although the S&P 500 index reached new all-time highs in September 2018, this level could not be defended and the index closed at 2,507 index points with a loss of just over 6 %. The German benchmark index DAX lost considerably more and recorded a decline of more than 18 % on an annual basis and closed at 10,559 points at the end of the year.

The SINGULUS TECHNOLOGIES stock

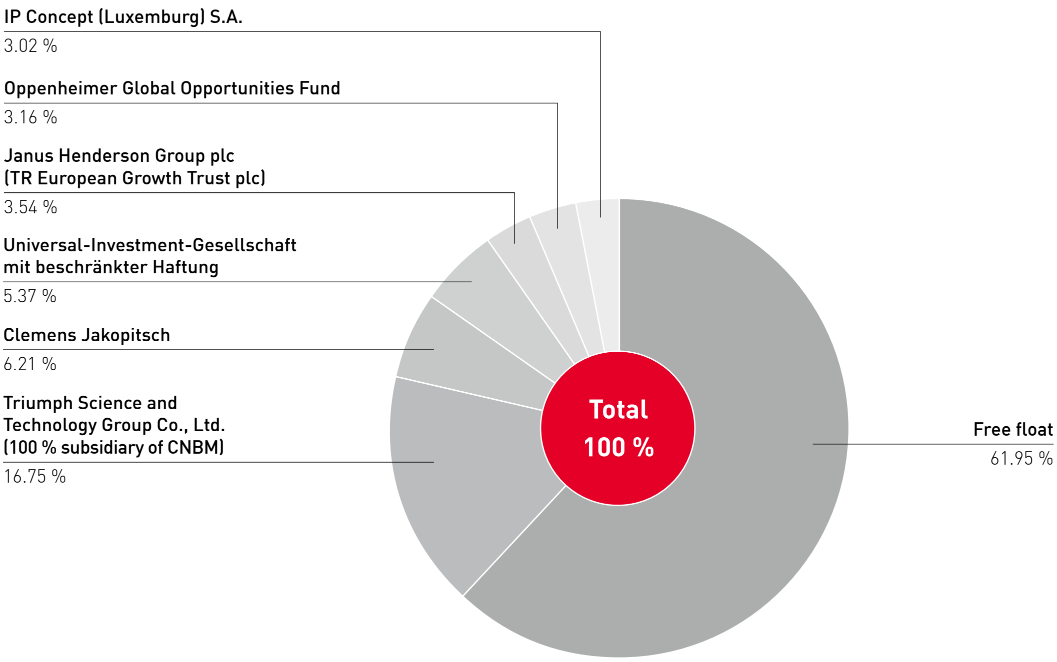
The share price of the SINGULUS TECHNOLOGIES stock started at the beginning of the business year with around EUR 15 and climbed to more than EUR 18 in the first couple of weeks in 2018. However, this level could not be maintained and the share price trended lower in the subsequent months.

A recover to more than EUR 15 and started at the end of September 2018. This can certainly be seen in the context that China National Building Materials, Beijing, China (CNBM) informed the SINGULUS TECHNOLOGIES AG on September 21, 2018 that it had concluded the announced purchase of a minority stake as a first step with around 13.11 % of the shares (1.166 million shares). Towards the beginning of the year 2019, the stock gave up the gains once again and traded around EUR 10 on Xetra. The share price could not stabilize at the beginning of 2019 until the end of February and dropped under the EUR 10 mark. In March 2019, the stock exceeded the EUR 10 mark and closed on March 22, 2019 at € 10.36.

Changes in the shareholder structure

The most significant change in the shareholder structure was the transfer of 1.166 million shares (around 13.11 %) to the Triumph Science and Technology Group Company, LLC, (Triumph), a 100 % subsidiary of CNBM. The SINGULUS TECHNOLOGIES AG was informed on September 21, 2018 that the announced acquisition of a minority stake as a first step had been concluded.

Shareholder Structure
(As of March 22, 2019)



On January 22, 2019, the SINGULUS TECHNOLOGIES AG was informed that CNBM had acquired additional 3.64 % of the shares and that the transfer of ownership of the shares to Triumph was concluded so that the company now holder 16.75 % of the shares of the SINGULUS TECHNOLOGIES AG in total.

Share information (as of December 31, 2018)

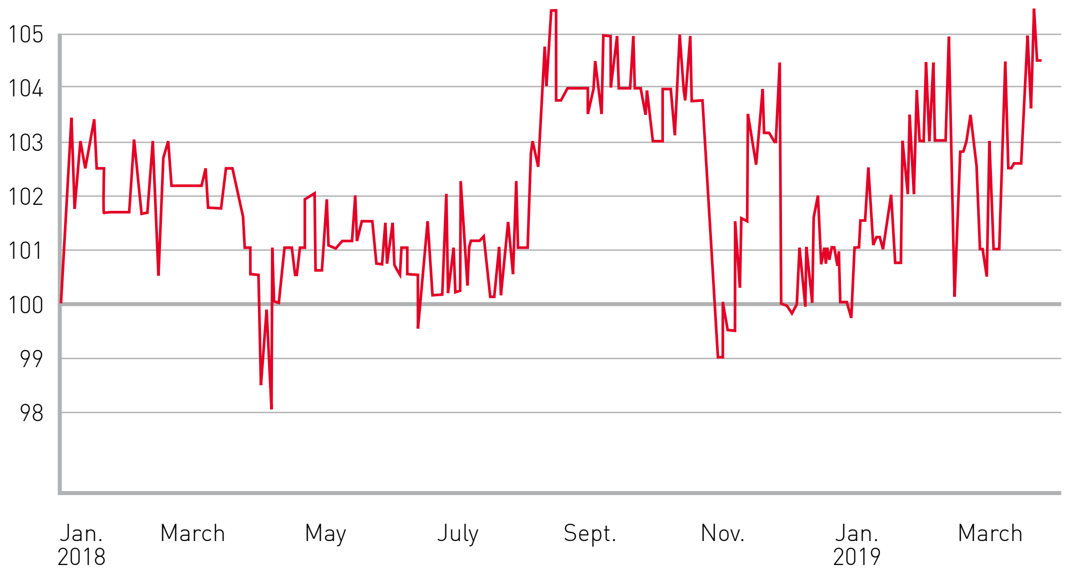
Shares outstanding	8,896,527
Nominal capital in EUR	8,896,527
ISIN	DE000A1681X5
WKN	A1681X
Stock symbol	SNG / Reuters SNGG.DE / Bloomberg SNG.NM
Type of shares	Ordinary bearer shares at a par value of EUR 1 each
Prime Standard	Technology

The SINGULUS TECHNOLOGIES Stock
(Xetra close in EUR)

The SINGULUS TECHNOLOGIES corporate bond

The bond of the SINGULUS TECHNOLOGIES AG with a nominal value in the amount of EUR 12 million is traded in the Open Market of Deutsche Börse AG at the Frankfurt Stock Exchange since July 2016. The bond is secured and has a term to maturity of five years in total ending on July 22, 2021. Overall, the bond was very stable and traded above the issue price during the course of the year. On March 22, 2019 the bonds traded at 104.5 %.

Price of SINGULUS TECHNOLOGIES Corporate Bond
(ISIN DE000A2AA5H5, WKN A2AA5H, Frankfurt Stock Exchange, %)



Continuous communication with capital market participants

The open and ongoing communication with all participants of the capital markets is very relevant for SINGULUS TECHNOLOGIES. We gladly provide our private and institutional investors information through various publications or during the Annual General Meeting. Throughout the year, SINGULUS participates in several conferences and road shows in Germany and abroad to particularly present the strategic positioning and the future positioning. In addition, it is possible to obtain relevant information at all times through our website under http://www.singulus.de in the sections Investor Relations and Credit Relations, respectively.

MEDLINE

PRODUCTION SYSTEM FOR CLEANING AND COATING OF CONTACT LENSES

The MEDLINE Clean cleans the contact lenses of material residues and coats the lenses in a further process step.


SINGULUS
MEDLINE

MANAGEMENT REPORT

COMBINED MANAGEMENT REPORT OF THE SINGULUS TECHNOLOGIES GROUP AND SINGULUS TECHNOLOGIES AG

The Company has exercised the option in accordance with § 315 (3) of the German Commercial Code (Handelsgesetzbuch, "HGB") and published a combined management report for the SINGULUS TECHNOLOGIES Group and SINGULUS TECHNOLOGIES AG. The course of business, the Company's situation, and the risks and opportunities affecting the future development of SINGULUS TECHNOLOGIES AG and the SINGULUS TECHNOLOGIES Group broadly coincide, and, where not otherwise indicated, the following explanations, in particular the figures, refer to the SINGULUS TECHNOLOGIES Group.

Basis of the Group

SINGULUS TECHNOLOGIES Group business model

The business activities of SINGULUS TECHNOLOGIES center on developing, manufacturing, and marketing machinery and equipment in the fields of vacuum coating technology, surface engineering, wet chemistry, and thermal processing technologies. The range of services includes all associated business areas and services – including the various forms of sales financing. The Company operates in the solar, optical disc and semiconductor sales markets. The new fields of activity defined in the previous year, medical technology and consumer goods, are allocated to the segments on the basis of their technical properties. Specifically, as in the previous year, the activities for the medical technology area are grouped under the solar segment and the activities in the consumer goods area are grouped into the optical disc segment.

In the Solar segment, SINGULUS TECHNOLOGIES offers machinery and large-scale equipment for manufacturing thin-film solar cells based on copper indium gallium diselenide (CIGS), and cadmium telluride (CdTe) and crystalline solar cells with the focus on high-efficiency cells. These consist of vacuum coating equipment, systems for thermal processes, and equipment for wet-chemical processing. The field of activity of crystalline silicon solar cells includes production solutions for high-efficiency solar cell concepts such as HJT (heterojunction), IBC (interdigitated back contact), PERC (passivated emitter rear cell), and PERT (high-efficiency passivated emitter, rear totally diffused cell) solar cells. SINGULUS TECHNOLOGIES offers complete crystalline silicon solar cell production lines in this market. After the strategic decision to enter the market for medical technology was made in fiscal year 2017, SINGULUS TECHNOLOGIES has marketed wet-chemical processing systems. In the future, the portfolio will be expanded for this field of activity to include vacuum coating equipment.

Machinery to produce common optical disc formats (CD, DVD, dual-layer Blu-ray discs and Ultra HD Blu-ray Discs) is offered in the Optical Disc segment. In recent years, the DECOLINE II integrated production line and the POLYCOATER inline vacuum cathode sputtering system were developed for the consumer goods area.

In the Semiconductor segment, SINGULUS TECHNOLOGIES sells the TIMARIS and ROTARIS ultra-high-vacuum modular equipment platforms for the deposition of semiconductor wafers with complex functional coatings. The Company markets this equipment for a range of different applications in semiconductor technology.

The Company's entire range of equipment is complemented by a global replacement parts and service business.

Group structure

Machinery and equipment is designed, constructed, and manufactured for all segments at the location in Kahl am Main. In addition, Group management, accounting, sales and all central functions are based here. Production systems for wet-chemical processes are developed and constructed at the Fürstenfeldbruck location.

SINGULUS TECHNOLOGIES has a sales and service network in all relevant global regions, enabling it to offer advisory and other services worldwide. Some subsidiaries in key regions are supplemented by a network of long-term tied agents.

Goals and strategies

Solar segment

By continuing the work on our ongoing major projects in the CIGS-solar area, we further strengthened our core business in the fiscal year 2018 and developed further growth potential. Our activities centered around the manufacturing and installation of the production equipment ordered and the acquisition of follow-up orders from our key customers in order to be able to generate sustainable profit in the future.

In fiscal year 2018, in the market of equipment to produce crystalline high-efficiency cells, e.g., heterojunction (HJT) solar cells, the Company introduced the GENERIS PVD vacuum cathode sputtering system for the PVD process step and entered into corresponding agreements with international customers that are expected to be converted to firm orders in fiscal year 2019. The GENERIS PECVD vacuum deposition equipment (PECVD = plasma-enhanced chemical vapor deposition) is offered for manufacturing so-called PERC (passivated emitter and rear cell) solar cells and the objective is to market them for this application.

SINGULUS TECHNOLOGIES' strategy is to leverage and expand its existing core skills for production solutions in the area of photovoltaics to other cell designs. This includes vacuum coating technologies, surface engineering, wet chemistry, and thermal processing technologies.

In the medical technology field of activity, SINGULUS TECHNOLOGIES saw the first orders placed for new wet-chemical processing equipment for manufacturing contact lenses in 2017. In early June 2018, the Company signed a follow-up order. All of the equipment ordered will be delivered to an internationally operating company in the medical industry. In this field of activity, we are working on developing new applications both in the field of wet-chemical processing as well as in the field of vacuum coating technology.

Optical Disc segment

SINGULUS TECHNOLOGIES currently does not see any new growth in the market for physical storage media. The trend for films and music continues in the direction of downloading and streaming. In the coming years, we will continue to focus our activities in this segment on the global replacement parts and service business for the extensive range of existing equipment installed and anticipate disposing of individual production plants to existing customers as part of investments for replacing this technology.

Surface refinement is one of the core skills of SINGULUS TECHNOLOGIES. With the integrated production line DECOLINE II and the inline vacuum coating system POLYCOATER, we have launched two systems on the market in past years that offer surface refinement of all types of consumer goods such as in the cosmetics and automotive industries.

Semiconductor segment

In the Semiconductor segment, SINGULUS TECHNOLOGIES introduced two equipment platforms onto the market for memory chips for applying extremely thin layers of coatings of less than one nanometer with the utmost precision. In the future, these magnetic layering systems are expected to be used for various application areas in modern sensor technology.

We offer the TIMARIS and ROTARIS system platforms for such applications and plan to market these more heavily in Asia. Despite further success in the past fiscal year, this segment remains the Company's smallest.

Corporate management system

The Group is divided into reporting segments for the purposes of corporate management. The Group is managed using financial key earnings indicators. Group management mainly uses revenue and EBIT (earnings before interest and taxes) by segment to facilitate decisions regarding the allocation of resources and to determine the segments' performance. Financing is monitored and managed at Group level.

Research, development, and design

In fiscal year 2018, the focus of new and further development of processing systems was on the solar and semiconductor segments and in the new medical technology field of activity.

In manufacturing CIGS thin-film modules, SINGULUS TECHNOLOGIES works with its customers to optimize the processes in order to be able to meet the ever growing demands within the solar industry for productivity at low operating costs. In the field of crystalline high-efficiency cells, GENERIS PVD and PECVD were further developed for various process steps in the production of HJT solar cells to achieve high reproducibility of the layer at high productivity and low operating costs. Both of these systems are designed especially for extremely thin substrates such as the wafers for HJT solar cells.

In the field of medical technology, SINGULUS TECHNOLOGIES concentrated on the new wet-chemical system MEDLINE for manufacturing contact lenses. The first machinery of this model was commissioned at our customer in early 2019.

In the semiconductor technology, additional processes had been developed to broaden the market for the TIMARIS and ROTARIS system platforms.

The capitalization rate stood at 26.9% in fiscal year 2018 (previous year: 19.8%). Amortization of capitalized development costs amounted to EUR 1.0 million (previous year: EUR 0.9 million). The Group's non-capitalizable development costs amounted to EUR 9.8 million in 2018 (previous year: EUR 6.9 million).

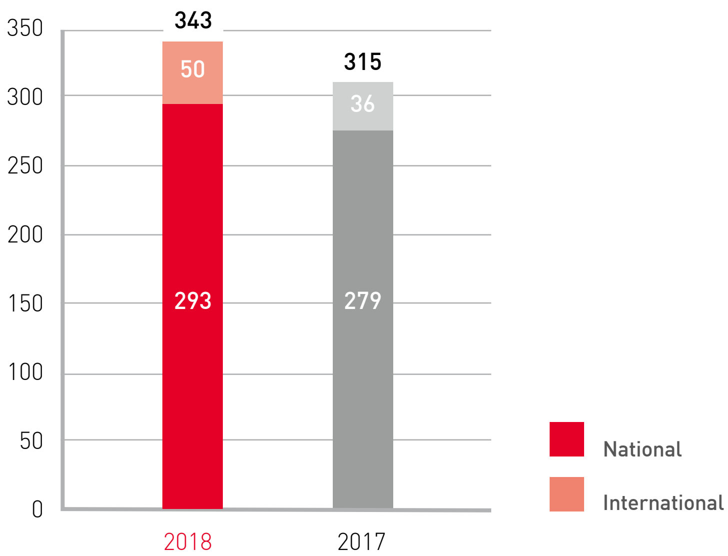
At SINGULUS TECHNOLOGIES, the Research, Development, and Design department employed an average of 82 people in fiscal year 2018 (previous year: 73 employees).

Headcount

SINGULUS TECHNOLOGIES increased headcount in certain specific areas in fiscal year 2018. Specialists had been recruited for key roles in development and design as well as for commissioning. The number of employees in the SINGULUS TECHNOLOGIES Group increased mainly in connection with increase in headcount at the distribution and service subsidiary headquartered in Shanghai, China, to 343 employees as of December 31, 2018 (December 31, 2017: 315 employees). The headcount in Germany as of the end of the year was 293 employees (previous year: 279 employees).

Employees

(as of December 31)



Report on economic position

Macroeconomic environment

In its update published at the end of 2018, the International Monetary Fund (IMF) indicated that trade conflicts, rising interest rates and crises in emerging markets were negatively impacting the global economy and economic growth was slowing. The ongoing trade dispute between China and the United States, in particular, is taking effect. The IMF expects global growth to slow somewhat in 2018 from the originally estimated 3.9% to a plus of 3.7%. Germany's economy cooled down even more, growing at a rate of only 1.3%.

In addition to the "negative effects" of trade policy measures, the IMF names the growing economic troubles in a series of emerging markets and developing economies – particularly the higher borrowing costs related to rising lending rates and higher oil prices – as reasons for its gloomier growth forecast.

Sector-specific environment

Solar segment

Market for solar cell production systems
The Intergovernmental Panel on Climate Change (IPCC) presented its special report in the third quarter of 2018 calling for a radical decrease in greenhouse gases by the middle of the century in order to achieve carbon neutrality. At the current emission rates, the IPCC estimates that the target of limiting the global temperature increase to only 1.5 degrees Celsius defined at the Paris Climate Conference will already be surpassed by the year 2040. According to the report, global warming is currently at around one degree Celsius compared to the level of the pre-industrial era. A total of 91 authors examined 6,000 studies to prepare the global climate report. Specifically, the report states that by 2030 CO_2 emissions would need to fall by 45% worldwide and the share of electricity from renewable sources would need to increase from currently approximately 20% to at least 70–85% worldwide.

The European Commission's European Technology and Innovation Platform for Photovoltaics (ETIP PV) drafted a study demonstrating that it is possible to supply 100% of the world's electricity from renewable energy sources. In this way, electricity generated from renewable energy such as photovoltaics and wind can make a valuable contribution to meeting the global demand for energy and support limiting the global temperature increase to 1.5 degrees Celsius. Availability of sunlight, modularity of the technology and continual cost reductions can help to establish photovoltaics as the world's biggest energy source and to overcome the challenge of drastic decarbonization.

A current study published by the consulting firm Deloitte also demonstrates that photovoltaic and wind energy are becoming the preferred energy sources and have already become integral to the energy supply in many countries. Particularly the lower cost of electricity generation is a key deciding factor in this.

Cost of photovoltaics continues to drop

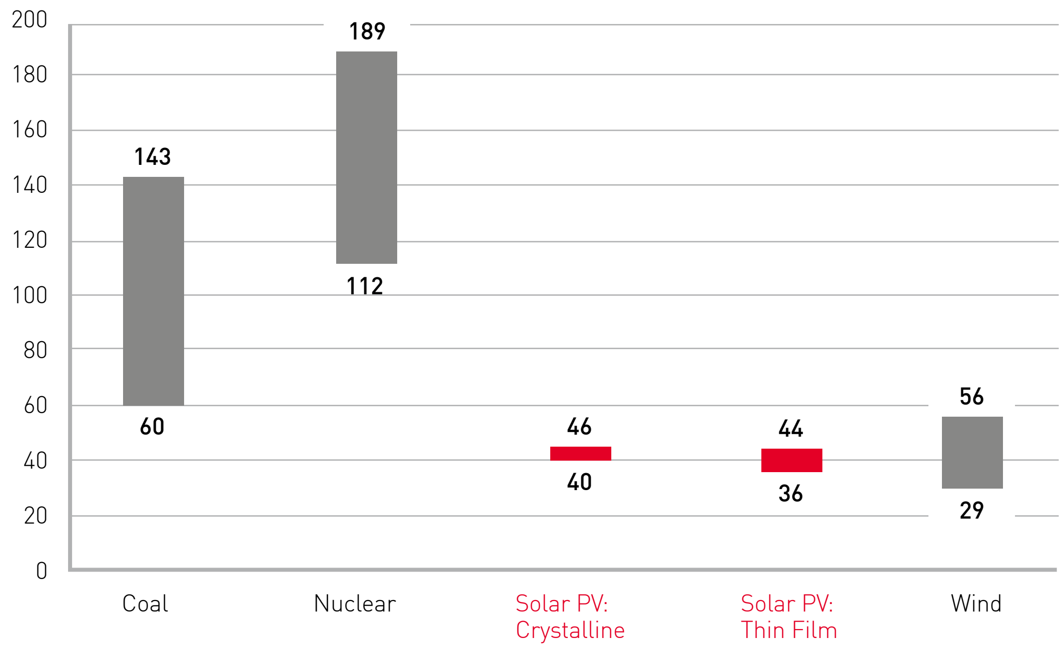
In Dubai, United Arab Emirates, a new record for the lowest price for a large-scale photovoltaic project was reported in 2018. In phase IV of the 5-GW Mohammed bin Rashid Maktoum solar park, the sales price for an additional 250 MW has been set at a rate of USD 0.024/kWh. This price equals that of a 1.17 GW solar park already operating in Abu Dhabi, United Arab Emirates.

In Germany, the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway (Bundesnetzagentur) reported that the tenders for 37 approved projects in 2018 ranged between 3.86 and 5.15 euro cents/kWh. With this, the lowest offer was slightly below the result of the preceding award of 3.89 euro cents/kWh. The average volume-weighted award for photovoltaic rounds of tenders in October 2018 increased minimally to 4.69 euro cents/kWh.

Thus, even at an international level, photovoltaics are able to compete with fossil fuels without subsidies and in parts of the world represent the lowest-cost technology for building up new electricity capacities.

Levelized Cost

($/MWh)



Unsubsidized levelized cost of alternative electricity compared to conventional energy sources

Source: Lazard's Levelized Cost of Energy, 2018

China repositions itself in the solar market

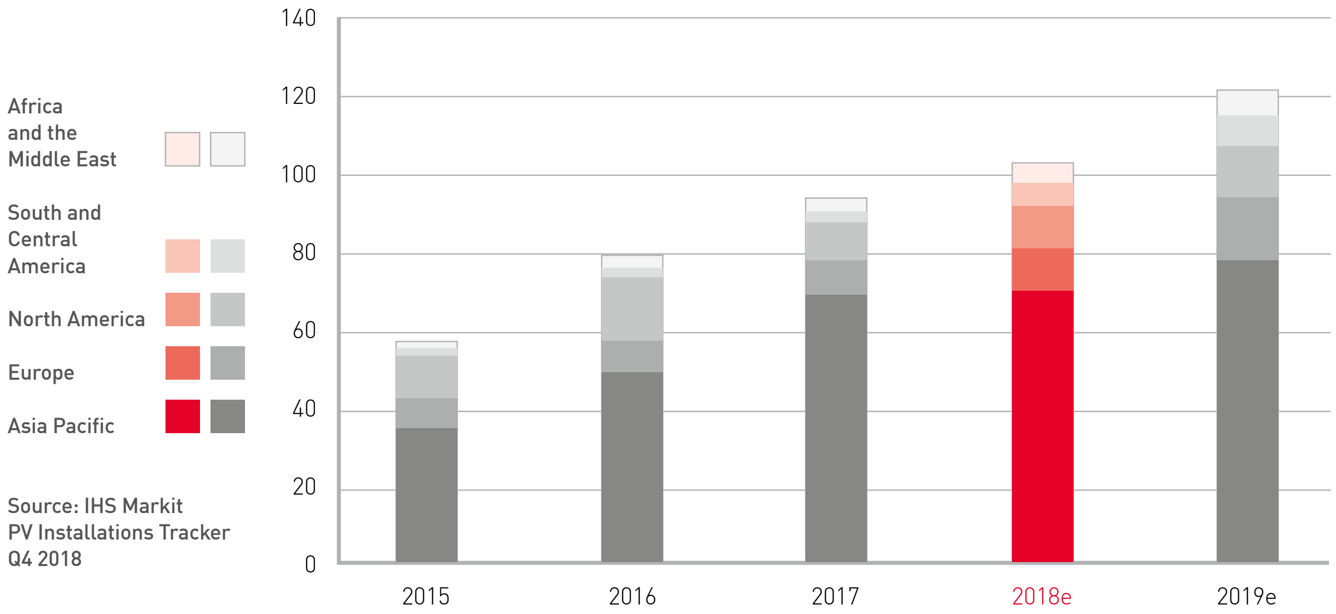
At the end of May 2018, the Chinese government announced that the national feed-in rate for electricity from solar energy would be reduced. A consolidation was expected in the market for solar cell manufacturers, such that mainly the smaller manufacturers of crystalline solar cells would come under increased pressure over the course of the year. With this decision, China aims to support high-efficiency solar cells, such as heterojunction, and to augment price pressure and competition in the market.

For over a decade, China has been a driving force in solar technology. China's National Energy Administration (NEA) reported 34.5 GW of installed photovoltaic capacity already in the first three quarters of 2018. Around 53 GW of capacity had been added in 2017. This brought the country's installed capacity to a total of 165 GW by the end of September 2018. The China Photovoltaic Industry Association (CPIA) reported that 43.6 GW of new photovoltaic capacity had been installed in all of 2018.

In their current annual forecast for 2018, analysts of market research firm IHS Markit continue to expect a positive trend with regard to added global capacity. Despite the change in China's policy reducing subsidization of feed-in rates for photovoltaic electricity, the forecast for globally installed photovoltaic capacity of 105 GW will be only 8 GW lower than the original forecast. The analysts expect that the downward trend in added capacity in China will be partly offset by other markets. The 105 GW of newly installed photovoltaic capacity represents an increase of eleven percent compared to 2017. In addition to the assessment of IHS Markit, SolarPower Europe estimates global added capacity in 2018 to be 102 GW.

PV installations 2015 to 2019

(Annual installations in GW)



Source: IHS Markit PV Installations Tracker Q4 2018

SINGULUS TECHNOLOGIES' position in the solar market
SINGULUS TECHNOLOGIES assumes a longer investment cycle, particularly for high-value CIGS thin-film solar cells. Our biggest customer in China, the state-owned China National Building Materials (CNBM) in Beijing, China, now holds 16.7% of the shares in SINGULUS TECHNOLOGIES AG. In the medium term, CNBM plans to invest in up to 6 GW of production capacity for manufacturing CIGS thin-film solar modules. According to CNBM, the lower feed-in rate will not change their investment plans for the CIGS technology. We consider the development order placed in June 2018 by CNBM for the design of new, highly specialized production machinery to be confirmation of this assertion. Moreover, several letters of intent (LoIs) were signed at the China International Import Show (CIIE; November 5–10, 2018) in Shanghai, China, for the delivery of production systems for manufacturing CIGS thin-film solar modules.

These investments relate to three sites in Bengbu, Meishan and Xuzhou. On the basis of the signed LoIs, SINGULUS TECHNOLOGIES will subsequently work with the customers to develop the corresponding detailed delivery agreements. The financing for the respective projects and the prepayments related to them are expected after the legally binding delivery agreements have been signed.

In the reporting period, the Company also received orders for CIGS production equipment from other customers. These are various individual orders for several buffer layer coating machines of the TENUIS II model. The customer in this case uses a production method that incorporates wet-chemical coating as a key production step.

Overall, we see promising interest in CIGS technology and anticipate a longer investment cycle, particularly in China. SINGULUS TECHNOLOGIES has a good position in the market for the CIGS solar cell production equipment and can offer the majority of the process steps relevant to cell efficiency. Our strategic focus here is on providing systems tailored to the manufacturing process of the respective customer. There are frequently providers of individual types of systems that compete with our equipment. However, from the Company's perspective, no competitor can presently offer the expertise or the scope of compatible equipment types as SINGULUS TECHNOLOGIES.

We expect the market for silicon solar cells to shift towards high-efficiency crystalline cells, e.g., those based on heterojunction technology (HJT). We are not significantly involved in the highly competitive market for standard solar cells. In the field of crystalline high-efficiency solar cells, the Company offers systems (SILEX II) for cell production, has established a good market position in the main markets and is currently involved in launching further production systems for the PVD and PECVD production stages on the market. Because of the general level of competition in the field of crystalline cell formats, SINGULUS TECHNOLOGIES is under high competitive price pressure with the wet-chemical products. The Company is also subject to high competitive pressure both at a technical level and with respect to price for its range of vacuum coating processes. All in all, the market situation for crystalline solar cells is more complex than that of the thin-film solar cells.

Medical technology field of activity – Further applications are being developed
Growth in global health spending is reflected in the positive trend of the global market for medical technology. The market for contact lenses and solutions is expected to record a stable rate of growth of around 3% in all regions of the world over the next three years. South America is expected to see the strongest annual growth at a rate of 9.1%, although absolute market growth will be mainly in North America.

SINGULUS TECHNOLOGIES believes that its move into the market for medical technology applications represented a strategically important addition to its portfolio with a view to the future. The medical technology order received at the end of 2017 for three wet-chemical processing systems for manufacturing contact lenses resulted to the first revenues for this area in 2018 and increased the operating result. In early June 2018, the Company signed another order for delivery of a further process system for manufacturing contact lenses. All of the equipment ordered will be delivered to an internationally operating company in the medical industry. SINGULUS TECHNOLOGIES has focused its internal processes on the high demands of the medical technology sector in terms of properties and functionality, meaning that it is focusing on product quality and the necessary manufacturing and processing procedures. The Company currently offers additional production systems for medical technology. Specifically, these are production systems using vacuum coating technology such as cathode sputtering systems for a wide variety of coatings and surface engineering.

Optical Disc segment – The market for physical media
In the Optical Disc segment, we do not expect significant investments in new production systems in the years to come.

In its study published at the end of 2017, the British market research firm Futuresource Consulting, St. Albans, UK, assumed that the production of Blu-ray discs would fall from 723 to 670 million discs from 2017 to 2018. According to this study, the production figures for the new Ultra HD Blu-ray disc format are expected to increase from 17 million discs in 2017 to 24 million discs in 2018 and will thus remain at a low level. Digital Entertainment Group (DEG) reports for 2018 that, to date, a total of 13 million households have players for the new 4K Ultra HD Blu-ray disc format and 445 films are available on 4K Ultra HD Blu-ray discs. The share of 4K TVs in the US increased by 61% to 48 million units in 2018 compared to the previous year. However, changing consumer behavior is represented in the global growth in online services and further amplifies the negative impact on demand for physical media.

This relates to demand for production systems but also to demand in SINGULUS TECHNOLOGIES' service and replacement parts business. The Company faces increasing local competition in this area. Nevertheless, the ongoing and profitable service business in the Optical Disc segment will be continued accordingly. Customers inquiring about production systems as replacement investments or to begin production of Ultra HD Blu-ray discs can still be serviced at any time.

Consumer Goods field of activity – Orientation toward new markets
With its vacuum coating equipment for surface refinement, SINGULUS TECHNOLOGIES addresses a variety of markets. Vacuum coating technology differs significantly from traditional coating processes, thus fulfilling all of the prerequisites to serve as a partial substitute for traditional and often environmentally harmful product refinement of plastic, glass and metal components and to automate the individual production stages. In general, the Company is witnessing growing interest in such solutions. Surface refinement using vacuum deposition equipment, also known as "decorative coating", opens up numerous new applications in the automotive and cosmetics industries as well as in the metallization of fashion items, ball-point pens and smartphones.

In January 2018, SINGULUS TECHNOLOGIES received the first order from the automotive industry for a production line of the DECOLINE II model for refining three-dimensional plastic components such as switches and decorative elements. The DECOLINE II allows components to be coated profitably without the use of chromium (VI) and allows for potential cost savings as a result of the integrated manufacturing and simplified logistics, particularly for the automotive industry.

SINGULUS TECHNOLOGIES created DECOLINE II for these markets as a turnkey solution integrating the paint and pretreatment steps into a single production process and automatically transporting the parts. The POLYCOATER integrated into DECOLINE is also offered separately as a vacuum coating system which refines three-dimensional plastic components in a vacuum.

Development of the market for semiconductor applications
With its equipment, SINGULUS TECHNOLOGIES addresses a niche of the semiconductor market with specific applications such as for sensor technology or systems for applying the thinnest metallic layering. Here, the Company offers the TIMARIS and ROTARIS systems; production systems built on these existing platforms are modified accordingly and marketed.

In fiscal year 2018, we were awarded a contract from one of the leading European manufacturers of semiconductor production systems to construct a complex vacuum coating system. The system based on the TIMARIS model is equipped with several process and add-on modules and will be used to apply very thin layers to thin-film products in a vacuum. The modules include coating units that can be equipped with several cathodes and work in an ultra-high vacuum of less than 10^{-8} torr.

Within the semiconductor applications offered, the Company finds itself in a competitive environment with several international competitors.

Course of business of the SINGULUS TECHNOLOGIES Group

In fiscal year 2018, the financial key performance indicators were achieved within the forecast. SINGULUS TECHNOLOGIES planned to achieve a marked year-on-year increase in revenue for the Group in accordance with International Financial Reporting Standards (IFRS) in the 2018 fiscal year. The target for revenue was in the low hundreds of millions and the target for EBIT in the mid-tens of millions.

In fiscal year 2018, SINGULUS TECHNOLOGIES increased revenue by 39.8% to EUR 127.5 million (previous year: EUR 91.2 million) and, in doing so, reached the growth target. All of the key areas and the new fields of activity contributed to this result. At the same time, the Company generated a positive operating result (EBIT) of EUR 6.8 million (previous year: EUR -1.2 million) as planned. Before depreciation, amortization and write-downs, EBITDA was also positive at EUR 9.1 million (previous year: EUR 0.7 million).

The Solar segment continued its growth trend. The operating result (EBIT) was expected to improve significantly compared with the previous year and close the year in the mid-single-digit million range. The forecasts for both revenue and operating result (EBIT) were met. Revenue in this segment amounted to EUR 98.5 million (previous year: EUR 64.8 million) and reflected a year-on-year increase of 52.0%. The operating result (EBIT) amounted to EUR 5.4 million (previous year: EUR 2.1 million). The revenue and earnings figures for medical technology are included in both planned and actual key performance indicators for 2018.

In the Optical Disc segment, the planning for 2018 assumed a slight decrease in revenue compared with 2017. From the Company's perspective, EBIT is still expected to improve somewhat compared with the previous year and to reach breakeven due to cost savings realized. Overall, the key performance indicators for this segment showed a positive trend. Revenue in this segment amounted to EUR 19.8 million (previous year: EUR 18.4 million), while EBIT amounted to EUR 0.7 million (previous year: EUR -3.0 million). In the core Optical Disc business itself, there was no significant demand for new production machines over the course of the year.

The Company expected slight revenue growth in the Semiconductor segment in fiscal year 2018 compared with the low level seen in 2017. Despite positive contribution margins, the operating result (EBIT) for this segment should be slightly negative. In fiscal year 2018, the planning targets for this segment were met. Specifically, revenue in the Semiconductor segment at EUR 9.2 million (previous year: EUR 8.0 million) was above plan and the operating result (EBIT) significantly better than expected at EUR 0.7 million (previous year: EUR -0.3 million).

Net assets, financial position, and results of operations

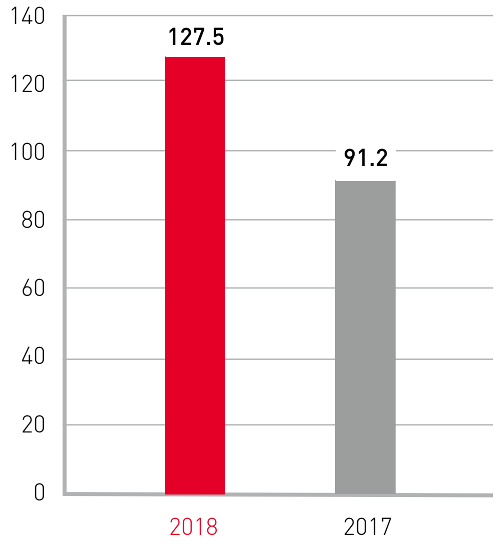
Results of operations

Gross revenue of EUR 127.5 million was generated in fiscal year 2018, significantly above on the prior-year figure of EUR 91.2 million. This corresponds to a year-on-year increase of 39.8%.

All of the Company's segments contributed to this growth, and the main driver was the Solar segment. The revenue growth in this segment (EUR +33.7 million) resulted primarily from the progression in the degree of processing for the CIGS projects. Specifically, gross revenue in fiscal year 2018 is attributable to the Solar segment in the amount of EUR 98.5 million (previous year: EUR 64.8 million), the Optical Disc segment in the amount of EUR 19.8 million (previous year: EUR 18.4 million), and to the Semiconductor segment in the amount of EUR 9.2 million (previous year: EUR 8.0 million).

Sales

(EUR million)

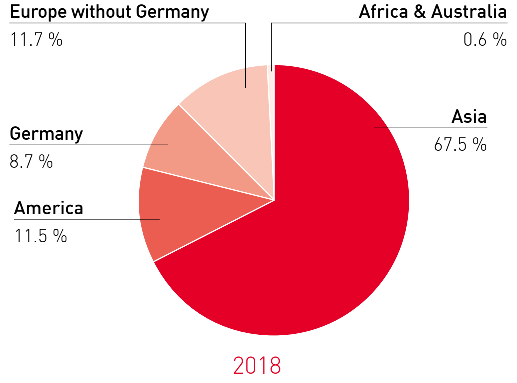


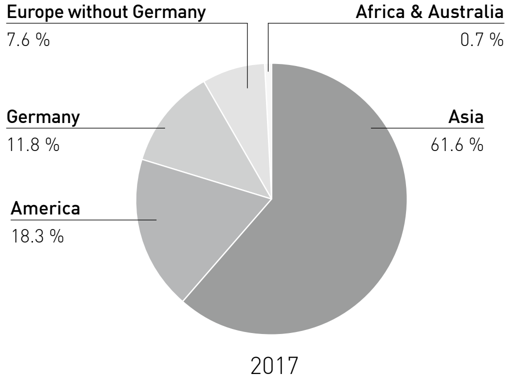
The percentage regional breakdown of revenue for fiscal year 2018 was as follows: Asia 67.5% (previous year: 61.6%), Europe 20.4% (previous year: 19.4%), North and South America 11.5% (previous year: 18.3%), and Africa and Australia 0.6% (previous year: 0.7%).

In the reporting period, the gross margin of 28.1% was on a par with the previous year (previous year: 28.1%).

Sales Split by Region

(in %)





Operating expenses (before other operating income and expenses) amounted to EUR 30.9 million in fiscal year 2018 (previous year: EUR 28.4 million). This increase is primarily attributable to higher research and development costs (EUR +3.5 million) and higher sales and customer service expenses (EUR +2.2 million). By contrast, general administrative expenses declined by EUR 3.2 million. Specifically, research and development costs amounted to EUR 8.2 million (previous year: EUR 4.7 million). These expenses are primarily connected with development services in the new areas of activity and for production solutions in the area of high-efficiency crystalline solar cells. Expenses for sales and customer service amounted to EUR 14.2 million in the reporting period (previous year: EUR 12.0 million). This increase is primarily attributable to the establishment of a distribution and service subsidiary in Shanghai, China. General administrative expenses amounted to EUR 8.5 million (previous year: EUR 11.7 million). In the year under review, other operating income mainly includes income from the release of other liabilities and provisions (EUR 1.8 million, previous year: EUR 0.5 million) and income from insurance claims (EUR 0.3 million, previous year: EUR 1.1 million)

Earnings before interest and taxes (EBIT) amounted to EUR 6.8 million in the reporting period (previous year: EUR -1.2 million).

Specifically, the Solar segment generated EBIT of EUR 5.4 million (previous year: EUR 2.1 million). The Optical Disc segment generated a positive EBIT of EUR 0.7 million (previous year: EUR -3.0 million). In the Semiconductor segment, EBIT amounted to EUR 0.7 million (previous year: EUR -0.3 million). Hence, all of the Company's segments generated positive EBIT.

The financial result for fiscal year 2018 amounted to EUR -2.0 million (previous year: EUR -1.6 million). This item included only finance costs. These resulted primarily from the finance costs of the corporate bond. The tax expense for the year under review was EUR 4.0 million (previous year: EUR 0.4 million). Tax expenses in the year under review related primarily to deferred tax liabilities expected to reverse in subsequent periods. The positive business performance drove a significant improvement in the profit or loss for the period, resulting in a profit for the period of EUR 0.8 million in fiscal year 2018 (previous year: net loss of EUR 3.2 million).

Key financial figures

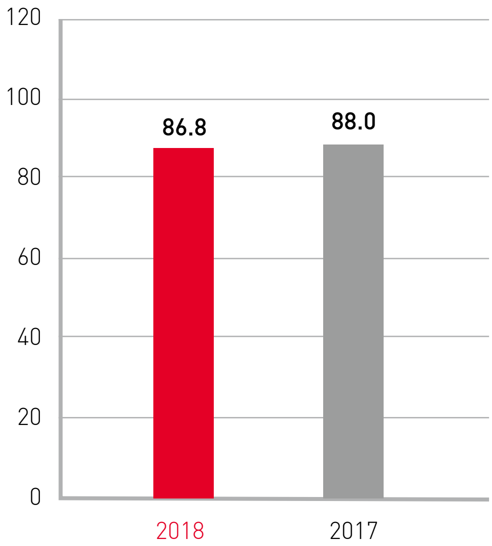
(EUR million)

	2018	2017
EBIT	6.8	-1.2
EBITDA	9.1	0.7
Profit or loss for the period	0.8	-3.2
Financial income/expense	-2.0	-1.6
Earnings per share in EUR	0.09	-0.39

Total order intake was down slightly on the prior-year figure to EUR 86.8 million in the reporting period (previous year: EUR 88.0 million). The order backlog as of December 31, 2018 was EUR 66.0 million (previous year: EUR 106.7 million).

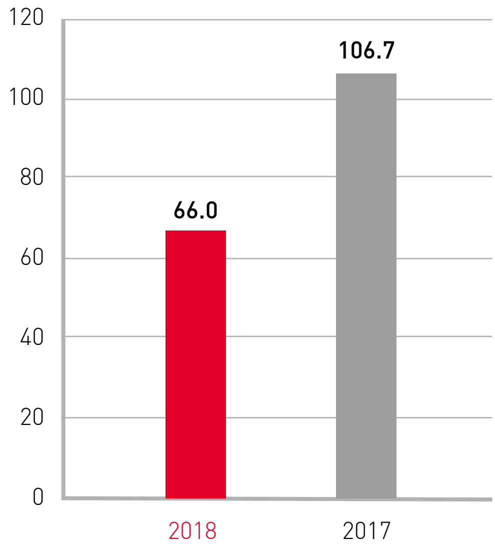
Order Intake

(EUR million)



Order Backlog

(EUR million)



Financial position

Principles and goals of financial management

SINGULUS TECHNOLOGIES uses centralized financial management to manage its liquidity. The goal of financial management is to ensure a sufficient liquidity position. Where possible, excess liquidity at subsidiaries is concentrated and monitored at the parent company. Derivative financial instruments are used to hedge against exchange rate risk, primarily forward exchange contracts. Their sole purpose is to hedge against currency risks arising from the Group's business activities. No derivatives are entered into without a corresponding hedged item. Credit insurance and bank guarantees are used where possible to hedge against credit risk from trade receivables. Further information about the management of individual financial risks can be found in note 36 to the consolidated financial statements.

Liquidity management

At December 31, 2018, the Group had bank guarantee lines in the amount of EUR 20.8 million available. EUR 11.9 million of these had been drawn down as of the end of the fiscal year. In addition, as of the balance sheet date, there was a bank guarantee in the amount of EUR 2.0 million for a prepayment received. Most of these loan commitments were 100 % secured by cash deposits as of the reporting date. The Company is currently negotiating the subscription of additional bank guarantee lines with significantly reduced cash collateral. These will be needed for further prepayments from various projects. The Solar segment in particular may require additional financing arrangements depending on project-specific requirements.

The Company took out a collateralized loan of EUR 4.0 million with a term of 12 months in February 2019 to strengthen its liquidity.

SINGULUS TECHNOLOGIES invests its excess liquidity exclusively in overnight and time deposits. Foreign currency risks from operations abroad are assessed as part of a risk analysis. Some revenue of the SINGULUS TECHNOLOGIES Group is generally subject to foreign currency risk, particularly the US dollar (USD) exchange rate risk. For this reason, derivative financial instruments are used to hedge against exchange rate risks. In the reporting period, however, that share of revenue was immaterial. Where material, risks from foreign currencies are continually assessed as part the risk management system.

The Group generated an operating cash flow of EUR 2.5 million in fiscal year 2018 (previous year: EUR -14.1 million). The cash flow from investing activities amounted to EUR -4.4 million (previous year: EUR -2.2 million). This included payments for investments in development projects amounting to EUR -3.6 million in 2018 (previous year: EUR -1.7 million). Payments for investments in other intangible assets and property, plant and equipment amounted to EUR 0.8 million (previous year: EUR 0.5 million). Overall, the cash flow from financing activities amounted to EUR -11.3 million (previous year: EUR 25.5 million), chiefly as a result of an increase in financial assets subject to restrictions on disposal (EUR 5.5 million) and outflows of EUR 4.1 million for repayment of loans. As a result, in the reporting period, the holdings of cash and cash equivalents decreased by EUR 13.7 million to EUR 13.5 million.

There were unused commitments under guarantees amounting to EUR 8.9 million as of the end of fiscal year 2018.

Cash flows

(EUR million)

	2018	2017
Cash flows from operating activities	2.5	-14.1
Cash flows from investing activities	-4.4	-2.2
Cash flows from financing activities	-11.3	25.5
Increase/decrease in cash and cash equivalents	-13.2	9.2
Cash and cash equivalents at the beginning of the fiscal year	27.2	18.5
Changes due to exchange rates	0.2	-0.5
Change in the scope of consolitation	-0.7	-
Cash and cash equivalents at the end of the fiscal year	13.5	27.2

Net assets
Compared to the previous year, net assets increased slightly to EUR 104.1 million as of December 31, 2018 (previous year: EUR 87.9 million).

Non-current assets amounted to EUR 23.7 million as of the end of the reporting period (previous year: EUR 15.5 million). This increase is mainly attributable to the extension of the lease for the office and production property at the Company's headquarters. Under the provisions of IAS 17, the property was capitalized for the first time in the reporting period. In addition, capitalized development costs increased to EUR 6.0 million (previous year: EUR 3.4 million). This increase is primarily related to the capitalization of development costs for the new business areas and to equipment for manufacturing CIGS solar modules.

At EUR 80.4 million, current assets in the reporting period and were thus above the prior-year level (previous year: EUR 72.4 million). Receivables from construction contracts increased (EUR +10.9 million) mainly as a result of the delayed receipt of project payments and the generally growing business volume. In addition, financial assets subject to restrictions on disposal increased by EUR 5.6 million in connection with the processing of ongoing major projects in the Solar segment. Financial assets subject to restrictions on disposal are mainly cash deposits to secure guarantees for prepayments received. By contrast, cash and cash equivalents decreased (EUR -13.7 million).

Inventories amounted to EUR 17.1 million as of the end of the reporting period, down slightly on the prior-year figure (EUR 17.3 million).

Current liabilities rose by EUR 9.7 million compared with the end of the 2017 fiscal year and amounted to EUR 50.2 million as of December 31, 2018 (previous year: EUR 40.5 million). This is primarily due to higher trade payables (EUR +8.4 million) as a result of the growing business volume. Furthermore, liabilities from construction contracts increased (EUR +2.7 million) as a result of the relatively slower project processing at the end of the year. By contrast, the loan of EUR 4.0 million taken out in March 2017 was repaid early in June 2018.

At EUR 34.2 million, non-current liabilities were also higher than the prior-year level (previous year: EUR 27.2 million). This increase is mainly attributable to the extension of the lease for the office and production property at the Company's headquarters. In connection with this, the non-current share of the lease liability was recognized as a liability in accordance with the provisions of IAS 17 in an amount of EUR 3.8 million.

Asset and equity structure

(EUR million)

	2018	2017
Cash and cash equivalents	13.5	27.2
Financial assets subject to restrictions on disposal	14.3	8.7
Receivables and other assets (current)	35.5	19.2
Inventories	17.1	17.3
Non-current assets	23.7	15.5
Total assets	**104.1**	**87.9**
Non-current liabilities	50.2	40.5
Non-current liabilities	34.2	27.2
Equity	19.7	20.2
Total equity and liabilities	**104.1**	**87.9**

The Group's equity in accordance with IFRS decreased by EUR 0.5 million in the reporting period to EUR 19.7 million as of December 31, 2018 (previous year: EUR 20.2 million). Following the deconsolidation of Singulus Manufacturing Guangzhou Ltd. with a minority share of 49.0%, the full amount of equity is attributed to the shareholders of the parent company. The equity ratio amounted to 18.9% as of December 31, 2018 (previous year: 23.0%).

Please see the comments on page 51 of this report for information on changes in the equity of SINGULUS TECHNOLOGIES AG in accordance with HGB.

Capital management

The overriding objective of capital management is to further strengthen the capital structure. After generating a profit for the period in the reporting period and the capital increase in 2017, the aim going forward is to further increase entrepreneurial flexibility and the confidence of investors and lenders. Subsequently, this should also contribute to sustainable operational growth of the business activities and an accompanying significant improvement of financial key performance indicators. A particular focus will be on meeting future financing requirements at appropriate terms via the capital markets. In connection with this, the Company is continually reviewing its options for an optimal financing structure.

Annual financial statements in accordance with the German Commercial Code (Handelsgesetzbuch, "HGB")

At the extraordinary shareholders' meeting on November 29, 2017, the Executive Board disclosed in accordance with section 92 (1) of the German Stock Corporation Act (Aktiengesetz, "AktG") that half of its share capital had been eroded. Under HGB, SINGULUS TECHNOLOGIES AG reported a EUR 29.9 million deficit not covered by equity as of December 31, 2018. Reported equity continued to decline during the period in which these financial statements were prepared in accordance with commercial law. Contrary to the assumptions made in the past fiscal year, the final acceptance for equipment delivered for the first thin-film solar cell plant in China was not granted in 2018. However, the Executive Board anticipates final acceptance of this equipment and for further major projects in the months to come. Consequently, a significant recovery of equity under HGB is expected in the current fiscal year 2019, although it will continue to be in the negative range at the end of the year. The Executive Board expects equity to return to the positive range in fiscal year 2020.

Net asset, financial position, and results of operations of SINGULUS TECHNOLOGIES AG – HGB annual financial statements/financial key performance indicators

(EUR million)

	2018	2017
Revenue	23.8	61.7
Gross revenue for the period	76.8	60.8
Cost of materials	-57.1	-45.8
Personnel expenses	-30.1	-26.4
Net other operating income and expenses	-12.0	-7.2
Net income/loss for the year	-30.8	-30.0
Fixed assets	29.3	32.6
Current assets (excluding bank balances)	7.3	4.9
Bank balances of which subject to restrictions	24.2 14.3	31.1 8.7
Deficit not covered by equity/ equity in previous year	29.9	0.9
Provisions	24.3	23.3
Bonds	12.0	12.0
Other liabilities	54.7	33.1

The Company expects substantial customer payments for the ongoing major projects in the months to come. Among these, late payments from the customers CNBM and Hanergy PV Investment Ltd., Beijing, China (Hanergy), are worth noting and play a critical role. For future projects, the Company anticipates that payments will be received in accordance with the contractually stipulated terms.

Moreover, cash collateral for guarantees is already gradually being reduced as planned as a measure aimed at lowering the amount of liquidity tied up. Based on the cash and cash equivalents currently available and the anticipated progression of payment receipts described above, the Company is forecast to continue as a going concern and, accordingly, the accounts have been prepared on a going concern basis.

The effects with a significant impact on the net assets, financial position, and results of operations for the past fiscal year are presented below.

Revenues were down sharply in fiscal year 2018 as a result of project delays in the final acceptance of the first machines of the major CIGS order for CNBM for the production facilities in Bengbu. Overall, the Company generated revenue of EUR 23.8 million in the fiscal year (previous year: EUR 61.7 million). Revenue in the Solar segment amounted to EUR 5.7 million against EUR 45.1 million in the previous year. At EUR 11.3 million, revenue in the Optical Disc segment was slightly above the previous year (EUR 10.8 million). Revenue generated by the Semiconductor segment was EUR 6.8 million in the year under review (previous year: EUR 5.3 million).

Total output (revenue plus the change in inventories and own work capitalized) amounted to EUR 76.8 million in fiscal year 2018 (previous year: EUR 60.8 million).

Other operating income of EUR 4.2 million (previous year: EUR 7.4 million) mainly comprises income unrelated to the accounting period from the reversal of provisions (EUR 2.9 million) and insurance reimbursements (EUR 0.4 million).

The cost of materials increased from EUR 45.8 million to EUR 57.1 million. The cost of materials ratio (cost of materials/gross revenue) was 74.3% (previous year: 75.3%). The slight decrease in the cost of materials ratio is due mainly to the different product mix in the 2018 fiscal year.

At EUR 30.1 million, personnel expenses increased compared to the previous year (EUR 26.4 million). This was due primarily to an increase in expenses for expected bonus payments, pay-scale increases and new hires. In the past fiscal year, SINGULUS TECHNOLOGIES AG had an annual average of 319 permanent employees (previous year: 306).

Other operating expenses of EUR 16.1 million (previous year: EUR 14.6 million) mainly comprise legal and consulting fees, the costs of preparing the annual financial statements, costs for premises, transport, and packaging, travel and entertainment expenses, and other rental costs. Impairment losses on trade receivables amounted to EUR 0.9 million (previous year: EUR 1.0 million).

There was a net interest loss of EUR 2.6 million (previous year: net interest loss of EUR 2.3 million). At EUR -2.9 million, interest and similar expenses were at the level of the previous year (EUR -2.6 million). Specifically, interest expenses from bonds issued amounted to EUR 0.8 million in 2018 (previous year: EUR 0.8 million). A secured loan for EUR 4.0 million taken out in 2017 resulted in interest expenses in the amount of EUR 0.2 million. The interest income of EUR 0.2 million (previous year: EUR 0.3 million) is due to interest income from loans to affiliated companies.

Financial assets were written down by EUR 0.2 million (previous year: EUR 2.3 million).

Overall, the net loss for the year amounted to EUR -30.8 million (previous year: net loss of EUR 30.0 million).

The Company's total assets amounted to EUR 91.0 million as of December 31, 2018, an increase of EUR 21.8 million compared to the previous year.

Fixed assets accounted for 32.2% of total assets and amounted to EUR 29.3 million as of the reporting date (previous year: EUR 32.6 million). This included intangible assets, which were mostly attributable to the merger with SINGULUS STANGL SOLAR GmbH in fiscal year 2015. The EUR 3.3 million decline to EUR 8.8 million is due to depreciation and amortization of assets.

The prepayments received of EUR 167.9 million exceeded inventories (EUR 135.5 million) at the end of the reporting period. The excess amount is reported as a liability (EUR 32.4 million). The prepayments received primarily related to orders in the Solar segment.

Trade receivables amounted to EUR 1.4 million as of the reporting date and increased slightly compared to the previous year (EUR +0.2 million).

Cash and cash equivalents were down during the fiscal year. As of December 31, 2018, they amounted to EUR 24.2 million (previous year: EUR 31.1 million). Of this figure, a total of EUR 14.3 million is held in blocked accounts as collateral deposits, mostly related to prepayment guarantees (previous year: EUR 8.7 million). At the end of the reporting year, available cash and cash equivalents amounted to EUR 9.9 million (previous year: EUR 22.4 million).

Equity fell by EUR 30.8 million in the reporting period. As a result, SINGULUS TECHNOLOGIES AG reported a EUR 29.9 million deficit not covered by equity as of the end of the reporting period (previous year: equity of EUR +0.9 million). Please refer to the comments at the beginning of this chapter concerning the Company's expectations for further changes in equity under HGB.

Debt amounted to EUR 91.0 million as of December 31, 2018 (previous year: EUR 68.3 million).

Provisions increased by a total of EUR 1.0 million year on year to EUR 24.3 million as of the reporting date (previous year: EUR 23.3 million). Other provisions totaled EUR 12.9 million as of December 31, 2018 (previous year: EUR 12.9 million). These primarily include personnel provisions (EUR 7.3 million), provisions for expected losses in connection with the underutilization of production capacities (EUR 2.5 million), provisions for outstanding invoices (EUR 1.3 million), and provisions for follow-up costs (EUR 0.5 million).

Liabilities of EUR 66.7 million as of December 31, 2018, were significantly above the previous year (EUR 45.1 million). Bond liabilities remained unchanged at EUR 12.0 million. Trade payables increased from EUR 7.4 million in the previous year to EUR 10.1 million as of December 31, 2018, driven by business volume.

In addition, other liabilities from financing agreements amounted to EUR 4.9 million (previous year: EUR 10.1 million). This resulted entirely from lease liabilities for the office and production property at the Company's headquarters. A loan taken out in March 2017 was repaid early in June 2018.

SINGULUS TECHNOLOGIES AG's forecast HGB for fiscal years 2019 and 2020

Revenue and the net result for the year under HGB were significantly below expectations in the fiscal year 2018. In particular, this was attributable to delays in the final acceptance of the first machines of the major CIGS order for CNBM at the production facilities in Bengbu. In addition to this equipment, additional major orders are expected to be accepted by the customers in 2019 and then to contribute to revenue and earnings in accordance with HGB. As a result, the Company thus forecasts significant growth in revenue in 2019 compared to the previous year, particularly within the Solar segment. Overall, following low revenue in the previous year, we forecast the revenue of SINGULUS TECHNOLOGIES AG under HGB to amount to between EUR 160.0 million and EUR 200.0 million in fiscal year 2019. Earnings before tax should fall within the range of EUR 9.0–19.0 million. In 2020, we once again anticipate a significant increase in revenue as against 2019 as a result of the final acceptance of major projects in the Solar segment. The Company also expects earnings before taxes to improve significantly in 2020 compared to 2019.

Report on expected developments

Macroeconomic environment

The International Monetary Fund (IMF), Washington, D.C., USA, forecasts that the economy will begin to cool in 2019 and trimmed 0.2 percentage points from its forecast for global economic growth at the beginning of the year, lowering it to 3.5%. Among other things, the IMF bases this development on the ongoing trade dispute between China and the United States and the numerous crises in emerging markets. Abandoning of the expansive low interest rate policy is also viewed as a risk. Turmoil in the financial markets and with the exchange rates could further exacerbate the situation.The IMF also lowered its forecast for Germany for 2019. Growth is only expected to reach 1.3%. The reasons for this include a downturn in the export business and weaker industrial production coupled with uncertainty surrounding the UK's withdrawal from the EU.

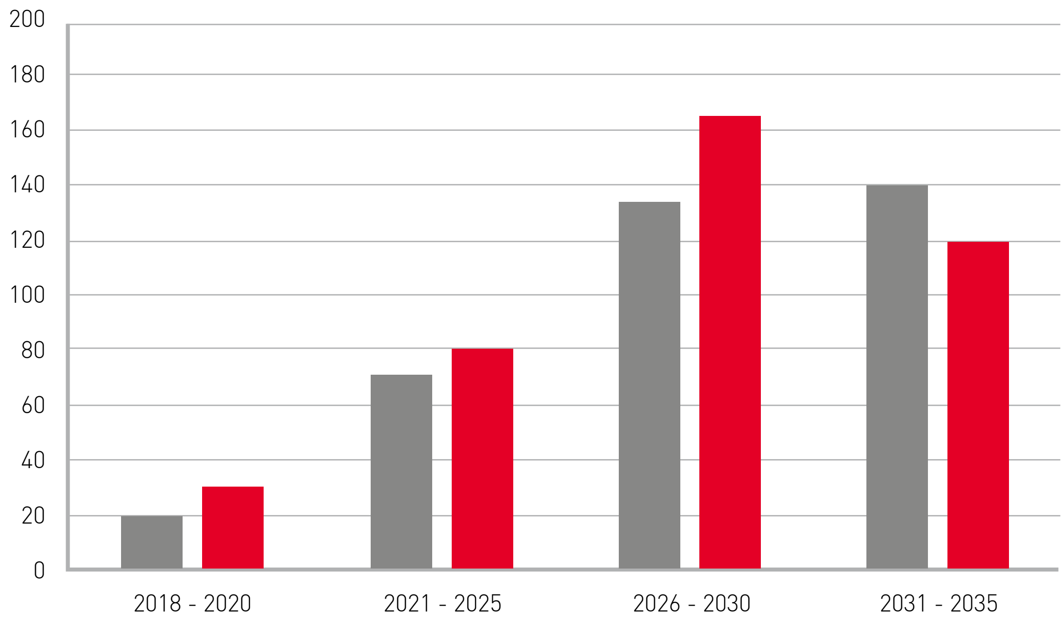
Industry-specific expectations and outlook for fiscal 2019

Solar segment – Demand for photovoltaics continues to grow

According to analyses by the market research firm IHS Markit, photovoltaics capacity in 2019 will grow by 18% to reach 123 GW of newly installed photovoltaic capacity. It is expected that the markets outside China will once more gain in importance and be the source of two-thirds of the newly installed photovoltaics capacity. The China Renewable Energy Outlook 2018 (CREO 2018) entitled "Time for a new era in the Chinese energy transition" was officially presented at the UN Climate Change Conference (COP 24) in Katowice, Poland. According to this outlook, the country's fossil fuel consumption will peak in 2020 before declining steadily until 2035. In turn, China aims to further step up renewable energy production. The country plans to add new photovoltaics installations of 80 to 160 GW in the decade from 2021 to 2030. For wind power, it plans to add from 70 to 140 GW. Thus, photovoltaics and wind power are expected to form the core of the nation's energy system by 2050.

Strong wind and solar power boost in China from 2020

(GW/year)



The deployment of solar and wind power can increase significantly in the next 10 years. New annual solar PV installation could reach 80-160 GW and wind 70-140 GW per year.

Source: CNREC Outlook 2018

In the next ten years, the global photovoltaics market is expected to undergo rapid growth everywhere. According to a publication of the Fitch Group, the installed capacity will increase to 942 GW by the end of 2027. Fitch forecasts that this expansion in photovoltaics will continue to be dominated by Asia in the next ten years. In addition, Fitch expects that in 2027, 60% of the world's installed capacity will be located in Asia.

Overall, however, the growth is expected to see a regional distribution with the demand increasing by more than 20% year on year in 45 countries. IHS Markit expects that Argentina, Egypt, South Africa, Spain and Vietnam alone will account for a total of 7% of the global added capacity. In 2019, the market is expected to see 28% growth in the US. In view of the growing global market and the slowdown in capacity expansion announced by photovoltaics manufacturers, IHS Markit concludes that the utilization rates of production capacities will be higher over the entire value-added chain in the next year. The overcapacity situation in the solar industry seen in the second half of 2018 is expected to ease.

Photovoltaics trends specific to SINGULUS TECHNOLOGIES

The conditions, including from the Company's perspective, continue to support continuous growth in the area of photovoltaics. The surface engineering and vacuum thin-film deposition offered by SINGULUS TECHNOLOGIES play an important role in achieving the ever-increasing efficiency of the modern cell designs. This applies both to processes for thin-film deposition technology (CIGS, CdTe) as well as to the use of new crystalline cell designs (incl. HJT) in manufacturing. The SINGULUS TECHNOLOGIES systems are positioned in a technical field that is essential in defining the competitive advantages of the customers. The successful implementation of a growth strategy is closely linked to the targets of the Chinese government for the local energy market being achieved as planned.

In the field of crystalline solar cells, SINGULUS TECHNOLOGIES expects the market to shift in the medium term towards crystalline high-efficiency solar cells, e.g., based on heterojunction technology (HJT). This is an area in which SINGULUS TECHNOLOGIES offers its own equipment for cell production and has a good market position with the SILEX II system in the key markets outside of China. SINGULUS TECHNOLOGIES is currently introducing further new system designs on the solar market. These include the cathode sputtering vacuum deposition system (PVD) and the plasma-enhanced chemical vapor deposition system (PECVD). The Company's objective is to establish itself in the market for manufacturing high-efficiency cells with new machines for the PVD and PECVD process stages.

The business in the Solar segment is expected to continue to grow in 2019. In the upcoming fiscal year, this depends on the realization of orders already awarded by CNBM and the receipt of the corresponding prepayments on the basis of the current project schedule. The Company will continue to work with the customer on the basis of the LoI signed in November 2018 for the three sites in China in Bengbu, Meishan and Xuzhou, to develop the detailed delivery agreements. Production and delivery of the systems for the three sites should mostly take place in 2019 and 2020. For these to occur, the delivery agreements must be signed and the corresponding prepayments received in the months to come.

Overall, a significant increase in revenue is anticipated for the Solar segment in fiscal year 2019 compared to the previous year. The operating result (EBIT) is also expected to improve significantly and close the year in the mid-to-upper millions.

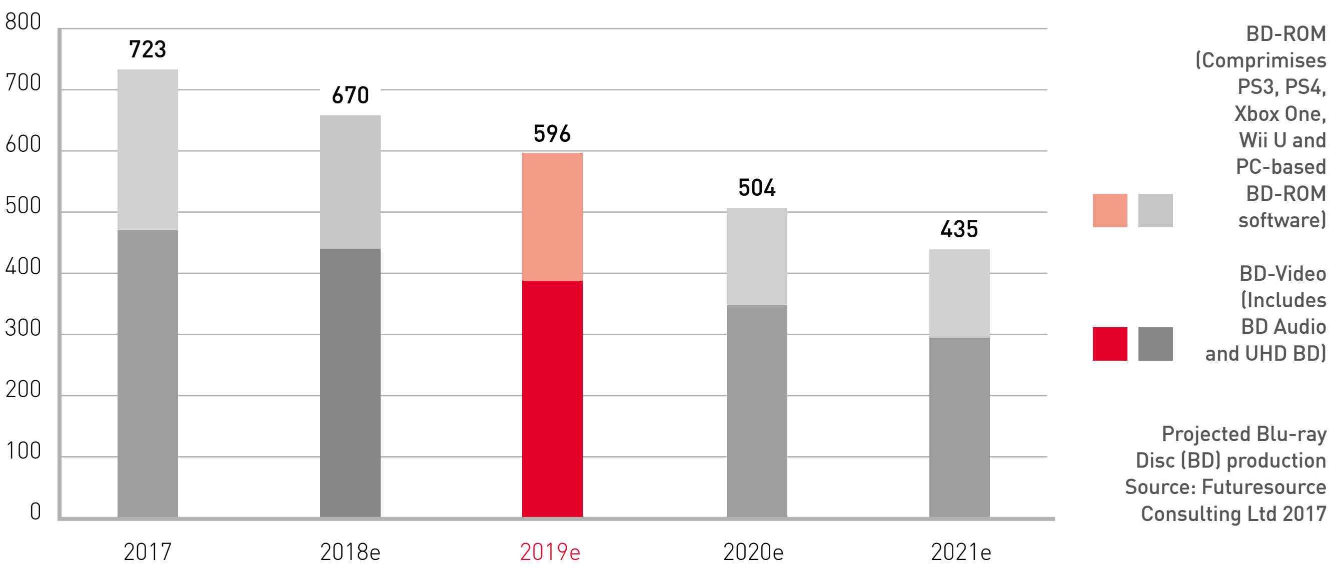
The medical technology area is expected to develop favorably and result in new order intakes in 2019.

Optical Disc segment – The market for physical media is in decline

Consumer behavior in the entertainment industry has changed radically over the past few years. Demand for the enhanced quality of media such as Ultra HD Blu-ray in terms of sound and image is weakening, and these factors are no longer relevant in the consumer's purchase decision. Especially young consumers rely more on mobile devices and streaming services.

Global production of discs

(million)



Projected Blu-ray Disc (BD) production
Source: Futuresource Consulting Ltd 2017

The British market research firm Futuresource Consulting confirms the downward trend and anticipates that standard Blu-ray discs will drop further to below 600 million discs in 2019. The production of Ultra HD Blu-ray discs is expected to grow slightly. However, this trend will have little or no impact on the equipment business at SINGULUS TECHNOLOGIES.

The service and replacement parts business in this segment follows this trend and will also deteriorate. The Executive Board's planning for 2019 assumes a slight decline in revenue. However, a significant downturn in the Optical Disc activities will partly be offset by increasing revenue from the consumer goods field of activity. The Executive Board continues to expect operating earnings (EBIT) breakeven.

For the consumer goods area, we anticipate growth and further order intakes in 2019.

Semiconductor segment – SINGULUS TECHNOLOGIES remains provider of special systems

SEMI (Semiconductor Equipment and Materials International, Milpitas, USA) expects investment volume for all semiconductor production systems to increase by 7.5% to a total of USD 68.0 billion in the current fiscal year. Korea and China top the list of countries with new investments. The total revenue of the industries is expected to increase slightly by 3.63% to a total of USD 491 billion.

At present, SINGULUS TECHNOLOGIES addresses niches in this market with its special applications. The Company is focused on applications in the area of sensor technology, for voltage regulation in chips and for the application of critical metallic layering systems for thin-film products in the semiconductor industry.

In these markets, SINGULUS TECHNOLOGIES is an internationally competitive provider of special machinery. Based on the TIMARIS and ROTARIS system designs, the Company sees strong potential overall for the future and for revenue diversification.

We expect significant revenue growth in this segment in fiscal year 2019 compared with the low level for the Semiconductor segment seen in 2018. The operating result (EBIT) should be slightly positive.

Outlook for fiscal years 2019 and 2020

SINGULUS TECHNOLOGIES expects revenue and key earnings figures under IFRS to rise in the current fiscal year compared to the fiscal year 2018. Revenue is forecast to amount to between EUR 135.0 million and EUR 155.0 million for the 2019 fiscal year. Operating earnings before interest and taxes (EBIT) is also overwhelmingly likely to grow and amount to between EUR 6.0 million and EUR 11.0 million.

The most important revenue and earnings impetus is expected to come from the Solar segment and, within this area, from the major project orders for investments in production lines for CIGS solar modules. The forecasted growth in the Group is built on the current project plan and based on the realization of the ongoing projects and the start of expected new projects for CNBM's new and expanded CIGS sites. In its budget for the fiscal year 2019, the Executive Board considers it highly probable that the delivery agreements will be signed and the corresponding prepayments received in the coming months.

Measured against the mean value in the ranges described above, the Company forecasts further growth in revenue for 2020. The operating result (EBIT) should rise accordingly. This development is based on the assumption of further growth in the solar markets and a further increase in business activities, particularly in the area of CIGS. The new fields of activity medical technology and decorative coating are also expected to contribute to the increase in revenue and EBIT.

Both in terms of reaching the targets for the expected financial key performance indicators and the changes in liquidity, the SINGULUS TECHNOLOGIES Group is highly dependent on the further development of the business activities with a few major customers as well as on the general performance of the solar market in China. If the progression of the cooperation with these customers or the general performance of the solar systems market in China deviates significantly from the assumptions underlying the forecasts, this could have significant negative effects on the net assets, financial position, and results of operations, even to the extent of jeopardizing the Company's existence.

The outlook for fiscal year 2019 forming part of the HGB annual financial statements can be found in the section entitled "Annual financial statements in accordance with the German Commercial Code" on page 54 of this management report.

Report on risks and opportunities

The SINGULUS TECHNOLOGIES Group is exposed to numerous risks related to the entrepreneurial actions within the operating segments and resulting from internal and external influences. A risk is considered the danger that events, development or actions prevent the Group or one of the segments from reaching its objectives. At the same time, it is important for the SINGULUS TECHNOLOGIES Group to identify opportunities in order to leverage them in the course of conducting business and, in this way, to secure and improve the Company's competitiveness. Recognizing and managing business risks and opportunities at an early stage is the direct responsibility of the operating segments and departments. Effective management and control systems are used for this purpose to identify risks and opportunities at an early stage, to evaluate them and handle them in a consistent manner. Risks and opportunities are not offset against each other.

The purpose of the risk management system is to systematically and continually identify, assess, manage, monitor and document risks jeopardizing the Company's continued existence and other material risks in order to help ensure that corporate targets are achieved and to increase risk awareness within the Group.

As part of the opportunity management system, the opportunities of SINGULUS TECHNOLOGIES for further entrepreneurial development are discussed during regularly-held strategy meetings, analyzed in Executive Board and Supervisory Board meetings, and, if possible, identified in the annually prepared operating budgets. The objective is to identify potential opportunities arising from positive developments in connection with operating activities at an early stage and to take appropriate measures to leverage them most effectively for the Company. The Executive Board and the operating areas are directly responsible for identifying and realizing opportunities at an early stage. Opportunities are therefore not part of the risk management at the SINGULUS TECHNOLOGIES Group.

The following disclosures apply to both SINGULUS TECHNOLOGIES AG as the parent company and to the SINGULUS TECHNOLOGIES Group. The parent company plays a key role in our risk and opportunity management.

Objectives and principles of risk management

For SINGULUS TECHNOLOGIES, efficient and forward-looking risk management is a crucial and value-creating task. Risk management is a core business function and has a decisive impact on the success of our business activities.

Specifically, risk management supports the achievement of our corporate objectives by providing transparency about the Company's risk situation as the basis for risk-conscious decisions, by identifying potential risks to the Company's net assets, financial position, and results of operations, and by prioritizing the risks and necessary actions. In addition, risk management ensures the targeted management of risks through implementing and monitoring the appropriate measures. Furthermore, it aims to limit risks to an acceptable level and to optimize risk costs.

Risk management helps increase enterprise value, is aligned with the interests of investors and stakeholders, and serves to ensure regulatory compliance.

Risk management at SINGULUS TECHNOLOGIES is based on the following principles:
- Risk management is primarily ensured by the operating segments as part of their management tasks;
- Risk management cannot be limited to financial risks, but must cover all risks associated with the Company's business activities;
- Risk management must constitute an integral part of the business processes;
- The prerequisite for effective risk management is the clear and coherent allocation of tasks and responsibilities, and a systematic risk management process;
- Support and active involvement from management;
- The efficiency and reliability of the risk management system must be monitored on an on going basis and adjusted where necessary;
- The risk management system must be appropriately documented, and the risk management principles and guidelines must be determined in writing and communicated to the respective functions;
- Opportunities are not part of risk management.

In particular, risk management is aimed at making the following contributions:
- To improve risk awareness and transparency;
- To identify, appropriately manage, and monitor all material risks;
- To highlight risk accumulations;
- To provide reliable management information about the Company's risk situation.

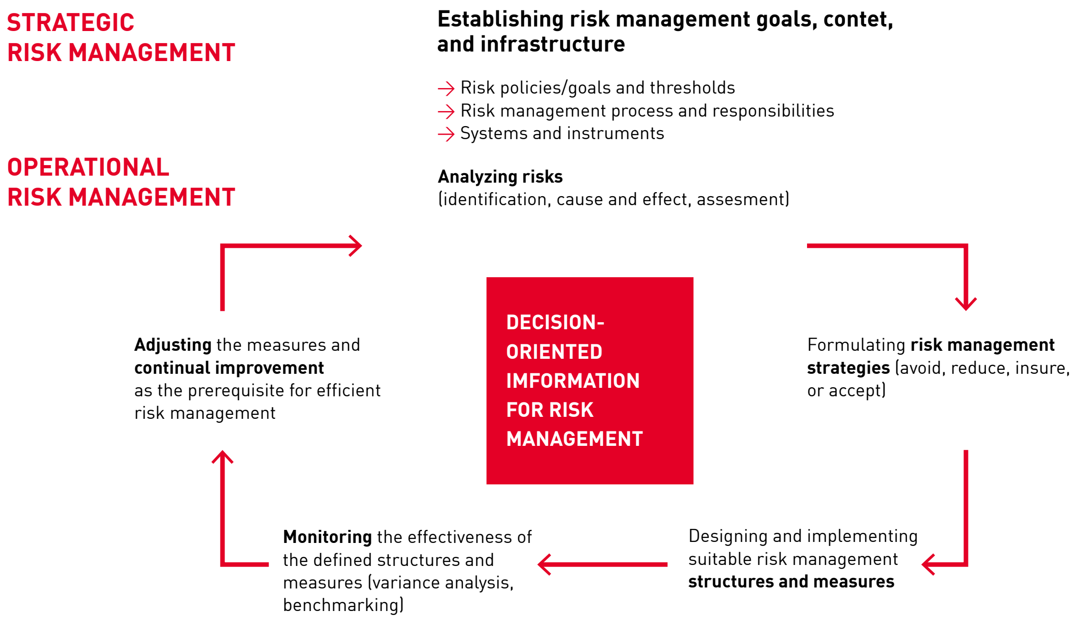
Risk management organization

Risk management is integrated into SINGULUS TECHNOLOGIES' existing organization. It does not constitute an independent structure. The risk management organization at SINGULUS TECHNOLOGIES is the responsibility of the heads of the respective departments, who are supported by the risk manager and the Chief Financial Officer. The Chief Financial Officer agrees all activities connected with risk management at SINGULUS TECHNOLOGIES with the Chief Executive Officer.

In order to identify risks, risk development is reflected once per year in the corporate planning, and new risks arising from the Company's perspective for the business development of all SINGULUS TECHNOLOGIES production sites and sales subsidiaries are discussed. Risks are reported directly at parent company level due to the weak independence of the sales subsidiaries. The respective departmental heads are responsible for subsequently formulating and implementing risk management measures. The Finance and Controlling departments support the heads of the departments in carrying out the individual stages of the risk management process. The risk manager is responsible for the Company's methods and guidelines, and coordinates risk reporting within the SINGULUS TECHNOLOGIES Group.

The Executive Board has overall responsibility for the implementation of a suitable and efficient risk management system to ensure the timely identification and management of situations capable of jeopardizing the continued existence of the Company.

The risk management organization of SINGULUS TECHNOLOGIES AG:



The risk management process in the SINGULUS TECHNOLOGIES Group

Overall, the risk management system is a continuous process in accordance with the business risk management process:

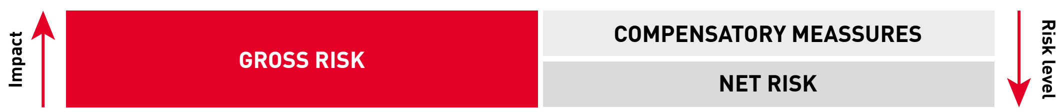
Stage 1: Establishment of goals, content, and infrastructure

The alignment of the risk policy (including goals and thresholds), the risk management processes, and the definition of the relevant systems and instruments form the basis for the strategic risk management process. The original definitions must subsequently be expanded or modified as part of a long-term control cycle.

Stage 2: Risk analysis

In a second step, risks are initially identified and documented, after which they are analyzed from a wide variety of perspectives and finally assessed, if possible. A theoretical risk portfolio is used to ensure a complete risk inventory. Analysis and updates were performed as part of the annual planning. Risk reporting on the development of material risks is carried out on a quarterly basis.

Risks are assessed using an ordinal scale. Gross loss is assessed. This assessment is repeated on a quarterly basis.



Gross loss is defined as the negative earnings impact on EBIT for the Group. The probability of occurrence is the subjective estimate of the probability of occurrence for the fiscal year. Specifically, the probability is classified as low, medium, or high. The assessments are "gross" in each case, i.e., the existing controls and measures are not taken into consideration. The relevance indicators used to categorize gross risk are defined in the table below. The assumptions are derived from the specific maximum loss values (relative to Group equity) taken from long-term historical observations of financial key performance indicators. In addition, the short- and medium-term liquidity risk is monitored on an ongoing basis. Please refer to the report on expected developments for the current assessment.

Relevance	**Characteristics**	**Maximum loss value**	
		from	to
1	Insignificant risks that have no material impact on EBIT.	EUR 0 million	EUR 0.5 million
2	Medium risks that have a noticeable impact on EBIT.	EUR 0.5 million	EUR 2.5 million
3	Significant risks that have a considerable impact on EBIT or lead to a noticeable reduction in enterprise value.	EUR 2.5 million	EUR 10 million
4	Serious risks that lead to negative EBIT and a substantial reduction in enterprise value.	EUR 10 million	EUR 20 million
5	Risks jeopardizing the Company's continued existence as a going concern.	> EUR 20 million	

The probability of occurrence is subsequently estimated for each individual risk (classification as high, medium, or low).

Stage 3: Formulation of the risk management strategy
Specific measures can be derived on the basis of risk management strategies. These strategies are defined with respect to the Company's overall strategy and risk preference. In principle, management has the following alternatives at its disposal to manage risk:

- **Avoid risks**
  Risk avoidance leads to a complete elimination of the risk, e.g., through withdrawing from a risky or unprofitable business.
- **Reduce risks**
  Risk reduction aims to limit the probability of occurrence and/or the impact on EBIT or corporate objectives to an acceptable level, e.g., through improving early risk identification and implementing countermeasures.
- **Transfer (insure) risks**
  Coverage transfers a potential loss to a third party, e.g., via the corresponding insurance protection.
- **Assume (accept) risks**
  When risks are accepted, the direct form of risk financing by SINGULUS TECHNOLOGIES is described, e.g., financial coverage through recognizing provisions. Risk development is monitored by the corresponding employees, without specific risk management measures being introduced.

Stage 4: Design and implementation of suitable structures and measures
The necessary structures and measures are subsequently derived and implemented on the basis of the risk management strategy previously formulated.

Stage 5: Monitoring of effectiveness
The measures implemented must be regularly monitored and reviewed for effectiveness. Compliance with statutory documentation requirements must also be ensured.

Stage 6: Adaptation of measures and continuous improvement process
The changing environment means that risk management must be understood as a continuous process. For this reason, it is inevitable that the risk management process is continuously adapted to external and internal developments. Intensive knowledge management remains necessary to enable this. The departure point in the SINGULUS TECHNOLOGIES risk management process is the corporate strategy, which provides the basis for defining and communicating business goals.

The risk management system is reviewed by impartial individuals, i.e., by people who are not directly involved in managing risk. The following basic review requirements apply:

→ **Supervisory Board**
  The Supervisory Board is responsible for reviewing the effectiveness of risk management. The Executive Board reports to the Supervisory Board on the current status of risk management at least once per year.

→ **Audit**
  The audit of the annual financial statements in accordance with § 317 (4) HGB includes an assessment of whether the Executive Board has suitably implemented the measures for which it is responsible in accordance with § 91 (2) AktG, and whether the monitoring system that must subsequently be established is adequate for the early detection of developments posing a risk to the Company's continued existence.

Risk report

In summary, the following relevance indicators and probabilities of occurrence in the reporting year result for the individual material risk groups identified, compared in each case to the previous year:

	2018		2017	
	Relevance*	Probability of occurrence	Relevance*	Probability of occurrence
Sales market risk in Solar segment	• • • • •	medium	• • • •	medium
Project risks	• • • • •	medium	• • • • •	medium
Technological risks	• • •	medium	• • •	medium
Financial risks	• • • • •	medium	• • • • •	medium
Procurement market risks	• • •	medium	• • •	medium

* Measured using relevance indicators from1 through 5

The following sections provide an explanation of those risk areas or individual risks from among the overall risks identified for the Group that from today's perspective have a material impact on the net assets, financial position, and results of operations of SINGULUS TECHNOLOGIES AG and of the Group, and that can lead to negative deviations from targets.

Furthermore, risks that are currently still unknown or considered immaterial can affect the net assets, financial position, and results of operations of the Company.

Sales market risk

Solar segment

Risk description: SINGULUS TECHNOLOGIES is dependent on the willingness of its global customers to invest in new production facilities.

The market for solar cell production facilities is of particular significance here. To a large extent, developments in the market for photovoltaic systems in recent years have relied on the regulatory environment and global subsidiaries for investments in photovoltaic systems. Although the profitability of photovoltaic systems is less and less reliant on government subsidies as the costs of photovoltaic systems decrease, the future global market for these systems will remain dependent on the continuation of state subsidies. This applies mainly in the principal markets of China and the United States. Particularly as a result of the enormous significance of China as a growth driver of the solar industry in recent years, the further development of the regulatory framework and subsidization in this country harbors a considerable risk with regard to the Company's primary business field. If the Chinese government realigns or changes its energy policy and in conjunction, refocuses its subsidy policy for solar power to support technologies other than CIGS, HJT or another new production method, or even if it simply does not expand its production capacities to the extent currently planned, this would have a considerable negative effect on the Company's sales.

Furthermore, investments in photovoltaics could cease, reduce, or at least fall significantly short of the levels forecast by SINGULUS TECHNOLOGIES if other means of generating renewable energy become more attractive than photovoltaics going forward, or if those other technologies develop better than photovoltaics due to technical, economic, regulatory, or other reasons.

In the Solar segment, the Company currently conducts its business with a small number of major customers. This particularly the case in view of the major orders and future business relationships with the state-owned company CNBM in China. There is a risk that major customers noticeably reduce or terminate the business relationship with the Company. In such a case, it is unlikely that the Customer will be able to compensate for the lost business volumes with new customers in the short or medium term.

In addition, competition may continue to increase as a result of future business combinations or partnerships between individual competitors or the market entry of additional competitors. Growing competition may also lead to lower prices for the Company's production systems or even to a significant loss of market share.

Impact: Due to the somewhat weaker order situation at the end of the fiscal year, the market risk in the Solar segment is classified as relevance indicator 5 (previous year: 4) with an unchanged medium probability of occurrence. Accordingly, this risk is classified as jeopardizing the Company's continued existence. Management expects sustained high revenue in the Solar segment in the years to come. Despite entering new business areas, the plan is still for this segment to make the greatest contribution by far to revenue and earnings. If the expansion of renewable energies were given a lower priority by the Chinese government and as a result, the expansion of solar parks in this country were to decline significantly over the coming years, this would have a material effect on the investment appetite of Chinese customers and thus on the Company's most important sales market. It is highly dependent on CNBM in particular and its continued demand for CIGS production equipment. Most of the order backlog is already currently destined for the Chinese market. If the order intake in this area remains below the assumed levels in the fiscal years to come, this would jeopardize the Company's continued existence as a going concern.

Measures: The Company is keeping a close eye on market developments in China and collecting information from their sources in that country. In particular, these include discussions with our customers and institutions in China. Furthermore, efforts are being made to reduce dependence on the Chinese solar market through diversification in other markets and applications.

Optical Disc segment
Risk description: Due ongoing hesitancy in the introduction of the new UHD standard, our customers will once again delay their planned capital investments in the Optical Disc segment.

Impact: Due to the further decrease in significance for the Company's financial key performance indicators, as in the previous year, market risk in this segment is assigned a relevance indicator of 2 (previous year: 2) and medium probability of occurrence (previous year: medium).

Semiconductor segment
The Semiconductor segment continues to be viewed as immaterial due to the low volumes with regard to possible revenue.

Measures: External data such as the results of market research, as well as close contact with our customers and monthly comparisons of actual and planned figures, help to improve our estimates of future trends at an early stage.

Project risk

Risk description: We define project risk as relating to orders for non-standardized systems with a purchase price generally exceeding EUR 3.0 million. This affects the Solar and Semiconductor segments as well as the activities in the medical technology business area that are reported within the Solar segment. Specifically, the risks relate to budget and project schedule overruns, non-compliance with acceptance criteria, as well as contract cancellations, the associated non-acceptance of systems, and the resulting contractual risks.

Impact: If risks materialize in connection with project processing, these could have a considerable adverse impact on the Company's business activities, especially with regard to larger projects. The risk of not keeping to the project schedule, in particular, and not meeting the acceptance criteria are assessed as material. Particularly the planned processing of the project with the major customer CNBM for the delivery of production systems for manufacturing CIGS solar modules is of great importance to the continued existence of the Company. Following significant delays, the corresponding equipment for the first expansion stage at the plant in Bengbu, China, is currently in the process preceding final acceptance. However, we currently anticipate meeting the contractually stipulated acceptance criteria in the coming months. Please note, however, that materialization of project risks within these activities would lead to significant negative effects on the net assets, financial position, and results of operations of the Company. If these projects were to fail in whole or in part, or the planned profit not sufficiently realized, this could have significant negative effects even to the extent of jeopardizing the continued existence of the Company. Accordingly, we continue to classify the project risks as relevance indicator 5 (previous year: 5). As in the previous year, the probability of occurrence was classified as medium.

Measures: Project calculations, project schedules, and project-specific risk assessments and liquidity planning are carried out at the proposal phase for the purposes of risk management. Changes in parameters are monitored on an ongoing basis in parallel to project progress with the aim of identifying potential project risks and implementing the necessary measures at an early stage. Prepayments and part-payments on completion of project milestones are routinely agreed to reduce the risk of cancellation.

Financial risk

Risk description: The SINGULUS TECHNOLOGIES Group is exposed to financial risk, primarily with regard to liquidity risk. It is also exposed to credit risk in relation to receivables from customers. The Solar business may require additional financing arrangements depending on project-specific requirements. In particular, prepayments made by customers must frequently be secured by guarantees. For this purpose, the Company must deposit a large amount of cash with the guarantors as collateral. This collateral is not available to the Company to finance working capital and, depending on the progress of the project, could lead to liquidity squeezes.

The payment history of customers, particularly that of the two largest customers CNBM and Hanergy, is of great significance for the ongoing liquidity position and the future improvement of the Company's credit rating. Sufficient liquidity of the Company in the financial years 2019 and 2020 can only be maintained if the partial payments to be made as a result of the already contracted major contracts will actually take place or will be not materially delayed and additionally the orders taken into account in the liquidity planning are completed as planned. These events and circumstances point to the existence of material uncertainty that may raise significant doubts about the Company's ability to continue as a going concern and that poses a threat to its continued existence.

Impact: As in the previous year, we currently classify liquidity risk as relevance indicator 5 (previous year: 5), and credit risk remains at relevance indicator 3 (previous year: 3). Despite payment delays within the major projects in the past fiscal year, we classify the probability of occurrence for liquidity risk as medium, as in the previous year. In particular, receipt of further partial payments from the significant major customers as contractually stipulated is necessary. Material delays in payment or non-payment within these projects could not be compensated for.

Furthermore, the financing commitments from banks and insurers will need to be significantly increased to fund the required guarantee lines in the upcoming fiscal year 2019 or the required cash collateral will need to be reduced. The financing of major projects, in particular, requires a great deal more flexibility in the amount of cash and cash equivalents available. In addition, the Company plans revenue growth in the years to come. The liquidity risk of the Company can only be materially reduced given sufficient availability of cash and cash equivalents from customer prepayments.

As in the prior year, we assess the probability of occurrence for credit risk as low.

Measures: A liquidity reserve in the form of cash will be maintained to safeguard the SINGULUS TECHNOLOGIES Group's solvency and financial flexibility at all times. Liquidity plans will be regularly drafted and compared with actual developments to ensure the early detection of liquidity risks. The Company is currently negotiating new guarantees with significantly reduced collateral. In February 2019, the Company also extended a loan with a twelve-month term and a volume of EUR 4.0 million in order to further secure liquidity.

The receivables portfolios of the individual SINGULUS TECHNOLOGIES Group companies are reviewed at short intervals to analyze credit risk. We use export credit insurance as the primary instrument to hedge against credit risk relating to foreign customers. Customers' creditworthiness and payment history are continually monitored and corresponding credit limits are set. Furthermore, risks in individual cases are limited wherever possible through credit insurance and bank guarantees.

Technology risk

Risk description: The SINGULUS TECHNOLOGIES Group operates in highly competitive markets. If product refinements or new product developments produce undesirable results, this could lead to significant costs.

Impact: As in the previous year, we currently classify the risk of undesirable or delayed development as relevance indicator 3 with a medium probability of occurrence.

Measures: Analysis of market requirements is a key aspect in reviewing development risk. We reduce the risk of undesirable or delayed development through cooperating with partners and research institutes, as well as via a continuous evaluation process in which the efficiency, chances of success, and general framework of development projects are continuously reviewed. Monitoring the planning of the various development projects is a key part of this process. The necessary impairment write-downs are recognized for capitalized development costs that are considered to be impaired. Analyzing, unlocking, and exploiting chances for success to safeguard and expand the Company's competitiveness also constitute key aspects of strategic planning.

Procurement risk

Risk description: The availability, unplanned price increases, and inadequate quality of purchased components constitute a risk for SINGULUS TECHNOLOGIES. High inventory levels present a further risk.

Impact: In light of the high inventory levels, we currently classify inventory risk as relevance indicator 3 (previous year: 3) as in the previous year, and continue to consider this to be a low probability of occurrence (previous year: low). From our current perspective, we assume sufficient coverage of the inventory risk by recognizing impairment losses on the balance sheet. At the end of the fiscal year, we classify the risk in regard to the availability, quality, and price increases of purchased components as relevance factor 3 (previous year: 3), and we consider this to be a medium probability of occurrence (previous year: medium). We do not expect any significant price increases in the short to medium term based on current contractual negotiations and analysis of market expectations. The average inventory backlog rate and the number of quality complaints were mostly within the target range throughout the entire fiscal year.

Measures: Delivery capacity and compliance with our quality requirements for purchased components are subject to constant monitoring. Inventory management constitutes a further component of risk management. This includes regularly reviewing the marketability and days inventory held (DIH) for goods and purchased components. In order to avoid unplanned price increases, long-term contracts are entered into with suppliers in some cases.

In addition, at the end of the reporting period, the Company assessed the impact of a disorderly Brexit scenario in the ongoing fiscal year 2019. Even in the event of a disorderly Brexit, however, there would be no material impact on the procurement process due to the low purchase volume and the availability of alternative suppliers.

Compliance risks

Risk description: As a company operating internationally, the SINGULUS TECHNOLOGIES Group is exposed to a wide range of legal, tax, and regulatory risks in addition to the operational and financial risks. In particular, these include risks associated with product liability, patent law, and company law. The outcomes of legal disputes and litigation can cause considerable damage to the Company's reputation and business or at least involve significant costs.

In addition, disregard for laws, regulatory requirements, and the guidelines aligned with these requirements could have serious negative impacts on the Company such as reputational damage or monetary penalties. These include, for instance, risks related to corruption and violations of export conditions.

Impact: Compliance violations can result in legal disputes. The outcome of legal disputes is subject to uncertainty and can have significant economic effects. These could potentially not be covered by insurance, or only partially, and could therefore impact our business and the corresponding financial key performance indicators.

SINGULUS TECHNOLOGIES AG currently has no material ongoing legal disputes and no material compliance violations are known at this time. We therefore currently classify the effects of compliance violations as relevance indicator 3 (previous year: 5) with a low probability of occurrence (previous year: low).

Measures: Legal risks are identified using a systematic approach and are managed with the assistance of external lawyers.

To prevent potential violations of the law, the SINGULUS TECHNOLOGIES Group has established a Group-wide Code of Conduct. This is intended to provide employees with specific rules of behavior for various situations. Individual employee training on individual questions about a variety of legal provisions represents yet another measure aimed at preventing compliance violations.

Key accounting features of the SINGULUS TECHNOLOGIES Group's internal control system and risk management system

The SINGULUS TECHNOLOGIES Group's internal control and risk management systems are integrated into one overall system. The internal control system comprises the principles, procedures and measures introduced throughout the Company by the management in order to implement the management's decisions throughout the organization. Specifically, this includes:

- Ensuring the effectiveness and profitability of the business activities
- Correctness and reliability of the internal and external accounting
- Compliance with the requirements applicable to the Company

The risk management system includes the entirety of all organizational regulations and measures developed to identify and manage risks arising out of operating activities. The following structures and processes relating to the (Group) accounting processes were implemented at the SINGULUS TECHNOLOGIES Group.

The overall responsibility for the internal control system with regard to the (Group) accounting processes rests with the Executive Board. All companies included in the consolidated financial statements are integrated under a clearly defined management and reporting organization. Under the (Group) accounting processes, features of the internal control and risk management system are classified as important if they materially influence the Group's accounting and the overall presentation of the consolidated financial statements, including the Group management report. This includes the following elements in particular:

- Identifying material risk areas and controls that influence the Group-wide accounting process
- Monitoring the Group-wide accounting process and the corresponding findings at the Executive Board level
- Preventative finance and accounting control measures at the Group and the subsidiaries included in the consolidated financial statements

In addition, the findings from the ongoing reporting process are used to further develop the internal control system.

Report on opportunities

SINGULUS TECHNOLOGIES further strategically aligned and expanded its product portfolio in the Solar segment over the past few fiscal years. SINGULUS TECHNOLOGIES addresses the global market for machinery and equipment for manufacturing the various different solar cell formats. In the CIGS field, we anticipate a longer investment cycle in China for CIGS thin-film solar cells. The market position it has achieved provides the Company with the opportunity for sustained growth in the years to come.

The biggest customer in China, CNBM, has since started construction work on several production sites, each with a capacity of around 300 MW for CIGS thin-film solar modules in China. The first plant is currently being commissioned. The planned output volume for each site is planned to reach around 1,500 MW in the final phase. The contracts and agreements already in place present SINGULUS TECHNOLOGIES as a supplier of machinery with favorable growth opportunities over the coming years. SINGULUS TECHNOLOGIES anticipates that the agreements entered into under the LoI in November 2018 will be converted to legally binding delivery agreements. The Company sees good prospects for follow-up orders in this area as other companies are expanding production sites for CIGS modules in China.

In the field of crystalline high-efficiency solar cells, SINGULUS TECHNOLOGIES aims to be a single-source provider of the main production steps, i.e. the various stages of vacuum coating technology in addition to the wet-chemical treatment.

This opens up opportunities for SINGULUS TECHNOLOGIES in the current fiscal year for new major projects in the areas of crystalline HJT and thin-film solar technology.

Demand for the new Ultra HD Blu-ray disc format has been weak to date, resulting in only minimal opportunities for using SINGULUS TECHNOLOGIES' production equipment. The Company believes that this market will remain a niche market with low sales figures.

On the basis of numerous MRAM development projects, the Semiconductor segment offers sales opportunities for its vacuum coating machines if demand increases. We anticipate new fields of application for extremely precise layer systems such as in sensor systems to provide additional opportunities over the coming years.

Furthermore, we see opportunities for generating revenue and earnings contributions from additional applications in surface technology going forward, such as decorative coatings for consumer goods in the cosmetics and automotive industries and in the application of wet-chemical processes in the field of medical technology.

Summary of Risks and Opportunities

At the present time, the project and sales market risk for the Solar segment and the liquidity risk are still viewed as the Group's most significant risks.

If risks materialize in connection with order processing for current and future major projects, particularly after the delays in commissioning equipment for CNBM at its site in Bengbu, China, this could have a have a considerable adverse effect on the Company's business activities. The occurrence of the promised partial payments and awarding of further major orders for the delivery of equipment for manufacturing CIGS solar modules is of great importance to the success and the continued existence of SINGULUS TECHNOLOGIES.

The Solar segment is expected to make the greatest contribution to revenue and earnings over the coming years. If the revenue in the years to come fails to materialize, this would materially affect the net assets, financial position, and results of operations of SINGULUS TECHNOLOGIES. Even in light of the establishment of new segments, the development of the solar market remains a decisive criterion for the Company's future performance. Receipt of payments as planned from the major projects is necessary to secure ongoing liquidity. These events and circumstances point to the existence of material uncertainty that may raise significant doubts about the Company's ability to continue as a going concern and that poses a threat to its continued existence.

Environment and sustainability

SINGULUS TECHNOLOGIES AG places great value on responsibly and sustainably managing the Company. The Executive Board and the Supervisory Board understand this to mean a responsible and sustainable approach to managing and controlling that is geared towards the long-term success of the Company. The objective of these principles of good corporate governance is to ensure that the Executive Board and the Supervisory Board work together efficiently to achieve their objectives, the best interests of the shareholders and employees are taken into account, risks are managed appropriately, and entrepreneurial decisions are made transparently and responsibly.

The Company's products are continuously being improved in order to follow the idea of sustainability and to reduce energy consumption. Sustainable thinking begins here in the design of the systems. Recycling all consumables whenever possible is a matter of course in the Company.

SINGULUS TECHNOLOGIES put an energy management system in place in the Company. In 2016, the Company gained certification in accordance with DIN EN ISO 50001. This encompasses all of the normative, statutory, and internal requirements and directives, as well as the tracking and implementation. SINGULUS TECHNOLOGIES provides the necessary financial, technical, and personnel resources to support the continual improvement of the energy management system, its realization and maintenance. Energy management is only one of the ongoing activities that is continually being improved over the years. The following steps ensure the realization of the energy policy in accordance with DIN EN ISO 50001:

- Energy consumption is systematically evaluated
- Energy flows are mapped and kept up to date
- Energy savings measures are planned and introduced
- Activities planned to improve energy efficiency are continually updated
- The Executive Board publishes energy management targets

An energy management officer was appointed in order to implement the energy policy. In order to comply with due diligence, all strategic and operational targets as well as all necessary measures are defined in an energy management manual.

Total energy of approximately 6.263 GWh was consumed at the Kahl am Main and Fürstenfeldbruck sites in 2015. In 2016, total energy consumption was 6.354 GWh and 6.293 GWh in 2017. Last year, this figure dropped further to 5.909 GWh for both the Kahl and Fürstenfeldbruck sites. Both electricity and gas are included in this disclosure. This figure is heavily influenced by the utilization rate at these two sites. Part of the energy we consume is generated in house using our photovoltaic power plant at our site in Fürstenfeldbruck. Electricity consumption, in particular, has been reduced by implementing targeted measures to save energy. Since 2017, the complete lighting systems of the plant halls and the exterior lighting at both sites has been gradually converted to state-of-the-art and efficient LED light sources.

SINGULUS TECHNOLOGIES views sustainability as an opportunity to position itself accordingly with innovative products that are in line with this basic concept.
The focus here is on:

- Environmental awareness
- Conserving resources
- Avoiding unnecessary CO_2 emissions

Remuneration report

This remuneration report is a component of the combined management report for the SINGULUS TECHNOLOGIES Group and SINGULUS TECHNOLOGIES AG. It includes disclosures that – pursuant to the provisions of the German Commercial Code (Handelsgesetzbuch, "HGB") (§ 289a (2) in conjunction with § 285 (9) HGB) – form part of the notes to the financial statements in accordance with § 314 (1) (6) HGB or the management report in accordance with § 315a (2) HGB. The remuneration report explains the principles and structure of the remuneration system for the Executive Board and Supervisory Board of SINGULUS TECHNOLOGIES AG and also discloses the remuneration awarded to the individual Executive Board and Supervisory Board members for the performance of their duties at the Company in fiscal year 2018 pursuant to the statutory requirements and the recommendations of the German Corporate Governance Code in the version dated February 7, 2017 (the Code). It also takes into account the requirements of German Accounting Standard (GAS) 17.

A. Remuneration of the Executive Board

I. Composition of the Executive Board in fiscal year 2018

Dr.-Ing. Stefan Rinck
Chief Executive Officer, Executive Board member responsible for Production, Sales and Marketing, Technology, Research and Development, and Strategy and International Activities
Dipl.-Oec. Markus Ehret
Executive Board member responsible for Finance, Controlling, Investor Relations, Human Resources, Purchasing and IT

II. Description of the remuneration structure

1 Overview of the remuneration structure

1.1 Design and objectives of the remuneration structure

The remuneration of the individual Executive Board members is set and regularly reviewed by the Supervisory Board. The objective is to appropriately compensate the members of the Executive Board on the basis of their duties and responsibilities, taking into account their individual performance as well as the economic situation, success and future prospects of the Company.

The remuneration structure centers on sustainable business development and comprises fixed and variable remuneration. The fixed, non-performance-based remuneration component consists of a fixed annual salary, pension benefits financed by the Company and benefits in kind. The performance-based component consists of a variable bonus and a share-based remuneration component (phantom stocks). The variable bonus is intended to reward the respective members of the Executive Board for their motivation and commitment and to reinforce their connection to the Company. The variable bonus is tied to the achievement of individual targets related to the Company's financial, operating and strategic objectives. The Supervisory Board sets new targets every year and individually agrees these with the Executive Board members following the approval of the budget for the subsequent year. By linking the remuneration to the Company's performance and its sustainable share performance, the objective of the phantom stock program is to function as a long-term incentive and retention mechanism. The phantom stocks may be exercised upon expiry of the two-year vesting period in tranches of 25% every six months when the Company's share price is a certain minimum percentage above the exercise price. The phantom stocks are therefore a remuneration component with a multi-year measurement basis that closely aligns the interests of the beneficiaries and those of the shareholders.

The variable bonus, along with the phantom stocks and remuneration, are all capped at a maximum value recommended by the German Corporate Governance Code.

In setting the target remuneration, the Supervisory Board considers the remuneration that similar companies pay to the members of their management teams as well as the "vertical" appropriateness of the remuneration in comparison to the other salary levels at the Company. The Supervisory Board aims to retain the members of the Executive Board with the Company for the long term and incentivize them to increase the enterprise value. In addition, the variable remuneration is intended to motivate the members of the Executive Board, while at the same time providing a means to take the Company's economic situation into account when setting the bonus. The Supervisory Board reviews the remuneration on a regular basis at its first Supervisory Board meeting of the year. In this review, the Supervisory Board compares an Executive Board member's individual performance and responsibilities against the performance and responsibilities of other Executive Board members as well as the Company's economic situation.

By resolution of the Supervisory Board on January 26, 2017, the appointment of Dr.-Ing. Stefan Rinck as a member of the Executive Board was extended early by five years until August 31, 2022, and the former service agreement was replaced by a revised service agreement effective as of September 1, 2017. By resolution of the Supervisory Board on January 25, 2018, the service agreement with Mr. Markus Ehret was revised with effect as of January 1, 2018, for the remaining term until December 31, 2019. The revised agreements serve to reflect the amendments to the Code effected in the meantime and to further harmonize the remuneration structure of both members of the Executive Board. In light of the new service agreements signed for each of the members of the Executive Board, the Supervisory Board had the remuneration system reviewed by an independent consultant in the spring of 2018. The review concluded that the remuneration system meets the statutory requirements and complies with the recommendations of the Code. Furthermore, by resolution on June 28, 2018, the Annual General Meeting approved the applicable system for remuneration of Executive Board Members.

1.2 Breakdown of remuneration

Remuneration generally comprises performance-based and non-performance-based components.

The non-performance-based remuneration component consists of a fixed annual salary, pension benefits financed by the Company and benefits in kind. The benefits in kind include company vehicles and insurance as well as a defined-contribution company pension financed by the Company.

The performance-based component consists of a variable bonus and phantom stocks (virtual shares). In accordance with the Executive Board service agreements, special one-time payments to account for outstanding performance may still be granted by the Supervisory Board in addition to the variable remuneration.

The variable bonus is tied to the achievement of individual targets related to the Company's financial, operating and strategic objectives. The Supervisory Board sets new targets every year and individually agrees these with the Executive Board members following the approval of the budget for the subsequent year. The target agreements comprise 50% financial targets, 30% operational targets, and 20% strategic targets. The variable bonus is not to exceed 80% of the fixed salary so that the target remuneration at the maximum bonus amount comprises approximately 56% fixed salary and around 44% of the annual bonus payment. If the annual targets of the respective Executive Board members are exceeded, the Supervisory Board may stipulate target achievement of up to 120% in an individual case at its discretion. For presumed 100% target achievement, on average the bonus equals the maximum bonus. If the targets are not met or only partially met at less than 50%, the Supervisory Board decides at its own discretion whether and to what extent the variable remuneration is paid.

Since fiscal year 2011, the Company has granted phantom stocks to the members of the Executive Board every year in accordance with the phantom stock program approved by the Supervisory Board. The terms of the program were adjusted for Dr.-Ing. Stefan Rinck and Mr. Markus Ehret for in their respective revised service agreements. In each case, the amendments are primarily technical in nature.

By linking the remuneration to the Company's performance and its sustainable share performance, the objective of the phantom stock program is to function as a long-term incentive and retention mechanism. The phantom stocks are a remuneration component with a multi-year measurement basis that closely aligns the interests of the beneficiaries and those of the shareholders, thereby creating sustainable shareholder value. The phantom stocks are allocated free of charge as a further component of remuneration. Each individual phantom stocks is designed as a virtual stock option and, upon expiry of a vesting period and achievement of a performance target, entitles the bearer to receive a payment equal to the difference between the applicable exercise price and the reference price upon exercise and for one bearer share of the Company's stock at par value of EUR 1.00 each. The exercise price is the non-weighted average closing price (or a corresponding closing price) of the Company's shares on the Xetra trading platform (or a functionally comparable successor system to the Xetra trading system) of the Frankfurt Stock Exchange on the five trading days prior to the issue date. The reference price is the (non-weighted) average closing price (or a corresponding closing price) of the Company's shares on the Xetra trading platform (or a functionally comparable successor system to the Xetra trading system) of the Frankfurt Stock Exchange on the five trading days prior to the exercise date. Phantom stocks may be exercised for the first time after the expiration of the two-year vesting period, which begins on the issue date. The term of the phantom stocks amount to five years from the respective issue date.

Phantom stocks not exercised by the end of this term lapse without substitute or compensation. The stock options may be exercised upon expiry of the vesting period within a period of 14 trading days beginning on the sixth trading day (inclusive) following publication of the quarterly reports for the first or third quarter ending on June 20 or December 20 of this fiscal year (exercise period). If exercise is not possible during the exercise period due to a deferment in accordance with Article 17 (4) of the Market Abuse Regulation (MAR), the exercise period extends for the duration of the deferment. No more than 25% of the phantom stocks issued can be exercised at one time within the exercise period. If an exercise tranche is not exercised within a certain exercise period, it can be exercised additionally in the following exercise periods. Furthermore, the phantom stocks may only be exercised if the performance target is met, i.e., if the reference price is at least 15% higher than the exercise price on the exercise date.

Within the term of the phantom stocks, the phantom stocks may also be exercised early, i.e., outside of the respective exercise period and before expiry of the vesting period, if a takeover bid as defined in § 29 (1) of the German Securities Acquisition and Takeover Act (Wertpapier-erwerbs- und Übernahmegesetz, "WpÜG") for the Company's shares was published or a person gains control as defined in § 29 (2) WpÜG. In these cases, all phantom stocks can be exercised, regardless of whether or not the performance target is met.

When exercised, phantom stocks entitle the bearer to payment exclusively in the form of a cash settlement. The cash settlement is limited to three times the amount of the exercise price per phantom stock. Furthermore, the service agreements of both members of the Executive Board also include an additional threshold under which the cash settlement to be paid within a given year may not exceed the annual fixed remuneration. The Company's treasury shares may not be used to satisfy the obligations arising in connection with the phantom stock program.

1.3 Maximum limits

Section 4.2.3 (2) sentence 6 of the Code recommends that the remuneration of Executive Board members be capped, both overall and for variable remuneration components. The Supervisory Board considers maximum limits on the Executive Board's remuneration to be generally useful and implemented such caps as follows:

The service agreements of the two current members of the Executive Board provide for caps on the variable remuneration components. These caps are derived from the remuneration system and monitored by the Supervisory Board. At its discretion, the Supervisory Board may increase the variable bonus for the respective member of the Executive Board to up to 120% of the target amount if the annual targets are exceeded. However, the variable bonus may not exceed 80% of the fixed salary; this also applies when the target achievement exceeds 100%.

Members of the Executive Board also receive phantom stocks. The Supervisory Board decides the number of phantom stocks to grant at its own discretion. However, the cash settlement due upon exercising the phantom stocks is limited to three times the amount of the exercise price per phantom stock. Furthermore, the cash settlement to be granted over the course of one year from the phantom stock program may not exceed the annual fixed salary. This also applies when exercise tranches mature during one year and originate from phantom stock programs of different years. This threshold does not apply if the phantom stocks are exercised early in the event of a takeover bid or change of control.

Any one-time special payment granted by the Supervisory Board under revised service agreements is limited to no more than half of the fixed salary and is subject to the overall cap on remuneration constituting the maximum amount a member of the Executive Board can receive in the course of one year.

The maximum remuneration that the respective member of the Executive Board can receive over the course of one year (fixed and variable remuneration including ancillary benefits, a potential special payment and pension contributions) is limited to 3.5 times the fixed salary set in each case. The maximum threshold does not apply to any severance payments and payments under the phantom stock program for phantom stocks exercised early following a change of control.

2 Fixed remuneration

The fixed, non-performance related, annual remuneration of members of the Executive Board is paid in twelve equal amounts at the end of each month, and the final payment for the full month in which the service agreement ends. The appropriateness of the remuneration is reviewed annually and adjusted if necessary. Adjustments may also be made due to special one-time payments. In fiscal year 2018, the annual fixed remuneration for Executive Board members amounted to EUR 440,000 for Dr.-Ing. Stefan Rinck and EUR 300,000 for Mr. Markus Ehret.

The fixed remuneration paid to the members of the Executive Board in fiscal year 2018 amounted to a total of EUR 740,000.

3 Short-term variable remuneration

In addition to the fixed salary, the Company pays the members of the Executive Board variable remuneration (bonus) measured annually, the amount of which the Supervisory Board sets for the respective fiscal year on the basis of the targets agreed each year. Based on the target agreements for fiscal year 2018 with each of the members of the Executive Board, the Supervisory Board set the target achievement for both members of the Executive Board at 95% each for the 2018 fiscal year. The variable remuneration granted on the basis of the individual target arrangements and pursuant to the target achievement rate for fiscal year 2018 amounted to EUR 278,350 for Dr.-Ing. Stefan Rinck and EUR 177,334 for Mr. Markus Ehret, a total of EUR 455,684.

Furthermore, the Supervisory Board also has the right to grant members of the Executive Board special payments for outstanding performance at its discretion. The Supervisory Board did not exercise the option to grant a member of the Executive Board a special payment in fiscal year 2018.

4 Long-term variable remuneration (phantom stocks)
SINGULUS TECHNOLOGIES AG grants phantom stocks to the members of the Executive Board every year in accordance with the phantom stocks program approved by the Supervisory Board. In fiscal year 2018, the Company granted the members of the Executive Board a total of 250,000 (previous year: 250,000) phantom stocks, of which 150,000 were granted to Dr.-Ing. Stefan Rinck (previous year: 150,000) and 100,000 to Mr. Markus Ehret (previous year: 100,000). The fair value of these virtual shares on the date issued amounted to EUR 4.554 per phantom stocks (previous year: EUR 3.146). Consequently, including the 250,000 phantom stocks issued in fiscal year 2018 and less the phantom stocks exercised in fiscal year 2018, the members of the Executive Board still held around 668,750 phantom stocks at the end of fiscal year 2018.

Dr.-Ing. Stefan Rinck exercised the phantom stocks on December 4, 2018, as follows and received the following settlement payments: (i) 2015 program: 390.6 shares, EUR 1,471.10 and (ii) 2016 program: 31,250 shares, EUR 213,206.25. For him, the total settlement payments thus amounted to EUR 214,677.35. Mr. Markus Ehret also exercised the phantom stocks on December 4, 2018, as follows and received the following settlement payments: (i) 2015 program: 312.5 shares, EUR 1,176.88 and (ii) 2016 program: 25,000 shares, EUR 170,565.00. For him, the total settlement payments thus amounted to EUR 171,741.88.

Dr.-Ing. Stefan Rinck held 393,750 virtual shares at the end of fiscal year 2018, comprised as follows: (i) 93,750 remaining virtual shares from the 2016 program, (ii) 150,000 virtual shares from the 2017 program, and (iii) 150,000 virtual shares issued in fiscal year 2018. Mr. Markus Ehret held 275,000 virtual shares at the end of fiscal year 2018, comprised as follows: (i) 75,000 remaining virtual shares from the 2016 program, (ii) 100,000 virtual shares from the 2017 program, and (iii) 100,000 virtual shares issued in fiscal year 2018.

The fair value of the virtual shares allocated on an accrual basis led to an expense of EUR 0.7 million in fiscal year 2018. EUR 400 thousand (previous year: EUR 411 thousand) is attributable to Dr.-Ing. Stefan Rinck's virtual shares and EUR 276 thousand (previous year: EUR 311 thousand) to Mr. Markus Ehret's virtual shares.

5 Other remuneration

The members of the Executive Board also receive ancillary benefits in the form of benefits in kind, such as company vehicles or lump-sum compensation for using a private vehicle for business purposes and casualty and third-party liability insurance. Since these ancillary benefits represent a remuneration component, the individual Executive Board members must pay taxes on these ancillary benefits.

In fiscal year 2018, other remuneration amounted to EUR 46 thousand for Dr.-Ing. Stefan Rinck and EUR 27 thousand for Mr. Markus Ehret. In fiscal year 2018, the members of the Executive Board did not receive any additional remuneration in connection with their duties as managing directors of a subsidiary. A lump-sum share of 15% of the fixed remuneration and the one-year variable remuneration is considered remuneration for these activities.

6 Pension commitments

Members of the Executive Board receive a defined-contribution company pension benefit financed by the Company. The Company grants Executive Board members an annual pension contribution amounting to a certain percentage of the respective gross annual fixed salary stipulated in their service agreements. This type of pension scheme allows the Company to reliably calculate the annual – and thus also long-term – expenditures. The amount of the pension commitments was calculated as a percentage of the fixed remuneration on the basis of an approximate target amount of benefits at retirement, a hypothetical term of office and the expected interest rate development in accordance with actuarial principles. However, the actual amount of benefits at retirement is not specified for defined contribution plans, because this depends on the length of service on the Executive Board and interest rate developments.

The annual pension plan contribution for Dr.-Ing. Stefan Rinck since January 1, 2012, amounts to 59.97% of the annual fixed remuneration; the annual pension plan contribution for Mr. Markus Ehret since January 1, 2018, amounts to 31.58% of the annual fixed remuneration. The annual expense for the Company in fiscal year 2018 was around EUR 359 thousand (previous year: EUR 352 thousand), of which around EUR 264 thousand (previous year: EUR 264 thousand) was for Dr.-Ing. Stefan Rinck and around EUR 95 thousand (previous year: EUR 88 thousand) for Mr. Markus Ehret.

In 2011, the Company outsourced the pension plan to Towers Watson Second e-Trust e.V. ("Towers Watson"). Retirement and survivor benefits are granted as pension benefits. The pension scheme stipulates that pension benefits will be granted as a monthly pension or a one-time capital payment if the Executive Board member terminates his service after turning 63 years of age. If the Executive Board member terminates his service prior to attaining the age of 63, but no sooner than turning 60 years of age, the early retirement benefits are granted as an early monthly pension or an early one-time capital payment, provided the Executive Board member requests the payment of the early retirement benefits at the date he departs the Company. The amount of the (early) retirement benefits is based on actuarial principles in accordance with the reinsurer's rate structure. Towers Watson takes out the corresponding reinsurance to insure the pension benefits. The rights from these agreements fall exclusively to Towers Watson. In the event that a member of the Executive Board dies before (early) retirement benefits are claimed, the surviving spouse shall receive a one-time lump sum. The amount of the one-time survivor's lump sum is calculated at the time of the insured event and corresponds to the respective amount of the pension contributions that must be refunded in the event of death prior to the start of retirement under the reinsurance policy taken out by Towers Watson for the Executive Board.

In the event of a death after (early) retirement benefits have been claimed in the form of a monthly rent, but prior to the expiry of 20 years since the start of retirement, the surviving spouse shall receive a temporary survivor's pension until the expiry of said 20-year period. If there is no eligible surviving spouse, the surviving children will, under certain circumstances, each receive the survivor's benefits in equal parts.

If a member of the Executive Board leaves SINGULUS TECHNOLOGIES AG prior to the occurrence of an insured event, that member shall keep prorated vested pension benefits regardless of whether or not the statutory vesting period under the applicable provisions of the German Company Pensions Act (Betriebsrentengesetz) applies at the time the member departs the Company.

III. Individual remuneration

The total remuneration granted to the members of the Executive Board amounted to EUR 2,790 thousand in fiscal year 2018 (min.: EUR 1,172 thousand; max.: EUR 3,272 thousand) (previous year: EUR 2,411 thousand). Of this amount, EUR 740 thousand (previous year: EUR 720 thousand) relates to fixed, non-performance related remuneration components and EUR 480 thousand (min: EUR 0 thousand; max: EUR 592 thousand (previous year: EUR 480 thousand)) to variable, one-year performance-related remuneration components. EUR 73 thousand (previous year: EUR 73 thousand) is attributable to non-performance related benefits in kind and other benefits and EUR 359 thousand (previous year: EUR 352 thousand) to pension expense. The virtual shares (phantom stocks) granted in fiscal year 2018 amounted to a total of 250,000 shares (previous year: 250,000 shares) at a fair value on the date they were granted (grant price) of EUR 4.554 per phantom stock (previous year: EUR 3.146). During the year under review, the individual members of the Executive Board were granted the following compensation (in relation to the total remuneration received, please see the compensation received table on p. 85 of this report).

Benefits granted	Dr.-Ing. Stefan Rinck Chief Executive Officer Start date: September 1, 2009 2017 [in EUR]	2018 [in EUR]	2018 (Min.) [in EUR]	2018 (Max.) [in EUR]	Dipl.-Oec. Markus Ehret Member of the Executive Board Start date: April 19, 2010 2017 [in EUR]	2018 [in EUR]	2018 (Min.) [in EUR]	2018 (Max.) [in EUR]
Fixed remuneration	440,000	440,000	440,000	440,000	280,000	300,000	300,000	300,000
Fringe benefits	45,580	45,691	45,691	45,691	27,115	27,225	27,225	27,225
Total	**485,580**	**485,691**	**485,691**	**485,691**	**307,115**	**327,225**	**327,225**	**327,225**
One-year variable remuneration	293,000[1]	293,000[2]	0	352,000	186,667[1]	186,667[2]	0	240,000
Special payments	0	0	0	220,000[3]	0	0	0	150,000[3]
Multi-year variable remuneration	**471,900**[4]	**683,100**[4]	**0**	**683,100**[4]	**314,600**[4]	**455,400**[4]	**0**	**455,400**[4]
2017 phantom stocks (to be exercised between July 21, 2019 and July 22, 2022	471,900[4]	0	0	0	314,600[4]	0	0	0
2018 phantom stocks (to be exercised between April 9, 2020 and April 9, 2023)	0	683,100[4]	0	683,100[4]	0	455,400[4]	0	455,400[4]
Total	**1,250,480**	**1,461,791**	**485,691**	**1,740,791**	**808,382**	**969,292**	**327,225**	**1,172,625**
Pension expense	263,868	263,868	263,868	263,868	88,424	94,740	94,740	94,740
Total remuneration granted	**1,514.348**	**1,725.659**	**749,559**	**2,004,659**[5]	**896,806**	**1,064,032**	**421,965**	**1,267,365**[6]

1) The one-year variable remuneration actually granted amounted to EUR 234,400 for Dr.-Ing. Stefan Rinck and EUR 149,334 for Mr. Markus Ehret at 80% target achievement.

2) The one-year variable remuneration actually granted for fiscal year 2018 amounted to EUR 278,350 for Dr.-Ing. Stefan Rinck and EUR 177,334 for Mr. Markus Ehret at 95% target achievement.

3) Cap on the amount that the Executive Board member can receive in one year according to the service agreement.

4) The fair market value of the phantom stocks on the granting date; 25% of the phantom stocks (2017 phantom stock program) can be exercised no earlier than fiscal year 2019, or 50% (2018 phantom stock program) no earlier than in fiscal year 2020. Upon exercising the phantom stocks, the beneficiary receives the difference between the exercise price upon granting and the reference price upon exercising the option, but no more than three times the exercise price per phantom stock. The settlement payment to be granted over the course of one year may not exceed the amount of the annual fixed salary of the respective member of the Executive Board.

5) Cap of EUR 1,540,000 according to service agreement; includes pension expense; does not refer to the phantom stocks granted but not exercised in the fiscal year. The cap for phantom stocks exists only as regards the compensation received and therefore the exercising of the remuneration instrument.

6) Cap of EUR 1,050,000 according to service agreement; includes pension expense; does not refer to the phantom stocks granted but not exercised in the fiscal year. The cap for phantom stocks exists only as regards the compensation received and therefore the exercising of the remuneration instrument.

Benefits received	Dr.-Ing. Stefan Rinck Chief Executive Officer Start date: September 1, 2009		Dipl.-Oec. Markus Ehret Member of the Executive Board Start date: April 19, 2010	
	2017 [in EUR]	**2018** [in EUR]	**2017** [in EUR]	**2018** [in EUR]
Fixed remuneration	440,000	440,000	280,000	300,000
Fringe benefits	45,580	45,691	27,115	27,225
Total	**485,580**	**485,691**	**307,115**	**327,225**
One-year variable remuneration	175,800	234,400	112,000	149,334
Special payments	0	0	0	0
Multi-year variable remuneration	**9,239***	**214,677**	**7,391***	**171,742**
2012 phantom stocks (to be exercised between November 27, 2014 and November 26, 2017)	1,931*		1,545*	
2014 phantom stocks (to be exercised between April 8, 2016 and April 7, 2019)	5,837*		4,669*	
2015 phantom stocks (to be exercised between April 9, 2017 and July 9, 2020)	1,471*	1,471	1,177*	1,177
2016 phantom stocks (to be exercised between November 30, 2018 and November 30, 2021)	0	213,206	0	170,565
Other	0	0	0	0
Total	**670,619**	**934,768**	**426,506**	**648,301**
Pension expense	263,868	263,868	88,424	94,740
Total remuneration	**934,487**	**1,198,636**	**514,930**	**743,041**

* Payment made in January 2018 due to settlement reasons.

The total remuneration received by the members of the Executive Board amounted to EUR 1,914 thousand in fiscal year 2018 (previous year: EUR 1,449 thousand). Of this amount, EUR 740 thousand (previous year: EUR 720 thousand) relates to fixed, non-performance related remuneration components and EUR 770 thousand (previous year: EUR 304 thousand) to variable, one- and multi-year performance-related remuneration components. EUR 73 thousand (previous year: EUR 73 thousand) is attributable to non-performance related benefits in kind and other benefits and EUR 359 thousand (previous year: EUR 352 thousand) to pension expense.

IV. Pension obligations in the event of termination and from third parties, change of control clauses

1 Severance policy

In the event that the service agreement is terminated early with notice or in the event the appointment is terminated early, the members of the Executive Board shall receive a severance package limited to two years' annual remuneration (severance cap). The amount is calculated as the fixed remuneration less benefits in kind and other ancillary benefits plus a lump sum variable remuneration amounting to 25% of the applicable fixed remuneration including additions to pension benefits. If the remaining term of the respective Executive Board service agreement is less than two years, the severance shall be reduced pro rata temporis over the remaining term of the service agreement. In the event of a termination for good cause, the employee shall not be entitled to a severance package.

2 Third-party pension obligations

During the year under review, no third-party benefits were granted or promised to members of the Executive Board with respect to their work as Executive Board members.

3 Change of control clauses

The Executive Board service agreements include a change of control clause. The members of the Executive Board of SINGULUS TECHNOLOGIES AG have a special termination right in the event of a change of control. This entitles them to terminate their service agreement at any time with six months' notice within a period of one year following the change of control. A change of control within this meaning arises if (i) a shareholder has acquired control as defined in § 29 WpÜG; (ii) a control agreement in accordance with § 291 AktG has been concluded with the Company as an independent company and has entered into force; (iii) the Company was merged with another, non-consolidated legal entity in accordance with § 2 of the German Reorganization Act (Umwandlungsgesetz, "UmwG"), unless the value of the other legal entity under the agreed exchange ratio is less than 50% of the value of the Company; or (iv) a takeover or mandatory bid as defined in WpÜG has been implemented.

If the service agreement is terminated because a member of the Executive Board exercised the special termination right or the member's service agreement was not extended following a change of control, the member of the Executive Board is entitled to a special payment amounting to the total of (i) the most recent fixed remuneration for three years, (ii) the total variable remuneration (bonuses) for the last three years, and (iii) the additions to pension benefits for three years. The claim to a special payment exists only if the remaining term of the service agreement is longer than nine months at the time of the change of control. The service agreements with Mr. Markus Ehret and Dr.-Ing. Stefan Rinck also stipulate that the entitlement also applies in the event of a change of control if the Company places the member of the Executive Board on leave or terminates the service agreement.

Within the term of the phantom stock program, option rights arising from the phantom stocks may also be exercised early, i.e., outside of the respective exercise period and before expiry of the vesting period, if (i) a takeover bid as defined in § 29 (1) WpÜG for the Company's shares was published or (ii) a person gains control as defined in § 29 (2) WpÜG. In these cases, all phantom stocks can be exercised, regardless of whether or not the performance target is met.

B. Remuneration of the Supervisory Board

The remuneration of the Supervisory Board is set out in Article 11 of the Articles of Association of SINGULUS TECHNOLOGIES AG and is based on the duties and responsibilities of the Supervisory Board members.

In addition to being reimbursed for their out-of-pocket expenses, the members of the Supervisory Board receive fixed remuneration of EUR 40,000 for each full fiscal year they serve on the Supervisory Board; the fixed remuneration is payable after the end of the fiscal year. The Chairman of the Supervisory Board receives twice and the deputy chairman one and half times the fixed remuneration. Supervisory Board members who were only on the Supervisory Board or acted as chairman or deputy chairman for part of the fiscal year receive proportionately lower fixed remuneration than the other Supervisory Board members.

The Company reimburses each Supervisory Board member the value added tax levied on that member's remuneration.

The total remuneration of the Supervisory Board in fiscal year 2018 was EUR 180,000 (previous year: EUR 180,000) plus value added tax of EUR 34,200 (previous year: EUR 34,200). The individual members of the Supervisory Board are entitled to the following remuneration for fiscal year 2018:

	Total 2018 (in EUR '000)	Total 2017 (in EUR '000)
Dr.-Ing. Wolfhard Leichnitz	80	80
WP/StB Christine Kreidl	60	60
Dr. rer. nat. Rolf Blessing	40	40
Total	**180**	**180**

The members of the Supervisory Board did not receive any remuneration or benefits in the reporting year for personal services, particularly consulting or intermediary services.

C. Advances and loans granted to Executive Board and Supervisory Board members

The Company did not grant any advances or loans to Executive Board and Supervisory Board members in the year under review.

MANAGEMENT REPORT PURSUANT TO §§ 289A (1), 315A (1) HGB

1. Composition of subscribed capital

As of December 31, 2018, the share capital of SINGULUS TECHNOLOGIES AG amounted to EUR 8,896,527.00, divided into EUR 8,896,527 bearer shares with a par value of EUR 1.00 each. The share capital has been fully paid up. Different share classes do not exist; all shares are ordinary shares. All shares carry the same rights and obligations. Each share confers one vote and an equal share of profit. The rights and obligations attached to the shares are based on the statutory provisions. Any claim to securitization of their shares by shareholders is excluded pursuant to Article 6.4 of the Company's Articles of Association. In the event of a capital increase, the profit participation of new shares pursuant to Article 6.5 of the Company's Articles of Association can be determined in derogation of § 60 AktG.

2. Restrictions concerning voting rights or the transfer of shares

There are no restrictions concerning voting rights or the transferability of shares in the Company. All shares in the Company can be freely traded in accordance with the statutory provisions that apply to bearer shares.

3. Direct or indirect equity investments exceeding 10% of the voting rights

In accordance with the German Securities Trading Act (Wertpapierhandelsgesetz, "WpHG"), investors that indirectly or directly reach, exceed or fall below the voting rights thresholds of a listed company pursuant to § 33 WpHG by purchase, sale or by any other means must notify the company of this.

To the best of the Company's knowledge, only Triumph Science and Technology Group Co., Ltd. held, directly or indirectly, more than 10% of the voting rights in SINGULUS TECHNOLOGIES AG, holding 13.11% of the voting rights as of December 31, 2018. The voting rights held by Triumph Science and Technology Group Co., Ltd. are attributed to the following party subject to disclosure: People's Republic of China and China National Building Material Group Co., Ltd.

On the date the threshold was reached on January 22, 2019, the People's Republic of China provided notification that, in the course of this minority shareholding, an additional 3.64% of voting rights had been acquired in a second stage and ownership of these voting rights had been transferred to Triumph Science and Technology Group Company, LLC. With this, Triumph Science and Technology Group Co., Ltd. now holds a total of 16.75% of the voting rights in SINGULUS TECHNOLOGIES AG.

4. Shares with special rights conveying powers of control

There are no shares with special rights conveying powers of control.

5. Control of voting rights if employees are shareholders of the Company and do not exercise their control rights directly

There are no employees who are shareholders of the Company and do not exercise their control rights directly.

6. Appointment and dismissal of Executive Board members; amendments to the Articles of Association

Executive Board members were appointed and dismissed in accordance with the provisions of §§ 84, 85 AktG, which stipulate that Executive Board members are appointed by the Supervisory Board for a maximum of five years. Executive Board members may be reappointed or their term of office extended for a maximum of five years in each case. Pursuant to Article 7.1 of the Company's Articles of Association, the Company's Executive Board comprises at least two members. Moreover, the Supervisory Board determines the number of members of the Executive Board. It may appoint a chairman and a deputy chairman of the Executive Board pursuant to § 84 AktG and Article 7.1 of the Company's Articles of Association.

Pursuant to § 179 (1) sentence 1 AktG, any amendment of the Company's Articles of Association must be resolved by the Annual General Meeting. In accordance with § 179 (2) AktG, resolutions brought by the Annual General Meeting to amend the Articles of Association require a capital majority of at least three-fourths of the share capital represented at the time of the resolution. In accordance with Article 17.1 of the Articles of Association, the Supervisory Board is authorized to resolve on amendments to the Articles of Association which relate only to the wording thereof. This also applies to amendments to the Articles of Association due to a change in the share capital.

7. Authorization of the Executive Board to issue and redeem shares

7.1. Authorized capital

By resolution of the Annual General Meeting dated June 28, 2018, the Executive Board was authorized to increase the Company's share capital, with the approval of the Supervisory Board, until June 27, 2023, once or severally by up to a total of EUR 4,448,263.00 in exchange for cash and/or contributions in kind by issuing up to 4,448,263 new bearer shares with a par value of EUR 1.00 per share (Authorized Capital 2018/1). On principle, shareholders are to be granted subscription rights. The new shares may also be subscribed by one or more banks if the bank agrees or the banks agree to offer the shares to the shareholders for subscription (indirect subscription right). The Executive Board is however authorized, with the consent of the Supervisory Board, to exclude the subscription rights of shareholders (1) if this is necessary to eliminate fractional amounts; (2) if the new shares are issued against cash contributions at a price not significantly below the market price of the Company's shares as defined in § 186 (3) sentence 4 AktG and the pro rata amount of the shares issued for which the subscription rights are excluded does not exceed 10% of share capital as defined in § 186 (3) sentence 4 AktG on the date the authorization is entered in the commercial register or – if the amount is lower – on the respective date it is exercised. During the term of this authorization, this limit includes any new shares that the Company issues as part of a cash capital increase and any shares that the Company sells following repurchase under exclusion of subscription rights pursuant to or in accordance with § 186 (3) sentence 4 AktG. Furthermore, this 10% limit includes any shares that are tied to conversion or option rights or carrying conversion obligations on the basis of option rights, convertible bonds or participation rights issued by the Company or its subordinated

Group companies during the term of this authorization under exclusion of subscription rights in accordance with § 221 (4) sentence 2 in conjunction with § 186 (3) sentence 4 AktG, or if the Company has a redemption right in the form of stocks; (3) if this is necessary in order to grant holders or creditors of option rights, convertible bonds or participation rights that have been or will be issued by SINGULUS TECHNOLOGIES AG or its subordinated Group companies pre-emptive subscription rights to new shares to the extent to which they would have been entitled after exercising the option or conversion rights or satisfying the conversion obligations; (4) for capital increases against in-kind contributions, particularly for acquisition of companies, business units or interests in companies.

7.2. Contingent capital

The Company's share capital was conditionally increased by up to EUR 24,465,157.00 by the issuance of up to 24,465,157 bearer shares with a par value of EUR 1.00 each (Contingent Capital 2015/1). The contingent capital increase is implemented only insofar as holders of option or conversion rights or holders subject to the obligation to convert their bonds or to exercise the options under convertible or warrant-linked bonds – which are issued or guaranteed by SINGULUS TECHNOLOGIES AG or one of SINGULUS TECHNOLOGIES AG's Group companies as defined in § 18 AktG, in which SINGULUS TECHNOLOGIES AG directly or indirectly holds at least a 90% interest, on the basis of the authorization approved by the Annual General Meeting on June 9, 2015 under agenda item 8 – exercise their option or conversion rights or, to the extent they are subject to the obligation to convert their bonds or to exercise the options, satisfy such obligations, or to the extent SINGULUS TECHNOLOGIES AG exercises an option to grant ordinary shares in SINGULUS TECHNOLOGIES AG in lieu of paying the cash amount due (either in full or parts thereof). The contingent capital increase will not be implemented if a cash settlement is granted or treasury shares or shares from authorized capital or from another listed company are used to service the bonds.

7.3. Redemption authorizations

The Executive Board is not authorized to repurchase shares in the Company.

8. Material agreements of the Company that are subject to a change of control upon a takeover bid and the resulting effects

In accordance with the conditions of the bonds issued by SINGULUS TECHNOLOGIES AG in July 2016, which have a total nominal value of EUR 12,000,000.00, bondholders have the right to call their bonds and demand their immediate repayment or, at the Company's discretion, demand that they are purchased by the Company or a third party at a price of EUR 100.00 plus accumulated interest in the event of a change of control.

Bondholders must exercise the put option within a period of 30 days following the publication of the notification of the change of control (put period). However, an exercise of the put option only becomes effective if the put notices submitted to the Company by bondholders during the put period account for at least 25 % of the aggregate nominal amount of the bonds still outstanding at that time. A change of control arises if one of the following events occurs: (i) the Company becomes aware that a person or group of persons acting in concert within the meaning of § 2 (5) WpÜG has become the legal or beneficial owner (direct or indirect) of more than 30% of the Company's voting rights; or (ii) the merger of the Company with or into a third person or the merger of a third person with or into the Company, except in connection with legal transactions, as a result of which the holders of 100% of the Company's voting rights hold at least the majority of the voting rights in the surviving legal entity directly following such a merger.

9. Compensation arrangements agreed by the Company with the members of the Executive Board or employees in the event of a takeover bid

The service agreements of the members of the Executive Board of SINGULUS TECHNOLOGIES AG provide the members of the Executive Board with a special call option in the case of a change of control. If the service agreement of a member of the Executive Board is terminated following a change of control because the member of the Executive Board exercised his special call option or if the service agreement is not renewed following a change of control, the respective member of the Executive Board is entitled to a special payment provided – in the event of exercising the special call option – that the service agreement still has a remaining term of more than nine months at the time of the change of control. The same applies in the event of a change of control if the Company places the member of the Executive Board on leave or terminates the service agreement. The amount of this special payment is capped. The change of control clauses and the compensation benefits are described in further detail in the remuneration report (see also page 86).

CORPORATE GOVERNANCE DECLARATION IN ACCORDANCE WITH § 289F AND § 315D HGB

The corporate governance declaration in accordance with § 289f and § 315d HGB including the diversity concept addressing the composition of the Company's management and supervisory bodies is contained in the corporate governance report and available on the Company's website at www.singulus.de.

Kahl am Main, March 15, 2019

SINGULUS TECHNOLOGIES AG

The Executive Board

Dr.-Ing. Stefan Rinck Dipl.-Oec. Markus Ehret


SINGULUS
DECOLINE II

DECOLINE II

DECOLINE II PRODUCTION SYSTEM FOR 3-DIMENSIONAL PARTS

THE DECOLINE II SYSTEM INTEGRATES VACUUM METALLIZING AS WELL AS ALL LAQUERING AND PRE-TREATMENT STEPS IN ONE PRODUCTION CYCLE AND IS TRANSPORTING THE SUBSTRATES THROUGH THE ENTIRE PRODUCTION PROCESS

Consolidated Balance Sheet

as of Dezember 31, 2018 and Dezember 31, 2017

Assets	Note	12/31/2018 EUR million	12/31/2017 EUR million
Cash and cash equivalents	(6)	13.5	27.2
Financial assets subject to restrictions on disposal	(7)	14.3	8.7
Trade receivables	(8)	6.1	2.3
Receivables from construction contracts	(8)	20.4	9.5
Other receivables and other assets	(9)	9.0	7.4
Total receivables and other assets		35.5	19.2
Raw materials, consumables and supplies		7.9	6.5
Work in process		9.2	10.8
Total inventories	(10)	17.1	17.3
Total current assets		**80.4**	**72.4**
Property, plant and equipment	(12)	10.7	4.9
Capitalized development costs	(11)	6.0	3.4
Goodwill	(11)	6.7	6.7
Other intangible assets	(11)	0.3	0.2
Deferred tax assets	(22)	0.0	0.3
Total non-current assets		**23.7**	**15.5**
Total assets		**104.1**	**87.9**

Equity and Liabilities

	Note	12/31/2018 EUR million	12/31/2017 EUR million
Trade payables		18.5	10.1
Prepayments received	(14)	1.0	0.8
Liabilities from construction contracts	(8)	14.8	12.1
Financing liabilities from the loan borrowed	(17)	0.0	4.0
Financial liabilities from the issuance of bonds	(16)	0.9	0.8
Current leasing liabilities		1.1	0.0
Other liabilities	(13)	11.3	11.0
Provisions for restructuring measures	(20)	0.6	0.7
Provisions for taxes		0.5	0.0
Other provisions	(19)	1.5	1.0
Total current liabilities		**50.2**	**40.5**
Financial liabilities from the issuance of bonds	(16)	12.0	12.0
Non-current leasing liabilities		3.8	0.0
Provisions for restructuring measures	(20)	1.5	1.9
Pension provisions	(18)	13.9	13.3
Deferred tax liabilities	(22)	3.0	0.0
Total non-current liabilities		**34.2**	**27.2**
Total liabilities		**84.4**	**67.7**
Subscribed capital	(21)	8.9	8.9
Capital reserves		19.8	19.8
Reserves	(21)	3.6	3.5
Loss carryforward		-12.6	-12.7
Equity attributable to owners of the parent		**19.7**	**19.5**
Non-controlling interests	(21)	**0.0**	**0.7**
Total equity		**19.7**	**20.2**
Total equity and liabilities		**104.1**	**87.9**

Consolidated Income Statement

for the period from January 1 to Dezember 31, 2018 and 2017

		1/1 - 12/31			
		2018		2017	
	Note	EUR million	in %	EUR million	in %
Revenue (gross)	(5)	**127.5**	**101.3**	**91.2**	**101.3**
Sales deductions and direct selling costs	(24)	-1.6	-1.3	-1.2	-1.3
Revenue (net)		**125.9**	**100.0**	**90.0**	**100.0**
Cost of sales		-90.5	-71.9	-64.7	-71.9
Gross profit on sales		**35.4**	**28.1**	**25.3**	**28.1**
Research and development	(29)	-8.2	-6.5	-4.7	-5.2
Sales and customer service		-14.2	-11.3	-12.0	-13.3
General administration	(28)	-8.5	-6.8	-11.7	-13.0
Other operating expenses	(30)	-0.7	-0.6	-1.0	-1.1
Other operating income	(30)	3.0	2.4	2.9	3.2
Total operating expenses		-28.6	-22.7	-26.5	-29.4
Operating result (EBIT)		**6.8**	**5.4**	**-1.2**	**-1.3**
Finance income	(31)	0.0	0.0	0.1	0.1
Finance costs	(31)	-2.0	-1.6	-1.7	-1.9
EBT		**4.8**	**3.8**	**-2.8**	**-3.1**
Tax expense/income	(22)	-4.0	-3.2	-0.4	-0.4
Profit or loss for the period		**0.8**	**0.6**	**-3.2**	**-3.6**

Thereof attributable to:					
Owners of the parent		0.8		-3.2	
Non-controlling interests		0.0		0.0	
Basic earnings per share based on the profit for the period (in EUR) attributable to owners of the parent	(23)	0.09		-0.39	
Diluted earnings per share based on the profit for the period (in EUR) attributable to owners of the parent	(23)	0.09		-0.39	

Consolidated Statement of Comprehensive Income

for the period from January 1 to Dezember 31, 2018 and 2017

	Note	2018 EUR million	2017 EUR million
Profit or loss for the period		**0.8**	**-3.2**
Items that will never be reclassified to profit and loss:			
Actuarial gains and losses from pension commitments	(18)	-0.7	0.5
Changes in the scope of consolidation		-0.7	0.0
Items that may be reclassified to profit and loss:			
Exchange rate differences in the fiscal year	(21)	0.1	-0.6
Total income and expense recognized directly in other comprehensive income		-1.3	-0.1
Total comprehensive income		**-0.5**	**-3.3**

Thereof attributable to:			
Owners of the parent		-0.5	-3.2
Non-controlling interests		0.0	-0.1

Consolidated Statement of Changes in Equity

for the period from January 1 to Dezember 31, 2018 and 2017

	Equity Attributable to owners of the Parent		
			Reserves
	Subscribed Capital	Capital Reserves	Currency Translation Reserves
	EUR million	EUR million	EUR million
Note	(21)		(21)
As of January 1, 2017	**8.1**	**10.4**	**4.1**
Profit or loss for the period	0.0	0.0	0.0
Other comprehensive income	**0.0**	**0.0**	**-0.6**
Total comprehensive income	**0.0**	**0.0**	**-0.6**
Cash capital increase	0.8	9.4	0.0
As of December 31, 2017	**8.9**	**19.8**	**3.5**
As of January 1, 2018	**8.9**	**19.8**	**3.5**
Profit or loss for the period	0.0	0.0	0.0
Other comprehensive income	**0.0**	**0.0**	**0.1**
Changes in the scope of consolidation	0.0	0.0	0.0
Total comprehensive income	**0.0**	**0.0**	**0.1**
As of December 31, 2018	**8.9**	**19.8**	**3.6**

Equity Attributable to owners of the Parent			Non-Controlling Interests	Equity
Loss Carryforward				
Actual Gains and Losses from Pension Commitments	Other Reserves	Total		
EUR million	EUR million	EUR million	EUR million	EUR million
(18)			(21)	
-5.7	**-4.4**	**12.5**	**0.8**	**13.3**
0.0	-3.2	-3.2	0.0	-3.2
0.5	**0.1**	**0.0**	**-0.1**	**-0.1**
0.5	**-3.1**	**-3.2**	**-0.1**	**-3.3**
0.0	0.0	10.2	0.0	10.2
-5.2	**-7.5**	**19.5**	**0.7**	**20.2**
-5.2	**-7.5**	**19.5**	**0.7**	**20.2**
0.0	0.8	0.8	0.0	0.8
-0.7	**0.0**	**-0.6**	**0.0**	**-0.6**
0.0	0.0	0.0	-0.7	-0.7
-0.7	**0.8**	**0.2**	**-0.7**	**-0.5**
-5.9	**-6.7**	**19.7**	**0.0**	**19.7**

Consolidated Cash Flow Statement

for the period from January 1 to Dezember 31, 2018 and 2017

	Note	2018 EUR million		2017 EUR million	
Cash flows from operating activities					
Profit or loss for the period			0.8		-3.2
Adjustment to reconcile profit or loss for the period to net cash flow					
Amortization, depreciation and impairment of non-current assets	(11/12)	2.3		2.0	
Contribution to the pension provisions	(18)	0.4		0.1	
Profit/loss from disposal of non-current assets		0.1		0.0	
Other non-cash expenses/income		-0.7		0.9	
Net finance costs	(31)	2.0		1.6	
Net tax expense	(22)	4.0		0.4	
Change in trade receivables		-3.9		5.4	
Change in construction contracts		-8.1		-25.2	
Change in other receivables and other assets		-1.8		1.3	
Change in inventories		0.8		4.3	
Change in trade payables		8.4		-0.1	
Change in other liabilities		-0.7		1.4	
Change in prepayments		0.2		-0.6	
Change in provisions from restructuring measures		-0.4		-0.9	
Change in further provisions		-0.1		-1.2	
Interest paid	(31)	-0.6		-0.3	
Interest received	(31)	0.0		0.1	
Income tax paid	(22)	-0.2	1.7	-0.1	-10.9
Net cash from/used in operating activities			**2.5**		**-14.1**

	Note	2018 EUR million		2017 EUR million	
Cash flows from investing activities					
Cash paid for investments in development projects	(11)	-3.6		-1.7	
Cash paid for investments in other intangible assets and property, plant and equipment	(11/12)	-0.8		-0.5	
Net cash from/used in investing activities			-4.4		-2.2
Cash flows from financing activities					
Cash used to pay bond interest	(16)	-0.8		-0.4	
Cash received/used on the issuance of loans	(17)	0.0		3.8	
Cash received from capital increases		0.0		10.2	
Cash used for prepayment of loan	(17)	-4.1		0.0	
Cash used to pay loan interest		-0.2		-0.3	
Cash used to pay leasing liabilities		-0.7		0.0	
Cash received/used on financial assets subject to restrictions on disposal		-5.5		12.2	
Net cash from/used in financing activities			-11.3		25.5
Cash and cash equivalents at the beginning of the reporting period			**-13.2**		**9.2**
Effect of exchange rate changes			0.2		-0.5
Changes in the scope of consolidation			-0.7		0.0
Cash and cash equivalents at the beginning of the reporting period			**27.2**		**18.5**
Cash and cash equivalents at the end of the reporting period			**13.5**		**27.2**

SINGULUS TECHNOLOGIES GROUP

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS AS OF DECEMBER 31, 2018

1

General

The consolidated financial statements present the operations of SINGULUS TECHNOLOGIES AG, Hanauer Landstrasse 103, 63796 Kahl am Main (hereinafter also referred to as "SINGULUS TECHNOLOGIES AG") and its subsidiaries (hereinafter also referred to as "SINGULUS TECHNOLOGIES," the "Company" or the "Group").

The Company is registered under HRB 6649 in the commercial register at the local court (Amtsgericht) of Aschaffenburg.

The consolidated financial statements were prepared in euros (EUR). Unless stated otherwise, all figures are presented in millions of euros (EUR m). Rounding differences may occur due to the presentation in millions of euros.

The consolidated financial statements of SINGULUS TECHNOLOGIES AG were prepared in accordance with the International Financial Reporting Standards ("IFRSs") as adopted in the European Union ("EU") and the additional requirements of section 315e (1) of the German Commercial Code (Handelsgesetzbuch, "HGB").

The term "IFRSs" includes all International Financial Reporting Standards and International Accounting Standards ("IASs") with mandatory application as of the reporting date. All interpretations of the International Financial Reporting Standards Interpretations Committee ("IFRS IC") – formerly the Standing Interpretations Committee ("SIC") and the International Financial Reporting Interpretations Committee ("IFRIC") – that were mandatory for fiscal year 2018 were likewise applied.

In order to improve the clarity and meaningfulness of the consolidated financial statements, individual items are aggregated in the balance sheet and income statement and presented separately and in the notes to the financial statements.

At the extraordinary shareholders' meeting on November 29, 2017, the Executive Board disclosed in accordance with section 92 (1) of the German Stock Corporation Act (Aktiengesetz, "AktG") that half of its share capital had been eroded. Equity reported in the Company's annual financial statements in accordance with HGB amounted to EUR -29,9 million (not covered by equity) as of the balance sheet date. Reported equity continued to decline during the period. The equipment for the first factory for thin-film solar cells in China will largely have undergone final acceptance in the months to come, thus strengthening equity in accordance with HGB again. The Executive Board does not expect the equity base to experience a long-term recovery until in the coming fiscal year. However, it is currently believed that the Company will have sufficient cash funds available during this period to secure its business activities and has therefore prepared its accounts on a going concern basis. The going concern assumption is based on the assumption that scheduled projects will proceed as planned and that the agreed prepayments will be received. Moreover, cash collateral for guarantees is expected to be reduced.

For information relating to the existence of material uncertainty which may raise significant doubt as to the Company's ability to continue operating as a going concern and risks to the Company's continued existence within the meaning of section 322 (2) sentence 3 HGB, please refer to the section entitled "Report on risks and opportunities" in the combined management report of the SINGULUS TECHNOLOGIES Group and SINGULUS TECHNOLOGIES AG.

2

Business activities

SINGULUS TECHNOLOGIES develops and builds machinery for effective and resource-efficient production processes. Areas of application include vacuum thin-film deposition and plasma deposition, as well as wet-chemical processes and thermal process technologies.

SINGULUS TECHNOLOGIES applies its expertise in the areas of automation and process technology to all machines, processes and applications. Additional fields of activity are being tapped into aside from the solar, semiconductor and optical disc areas of application.

For more information, please see the comments on segment reporting in Note 5.

3

New accounting standards

New accounting standards and interpretations requiring application

In previous years, the International Accounting Standards Board ("IASB") and the International Financial Reporting Standards Interpretations Committee ("IFRS IC") issued the following new accounting standards or interpretations. These standards/interpretations have been endorsed by the EU as part of the endorsement project and are mandatory for fiscal year 2018.

- IFRS 9 – "Financial Instruments"
- IFRS 15 – "Revenue from Contracts with Customers"
- Amendments to IFRS 2 – "Classification and Measurement of Share-based Payment Transactions"
- Amendments to IFRS 4 – "Applying IFRS 9 'Financial Instruments' with IFRS 4 'Insurance Contracts'"
- Amendments to IFRS 15 – "Clarifications to IFRS 15"
- Amendments to IAS 40 – "Transfers of Investment Property"
- IFRIC 22 – "Foreign Currency Transactions and Advance Consideration"
- Amendments to IFRS 1 and IAS 28

The provisions which are relevant for the SINGULUS TECHNOLOGIES Group as well as their impact on these consolidated financial statements are outlined below:

- Amendments to IFRS 9 – "Financial Instruments"

As of January 1, 2018 the Group applied IFRS 9 for the first time.
Due to the transition methods selected by the Group when applying these standards, the comparative information contained in these financial statements were not restated to comply with the requirements of the new standards.
The effects from the first-time application of the standard were primarily attributable to the increase in impairment charges for financial assets.

IFRS 9 sets out the requirements for recognizing and measuring financial assets, financial liabilities and certain agreements to purchase or sell non-financial contracts. This standard replaces IAS 39 "Financial Instruments: Recognition and Measurement".
In addition, the Group has applied subsequent amendments to IFRS 7 "Financial Instruments: Disclosures" to the disclosures in the notes for fiscal year 2018. These amendments were not applied to the comparative information.
The effects from the first-time application of IFRS 9 resulted in adjustments to the opening balance sheet of less than EUR 0.1 million.

i. Classification and measurement of financial assets and liabilities

IFRS 9 sets out three general categories into which financial assets are classified: at amortized cost, at fair value through other comprehensive income (FVOCI) and at fair value through profit or loss (FVTPL). In accordance with IFRS 9, financial assets are classified according to the entity's business model for managing financial assets and cash flow characteristics. IFRS 9 eliminates the categories previously used under IAS 39: held to maturity, loans and receivables, and available for sale. In accordance with IFRS 9, derivatives which are embedded in contracts with a host that is an asset within the scope of the standard are never accounted for separately. Instead, the hybrid contract is assessed as a whole for the purposes of classification.
IFRS 9 largely retains the existing requirements of IAS 39 for the classification of financial liabilities.
The first-time application of IFRS 9 did not result in any material effects on the Group's accounting methods for financial liabilities and derivative financial instruments.
The table below and the accompanying disclosures present the original measurement category in accordance with IAS 39 and the new measurement category in accordance with IFRS 9 as of January 1, 2018 for each category of financial assets and financial liabilities recognized by the Group.
The effects of the first-time application of IFRS 9 on the carrying amounts of the financial assets as of January 1, 2018 resulted exclusively from the new requirements for recognizing impairments, although these effects amount to less than EUR 0.1 million.

EUR million	Original measurement category in accordance with IAS 39	New measurement category in accordance with IFRS 9	Original carrying amount in accordance with IAS 39	New carrying amount in accordance with IFRS 9
Financial assets				
Cash and cash equivalents	Loans and receivables	Amortized cost	27.2	27.2
Financial assets subject to restrictions on disposal	Loans and receivables	Amortized cost	8.7	8.7
Trade receivables	Loans and receivables	Amortized cost	2.3	2.3
Receivables from construction contracts (Contract assets following IFRS 15)	Loans and receivables	Amortized cost	9.5	9.5
Total financial assets			**47.7**	**47.7**

EUR million	Original measurement category in accordance with IAS 39	New measurement category in accordance with IFRS 9	Original carrying amount in accordance with IAS 39	New carrying amount in accordance with IFRS 9
Financial liabilities				
Bond	Financial liabilities measured at amortized cost	Amortized cost	12.8	12.8
Liabilities from loans	Financial liabilities measured at amortized cost	Amortized cost	4.0	4.0
Derivative financial instruments Hedging derivatives	Hedging derivatives	Fair value – hedging instrument	0.0	0.0
Trade payables	Other financial liabilities	Amortized cost	10.1	10.1
Total financial liabilities			**26.9**	**26.9**

a) **Cash and cash equivalents and financial assets subject to restrictions on disposal,** which had been classified under IAS 39 as loans and receivables, are recognized at amortized cost in accordance with IFRS 9. The expected write-down on cash and cash equivalents and financial assets subject to restrictions on disposal was calculated on the basis of expected losses within the respective maturity bands. Due to the availability of demand deposits at short notice and the outstanding creditworthiness of the credit institutions, it is assumed that cash and cash equivalents are exposed to low risk of default. As a consequence, the application of the impairment rules set out in IFRS 9 as of December 31, 2018 will result in a slight default risk. The Finance department monitors changes in the default risk through quarterly observation of published external credit ratings. To the extent that the potential impairment losses remain small, the Company will opt not to recognize a write-down as of the transition date and for subsequent periods.

b) **Receivables from construction contracts (Contract assets following IFRS 15),** which had been classified under IAS 39 as loans and receivables, are recognized at amortized cost in accordance with IFRS 9. Receivables from construction contracts reflect the Group's receivables from the machinery business. These are generally collateralized through letters of credit. Unsecured receivables are recognized using the historical default rates for each customer. The resulting effects on receivables from construction contracts were immaterial as of January 1, 2018.

c) **Trade receivables,** which had been classified under IAS 39 as loans and receivables, are recognized at amortized cost in accordance with IFRS 9. An increase in allowances on these receivables by less than EUR 0.1 million was recognized in retained earnings upon transition to IFRS 9 as of January 1, 2018. No additional trade receivables were recognized as of January 1, 2018 in the course of the first-time application of IFRS 15.

d) **Prepayments,** which had been classified under IAS 39 as loans and receivables, are measured at amortized cost in accordance with IFRS 9. Prepayments to suppliers have been analyzed with respect to supplier creditworthiness. The resulting effects as of January 1, 2018 were immaterial.

ii. Impairment of financial assets
IIFRS 9 replaces the "incurred loss" model of IAS 39 with the "expected credit loss" ("ECL") model. As a result, credit losses are recognized earlier under IFRS 9 than under IAS 39. The new impairment model is applicable to financial assets measured at amortized cost and debt instruments measured at FVOCI, but not to equity investments held as long-term financial assets.

Impairments in respect of assets falling under the scope of the impairment model set out in IFRS 9 are likely to increase in amount and volatility. The Group has determined that the additional impairment charges resulting from the application of the impairment requirements of IFRS 9 as of January 1, 2018 will be as follows:

	Carrying amount EUR k	Estimated loss rate (weighted average)	Estimated write-down EUR k
Not overdue	746	0.00 %	0.0
1-30 days overdue	295	0.00 %	0.0
31-60 days overdue	86	0.63 %	0.5
61-90 days overdue	12	0.59 %	0.1
91-180 days overdue	10	0.00 %	0.0
More than 180 days overdue	21	28.19 %	6.0
Total	**1,170**		**6.6**

The estimated expected write-downs were calculated on the basis of experience with actual credit defaults over the past five years. The Group has calculated the expected credit defaults separately for individual maturity bands.

iii. Hedge accounting
The Group has opted to apply the new general hedge accounting model set out in IFRS 9. That model requires that the Group ensure that the hedging relationships be concluded in line with the Group's risk management strategy and objectives and that they apply a more qualitative and future-facing approach for assessing hedge effectiveness.
The Group uses forward exchange contracts to hedge against fluctuations in cash flows in connection with changes in exchange rates affecting foreign-denominated receivables. The Group designates only the change in the fair value of the spot elements of the foreign exchange contracts as the hedging instrument in cash flow hedges. The effective portion of the change in the fair value of the hedging instrument is reported as a separate item of equity in the reserve for cash flow hedges.

The first-time application of IFRS 9 did not result in any material effects on the Group's basic or diluted earnings per share in the fiscal year ended December 31, 2018.

→ Amendments to IFRS 15 – "Revenue from Contracts with Customers"

IFRS 15 establishes a comprehensive framework for determining whether and when to recognize revenue, and how much revenue to recognize. It replaces the existing standards on recognizing revenue, including IAS 18 "Revenue", IAS 11 "Construction Contracts" and IFRIC 13 "Customer Loyalty Programs". In accordance with IFRS 15, revenue is recognized when a customer obtains control over goods or services.
Judgment is required when determining whether control is obtained at a point in time or over time.
The Group applied IFRS 15 for the first time as of January 1, 2018.

Due to the transition methods selected by the Group when applying these standards, the comparative information contained in these financial statements were not restated to comply with the requirements of the new standards.
The effects from the first-time application of the standard are attributable to the delay in the recognition of revenue due to potential contractual penalties relating to deliveries. The Company applied the modified retrospective method to transition to IFRS 15, whereby cumulative adjustments were recognized as of January 1, 2018. As a result, the comparative information for 2017 was not adjusted and is thus presented as previously in accordance with IAS 18, IAS 11 and the relevant interpretations. Moreover, the disclosure requirements set out in IFRS 15 are generally not applied to comparative information.

The effects on retained earnings and non-controlling interests from the transition to IFRS 15 as of January 1, 2018 amounted to less than EUR 0.1 million.

The tables below summarize the effects of IFRS 15 on the relevant items of the consolidated balance sheet as of December 31, 2018 and the income statement for the 2018 fiscal year.

Effects on the consolidated balance sheet

December 31, 2018 **EUR million**	**Note**	**As reported**	**Adjustments**	**Amounts reported absent application of IFRS 15**
Assets				
Receivables from construction contracts (Contract assets following IFRS 15)	8	20.4	0.1	20.5
Other		83.7	-	83.7
Total assets		104.1	0.1	104.2
Liabilities				
Liabilities from construction contracts (Contract liabilities following IFRS 15)	8	14.8	-0.2	14.6
Other		69.6	-	69.6
Total liabilities		84.4	-0.2	84.2
Equity				
Retained earnings		-12.6	0.3	-12.3
Other		32.3	-	32.3
Total equity		19.7	0.3	20.0
Total assets, liabilities and equity		104.1	0.1	104.2

Effects on the income statement

January 1 to December 31, 2018 **EUR million**	**Note**	**As reported**	**Adjustments**	**Amounts reported absent application of IFRS 15**
Revenue	5	127.5	0.3	127.8
Gross profit on sales		35.4	0.3	35.7
Operating result (EBIT)		6.8	0.3	7.1
Profit or loss for the period		0.8	0.3	1.1

The effects on the consolidated balance sheet and income statement were attributable to the temporary delay in revenue recognition due to potential contractual penalties relating to construction contracts. The resulting shift in revenue brought about a reduction in the contract asset balances and an increase in the contract liabilities balances. There was no material effect on the consolidated cash flow statement or statement of comprehensive income for fiscal year 2018.

- Amendments to IFRS 2 – "Classification and Measurement of Share-based Payment Transactions"

The amendments address accounting for cash-settled share-based payment transactions that include a performance condition, the classification of share-based payment transactions with net settlement features for tax withholdings, and the accounting for modifications of share-based payment transactions from cash-settled to equity-settled.

The amendments have no significant impact on the consolidated financial statements.

- IFRIC 22 – "Foreign Currency Transactions and Advance Consideration"

IFRIC 22 addresses an application issue relating to IAS 21 – "The Effects of Changes in Foreign Exchange Rates". It clarifies the date of the exchange rate used for translating transactions that are denominated in a foreign currency in circumstances in which consideration is received or paid in advance. The interpretation stipulates that the date of initial recognition of the asset or liability resulting from the prepayment is the deciding factor in determining the exchange rate for the underlying asset, income or expense.

There was no significant impact on the consolidated financial statements.

New and revised accounting standards and interpretations that do not yet require application

In addition to the new accounting standards and interpretations published by the IASB and IFRS IC requiring application, other standards and interpretations have also been published, some of which have already been endorsed by the EU but will only become mandatory at a later date. The following standards will be applied on the date on which they became mandatory. Use was not made of the option to adopt the standards voluntarily at an earlier date in these financial statements. Unless otherwise indicated, the effects on the SINGULUS TECHNOLOGIES consolidated financial statements are currently being examined.

The new and revised standards and interpretations listed below have already been endorsed by the EU:

- IFRS 16 – "Leases"
- Amendments to IFRS 9 – "Prepayment Features with Negative Compensation"
- IFRIC 23 – "Uncertainty over Income Tax Treatments"
- Amendments to IAS 28 - Non-current Interests in Associates and Joint Ventures
- Amendment to IAS 19 - Plan amendment, reduction or settlement

The following new and revised standards have not yet been endorsed by the EU:

- IFRS 17 – "Insurance Contracts"
- Amendments to IFRS 3 – "Definition of a Business"
- Amendments to IAS 1 and IAS 8 – "Definition of Material"
- Amendments to IFRS 2015 - 2017 - Amendments to IFRS 3, IFRS 11, IAS 12 and IAS 23
- Amendments to IFRS 10 and IAS 28 – "Sale or Contribution of Assets between an Investor and its Associate or Joint Venture"
- Conceptual Framework – "Amendments to References to the Conceptual Framework in IFRS Standards"

Only those Standards and Interpretations having a material effect on the SINGULUS TECHNOLOGIES Group's net assets, financial position and results of operations are explicitly listed below.

- IFRS 16 – "Leases"

  The Group is required to apply IFRS 16 – "Leases" as of January 1, 2019. The Group has assessed the estimated effects of the first-time application of IFRS 16 on the consolidated financial statements.

  IFRS 16 introduces a single accounting model by which leases must be recognized in the balance sheet of the lessee. Lessees recognize a right-of-use asset (representing the right to use the underlying asset) and a lease liability (representing the obligation to make lease payments). There are practical expedients for short-term leases and leases where the underlying asset has a low value.

  IFRS 16 replaces the existing rules for lease accounting, including those set out in IAS 17 – "Leases", IFRIC 4 – "Determining whether an Arrangement Contains a Lease", SIC-15 – "Operating Leases – Incentives" and SIC-27 – "Evaluating the Substance of Transactions Involving the Legal Form of a Lease".

For the first time, the Group will recognize assets and liabilities for its operating leases, including the lease for the branch office building in Fürstenfeldbruck and motor vehicle leases. The nature of the expenses in connection with these leases will change, since the Group now recognizes amortization for right-of-use assets and interest expenses relating to the lease liabilities. Previously, the Group had recognized operating leases on a straight-line basis over the term of the lease and had recognized assets and liabilities only in the amount by which there was a timing difference between the actual lease payments and the recognized expenses.

In addition, the Group will no longer recognize provisions for operating leases, which are estimated to be onerous, as discussed in Note 20. Instead, the Group will factor the payments due in relation to the lease into the lease liability.

This is not expected to have any material impact on the Group's finance leases.

IFRS 16 provides a simplified application option for leases with a total term of less than 12 months and leases for assets valued at less than EUR 5,000. As previously, the SINGULUS TECHNOLOGIES Group does not recognize any such leases.

Based on the currently available information, the Group estimates that it will be required to recognize additional lease liabilities amounting to EUR 6.9 million as of January 1, 2019. The Group has opted to apply the modified retrospective approach, meaning that it has not retrospectively restated prior-year comparative figures in the consolidated financial statements.

The Group intends to apply the practical expedient permitting it to retain the definition of a lease. This means that the Group will apply IFRS 16 to all leases entered into prior to January 1, 2019 which were identified as leases in accordance with IAS 17 and IFRIC 4.

→ Amendments to IFRS 9 – "Prepayment Features with Negative Compensation"

The amendments relate to a limited change in the assessment criteria of relevance to the classification of financial assets. Financial assets containing a prepayment feature with negative compensation may be recognized at amortized cost or at fair value through other comprehensive income rather than at fair value through profit or loss, provided they meet certain criteria.

The amendments are applicable for the first time as of January 1, 2019.

At present, the Group does not expect this to have any material impact on the consolidated financial statements.

→ Amendments to IFRIC 23 – "Uncertainty over Income Tax Treatments"

The tax treatment of such transactions may depend on the future recognition by the tax office or the financial courts. IAS 12 – "Income Taxes" determines how current and deferred taxes must be accounted for. IFRIC 23 supplements the requirements of IAS 12 with respect to the recognition of uncertainties over the income tax treatment of certain transactions.
The interpretation is applicable for the first time in reporting periods beginning on or after January 1, 2019. Earlier application is permitted.
At present, the Group does not expect this to have any material impact on the consolidated financial statements.

The following new and revised standards have not yet been endorsed by the EU:

→ Amendment to IFRS 3 – "Definition of a Business"
In the amendment, the IASB clarifies that to be considered a business, an acquired set of activities and assets must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs. The definition of outputs is furthermore based on goods and services provided to customers; the reference to an ability to reduce costs is removed. In addition, the new provisions also include an optional "concentration test" that is intended to permit a simplified identification of a business. Subject to an adoption into EU law, the changes are applicable to business combinations for which the acquisition date is on or after January 1, 2020. Earlier application is permitted.
At present, the Group does not expect this to have any material impact on the consolidated financial statements.

4

Significant accounting policies

4.1 Basis of consolidation and consolidation principles

The consolidated financial statements include the financial statements of SINGULUS TECHNOLOGIES AG and its subsidiaries as of December 31 of a given fiscal year.

Subsidiaries are fully consolidated as of the date of their acquisition, i.e., the date on which the Group obtains control. Consolidation ends as soon as the parent ceases to have control.

The financial statements of the subsidiaries are prepared as of the same balance sheet date as that of the parent, using consistent accounting policies.

All intragroup balances, income and expenses and unrealized gains and losses resulting from intragroup transactions are eliminated in full.

In addition to SINGULUS TECHNOLOGIES AG, the consolidated financial statements include all entities under the legal and/or de facto control of the Company.

The following subsidiaries are included in the consolidated financial statements:

- SINGULUS TECHNOLOGIES Inc., Windsor, USA
- SINGULUS TECHNOLOGIES MOCVD Inc., Windsor, USA
- SINGULUS TECHNOLOGIES ASIA PACIFIC Pte. Ltd., Singapore
- SINGULUS TECHNOLOGIES LATIN AMERICA Ltda., São Paulo, Brazil
- SINGULUS TECHNOLOGIES IBERICA S.L., Sant Cugat del Vallés, Spain
- SINGULUS TECHNOLOGIES FRANCE s.a.r.l., Sausheim, France
- SINGULUS TECHNOLOGIES ITALIA s.r.l., Senigallia (Ancona), Italy
- SINGULUS TECHNOLOGIES TAIWAN Limited, Taipei, Taiwan
- SINGULUS TECHNOLOGIES SHANGHAI Co. Ltd., Shanghai, China
- HamaTech USA Inc., Austin, USA
- STEAG HamaTech Asia Ltd., Hong Kong, China
- SINGULUS CIS Solar Tec GmbH, Kahl am Main, Germany
- SINGULUS New Heterojunction Technologies GmbH, Kahl am Main, Germany

The companies SINGULUS TECHNOLOGIES ITALIA s.r.l., and SINGULUS TECHNOLOGIES IBERICA S.L. were in liquidation as of December 31, 2018. The deconsolidation is anticipated to be made in each case upon conclusion of the liquidation during the 2019 fiscal year. The liquidation of SINGULUS MANUFACTURING GUANGZHOU Ltd. was completed with effect from September 28, 2018.

During the reporting period, the newly formed distribution company SINGULUS TECHNOLOGIES SHANGHAI Co. Ltd. was included in the basis of consolidation. SINGULUS TECHNOLOGIES AG holds 100 % of shares in the newly formed company, which was therefore fully consolidated. The share of equity and profit or loss attributable to minority interests is reported separately in the balance sheet and income statement (non-controlling interests).

The profit or loss of acquired entities is recognized in the consolidated financial statements from the date of acquisition.

For more information, please refer to Note 35.

4.2 Foreign currency translation

The financial statements of the foreign subsidiaries are prepared in the currency in which the majority of transactions are concluded (functional currency). The functional currency is the relevant local currency. For inclusion of the foreign financial statements in the Group's reporting currency, the balance sheet items are translated using the closing rate on the balance sheet date and income statement items are translated using the average rate for the fiscal year. The equity of equity investments is translated using the historical rate. Currency translation differences arising from the application of different exchange rates are recognized in other comprehensive income.

Foreign currency monetary items are translated using the closing rate. Exchange differences are recognized as income or expenses in the period in which they occur.

4.3 Management's use of judgment and main sources of estimating uncertainties

The preparation of consolidated financial statements in accordance with IFRSs requires the use of estimates and assumptions by management which have an effect on the amounts of the assets, liabilities, income, expenses and contingent liabilities reported. Assumptions and estimates generally relate to the uniform determination of useful lives of assets within the Group, impairment of assets, the measurement of provisions, the collectability of receivables, the recognition of realizable residual values for inventories and the probability of future tax benefits. The actual values may in some cases differ from the assumptions and estimates made. Any changes are recognized in profit or loss as and when better information is available.

In the Group, the use of judgment and estimating uncertainties affect the following areas in particular:

4.3.1 Impairment of assets

The Group determines whether goodwill is impaired at least once a year. Moreover, if there is any indication that an asset may be impaired, that asset is tested for impairment by estimating its recoverable amount. If it is not possible to estimate the recoverable amount of the individual asset, the Group determines the recoverable amount of the cash-generating unit to which the asset is allocated.

This requires an estimate of the recoverable amount of the assets or cash-generating units to which the goodwill or asset is allocated. Please also refer to the comments under 4.16 "Impairment of assets".

4.3.2 Deferred tax assets

Deferred tax assets are recognized for all temporary differences and for all unused tax loss carryforwards to the extent that it is probable that taxable profit will be available against which the tax assets can be utilized. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the probable timing and level of future taxable profits together with future tax planning strategies. Please also refer to the comments in Note 22.

4.3.3 Share-based payment

The Group measures the cost of equity-settled transactions with employees by reference to the fair value of the equity instruments at the date on which they are granted. In order to estimate fair value, an appropriate measurement approach must be determined for grants of equity instruments; this approach depends on the terms and conditions of the grant. Furthermore, the appropriate data to be used in this measurement approach, including the anticipated option term, volatility, dividend yield and the corresponding assumptions, must be determined. The assumptions and approaches used are disclosed in Note 15.

4.3.4 Pension obligations

The cost of defined benefit pension plans is determined using actuarial calculations. The actuarial valuation involves making assumptions about discount rates, future salary increases, mortality rates and future pension increases. As these plans are of a long-term nature, such estimates are highly uncertain. Please also refer to the comments in Note 18.

4.3.5 Development costs

Development costs are capitalized in accordance with the accounting policies described under "Research and development costs" further below in this section. In order to test for impairment, the management must make assumptions regarding the amount of estimated future cash flows from assets, the discount rates to be applied, and the timing of the future cash flows expected to be generated by the assets. Please also refer to the comments in Note 11.

4.3.6 Customer lists

In order to estimate the fair values of customer lists, assumptions must be made regarding the future free cash flows, the discount rates to be applied and the timing of future cash flows expected to be generated by these assets.

4.3.7 Leases

The Group has entered into lease agreements. The test to determine whether an agreement constitutes a lease is performed on the basis of the substance of the agreement on the date it was concluded and requires an estimate of the opportunities and risks being transferred in connection with the leased asset. Please also refer to the comments in Note 32.

4.3.8 Construction contracts

In order to evaluate the stage of completion of customer-specific construction contracts, the costs to complete the order must be estimated. Please also refer to the comments made below under 4.4 "Revenue recognition" and to the comments in Note 8.

4.3.9 Provisions

Estimating future expenses is fraught with uncertainty. Estimates relate in particular to restructuring measures which extend over a longer period. When determining the provision for expected losses, it was necessary to make estimates concerning the capacity utilization of the building. Please refer to our comments under Note 20.

4.4 Revenue recognition

The Group recognizes revenue when it satisfies a performance obligation by transferring a specified asset to a customer. An asset is deemed to have been transferred once the customer obtains control over that asset. Depending on the transfer of control, revenue is recognized either at a point in time or over time in the amount that reflects the consideration to which the Company expects to be entitled. Revenue relating to the sale of equipment in the Optical Disc operating segment is recognized when a contract has entered into effect, the delivery has been made, and, if required, the equipment has been installed for and accepted by the customer and payment is reasonably certain. Revenue relating to services is recognized when the service has been rendered, a price has been negotiated and is determinable and payment thereof is probable.

Given that the Solar and Semiconductor operating segments do not manufacture products in serial batches but rather to individual customer order, revenue is recognized over time. The relevant stage of completion is calculated using the input-oriented cost-to-cost method. The progress of the performance achieved can be estimated most accurately by the chosen method. The costs incurred to date are calculated as a proportion of the estimated total costs. Contracts are recognized on the balance sheet either as receivables from construction contracts (assets) or as liabilities from construction contracts if the prepayments received exceed the cumulative work performed. If it is probable that the total contract costs exceed the total contract revenue, the expected loss is immediately expensed.

Revenue from the sale of individual components of equipment or replacement parts is recognized at a point in time when control is transferred in accordance with the underlying agreements.

Revenue is recognized net of VAT, returns, sales deductions, credits and direct selling costs (primarily commissions).

For warranty claims, percentages are derived from experience for each product type and range between 2.75 % and 4.00 %.

The typical payment terms for the sale of equipment call for a significant down payment at the commencement of production. Further payment terms are contractually defined and depend on the degree of completion, calling for a final payment upon transfer of the specified equipment.

No material financing components exist. Typically, payment targets of between 30 and 60 days net are agreed for the replacement parts and service business. In addition, customer-specific advance payments are also agreed.

4.5 Goodwill

In all business combinations, the goodwill acquired was initially measured at cost, this being the excess of the cost of the business combination over the acquirer's interest in the fair value of the identifiable assets acquired and the liabilities and contingent liabilities assumed (partial goodwill method). After the effective date of the revised IFRS 3 and IAS 27, there is an option to recognize the total amount of the goodwill acquired, including goodwill attributable to non-controlling interests (full goodwill method), for all business combinations made on or after July 1, 2009. After initial recognition, goodwill is measured at cost less any accumulated impairment losses.

The recognized goodwill is not amortized. It is tested for impairment annually or whenever there are indications of impairment. Impairment testing takes place at the cash-generating unit level. If the recoverable amount of the relevant unit has fallen below the carrying amount of the unit, an impairment loss is recognized in accordance with IAS 36. Reversals of impairment losses are prohibited.

4.6 Research and development costs

Research costs are expensed in the period in which they are incurred. Pursuant to IAS 38, development costs are recognized as intangible assets at cost, provided that the conditions of IAS 38.57 are fulfilled. Cost comprises all costs directly attributable to the development process as well as appropriate shares of development-related overheads. Development costs are amortized using the straight-line method over the expected useful life of the developed products (3 to 5 years).

Amortization and impairment of capitalized development costs are recognized in the functional area to which the respective assets are allocated. Impairment losses on development costs are disclosed under "Restructuring expenses" if production of the relevant products is discontinued at the respective locations.

Government subsidies received for research and development projects are offset against the research and development costs in the income statement.

4.7 Other intangible assets

Intangible assets acquired separately are recognized at cost. Intangible assets acquired in a business combination are recognized at fair value as of the date of acquisition. Internally generated intangible assets are recognized if the criteria for recognition are met. If the criteria are not met, the costs related to such intangible assets are recognized as expenses in the period in which they are incurred. Intangible assets with finite useful lives are amortized over their useful lives. Intangible assets with indefinite useful lives are not amortized, and are instead tested for impairment at least once a year. No intangible assets with indefinite useful lives were recognized in the reporting period.

The useful lives of intangible assets with finite useful lives are:

→ Software	3 years
→ Patents	8 years
→ Technology	5 to 8 years
→ Customer lists	10 to 11 years

4.8 Cash and cash equivalents

Cash and cash equivalents comprise monetary investments with a remaining maturity of up to three months at the time of acquisition as well as bills of exchange with an original maturity of up to three months.

Financial assets subject to restrictions on disposal are presented separately in the balance sheet. These financial assets relate to the Company's financing transactions and are included in the consolidated cash flow statement as cash flows from financing activities.

4.9 Receivables

Trade invoices are issued mainly in euros and are recognized as receivables at the fair value of the goods supplied or services rendered.

If there is an objective indication that receivables carried at amortized cost are impaired, 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 (excluding expected future credit losses that have not yet been incurred) discounted at the financial asset's original effective interest rate (i.e., the effective interest rate determined on initial recognition). The carrying amount of the asset is reduced through the use of an allowance account. The impairment loss is recognized directly in profit or loss. For trade receivables, if there are objective indications that not all due amounts will be collected pursuant to the original payment terms (such as probability of insolvency or significant financial difficulties of the debtor), an impairment loss is charged. This only applies where there is no collateral (e.g., credit insurance policies, etc.). Receivables are derecognized when they are classified as uncollectible.

If, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognized, the previously recognized impairment loss is reversed, with the amount of the reversal recognized in profit or loss. However, the reversal must not result in the carrying amount of the asset exceeding what the amortized cost would have been at the date the impairment is reversed if the impairment had not been recognized.

Under the expected credit loss model set out in IFRS 9, portfolio loss allowances are recognized for trade receivables for which no individual loss allowance is recognized; the portfolio loss allowances are recognized based on the assets' statistical probability of default.

When trade receivables are sold under factoring arrangements and all risks and rewards of the asset are transferred to the buyer, the receivables are derecognized. In this connection, please refer to the comments under 4.11 "Financial assets and liabilities".

For details on the recognition of foreign currency receivables and the related hedging transactions, please see our comments under 4.12 "Hedge accounting" and 4.2 "Foreign currency translation".

4.10 Inventories

Inventories are carried at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less estimated costs of completion and the estimated costs necessary to make the sale. Raw materials, consumables and supplies including spare parts are measured using the weighted average cost formula. In the case of manufactured products, the cost includes an appropriate share of the production overheads based on normal operating capacity. Appropriate allowances are made for potential losses due to obsolete or slow-moving inventories.

The four existing allowance classes for salability are derived from past experience and range between 0 % and 80 % of depreciated cost. The four existing allowance classes for days inventory held ("DIH") also range between 0 % and 80 % of depreciated cost.

In addition, inventories are individually tested for impairment and written down by up to 100 %.

4.11 Financial assets and liabilities

Financial assets and financial liabilities are recognized in the balance sheet when an entity becomes party to the contractual provisions of the instrument. All financial assets and financial liabilities are initially recognized at fair value (plus any transaction costs).

Financial assets (particularly cash and cash equivalents and trade receivables) classified as held in order to collect contractual cash flows are recognized at amortized cost. Financial assets held for trading are measured at fair value through profit or loss. Financial assets classified as "hold and sell" are measured at fair value through other comprehensive income.

All regular way purchases and sales of financial assets are recognized on the trade date, i.e., the date that the Group commits to purchase or sell the asset. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established generally by regulation or convention in the marketplace concerned.

Financial assets which are held in order to collect contractual cash flows are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. These assets are measured reflecting discounts and premiums upon acquisition and include transaction costs and fees which are an integral part of the effective interest rate. After initial recognition, loans and receivables are measured at amortized cost using the effective interest method less any impairment. Gains and losses are recognized in profit or loss when the loans and receivables are derecognized or impaired, as well as through the amortization process.

The Group has not classified any financial assets as at fair value through profit or loss.

Financial assets and financial liabilities are measured at fair value through profit or loss if they are acquired for the purpose of disposal in the near future. Derivatives, including separately recognized embedded derivatives, are measured analogously, except for those derivatives that are financial guarantees or that have been designated as hedging instruments and are effective as such. Gains or losses from financial assets and financial liabilities held for trading are recognized in profit or loss.

For investments that are actively traded in organized financial markets, fair value is determined by the quoted market prices (bid prices) as at the reporting date. The fair value of investments that are not quoted on an active market is determined using valuation techniques. Such techniques may include using recent arm's length transactions between knowledgeable, willing independent parties, reference to the current fair value of another financial instrument which is substantially the same and discounted cash flow analysis or other valuation models.

Borrowings are initially recognized at fair value net of transaction costs directly associated with the borrowing. They are not designated as measured at fair value through profit or loss.

Derecognition

A financial asset (or, where applicable, part of a financial asset or part of a group of similar financial assets) is derecognized when one of the following conditions is met:

- The rights to receive cash flows from the asset have expired.
- The Group has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without delay to a third party under an agreement that meets the conditions in IFRS 9.3.2 ("pass-through" arrangement); and either (a) the Group has transferred substantially all the risks and rewards of the asset, or (b) the Group has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

4.12 Hedge accounting

Changes in the fair value of derivatives designated as a hedging instrument in a fair value hedge are recognized in profit or loss. The hedged item attributable to the hedged risk is also recognized at fair value, with the hedge expected to be highly effective in offsetting the changes in the fair value of the hedged item.

The derivative designated as a hedge in a cash flow hedge is carried in the balance sheet at fair value. However, changes in the value of the derivative are recorded in other comprehensive income if, and to the extent that, the hedging relationship is effective. The non-effective portion of the change in fair value continues to be recognized in profit or loss. The change in fair value recorded in equity is derecognized and recorded in profit or loss as soon as the hedged item has an effect on the income statement, or, if the hedged item is reversed, as soon as the hedged item ceases to exist.

In accordance with IFRS 9, effectiveness is tested on the basis of qualitative methods. The qualitative test must evaluate the economic relationship between the hedging instrument and the hedged item and ensure that the effects of a change in the credit risk is not so significant as to dominate the value changes of the changes in hedging instrument and the hedged item.

The Company primarily concludes forward exchange contracts to hedge foreign currency risks from trade receivables. In the case of hedges for existing receivables, the hedging transaction and the risk portion of the hedged item are carried at fair value. Changes in value are recognized in profit or loss.

In the case of cash flow hedges, the hedging instruments are likewise carried at fair value. Forward exchange contracts are measured using the ECB reference rates for spot currency and the valid forward exchange rates of the respective commercial bank for forward currency. Changes in value, provided that the hedges are deemed to be effective, are initially disclosed in other comprehensive income, taking into account any deferred taxes, and only recognized in profit or loss when the cash flow is realized.

4.13 Property, plant and equipment

Property, plant and equipment are carried at cost plus directly allocable costs, less depreciation and impairments. Finance costs relating to qualifying assets are recognized as part of the cost if the criteria set out in IAS 23 are met. Depreciation is charged on a straight-line basis over the economic lives of the assets. The economic life and depreciation method are reviewed periodically to ensure that the method and period of depreciation are consistent with the expected pattern of economic benefits from items of property, plant and equipment.

The economic lives are estimated as follows:

Buildings	25 to 30 years
Plant and machinery	2 to 10 years
Other assets	1 to 4 years

The economic useful life of the buildings at the production site Kahl am Main was reassessed and increased to 30 years. Depreciation and impairment of property, plant and equipment are recognized in the functional area to which the respective assets are allocated.

4.14 Leases

The Company is a lessee of property, plant and equipment and a lessor of replication lines. The criteria defined in IAS 17 for assessing, based on the risks and rewards, whether beneficial ownership of the leased asset is attributable to the lessor (operating lease) or the lessee (finance lease), are used to assess all the leases and account for them accordingly.

For leases in which the Group is the lessee, beneficial ownership of the leased assets is attributable to the lessor pursuant to IAS 17 if the lessor bears all the risks and rewards incidental to ownership of those assets. In this case, the leased assets are recognized in the financial statements of the lessor. The related lease expenses are expensed in full by the lessee.

4.15 Impairment of assets

At each reporting date, the Company assesses whether there is any indication that an asset may be impaired. If any such indication exists, or when annual impairment testing for an asset is mandatory, the Group makes an estimate of the asset's recoverable amount.

The recoverable amount of an asset or a cash-generating unit is the higher of its fair value less costs to sell and its value in use. The recoverable amount is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. Where the carrying amount of an asset/cash-generating unit exceeds its recoverable amount, the asset/cash-generating unit is considered impaired and is written down through profit and loss to the recoverable amount.

If a cash-generating unit is impaired, the assets in the unit are depreciated as follows:

a) First, the carrying amount of goodwill allocated to the cash-generating unit
b) then, the other assets of the unit pro rata on the basis of the carrying amount of each asset in the unit.

In assessing the recoverable amount, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. These estimates are based on a five-year plan prepared by the Company, which is derived from the three-year plan approved by the Supervisory Board and extrapolated a further two years in order to determine the recoverable amount. The perpetual annuity is determined on the basis of the fifth planning year.

For purposes of impairment testing, the goodwill acquired in business combinations is allocated to the cash-generating units, which correspond to the Group's three operating segments. Since goodwill from the acquisition of SINGULUS STANGL SOLAR also reflects the current and future business activities of SINGULUS TECHNOLOGIES AG in the Solar operating segment, this goodwill was tested for impairment at the level of the Solar operating segment.

4.15.1 Key assumptions used in the value-in-use calculation

The following parameters of the assumptions used in the value-in-use calculation of cash-generating units leave room for estimating uncertainties:

- Development of revenue and future EBIT margins
- Discount rates
- Development of the relevant sales markets
- Growth rates used to extrapolate cash flow projections beyond the forecast period

The EBIT margins are based on the revenue expectations of the management, which are in turn validated using market research forecasts for the industry. The corporate planning for planning years 2019 to 2021 (budget period) factors in both the order backlog in the Solar segment and revenue estimated on the basis of customer requests and bids which are in the process of negotiation. Overall, management expects an increase in revenue in the Solar segment significantly greater than general market growth. The Executive Board likewise expects a significant improvement in EBIT margins in connection with the planned increase in revenue. Market expectations are factored in for 2022 and 2023 in particular. This revenue planning is used to determine the cost of sales and operating expenses based on current cost structures, budgetary calculations and past experience. The overall detailed budget period extends over five years.

Discount rates – The discount rates reflect estimates made by management on risks to be attributed to specific cash-generating units. The weighted average cost of capital ("WACC") for each cash-generating unit was used as the discount rate. The underlying base interest rate was determined using the Svensson method and yields of German government bonds (Bunds) for equivalent terms. Further components include the 7.00 % market risk premium (previous year: 7.00 %), beta factors, assumptions regarding country and credit risk premiums and the debt ratio using market data.

Management assumptions on market changes and growth are very significant in calculating value in use in the Solar segment. Specifically, technological trends, the future development of these trends, and the behavior of competitors is forecast for the budget period. The Company's own industry experience, dialog with customers and published industry-specific market research forecast continuing strong growth for the solar market despite the volatility prevalent in previous years.

Growth rate estimates – The forecast growth rates outside of the budget period are based on published industry-specific market research. The growth rate in the perpetual annuity using the discounted cash flow model ("DCF model") was extrapolated at 1 % in the Solar segment.

The recoverable amount of the cash-generating units was determined based on a value-in-use calculation, using cash flow projections based on financial budgets prepared by senior management covering a five-year period. The pre-tax discount rate applied to the cash flow projections is 15.2 % (previous year: 15.3 %) in the Solar operating segment.

Working capital attributable to the cash-generating unit is taken into account in calculating its carrying amount. This working capital was negative as of the reporting date due to liabilities from construction contracts; the carrying amount of the cash-generating unit was positive.

4.15.2 Sensitivity of assumptions made

For the Solar operating segment, the value in use exceeds the carrying amount by EUR 72.2 million. A change in the assumptions could lead to a situation in which the carrying amount of the cash-generating unit exceeds the recoverable amount. This could result from revenue in each case falling more than 29.5 % short of the budgeted figures in the five-year planning period as well as in the perpetual annuity. The Solar operating segment is likely to benefit from the expected global market growth. In particular, the further development of the Chinese solar market is highly significant for the Company. At the same time, management expects the EBIT margin to increase. This development is thus reflected in the value in use of the cash-generating units in this operating segment. EBIT margins will increase from a low level to 10.4 % by 2023. In the event the actual EBIT margin in the five-year planning period, as well as the perpetual annuity, is more than 8.3 percentage points lower than the assumed margin, the carrying amounts would be written down as a result.

4.16 Current tax assets and liabilities

Current tax assets and liabilities for current and prior periods are measured at the amount expected to be recovered from or paid to the tax authorities using the tax rates and tax laws that have been enacted by the end of the reporting period.

Current taxes relating to items which are recognized in comprehensive income are also recognized in other comprehensive income and not in profit or loss.

4.17 Deferred tax liabilities and assets

Deferred taxes are recognized for all temporary differences between carrying amounts in the tax accounts and the consolidated balance sheet using the balance sheet liability method. Deferred tax liabilities are recognized for all taxable temporary differences. Deferred tax assets are recognized for all deductible temporary differences and the carryforward of unused tax losses, to the extent that it is probable that taxable profit will be available for use of the deductible temporary differences and the carryforward of unused tax losses.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow the benefit of part or all of the deferred tax asset to be utilized. Previously unrecognized deferred tax assets are reviewed at the end of each reporting period and recognized to the extent to which it has become probable that future taxable profit will allow the deferred tax asset to be recovered. This decision is made based on internal tax forecasts.

Deferred tax assets and liabilities are measured using the tax rates that are expected to apply to taxable profit in the years in which these temporary differences are expected to be reversed. In the event of a change in tax rate, the effects on deferred tax assets and liabilities are recognized in profit or loss in the period to which the new tax rate applies. Deferred tax assets and liabilities are not discounted and are classified as non-current assets or liabilities in the consolidated balance sheet.

Deferred tax assets and deferred tax liabilities are offset if SINGULUS TECHNOLOGIES AG or one of its subsidiaries has a legally enforceable right to set off a current tax asset against a current tax liability when they relate to income taxes levied by the same taxation authority.

4.18 Pension provisions

The actuarial measurement of pension provisions is based on the projected unit credit method prescribed by IAS 19 for benefit obligations for old-age pensions. This method takes into account the pensions and vested benefits known as of the balance sheet date as well as the increases in salaries and pensions to be expected in the future. The actuarial gains and losses are recognized in other comprehensive income.

4.19 Provisions

Under IAS 37, provisions are recognized if a present obligation toward a third party as a result of a past event exists which will probably result in a future outflow of resources, and whose amount can be reasonably estimated. Provisions that are not expected to lead to an outflow of resources in the subsequent year are carried at their discounted settlement amount on the balance sheet date. The discount factor is based on market interest rates. The settlement amount also includes the expected cost increases.

Provisions for warranty costs are recognized as soon as the respective revenue is realized. The provision is measured on the basis of historical estimates of the costs of meeting warranty obligations, including handling and transport costs.

4.20 Liabilities

The Group initially recognizes financial liabilities in connection with the issue of bonds as of the issue date. Repurchased own bonds are offset against financial liabilities from the bond issue. All other financial liabilities are initially recognized on the trade date, i.e., the date on which the Group became a contractual party to the financial instrument.

Financial liabilities are derecognized when the contractual obligations have been settled, canceled or have expired.

Non-derivative financial instruments are classified as other financial liabilities. Such financial liabilities are initially recognized at fair value less directly attributable transaction costs. These financial liabilities are subsequently measured at amortized cost using the effective interest method.

Other financial liabilities include loans and interest-bearing financial liabilities, financial liabilities in connection with the issue of bonds, trade payables and other liabilities.

Finance lease liabilities are recognized at the fair value of the leased asset or, if lower, the present value of the minimum lease payments.

4.21 Share-based payment

The Management Board and senior executives are granted share-based payments ("phantom shares") which are settled with a cash payment (cash-settled share-based payment transactions).

The cost of granting the share-based payments is measured at the fair value of these instruments on the date they were granted ("grant price"). The fair value is determined by an external valuer using a suitable measurement model, further details of which are given in Note 15.

The recognition of the expenses incurred in connection with the issue of share-based payment instruments takes place throughout the period in which the exercise or performance condition must be fulfilled (vesting period). This period ends on the date on which the relevant employees become fully entitled to the award. The cumulative expenses recognized on each reporting date for equity-settled transactions until the vesting date reflect the extent to which the vesting period has expired and the number of awards that, in the opinion of the Group at that date, based on the best available estimate of the number of equity instruments, will ultimately vest. The income statement charge or credit for a period represents the movement in cumulative expense recognized as of the beginning and end of that period. No expense is recognized for awards that do not vest, except for awards where vesting is conditional upon certain market conditions, which are treated as vesting irrespective of whether or not the market conditions are satisfied, provided that all other performance conditions are satisfied.

The costs arising due to cash-settled share-based payments is initially measured using a binominal model with reference to the fair value at the date on which they were granted. This fair value is expensed over the period until vesting with recognition of a corresponding liability. The liability is remeasured at each balance sheet date and at the date of settlement. Changes in the fair value are recognized in profit or loss.

4.22 Earnings per share

Basic earnings per share are calculated by dividing profit by the weighted average number of shares outstanding. Diluted earnings per share are calculated by dividing profit by the weighted average number of shares outstanding plus the number of convertible bonds and stock options outstanding, provided that the exercise of conversion rights and the stock options is reasonably certain.

The dilutive effect of the outstanding options would be reflected as additional share dilution in the determination of earnings per share, if vesting were deemed to be probable as of the balance sheet date.

5

Segment reporting

The Group's business is organized by product for corporate management purposes and has the following three operating segments which are subject to disclosure:

Solar segment (including medical technology)

At Kahl am Main, machinery is designed for use in evaporation, cathode sputtering and selenization processes, and end-to-end production lines are designed and offered. The aforementioned types of plants for manufacturing solar cells are assembled and commissioned in Kahl. The focus of SINGULUS TECHNOLOGIES' activities at its Fürstenfeldbruck plant is to develop, assemble and commission equipment used in wet-chemical processes, such as cleaning, etching and deposition machinery.

Optical Disc segment (including decorative coating)

The primary focus of SINGULUS TECHNOLOGIES' Optical Disc segment is to manufacture and distribute integrated production lines used in the manufacture of Blu-ray discs. SINGULUS TECHNOLOGIES offers BLULINE II and BLULINE III modular production systems for 50 GB, 66 GB and 100 GB Blu-ray discs. Income from the replacement parts and service business related to the aforementioned product lines is also reported under the Optical Disc segment.

Semiconductor segment

SINGULUS TECHNOLOGIES operates in the market for semiconductor elements through its Semiconductor segment. One area of focus is the development and manufacture of equipment that uses tunnel magnetic resistance (TMR) technology for semiconductor applications. This equipment is used to process wafers for MRAM, thin film heads and sensors.

Directly attributable income, expenses and assets are generally reported directly under the segments to which they are directly attributable in the segment reporting. Income, expenses and assets which cannot be directly attributed to a given segment are allocated as a proportion of planned revenue for the fiscal year.

Management monitors the business segments' operating results separately in order to facilitate decisions regarding the allocation of resources and to determine the units' performance.

The key figures for management are net revenue and EBIT (operating result). Liabilities are managed at the group level. Revenue and operating results were allocated to the operating segments as follows in 2018:

	"Solar" operating segment		"Optical Disc" operating segment		"Semiconductor" operating segment		SINGULUS TECHNOLOGIES Group	
	2018 EUR m	2017 EUR m	2018 EUR m	2017 EUR m	2018 EUR m	2017 EUR m	2018 EUR m	2017 EUR m
Gross revenue	98.5	64.8	19.8	18.4	9.2	8.0	127.5	91.2
Sales deductions and direct selling costs	-0.2	0.0	-1.3	-1.2	-0.1	0.0	-1.6	-1.2
Net revenue	98.3	64.8	18.5	17.2	9.1	8.0	125.9	90.0
Operating result (EBIT)	5.4	2.1	0.7	-3.0	0.7	-0.3	6.8	-1.2
Amortization, depreciation and impairment	-1.9	-1.7	-0.3	-0.2	-0.1	0.0	-2.3	-1.9
Financial income/expense							-2.0	-1.6
EBT							3.1	-2.8

The additions to capitalized development costs are attributable exclusively to the Solar segment (EUR 3.6 million; previous year: EUR 1.7 million).

Furthermore, significant revenue was generated with two customers in the Solar segment in fiscal year 2018. Of that revenue, EUR 53.8 million or 42.2 % of total revenue was attributable to one customer. EUR 19.2 million or 15.1 % of total revenue was attributable to the second customer.

The table below shows information by geographical region as of December 31, 2018 based on gross revenue and assets:

	Germany	Rest of Europe	North & South America	Asia	Africa & Australia
	EUR m	EUR m	EUR m	EUR m	EUR m
Revenue by country of					
origin	113.7	0.6	11.5	1.7	0.0
destination	11.1	14.9	14.7	86.0	0.8

	Germany	Rest of Europe	North & South America	Asia	Africa & Australia
	EUR m	EUR m	EUR m	EUR m	EUR m
Assets	94.2	0.3	6.6	3.0	0.0

The table below shows information by geographical region as of December 31, 2017 based on gross revenue and assets:

	Germany	Rest of Europe	North & South America	Asia	Africa & Australia
	EUR m	EUR m	EUR m	EUR m	EUR m
Revenue by country of					
origin	75.8	0.7	12.2	2.5	0.0
destination	10.8	6.9	16.7	56.2	0.6

	Germany	Rest of Europe	North & South America	Asia	Africa & Australia
	EUR m	EUR m	EUR m	EUR m	EUR m
Assets	80.4	0.7	3.1	3.6	0.0

Outside of Germany, significant revenue was generated in China (EUR 73.4 million; previous year: EUR 52.1 million) and the USA (EUR 11.3 million; previous year: EUR 14.4 million) during the fiscal year.

The matrix below presents the revenue for the reporting period as allocated to the individual segments by selected categories.

	Solar EUR m	Optical Disc EUR m	Semiconductor EUR m	Total EUR m
Revenue by destination				
Germany	9.5	1.6	0.0	11.1
Rest of Europe	3.5	4.7	6.7	14.9
North & South America	3.8	10.4	0.5	14.7
Asia	81.7	2.3	2.0	86.0
Africa & Australia	0.0	0.8	0.0	0.8
	98.5	**19.8**	**9.2**	**127.5**
Revenue by country of origin				
Germany	96.0	9.4	8.3	113.7
Rest of Europe	0.0	0.4	0.2	0.6
North & South America	2.1	8.9	0.5	11.5
Asia	0.4	1.1	0.2	1.7
Africa & Australia	0.0	0.0	0.0	0.0
	98.5	**19.8**	**9.2**	**127.5**

Products and services				
Production facilities	94.9	4.8	8.0	107.7
Service and spare parts	3.6	15.0	1.2	19.8
	98.5	**19.8**	**9.2**	**127.5**

Revenue recognition date				
Periodic revenue recognition	94.9	3.5	8.0	106.4
Revenue recognition as of a specific date	3.6	16.3	1.2	21.1
	98.5	**19.8**	**9.2**	**127.5**

The Group reported more than EUR 66.0 million as outstanding order backlogs for performance obligations not yet rendered in full. These are expected to be rendered in the next 15 months.

6

Cash and cash equivalents

Bank balances earn interest at floating rates based on daily bank deposit rates. Short-term deposits are made for periods ranging between one day and twelve months, depending on the relevant cash requirements of the Group. These earn interest at the relevant rates applicable to short-term deposits. The fair value of cash and cash equivalents is EUR 13.5 million (previous year: EUR 27.2 million).

7

Financial assets subject to restrictions on disposal

The Company has cash deposits of EUR 14.3 million (previous year: EUR 8.7 million) in blocked accounts over which it has no power of disposal. These deposits are included as cash flows from financing activities in the consolidated statement of cash flows if they are linked to the Group's financing transactions.

8

Trade receivables and receivables from construction contracts

	2018 EUR m	**2017 EUR m**
Trade receivables – current	7.3	3.4
Receivables from construction contracts	20.4	9.5
Less allowances	-1.2	-1.1
	26.5	**11.8**

As of December 31, 2018, bad debt allowances of a nominal EUR 1.2 million had been charged on trade receivables (previous year: EUR 1.1 million). The development of the valuation allowances is presented below:

	2018 EUR m	**2017 EUR m**
As of January 1	1.1	1.5
Allowances recognized in profit or loss	0.3	0.1
Utilization	-0.1	-0.4
Reversals	-0.1	-0.1
As of December 31	1.2	1.1

If trade receivables become uncollectible, the associated receivables and allowances are derecognized.

As of December 31, the age structure of trade receivables and receivables from construction contracts, taking into account specific bad debt allowances, are broken down as follows:

	Total	Not due	Overdue by less than 30 days	30 to 60 days	60 to 90 days	90 to 180 days	more than 180 days
	EUR m	EUR m	EUR m	EUR m	EUR m	EUR m	EUR m
2018	26.5	25.9	0.5	0.1	0.0	0.0	0.0
2017	11.8	11.1	0.5	0.1	0.1	0.0	0.0

The overdue trade receivables are collateralized in the form of retention of title, insurance policies and letters of credit. With regard to trade receivables for which no bad debt allowance was charged, there were no indications as of the balance sheet date that the debtors would not meet their payment obligations.

Subsequent measurement of trade receivables resulted in a net effect of EUR 0.2 million (previous year: EUR 0.0 million). This included expenses from additions to specific bad debt allowances amounting to EUR 0.3 million (previous year: EUR 0.1 million). In the reporting period, income was also generated from the reversal of specific bad debt allowances in the amount of EUR 0.1 million.

Receivables from construction contracts arise when revenue can be recognized according to the stage of completion (using the cost-to-cost method) and the criteria set forth in IFRS 15.35 have been fulfilled but this revenue cannot yet be invoiced to customers under the respective contract. The costs and estimated profits include directly allocable costs and all production-related overheads. Receivables from construction contracts are all recognized in current receivables. The receivables from construction contracts and the project-related prepayments offset against them break down as follows:

	2018 EUR m	2017 EUR m
Aggregate amount of costs incurred and recognized profits (less any recognized losses)	60.3	63.7
Prepayments received	-39.9	-54.2
Receivables from construction contracts	20.4	9.5

Gross amounts due to customers for construction contracts, which are reported as liabilities from construction contracts in a separate balance sheet item, break down as follows:

	2018 EUR m	2017 EUR m
Aggregate amount of costs incurred and recognized profits (less any recognized losses)	112.5	14.1
Prepayments received	-127.3	-26.2
Liabilities from construction contracts	-14.8	-12.1

Revenue from construction contracts of EUR 106.4 million (previous year: EUR 65.7 million) was recognized in the fiscal year.

Revenue from construction contracts include contract commissions amounting to EUR 0.3 million.

Deviations in the projected manufacturing costs mean that EUR 4.1 million less in revenue would have been attributable in prior periods. This effect was recognized during the reporting period and reduced income.

9

Other receivables and other assets

Other receivables and other assets break down as follows:

	2018 EUR m	2017 EUR m
Prepayments made	7.0	4.3
Insurance claims	0.0	1.3
Tax reimbursement claims	1.1	0.1
Other	0.9	1.7
	9.0	**7.4**

Tax assets for fiscal year 2018 essentially concern SINGULUS TECHNOLOGIES AG (EUR 1.1 million) and result primarily from claims for VAT reimbursements.

10

Inventories

The Group's inventories break down as follows:

	2018 EUR m	2017 EUR m
Raw materials, consumables and supplies	19.1	19.5
Work in process	19.9	24.0
Less allowances	-21.9	-26.2
	17.1	**17.3**

The inventory allowances relate to reductions in value in accordance with the "lower of cost or net realizable value" principle as well as decreases in carrying values to account for a lack of marketability and excessive days inventory held.

During the 2018 fiscal year, EUR 1.7 million in write-downs to the net realizable value of inventories were reported (previous year: reduction of more than EUR 2.3 million).

The carrying amount of inventories recognized at net realizable value amounts to EUR 12.9 million (previous year: EUR 10.6 million).

11

Intangible assets

In fiscal years 2018 and 2017, intangible assets developed as follows (all amounts in EUR m):

	Goodwill	Other intangible assets	Capitalized development costs	Total
Cost				
As of Jan. 1, 2017	**21.7**	**75.5**	**107.5**	**204.7**
Additions	0.0	0.1	1.7	1.8
Disposals	0.0	0.0	0.0	0.0
As of Dec. 31, 2017	**21.7**	**75.6**	**109.2**	**206.5**
Additions	0.0	0.2	3.6	3.8
Disposals	0.0	0.0	0.0	0.0
As of Dec. 31, 2018	**21.7**	**75.8**	**112.8**	**210.3**
Amortization and impairment				
As of Jan. 1, 2017	**15.0**	**75.3**	**104.8**	**195.1**
Additions to amortization (scheduled)	0.0	0.1	1.0	1.1
Additions to impairment losses (unscheduled)	0.0	0.0	0.0	0.0
Disposals	0.0	0.0	0.0	0.0
As of Dec. 31, 2017	**15.0**	**75.4**	**105.8**	**196.2**
Additions to amortization (scheduled)	0.0	0.1	1.0	1.1
Additions to impairment losses (unscheduled)	0.0	0.0	0.0	0.0
Disposals	0.0	0.0	0.0	0.0
As of Dec. 31, 2018	**15.0**	**75.5**	**106.8**	**197.3**
Carrying amounts Dec. 31, 2017	**6.7**	**0.2**	**3.4**	**10.3**
Carrying amounts Dec. 31, 2018	**6.7**	**0.3**	**6.0**	**13.0**

As of the balance sheet date, the Solar segment reported goodwill with a carrying amount of EUR 6.7 million (previous year: EUR 6.7 million). For further information on goodwill please also refer to our comments under 4.5 "Goodwill" and 4.15 "Impairment of assets".

EUR 3.6 million of the development costs incurred in fiscal year 2018 qualifies for recognition as an asset under IFRSs (previous year: EUR 1.7 million). Amortization and impairment of capitalized development costs is recognized under research and development expenses in the consolidated income statement.

12

Property, plant and equipment

In fiscal years 2018 and 2017, property, plant and equipment developed as follows (all amounts in EUR m):

	Land, own buildings	**Techn. equip. & mach.**	**Office & operating equip.**	**Total**
Cost				
As of Jan. 1, 2017	**6.6**	**9.5**	**7.2**	**23.3**
Additions	0.1	0.7	0.3	1.1
Disposals	0.0	0.0	-0.1	-0.1
As of Dec. 31, 2017	**6.7**	**10.2**	**7.4**	**24.3**
Additions	5.5	1.1*	0.4	7.0
Disposals	0.0	-0.3	-0.1	-0.4
As of Dec. 31, 2018	**12.2**	**11.0**	**7.7**	**30.9**
Amortization and impairment				
As of Jan. 1, 2017	**4.4**	**7.4**	**6.7**	**18.5**
Additions to depreciation (scheduled)	0.3	0.3	0.4	1.0
Disposals	0.0	0.0	-0.1	-0.1
As of Dec. 31, 2017	**4.7**	**7.7**	**7.0**	**19.4**
Additions to depreciation (scheduled)	0.5	0.4	0.3	1.2
Disposals	0.0	-0.3	-0.1	-0.4
As of Dec. 31, 2018	**5.2**	**7.8**	**7.2**	**20.2**
Carrying amounts Dec. 31, 2017	**2.0**	**2.5**	**0.4**	**4.9**
Carrying amounts Dec. 31, 2018	**7.0**	**3.2**	**0.5**	**10.7**

* of which EUR 1.0 million from reclassifications of inventories

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Other liabilities

Other liabilities are broken down as follows:

	2018 EUR m	2017 EUR m
Outstanding liabilities to personnel	2.9	1.9
Executive Board and employee bonuses	4.1	2.3
Outstanding invoices	1.5	1.6
Financial reporting, legal and consulting fees	0.5	0.5
Services to be provided	0.5	1.8
Other	1.8	2.9
	11.3	**11.0**

In the fiscal year, commitments for performance-related payments of EUR 4.1 million (previous year: EUR 2.3 million) to members of the Executive Board, managing directors of subsidiaries, senior executives and employees were recognized as a liability.

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Prepayments received

	2018 EUR m	2017 EUR m
Prepayments from customers	1.0	0.8

Prepayments received as of December 31, 2018 mainly relate to advances for orders received by the Solar and Optical Disc segments, which are reported in inventories under work in process.

15

Share-based payment

The various share-based payment plans launched in previous years are described below:

Phantom Stock Program 2015 (PSP VII and PSP VIII)

In order to provide Executive Board members and senior executives with a long-term incentive, SINGULUS TECHNOLOGIES AG launched a phantom stock program. Each stock option under this program entitles the beneficiaries to subscribe to one virtual bearer share of the Company with a par value of EUR 1.00 each at the exercise price. The stock options were issued free of charge. The phantom shares are not settled in shares of the Company, but in cash. The cash settlement is determined on the basis of the difference between the exercise price and the relevant closing price.

By resolution dated March 24, 2015, the Supervisory Board resolved to issue 225,000 stock options to the Executive Board (PSP VII). A further 112,000 stock options were issued to senior executives (PSP VIII). The exercise price of these stock options is EUR 1.3052. Upon entry of the capital decrease at a ratio of 160:1 in the 2016 fiscal year, the stock options under the above phantom stock programs were adjusted at the same ratio.

Phantom Stock Program 2016 (PSP IX and PSP X)

By resolution dated November 9, 2016, the Supervisory Board resolved to issue 225,000 stock options to the Executive Board (PSP IX). A further 130,000 stock options were issued to senior executives (PSP X). The underlying phantom stock program corresponds to the 2015 program. The exercise price of these stock options is EUR 4.5974.

Phantom Stock Program 2017 (PSP XI and PSP XII)

By resolution dated July 21, 2017, the Supervisory Board resolved to issue 250,000 stock options to the Executive Board (PSP XI). A further 120,000 stock options were issued to senior executives (PSP XII). The underlying phantom stock program corresponds to the 2015 program. The exercise price of these stock options is EUR 8.7950.

Phantom Stock Program 2018 (PSP XIII and PSP XIV)

By resolution dated April 9, 2018, the Supervisory Board resolved to issue 250,000 stock options to the Executive Board (PSP XIII). A further 130,000 stock options were issued to senior executives (PSP XIV). The underlying phantom stock program corresponds to the 2015 program. The exercise price of these stock options is EUR 12.016.

The specific terms and conditions of the above phantom stock programs are as follows:

The term of the stock options is five years. The stock options can be exercised at the earliest upon expiry of the two-year vesting period within a period of 14 trading days beginning on the sixth trading day following publication of the quarterly reports for the first or third quarter; up to 25 % of the phantom shares held by the respective beneficiary can be exercised during the first exercise period and then a further 25 % every six months during each subsequent exercise period.

The stock options under Phantom Stock Programs PSP VII through PSP X may only be exercised if the non-weighted average closing price for SINGULUS TECHNOLOGIES AG shares is (i) at least 15 % higher than the exercise price during the reference period for the first 25 % of the stock options (first tranche), (ii) at least 17.5 % higher than the exercise price during the reference period for the second 25 % (second tranche), (iii) at least 20 % higher than the exercise price during the reference period for the third 25 % (third tranche) and (iv) at least 22.5 % higher than the exercise price during the reference period for the final 25 % (fourth tranche). For stock options issued under the Phantom Stock Programs PSP XI to PSP XIV, the reference price for all tranches as of the exercise date must be at least 15.0 % above the exercise price.

If the stock options of a tranche cannot be exercised within the respective exercise period because the earnings target has not been reached, the phantom shares of this tranche can be exercised in subsequent exercise period(s) on the condition that the unmet earnings target for the respective previous exercise period(s) is achieved in those reference period(s). The reference period is the period of five trading days from the date of publication of the quarterly report applicable to the beginning of the exercise period.

The development of the issued tranches is presented below:

	PSP VII 2018		**PSP VIII 2018**	
Change in stock options	**Number of stock options**	**Average exercise price (EUR)**	**Number of stock options**	**Average exercise price (EUR)**
Outstanding as of the beginning of the fiscal year	703.12	1.3052	318.75	1.3052
Issued in the fiscal year	-	-	-	-
Revoked in the fiscal year	-	-	-	-
Exercised during the fiscal year	703.12	3.7656	318.75	3.7600
Expired in the fiscal year	-	-	-	-
Outstanding at the end of the fiscal year	-	-	-	-
Exercisable at the end of the fiscal year	-	-	-	-

	PSP IX 2018		**PSP X 2018**	
Change in stock options	**Number of stock options**	**Average exercise price (EUR)**	**Number of stock options**	**Average exercise price (EUR)**
Outstanding as of the beginning of the fiscal year	225,000	4.5974	130,000	4.5974
Issued in the fiscal year	-	-	-	-
Revoked in the fiscal year	-	-	-	-
Exercised during the fiscal year	56,250	11.4200	28,000	10.8371
Expired in the fiscal year	-	-	10,000	-
Outstanding at the end of the fiscal year	168,750	4.5974	92,000	4.5974
Exercisable at the end of the fiscal year	-	-	2,000	-

Change in stock options	**PSP XI 2018** Number of stock options	Average exercise price (EUR)	**PSP XII 2018** Number of stock options	Average exercise price (EUR)
Outstanding as of the beginning of the fiscal year	-	-	-	-
Issued in the fiscal year	250,000	8.7950	120,000	8.7950
Revoked in the fiscal year	-	-	-	-
Exercised during the fiscal year	-	-	-	-
Expired in the fiscal year	-	-	-	-
Outstanding at the end of the fiscal year	250,000	8.7950	120,000	8.7950
Exercisable at the end of the fiscal year	-	-	-	-

Change in stock options	**PSP XIII 2018** Number of stock options	Average exercise price (EUR)	**PSP XIV 2018** Number of stock options	Average exercise price (EUR)
Outstanding as of the beginning of the fiscal year	-	-	-	-
Issued in the fiscal year	250,000	12.016	130,000	12.016
Revoked in the fiscal year	-	-	-	-
Exercised during the fiscal year	-	-	-	-
Expired in the fiscal year	-	-	-	-
Outstanding at the end of the fiscal year	250,000	12.016	130,000	12.016
Exercisable at the end of the fiscal year	-	-	-	-

The stock options were measured using a binomial model, which reflects the fact that the amount to be paid out is limited to 300 % of the exercise price. The following parameters were used when measuring the options:

Tranche	**PSP VII**	**PSP VIII**	**PSP IX**	**PSP X**
Grant date	Apr. 9, 2015	Apr. 9, 2015	Nov. 9, 2016	Sep. 11, 2016
Exercise price	EUR 1.3052	EUR 1.3052	EUR 4.5974	EUR 4.5974
Dividend yield	0.00 %	0.00 %	0.00 %	0.00 %
Interest rate	-0.70 %	-0.70 %	-0.61 %	-0.61 %
Volatility of SINGULUS TECHNOLOGIES	50.46 %	50.46 %	80.57 %	80.57 %
Fair value of each stock option as of December 31, 2018	EUR 3.895	EUR 3.896	EUR 4.891	EUR 4.871

Tranche	PSP XI	PSP XI1	PSP XIII	PSP XIV
Grant date	Jul. 21, 2017	Jul. 21, 2017	Apr. 9, 2018	Apr. 9, 2018
Exercise price	EUR 8.7950	EUR 8.7950	EUR 12.0160	EUR 12.0160
Dividend yield	0.00 %	0.00 %	0.00 %	0.00 %
Interest rate	-0.49 %	-0.49 %	-0.43 %	-0.43 %
Volatility of SINGULUS TECHNOLOGIES	102.30 %	102.30 %	100.89 %	100.89 %
Fair value of each stock option as of December 31, 2018	EUR 4.045	EUR 4.017	EUR 3.789	EUR 3.759

The estimates pertaining to expected volatility were made on the basis of SINGULUS TECHNOLOGIES AG's past share performance. The remaining term of the stock options was used as a historical timeframe.

The measurement of the phantom shares resulted in an expense of EUR 1,564 thousand during the fiscal year (previous year: expense of EUR 1,117 thousand).

The program was treated as a cash-settled share-based payment within the meaning of IFRS 2.

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Financial liabilities from bond issue

The collateralized bond (ISIN DE000A2AA5H5) with a volume of EUR 12.0 million was issued in July 2016 for a five-year term and with annually increasing yields. The initial yield was 3.0 %; subject to an early redemption by the Company, this yield increases annually to 6.0 %, 7.0 %, 8.0 % to up to 10.0 % p.a. The effective yield is 6.70 % p.a. The bond is collateralized primarily through cash, receivables, inventories, property, plant and equipment, and intangible assets of SINGULUS TECHNOLOGIES AG.

Financial liabilities measured at amortized cost resulted in a loss of EUR 0.8 million in the reporting period (previous year: EUR 0.8 million). The net loss was essentially attributable to interest.
Please refer to Note 37.

17

Liabilities from loans

In March 2017, the Company took out a loan of EUR 4.0 million from a shareholder and a bondholder. The original term of the loan was one year. The term was extended until the end of 2018 in November 2017. The Company repaid the loan early in June 2018. The loan was granted in connection with the bond terms set out in section 8 (a) (iv) in conjunction with section 3 (e). According to those terms, the Company may take out financial liabilities in the form of a loan of up to EUR 4.0 million. The bond collateral was also used to collateralize the loan. This was senior in relation to the bondholders. The effective interest rate amounted to 13.85 % p.a.

Financial liabilities measured at amortized cost resulted in a loss of EUR 0.3 million in the reporting period (previous year: EUR 0.5 million). The net loss was essentially attributable to interest.
Please refer to Note 36.

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Pension provisions

Pension plans were granted by SINGULUS TECHNOLOGIES AG and from the previous HamaTech AG. They are defined benefit plans in both cases.

HamaTech AG's benefit obligations were transferred to SINGULUS TECHNOLOGIES AG in connection with the merger in fiscal year 2009. HamaTech AG's pension plan, which was transferred in the merger, was operated solely for former members of that company's Executive Board.

At SINGULUS TECHNOLOGIES AG company pension schemes in the form of direct pension commitments are provided for only some of the employees. On the one hand, beneficiaries are those employees who were employed at Leybold prior to the founding of the company in 1995 in accordance with the pension directives there in the versions dated January 1, 1969 and January 1, 1986 and, on the other hand, some former Executive Board members as well as a few employees who were granted corporate pension benefits based on an individual contract. New pension commitments have not been issued for some time. In particular, there are no pension plans open for new employees.

The existing pension obligations are all based on defined benefit plans. In a special case based on individual contractual arrangements, a one-time capital payment is promised when the age limit is reached, otherwise all benefits are in the form of lifetime pensions upon disability, age or death (to survivors). The amount of the pensions is contractually stipulated for the individual commitments. The commitments under the Leybold pension directives are based on the length of service in the company and the pensionable income; the total pension from the company pension and statutory pensions has an upper limit that may not exceed the last net pay received. The age limit is the last day on which the beneficiary is 65.

All benefits are financed internally by the regular accumulation of provisions. There are no plan assets within the meaning of IAS 19, nor are there other employers' pension insurance plans.
The company is charged with taxes or social security contributions on the retirement benefits.

Other than the general risks arising from interest rates, inflation, longevity and case law, there are no special risks specific to the company for these pension commitments. The longevity risk is taken into account through the use of cohort tables when calculating the obligation. The cohort tables make appropriate assumptions, in particular with respect to the further increase in life expectancy in the future.

The risk of inflation is factored in sufficiently by a long-term estimate of 1.60 % p.a. when calculating the obligation based on current knowledge. Moreover, this risk primarily impacts the adjustment when reviewing current pensions. Currently, there are no known risks arising from labor law by virtue of supreme court rulings which would impact the commitments.

HamaTech AG's pension plan, which was transferred in the merger, was operated solely for former members of that company's Executive Board.

The pension plan is not covered by plan assets. Pension provisions are determined on the basis of an independent actuarial report. Pension benefits under the plan are based on a percentage of the employees' current pensionable compensation and their years of service.

The pension obligations and underlying assumptions are described below.

The change in SINGULUS TECHNOLOGIES AG's pension obligations as of December 31, 2018 and 2017 is presented in the following tables:

Change in pension obligations	**2018 EUR m**	**2017 EUR m**
Present value at the beginning of the fiscal year	13.3	13.8
Recognized in profit or loss:		
Service cost	0.1	0.1
Interest expense	0.2	0.2
Recognized in other comprehensive income:		
Actuarial gains/losses from:		
financial assumptions	0.7	-0.6
demographic assumptions	0.2	0.0
experience-based adjustments	0.1	0.2
Miscellaneous:		
Payments made	-0.6	-0.4
Present value at the end of the fiscal year	13.9	13.3

Net pension expenses break down as follows:

	2018 EUR m	2017 EUR m
Service cost	0.1	0.1
Interest expense	0.2	0.2
	0.3	**0.3**

While service cost was mainly recognized under selling costs and general and administrative expenses as well as cost of sales, interest expense was disclosed in the financial result.

The figures for the current and previous four periods are as follows:

	2018 EUR m	2017 EUR m	2016 EUR m	2015 EUR m	2014 EUR m
Present value of the defined benefit obligation	13.9	13.3	13.8	12.3	12.4

The assumptions underlying the calculation of the pension provision are as follows:

Biometrics	**Heubeck 2018 G actuarial tables**	**Heubeck 2005 G actuarial tables**
Discount rate (future pensioners)	1.77 %	2.16 %
Discount rate (current pensioners)	1.32 %	1.46 %
Estimated future wage and salary increases	2.00 %	2.00 %
Estimated future pension increases	1.60 %	1.60 %

As of December 31, 2018, the weighted average term of the defined benefit obligation was 16.3 years.

In the financial year 2018, the "Richttafeln 2018 G" by Prof. Dr. Ing. Klaus Heubeck applied. Expenses for pensions in the amount of EUR 0.3 million (of which EUR 0.2 million interest expenses) were estimated for this period.

Contributions by the Company to the statutory pension insurance system amounted to EUR 1.6 million in the year under review. This is a defined contribution plan.

In addition, members of the Executive Board received a defined-contribution company pension benefit financed by the company. EUR 0.4 million was paid out for this in the year under review.

Keeping all other assumptions constant, from a reasonable perspective, possible changes to one of the significant actuarial assumptions as of the reporting date would have affected the defined benefit obligation in the following amounts.

	Defined benefit obligation	
Effect in EUR m	**Increase**	**Decrease**
Discount rate (0.5 percentage point change)	-1.1	1.2
Estimated future wage and salary increases (0.25 percentage point change)	0.1	-0.1
Estimated future pension increases (0.25 percentage point change)	0.4	-0.4
Life expectancy (+1 year change)	0.8	-

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Other provisions

Other provisions developed as follows in the fiscal year:

	Jan. 1, 2018 EUR m	Utilizations EUR m	Reversals EUR m	Additions EUR m	Dec. 31, 2018 EUR m
Warranties	0.5	-0.1	-0.3	0.2	0.3
Other	0.5	0.0	0.0	0.7	1.2
	1.0	**-0.1**	**-0.3**	**0.9**	**1.5**

Provisions for warranty costs are recognized as a percentage of product cost. The percentages used are derived from experience for each product type and range between 2.75 % and 4.00 % (previous year: between 2.75 % and 4.00 %). The guarantee period, and thus a possible utilization, ranges from 2 months to 24 months as of December 31, 2018.

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Provisions for restructuring measures

The provisions for restructuring measures developed as follows during the fiscal year:

	Jan. 1, 2018 EUR m	Additions EUR m	Utilizations EUR m	Reversals EUR m	Dec. 31, 2018 EUR m
Provisions for restructuring measures	2.6	0.0	-0.4	-0.1	2.1

The provisions for restructuring measures mainly contain provisions for underutilization of office and production facilities leased for wet-chemical processes within the Solar segment (EUR 1.9 million). Of that amount, provisions of EUR 1.5 million were recognized in non-current liabilities (previous year: EUR 1.9 million). Utilization of the provisions is anticipated to extend over the term of the leased administrative and production building in Fürstenfeldbruck until 2024.

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Equity

On September 21, 2017, SINGULUS TECHNOLOGIES AG disclosed in accordance with section 92 (1) AktG that half of its share capital had been eroded as of August 31, 2017. This loss was announced to the shareholders at an extraordinary shareholders' meeting on November 29, 2017.

As of December 31, 2018, the share capital amounted to EUR 8,896,527.00, divided into 8,896,527 bearer shares with a par value of EUR 1.00. Authorized capital 2018/1 amounted to EUR 4,448,263.00 as of the balance sheet date.

Reserves

Reserves include changes in the fair value of cash flow hedges as well as currency translation differences from translating the financial statements of foreign entities.

Non-controlling interests

Non-controlling interests represent third-party shareholdings in group entities. In the fiscal year, the non-controlling interests exclusively related to SINGULUS CIS SOLAR TEC GmbH.

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Tax expense/tax income; deferred tax assets/deferred tax liabilities

The disclosures on income taxes for 2018 and 2017 are as follows:

	2018 EUR m	2017 EUR m
Current income taxes		
Germany	-0.3	0.0
Foreign	-0.1	-0.1
Sub-total	-0.4	-0.1
Deferred taxes		
Germany	-3.4	-0.1
Foreign	-0.2	-0.2
Sub-total	-3.6	-0.3
Total tax expense/income	**-4.0**	**-0.4**

Pursuant to German tax law, the income taxes comprise corporate income tax, trade income tax and the solidarity surcharge. Deferred tax assets relate to the following:

	2018 EUR m	2017 EUR m
Inventories	5.6	4.7
Pension provisions	2.1	1.5
Trade receivables	0.1	0.3
Provision for restructuring measures	0.5	0.5
Goodwill	0.5	0.4
Other intangible assets	0.1	0.1
Deferred taxes on loss carryforwards	5.2	0.0
Other liabilities	0.1	0.1
	14.2	7.6
Netting with deferred tax liabilities	-14.2	-7.3
Deferred tax assets	**0.0**	**0.3**

The deferred tax assets (before netting with deferred tax liabilities) of EUR 14.2 million were above the prior year's level (EUR 7.6 million). After being offset against deferred tax liabilities, there were no deferred tax assets (previous year: EUR 0.3 million).

Deferred tax assets developed as follows:

	2018 EUR m	2017 EUR m
Balance as of Jan. 1	0.3	0.6
Recognized in other comprehensive income: Change in actuarial gains and losses from pension commitments	0.2	0.0
Recognized through profit and loss: Change in temporary differences	-0.1	-0.3
Netting with deferred tax liabilities	-0.4	0.0
Balance as of Dec. 31	**0.0**	**0.3**

As of December 31, 2018, SINGULUS TECHNOLOGIES AG (excl. foreign operating facilities) had preliminary corporate income tax loss carryforwards in the amount of EUR 168.6 million (previous year: EUR 140.9 million) and municipal trade tax loss carryforwards of EUR 161.2 million (previous year: EUR 133.7 million). In 2018, EUR 1.5 million was added to the EUR 11.3 million in interest carryforwards from previous years; these amounted to EUR 12.8 million as of December 31, 2018.

Deferred tax assets are recognized for all temporary differences and for all unused tax loss carryforwards to the extent that it is probable that taxable profit will be available against which the tax assets can be utilized. In accordance with IAS 12.34f in conjunction with IAS 12.31, in addition to the fact that this is netted with deferred tax liabilities, there were no deferred tax assets in the balance sheet due to the history of losses by SINGULUS TECHNOLOGIES AG.

In accordance with the disclosures under 4.16 Impairment of assets, the Company expects positive business development and expects SINGULUS TECHNOLOGIES AG to utilize existing loss carryforwards to a limited extent in the next three fiscal years.

Deferred tax liabilities break down as follows:

	2018 EUR m	2017 EUR m
Receivables and liabilities from construction contracts	15.6	6.3
Capitalized development costs	1.6	1.0
	17.2	7.3
Netting with deferred tax assets	-14.2	-7.3
	3.0	**0.0**

Deferred tax liabilities total EUR 17.2 million (before being offset against deferred tax assets), higher than the previous year's figure (EUR 7.3 million). This is primarily a result of higher temporary differences for receivables and liabilities from construction contracts, as well as capitalized development costs. After being offset against deferred tax assets, deferred tax liabilities amounted to EUR 3.0 million (previous year: EUR 0.0 million).

Deferred tax liabilities developed as follows:

	2018 EUR m	**2017 EUR m**
Balance as of Jan. 1	0.0	0.0
Recognized in other comprehensive income:		
Change in actuarial gains and losses from pension commitments	0.0	0.0
Recognized through profit and loss		
Change in temporary differences	17.2	0.0
Netting with deferred tax assets*	-14.2	0.0
Balance as of Dec. 31	**3.0**	**0.0**

The amount of the temporary differences related to investments in subsidiaries for which no deferred tax liabilities have been recognized totaled EUR 0.2 million.

The effective tax rate in Germany (for corporate income tax, trade tax and the solidarity surcharge) was 29.13 % (previous year: 29.13 %).

The effective tax rate is reconciled to the actual tax rate as follows:

	2018 EUR m	**2017 EUR m**
Consolidated earnings before taxes	4.8	-2.8
Anticipated tax *	1.4	-0.7
Adjustment of temporary differences and loss and interest carryforwards of the current period for which no deferred taxes were recognized	3.0	0.7
Recognized directly in other comprehensive income:	-0.2	0.0
Non-tax deductible expenses (+)/tax-free income (-)	0.0	0.4
Other permanent differences	-0.2	0.0
Current taxes	4.0	0.4

* A minus sign denotes tax income

The most recent tax field audit of SINGULUS TECHNOLOGIES AG covered the period from 2010 up to and including 2013.

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Earnings per share

Basic earnings per share are calculated by dividing profit for the period attributable to owners of the parent by the weighted average number of ordinary shares outstanding during the reporting period.

Diluted earnings per share are calculated by dividing the profit attributable to owners of the parent by the weighted average number of ordinary shares outstanding during the reporting period plus the weighted average number of ordinary shares that would be issued on the conversion of all the dilutive potential ordinary shares into ordinary shares. There were no dilutive effects in either the reporting period or the comparable prior-year period.

The table below shows the figures used to calculate basic and diluted earnings per share:

	2018 EUR m	**2017 EUR m**
Profit attributable to owners of the parent for calculating basic earnings per share	0.8	-3.2
Weighted average number of ordinary shares used to calculate basic earnings per share	8,896,527	8,145,363
Dilutive effect	-	-
Weighted average number of common shares, adjusted for dilutive effect	8,896,527	8,145,363

There have been no transactions involving ordinary shares or potential ordinary shares between the reporting date and the date of preparation of these consolidated financial statements.

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Sales deductions and direct selling costs

Sales deductions comprise all cash discounts granted. Direct selling costs essentially include expenses for commissions.

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Cost of materials

The cost of sales for fiscal year 2018 includes material costs of EUR 67.8 million (previous year: EUR 46.9 million).

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Personnel expenses

The income statement for fiscal year 2018 includes personnel expenses in the amount of EUR 33.5 million (previous year: EUR 29.5 million). Expenses for wages and salaries in the year under review totaled EUR 28.2 million (previous year: EUR 24.6 million); expenses for social security contributions totaled EUR 4.7 million (previous year: EUR 4.4 million); post-employment expenses were EUR 0.6 million (previous year: EUR 0.5 million).

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Depreciation and amortization

Depreciation and amortization expenses amounted to EUR 2.3 million (previous year: EUR 2.0 million).

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General administration

Administrative expenses include management expenses, HR expenses and finance and accounting expenses as well as the premises and vehicle expenses attributable to such areas. Ongoing IT costs, legal and consulting fees, investor relations costs as well as costs of general meetings and the financial statements are also recognized in this item.

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Research and development

Research and development costs relate not only to research and non-capitalizable development costs but also to the amortization of capitalized development costs of EUR 1.0 million (previous year: EUR 1.0 million).
Totaling EUR 13.4 million in 2018, the expenditures for research and development (including development services included in cost of sales) were above the prior-year level of EUR 8.6 million. EUR 3.6 million of these expenditures were capitalized (previous year: EUR 1.7 million).

The Company received national and EU subsidies amounting to EUR 0.5 million in the fiscal year (previous year: EUR 0.6 million).

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Other operating income/expenses

In the reporting year, other operating income mainly contained income from the reversal of other liabilities and provisions of EUR 1.8 million (previous year: EUR 0.5 million), exchange gains of EUR 0.3 million (previous year: EUR 0.7 million) and income from insurance receivables of EUR 0.3 million (previous year: EUR 1.1 million).

Other operating expenses in the fiscal year primarily included foreign currency losses amounting to EUR 0.3 million (previous year: EUR 0.8 million).

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Finance income and finance costs

Finance income/costs break down as follows:

	2018 EUR m	**2017 EUR m**
Interest income from time/ overnight deposits	0.0	0.1
Finance costs from the bond issue (including incidental expenses)	-0.8	-0.8
Interest expense from interest accrued on the pension provisions	-0.2	-0.2
Other finance costs	-1.0	-0.7
	-2.0	**-1.6**

The finance costs from the bond issue result from the bonds issued in 2016.

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Rents and leases

Under a real estate lease concluded on September 24, 1999 and supplemented on December 27, 2004, the Company leased the office building and production hall in Kahl am Main. The lease began on July 1, 2000 and ends on June 30, 2018. The annual lease payment is EUR 1.5 million. The Company has renewed this lease. The building with acquisition costs of EUR 5.5 million has been financed at a 4.9 % rate of interest over the lease term from July 1, 2018 to December 31, 2022. At the end of the lease term, ownership will transfer to the lessee.

Following the renewal of this lease, it is now classified as a finance lease in accordance with IAS 17.13 and both the lease asset and the lease liability are therefore recognized.

In addition, the Company entered into a real estate lease as of September 26, 2008, covering a production and administrative building in Fürstenfeldbruck. The total investment costs of the property are EUR 17.5 million; the lease period is 15 years plus a lease extension option of 5 years. The annual payments to the lessor in this connection are EUR 1.4 million.

Pursuant to IAS 17, this lease must be classified as an operating lease, as substantially all the opportunities and risks connected to ownership of the property remain with the lessor.

As of December 31, 2018, the future minimum payments arising from finance and operating leases in the Group were:

	EUR m
2019	2.7
2020	2.5
2021	2.4
2022	2.4
2023 and thereafter	1.8
	11.8

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Events after the balance sheet date

The government of the People's Republic of China, Beijing, notified SINGULUS TECHNOLOGIES AG on January 22, 2019 that a further 3.64 % of shares had been acquired in a second stage as part of a minority interest and the ownership of the shares transferred to Triumph Science and Technology Group Company, LLC, a wholly owned subsidiary of China National Building Materials, Beijing, China (CNBM). With effect from September 20, 2018, 13.11 % of shares were acquired in a first step. CNBM thus holds a total of 16.75 % of outstanding shares in SINGULUS TECHNOLOGIES AG.

With effect as of February 19, 2019, the Company assumed financial liabilities (pursuant to section 8 (a) (vi) in conjunction with section 3 (e) of the bond conditions) in the amount of EUR 4.0 million in the form of a 12-month loan to secure further liquidity. The bond collateral is also used to collateralize the loan. This is senior in relation to the bondholders.

There were no further events after the end of the fiscal year requiring disclosure.

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Related party disclosures

In accordance with IAS 24, those persons and companies which are able to exercise control or a significant influence over SINGULUS TECHNOLOGIES AG are deemed related parties. At the balance sheet date, the members of the Supervisory Board and the Executive Board of SINGULUS TECHNOLOGIES AG and associates were identified as related parties.

In accordance with the articles of incorporation, the Supervisory Board of SINGULUS TECHNOLOGIES AG has three members. The members of the Supervisory Board in fiscal year 2018 were:

Dr.-Ing. Wolfhard Leichnitz, Essen	Chairman
Christine Kreidl, Regensburg	Deputy Chairman
Dr. rer. nat. Rolf Blessing, Trendelburg	Member

The above members of the Supervisory Board were elected for the period until the end of the annual shareholders' meeting that resolves the ratification of their actions for the fourth fiscal year following the beginning of their term of office; the fiscal year in which their term of office begins is not included in this calculation.

In addition to compensation for expenses, each member of the Supervisory Board is entitled to fixed remuneration of EUR 40 thousand for each full fiscal year of board membership. The chairman receives twice and the deputy chairman one and half times this amount. Supervisory Board members who were only on the Supervisory Board for part of the fiscal year receive proportionately lower remuneration than the other Supervisory Board members. For their work in the fiscal year, the Supervisory Board members are entitled to fixed remuneration in accordance with the articles of incorporation of EUR 180 thousand. In addition, the Supervisory Board members were reimbursed expenses of EUR 7 thousand.

Dr.-Ing. Leichnitz held a total of 245 shares in the Company as of December 31, 2018 (previous year: 245 shares).

Companies are deemed related parties if they are able to exert control or a significant influence over the reporting entity and hence SINGULUS TECHNOLOGIES AG (associates). With effect from September 20, 2018, Triumph Science and Technology Group Co., Ltd (a wholly owned subsidiary of China National Building Materials, Beijing, China, "CNBM") acquired 13.11 % of shares in SINGULUS TECHNOLOGIES AG. In January 2019, CNBM acquired a further 3.64 % of shares in the Company. Its shareholding of SINGULUS TECHNOLOGIES AG was thus 16.75 %. At the same time, CNBM is currently the Company's largest customer and has therefore been classified as a related party within the meaning of IAS 24 since September 20, 2018. For reasons relating to cost-effectiveness and materiality, period-related disclosures are made for the last three months of the fiscal year.
During the period from October 1 to December 31, 2018, revenue amounting to EUR 15.2 million was generated from the manufacturing and delivery of equipment for CNBM. As a result, POC receivables of EUR 12.1 million were outstanding as of December 31, 2018.

The current occupations of Supervisory Board members are listed as follows:

	Occupation	**Membership of other supervisory boards and similar oversight bodies**
Dr.-Ing. Wolfhard Leichnitz	Construction engineer	None
Christine Kreidl	Diplom-Kauffrau, German Public Auditor [Wirtschaftsprüferin] and Tax Consultant	Biotest AG, Dreieich, Member of the Supervisory Board
Dr. rer. nat. Rolf Blessing	Dipl.-Physiker, Director of B.plus Beschichtungen Projekte Gutachten, Bad Karlshafen	None

Members of the Executive Board in fiscal year 2018 were:

Dr.-Ing. Stefan Rinck, Chairman of the Executive Board
Dipl.-Oec. Markus Ehret, Head of Finance

The total remuneration received by the Executive Board in the reporting period was as follows:

			2018		
	Fixed remuneration	**Other compensation**[1]	**Variable remuneration**	**Components with long-term incentive**[2]	**Total**
	EUR k	**EUR k**	**EUR k**	**EUR k**	**EUR k**
Dr.-Ing. Stefan Rinck	440	46	278	683	1,447
Dipl.-Oec. Markus Ehret	300	27	177	455	959
	740	**73**	**455**	**1,138**	**2,406**

[1] Other compensation includes ancillary benefits such as insurance and company vehicles.
[2] Phantom shares are accounted for at the respective fair value upon the initial grant.

The remuneration of the Executive Board for the previous year is broken down as follows:

	2017				
	Fixed remuneration	**Other compensation[1]**	**Variable remuneration**	**Components with long-term incentive[2]**	**Total**
	EUR k	**EUR k**	**EUR k**	**EUR k**	**EUR k**
Dr.-Ing. Stefan Rinck	440	46	234	472	1,192
Dipl.-Oec. Markus Ehret	280	27	149	315	771
	720	**73**	**383**	**787**	**1,963**

[1] Other compensation includes ancillary benefits such as insurance and company vehicles.
[2] Phantom shares are accounted for at the respective fair value upon the initial grant.

Members of the Executive Board receive a defined-contribution company pension benefit financed by the Company. The Company grants Executive Board members an annual pension contribution amounting to a certain percentage of their respective gross annual fixed remuneration. For Dr.-Ing. Stefan Rinck, this amounted to 59.97 % beginning on January 1, 2012 and for Mr. Markus Ehret, this percentage was 31.58 %. The annual expense for the Company in fiscal year 2018 was EUR 359 thousand (previous year: EUR 352 thousand), of which EUR 264 thousand (previous year: EUR 264 thousand) was for Dr.-Ing. Stefan Rinck and EUR 95 thousand (previous year: EUR 88 thousand) for Mr. Markus Ehret.

Former members of the Executive Board of SINGULUS TECHNOLOGIES AG received total remuneration of EUR 0.3 million in the fiscal year. As of December 31, 2018, the provisions for pension claims for former board members stood at EUR 6.6 million.

In addition, the members of the Executive Board held the following number of shares in SINGULUS TECHNOLOGIES AG from their own purchases as of the fiscal year-end:

	2018	**2017**
	No.	**No.**
Dr.-Ing. Stefan Rinck	122	122
Dipl.-Oec. Markus Ehret	43	43
	165	**165**

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Disclosures on shareholdings

	Equity interest %	Equity EUR k	Net income/loss EUR k
Germany			
SINGULUS CIS Solar Tec GmbH, Kahl am Main, Germany	66	15	-1
New Heterojunction Technologies GmbH, Kahl am Main, Germany	100	3,691	-685
Foreign *			
SINGULUS TECHNOLOGIES Inc., Windsor, USA	100	9,045	509
SINGULUS TECHNOLOGIES MOCVD Inc., Windsor, USA	100	-635	0
SINGULUS TECHNOLOGIES ASIA Pacific Pte. Ltd., Singapore	100	722	-307
SINGULUS TECHNOLOGIES LATIN AMERICA Ltda., Sao Paolo, Brazil	91.5	-4,200	-822
SINGULUS TECHNOLOGIES IBERICA S.L., Sant Cugat del Vallés, Spain	100	-1,458	0
SINGULUS TECHNOLOGIES FRANCE S.A.R.L., Sausheim, France	100	-272	-207
SINGULUS TECHNOLOGIES ITALIA s.r.l., Ancona, Italy	100	0	0
SINGULUS TECHNOLOGIES TAIWAN Ltd., Taipei, Taiwan	100	-1,412	-44
SINGULUS TECHNOLOGIES SHANGHAI Co. Ltd., Shanghai, China	100	50	-128
STEAG HamaTech Asia Ltd., Hongkong, China	100	0	0
HamaTech USA Inc., Austin/Texas, USA	100	-975	23

* Equity and net income/loss were taken from the IFRS annual financial statements

SINGULUS TECHNOLOGIES Inc., Windsor, USA, wholly owns SINGULUS TECHNOLOGIES MOCVD Inc.

8.5 % of the interest in SINGULUS TECHNOLOGIES LATIN AMERICA Ltda. is held by SINGULUS TECHNOLOGIES IBERICA S.L.

STEAG HamaTech Asia Ltd. discontinued its operating business in April 2003.
The companies SINGULUS TECHNOLOGIES ITALIA s.r.l., and SINGULUS TECHNOLOGIES IBERICA S.L. were in liquidation as of December 31, 2018. The liquidation of SINGULUS MANUFACTURING GUANGZHOU was completed with effect from September 28, 2018.

During the reporting period, the newly formed distribution company SINGULUS TECHNOLOGIES SHANGHAI Co. Ltd. was included in the basis of consolidation. SINGULUS TECHNOLOGIES AG holds 100 % of shares in the newly formed company, which was therefore fully consolidated.

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Financial risk management

The financial liabilities contained in the consolidated financial statements essentially concern the bond placed in 2016. The Group has various financial assets such as trade receivables and cash and short-term deposits which arise directly from its operations.

In accordance with group policy, no derivatives trading took place in fiscal years 2018 or 2017, nor will derivatives be traded for speculative purposes in the future.

The operating and financing activities can essentially give rise to interest rate, credit, liquidity and foreign currency risks.

The individual risks are described in greater detail below. Additional remarks may be found in the risk report within the management report.

Foreign currency risk

Foreign currency risks from operations abroad are assessed as part of a risk analysis. Some sales of the SINGULUS TECHNOLOGIES Group are subject to the US dollar (USD) currency risk. For this reason, derivative financial instruments are used to hedge against USD exchange rate risks. Risks from foreign currencies are continually assessed as part the risk management system.

The following table shows the sensitivity of consolidated earnings before taxes (due to the change in the fair values of monetary assets and liabilities) and of consolidated equity (due to the changes in fair values of forward exchange contracts recognized in other comprehensive income) to a change in the USD/EUR exchange rate generally possible based on reasonable judgment. There were no open forward exchange contracts as of the balance sheet date. All other factors remain unchanged.

	Change in USD exchange rate	Effect on EBT	Effect on equity
		EUR m	EUR m
2018	+10 %	0.5	0.5
	-10 %	-0.4	-0.4
2017	+10 %	0.0	0.0
	-10 %	0.0	0.0

SINGULUS TECHNOLOGIES' earnings results from bank balances, unhedged trade receivables and payables as well as unhedged intragroup receivables and payables denominated in USD.

The effects on equity reflect the potential change in fair value of forward exchange contracts recognized in other comprehensive income (cash flow hedges).

Liquidity risk

The processing of the major orders as scheduled in 2019 will be critical for the Company's future solvency. In particular, the Company is dependent on the major Chinese customer CNBM in this regard. The management also expects further order intake and thus additional cash and cash equivalents from prepayments for new projects.

The Group still has access to bank guarantee lines in the amount of EUR 20.8 million. EUR 11.9 million of these had been drawn down as of the end of the fiscal year. In addition, as of the balance sheet date, there was a single bank guarantee of € 2.0 million for a prepayment received. Cash and cash equivalents are deposited as collateral to secure these loan commitments. For more information, please refer to Note 7.

The table below summarizes the maturity profile of the Group's financial liabilities as of December 31, 2018. The disclosures are made on the basis of the contractual, non-discounted payments.

Fiscal year ended December 31, 2018	**Payable on demand**	**Up to 3 months**	**3 to 12 months**	**1 to 5 years**	**More than 5 years**	**Total**
	EUR m	**EUR m**	**EUR m**	**EUR m**	**EUR m**	**EUR m**
Bond repayment	0.0	0.0	0.0	12.0	0.0	12.0
Bond interest	0.0	0.9	0.0	0.0	0.0	0.9
Liabilities from loans	0.0	0.0	0.0	0.0	0.0	0.0
Other liabilities	1.6	4.0	5.7	1.6	0.0	12.9
Trade payables	3.5	11.1	3.9	0.0	0.0	18.5
	5.1	**16.0**	**9.6**	**13.6**	**0.0**	**44.3**

Fiscal year ended December 31, 2017	**Payable on demand**	**Up to 3 months**	**3 to 12 months**	**1 to 5 years**	**More than 5 years**	**Total**
	EUR m	**EUR m**	**EUR m**	**EUR m**	**EUR m**	**EUR m**
Bond repayment	0.0	0.0	0.0	12.0	0.0	12.0
Bond interest	0.0	0.8	0.0	0.0	0.0	0.8
Liabilities from loans	0.0	0.0	4.0	0.0	0.0	4.0
Other liabilities	2.0	3.2	3.8	1.4	0.6	11.0
Trade payables	3.3	6.8	0.0	0.0	0.0	10.1
	5.3	**10.8**	**7.8**	**13.4**	**0.6**	**37.9**

Interest rate risk

The Group is exposed to the risk of fluctuations in market interest rates. A shift in the yield curve by +/- 50 basis points would not have any significant effect on the Group's earnings before taxes.

Credit risk

The credit risk is the risk of financial losses if a customer or contractual party to a financial instrument fails to meet its contractual obligations. The credit risk generally arises from trade receivables, loans and the group's receivables from construction contracts. The group is using export credit insurance as the primary instrument to hedge against specific country risks. Customers' creditworthiness and payment history are continually monitored and corresponding credit limits are set. In addition, risks in individual cases are limited where possible through credit insurance, bank guarantees and retention of title. From our current perspective, the group assumes sufficient coverage of the receivables default risk.

Significance of the credit risk

The carrying amounts of the financial assets correspond to the maximum credit risk. The Group's maximum credit risk as of the reporting date is presented below:

	2018 EUR m	**2017 EUR m**
Cash and cash equivalents	13.5	27.2
Financial assets subject to restrictions on disposal	14.3	8.7
Trade receivables	6.1	2.3
Receivables from construction contracts	20.4	9.5
	54.3	**47.7**

Capital management

The Group analyzes its capital based on the "net liquidity" (as the total of cash and cash equivalents, short-term deposits and financial assets subject to restrictions on disposal less the bond and interest-bearing loans). As of the end of the fiscal year, the net liquidity was as follows:

	2018 EUR m	**2017 EUR m**
Cash and cash equivalents	13.5	27.2
Financial assets subject to restrictions on disposal	14.3	8.7
Financial liabilities from bond issue	-12.9	-12.8
Liabilities from loans	0.0	-4.0
Net liquidity	14.9	19.1

In order to identify liquidity risks at an early stage, cash flow forecasts are prepared every month on the basis of a one-year forecast. The insolvency risk is thus reviewed on a regular basis.

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Financial instruments

Fair values

The effect from the first-time application of IFRS 9 on the consolidated financial statements is described in Note 4. The following table shows the carrying amounts and fair values of all financial instruments recognized in the consolidated financial statements by category.

	Measurement method	Carrying amount 2018 EUR m	Carrying amount 2017 EUR m	Fair value 2018 EUR m	Fair value 2017 EUR m
Financial assets					
Cash and cash equivalents**	AC	13.5	27.2	13.5	27.2
Financial assets subject to restrictions on disposal**	AC	14.3	8.7	14.3	8.7
Derivative financial instruments					
Hedging derivatives**	HD	-	-	-	-
Trade receivables**	AC	6.1	2.3	6.1	2.3
Receivables from construction contracts**	AC	20.4	9.5	20.4	9.5
Financial liabilities					
Bond*	AC	12.9	12.8	12.9	12.7
Liabilities from loans	AC	0.0	4.0	0.0	4.0
Derivative financial instruments					
Hedging derivative**	HD	-	0.0	-	0.0
Trade payables**	AC	18.5	10.1	18.5	10.1
Total	**AC**	**85.7**	**74.6**	**85.7**	**74.5**
Total	**HD**	**0.0**	**0.0**	**0.0**	**0.0**

Abbreviations:
AC: Financial assets and liabilities measured at amortized cost
HD: Hedging Derivatives

* Fair value measurement was categorized as fair value Level 1 based on the input factors for the measurement approach applied.
** Fair value measurement was categorized as fair value Level 2 based on the input factors for the measurement approach applied.

Cash and cash equivalents, financial assets subject to restrictions on disposal, and trade payables are generally due in the short term. The balance sheet figures approximate the fair values. The same applies for trade receivables and other assets.

The fair values of non-current trade receivables correspond to the present values of the payments relating to the assets taking into account the corresponding interest parameters.

Forward exchange contracts are measured using the ECB reference rates for spot currency and the valid forward exchange rates of the respective commercial bank for forward currency.

The fair value of the exchange-listed bond equals the market price as of the balance sheet date plus the carrying amount of accrued interest liabilities as of the balance sheet date.

The fair values of the liabilities to banks correspond to the amounts repayable on the bank loans as of the balance sheet date.

The maximum credit risk is reflected in the carrying amounts of the financial assets and liabilities.

The table below shows changes in liabilities held for financing purposes.

	As of January 1, 2018 EUR m	**Cash flow EUR m**	**Additions EUR m**	**ZAs of December 31, 2018 EUR m**
Bond	12.0	0.0	0.0	12.0
Interest	0.8	-0.8	0.9	0.9
Liabilities from loans	4.0	-4.3	0.3	0.0
	16.8	**-5.1**	**1.2**	**12.9**

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Headcount

In the fiscal year, the Company had an annual average of 327 (previous year: 315) permanent employees. The annual average distribution of employees (FTEs) by functional area in the fiscal year is presented below:

	2018	**2017**
Assembly, production and logistics	108	100
Development	82	73
Sales	98	103
Administration (excluding Executive Board members)	39	39
	327	**315**

The Group had 343 employees as of December 31, 2018 (previous year: 315).

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Auditor's fees (disclosures pursuant to section 314 (1) no. 9 HGB)

In the year under review, SINGULUS TECHNOLOGIES AG and its subsidiaries were charged the following fees by the auditor of the consolidated financial statements:

	2018 EUR k
a) for the audit of the financial statements	235
b) for other assurance services	3
c) other	64
Total	**302**

The fee for KPMG AG Wirtschaftsprüfungsgesellschaft's auditing services related to the audit of the annual and consolidated financial statements. Other services concerned services in relation to audit-related issues.

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Corporate governance

The Executive Board and the Supervisory Board made the declaration required under section 161 AktG in November 2018 and have made it available to shareholders on a permanent basis on the Company's website at http://www.singulus.com/en/investor-relations/corporate-governance/declaration-of-conformity/2019.html.

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Publication

The consolidated financial statements of SINGULUS TECHNOLOGIES AG were released for publication by the Executive Board on March 15, 2019.

Kahl am Main, March 15, 2019

SINGULUS TECHNOLOGIES AG

The Executive Board

Dr.-Ing. Stefan Rinck Dipl.-Oec. Markus Ehret


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ULTRA-HIGH VACUUM DEPOSITION SYSTEM FOR SEMICONDUCTOR

Thinnest layers are coated in vacuum on silicon wafers for use in sensor technology, for mobile devices and for computers.

INDEPENDENT AUDITOR'S REPORT

To Singulus Technologies Aktiengesellschaft, Kahl am Main

Report on the audit of the consolidated financial statements and the management report

Audit Opinions

We have audited the consolidated financial statements of Singulus Technologies Aktiengesellschaft, Kahl am Main, (hereinafter referred to as "Singulus AG" or the "Company"), and its subsidiaries (the "Group"), which comprise the consolidated balance sheet as at December 31, 2018, and the consolidated income statement, consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the fiscal year from January 1 to December 31, 2018, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the combined management report of the Singulus Technologies Group and Singulus AG (hereinafter referred to as the "Management Report") for the fiscal year from January 1 to December 31, 2018.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to § [Article] 315e Abs. [paragraph] 1 HGB [Handelsgesetzbuch: German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as of December 31, 2018, and of its financial performance for the financial year from January 1 to December 31, 2018, and
- the accompanying management report as a whole provides an appropriate view of the Group's position. In all material respects, this management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development.

Pursuant to § 322 Abs. 3 Satz [sentence] 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the management report in accordance with § 317 HGB and the EU Audit Regulation (No. 537/2014, referred to subsequently as "EU Audit Regulation") and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the management report.

Material uncertainty as to the Company's ability to continue as a going concern
We refer to section A: "General" in the notes and the disclosures in the section entitled "Report on risks and opportunities" of the combined management report of the Singulus Group and Singulus AG. In these sections, the Executive Board disclosed that the Company would only be able to maintain sufficient liquidity in fiscal years 2019 and 2020 if installments to be paid on the basis of major orders already contracted are actually made or not subject to a material delay and the orders also taken into account in the liquidity planning are completed as planned. These events and circumstances indicate that there are material uncertainties which can raise doubts as to the ability of the Company to continue to operate as a going concern within the meaning of § 322 Abs. 2 Satz 3 HGB. This has not changed our audit opinion.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the fiscal year from January 1 to December 31, 2018. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

Goodwill impairment

Please refer to notes 4.5 and 4.16 to the consolidated financial statements for information on the accounting policies and assumptions applied. Disclosures on the amount of goodwill can be found in note 11 to the consolidated financial statements.

Risk for the financial statements
At December 31, 2018, goodwill amounted to EUR 6.7 million, or 31.5% of Group equity.

Goodwill relates solely to the "Solar" operating segment and is tested for impairment at this level annually and on an ad hoc basis. To that end, the carrying amount of the goodwill is compared against the recoverable amount of the Solar operating segment. If the carrying amount is greater than the recoverable amount, an impairment must be recognized. To test for impairment, the Company primarily determines the value in use and compares this against the respective carrying amount. The value in use is determined using a valuation model that is based on the discounted cash flow method. Goodwill was tested for impairment as of December 31, 2018. Goodwill impairment tests are complex and require that discretion be exercised when making assumptions. Such assumptions include the expected revenue and earnings trend, including an assumption as to the growing market share for the global new machinery business for selected production facilities of the Solar operating segment for the next five years, the assumed long-term growth rates and the discount rate used.

As a result of the impairment tests, the Company did not identify any need to recognize any impairment on goodwill. However, the Company's sensitivity analysis for the value in use found that if revenue were to fall beneath the target by more than 29.5% or if the planned EBIT margin were to fall more than 8.3 percentage points below the target, this would result in goodwill being written down to the value in use.

The financial statements are subject to the risk that a goodwill impairment not yet incurred as of the balance sheet date was not identified. Furthermore, there is a risk that the notes disclosures on goodwill impairment are not accurate.

Our audit approach
With the assistance of our valuation specialists, we assessed among other things the appropriateness of the discount rate used in the impairment test. In addition, we discussed the expected revenue and earnings trend, including an assumption as to the growing market share for the global new machinery business for selected production facilities of the Solar operating segment, the assumed long-term growth rates with those persons responsible for planning. In addition, we reconciled the three-year plan prepared by the Executive Board and adopted by the Supervisory Board with other internally available forecasts, e.g., for tax purposes, as well as with the draft statement on the going concern assumption for the SINGULUS Group prepared by an external expert. Moreover, we assessed the consistency of the assumptions with external market expectations and Singulus AG's market capitalization.

Furthermore, we assessed the accuracy of prior forecasts by the Company by comparing the projections for the fiscal year against the actual results, and analyzed deviations. As changes in the discount rate can have a material impact on the results of the impairment test, we have compared the assumptions and parameters underlying the discount rate, in particular the risk-free interest rate, the market risk premium and beta, with our own assumptions and publicly available data.

To ensure the arithmetical correctness of the valuation model used, we have verified the Company's calculations on the basis of selected risk-oriented elements.

In order to account for the existing forecast uncertainty for the impairment test, we conducted our own sensitivity analysis to examine possible changes in the earnings trend (in particular revenue and EBIT margins), the discount rate and the long-term growth rate for the recoverable amount by calculating alternative scenarios and comparing them with the Company's figures.

Finally, we assessed whether the notes disclosures on goodwill impairment are accurate. This also involved an assessment of the appropriateness of the disclosures in the notes regarding sensitivities to changes in material assumptions underlying the valuation.

Our conclusions
The calculation method underlying the impairment test for the Solar segment's goodwill is appropriate and complies with the applicable valuation principles. The assumptions and parameters used by the Company in the valuation are balanced overall. The notes disclosures on goodwill impairment are appropriate.

Accounting for construction contracts and revenue recognition

Please refer to note 4.4 to the consolidated financial statements for information on the accounting policies applied. Disclosures of the amount of reported revenue from construction contracts and receivables and liabilities from construction contracts can be found in note 8 to the consolidated financial statements.

Risk of the financial statements
Income from construction contracts amounted to EUR 106.4 million in fiscal year 2018. Receivables from construction contracts amounted to EUR 14.8 million as of December 31, 2018, taking into account prepayments received of EUR 20.4 and liabilities from construction contracts.

Singulus AG recognizes revenue from construction contracts when it satisfies a performance obligation by transferring a specified asset to a customer. An asset is deemed to have been transferred once the customer obtains control over that asset. Depending on the transfer of control, revenue is recognized either at a point in time or over time in the amount that reflects the consideration to which Singulus AG expects to be entitled.

Singulus AG has determined, on the basis of the following criterion, that the performance obligation for construction contracts is fulfilled over time and that revenue is therefore recognized over time: The Group's performance creates an asset that has no alternative use for the Group and the Group has a legal right to receive payment for the services already rendered, including an appropriate margin.

Where revenue is recognized over time, income and partial contributions to profit or loss are realized according to the degree of completion of the contract. This requires that the earnings from the contract can be reliably estimated. If the contract is expected to result in a loss, that loss must be recognized in full, immediately.

Accounting for construction contracts is complex and subject to discretion. There are uncertainties with respect to estimates, particularly regarding the total estimated contract costs and the calculation of the percentage of completion, which is based on continually updated projections (cost-to-cost method).

The most significant market for construction contracts for the Group is in Asia. The agreements with the customers contain complex contractual provisions.

Due to the relevance of complex contractual agreements and the discretion used when assessing the criteria for assessing the timing of the transfer of control, there is a risk that the revenue and earnings from construction contracts and the related receivables and liabilities may be incorrectly allocated to the respective fiscal years and that expected losses from construction contracts may not be recognized in a timely manner.

Our audit approach
On the basis of our acquired understanding of the process, we have assessed the design, establishment and functionality of identified internal controls, in particular with respect to the correct allocation of costs to individual contracts.

In light of the first-time application of IFRS 15, we focused our audit on assessing the executive directors' interpretation of the criteria for recognizing revenue over time. To this end, we have assessed all relevant current construction contracts.

For contracts selected based on risk-oriented aspects, we have assessed the appropriateness of significant discretionary decisions, such as estimating the costs still to be incurred. To that end, we discussed the selected construction contracts, including existing risks (e.g., legal and warranty risks), with the Company's relevant contacts (e.g., the Executive Board, sales management, controlling and project managers), analyzed their updated order calculations and the respective percentage of completion, and assessed the associated documents (e.g., contracts, acceptance records). In addition, we compared the accrued actual costs for the selected contracts still in progress with the original cost estimate in order to assess the general accuracy of projections. Based on previous findings, we also assessed whether the respective percentage of completion was appropriately calculated and reported in the balance sheet and income statement.

Our conclusions
Singulus AG's approach to recognizing revenue from construction contracts over time and accounting for construction contracts is appropriate. The assumptions underlying the accounting for construction contracts are appropriate.

Other Information
The executive directors are responsible for the other information. The other information include the annual report, which is likely to be made available to us after the date of this auditor's opinion, with the exception of the audited annual financial statements and management report and our auditor's report.

Our audit opinions on the annual financial statements and on the management report do not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the annual financial statements, with the management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

The annual report does not contain any further components of the management report, other than the "combined management report of the Singulus Group and Singulus AG".

Responsibilities of the Executive Directors and the Supervisory Board for the Consolidated Financial Statements and the Management Report
The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the management report.

The Supervisory Board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our audit opinions on the consolidated financial statements and on the management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with § 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.

- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these systems.

- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.

- Conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the management report or, if such disclosures are inadequate, to modify our respective audit opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.

- Evaluate the consistency of the management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.

- Perform audit procedures on the prospective information presented by the executive directors in the management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate audit opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

Other legal and regulatory requirements

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as auditor by the annual general meeting on June 28, 2018. We were engaged by the Supervisory Board of Singulus AG on September 11, 2018. We have been the auditor of the Singulus AG without interruption since fiscal year 2012.

We declare that the audit opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

German Public Auditor responsible for the engagement

The German Public Auditor responsible for the engagement is Yaman Pürsün.

Frankfurt am Main, March 19, 2019

KPMG AG
Wirtschaftsprüfungsgesellschaft

signed Pürsün German Public Auditor	signed Horn German Public Auditor

SINGULUS TECHNOLOGIES AG

Balance Sheet as of 31. Dezember 2018

Assets	12/31/2018		12/31/2017	
	EUR k	EUR k	EUR k	EUR k
A. Fixed assets				
I. Intangible fixed assets				
1. Purchased industrial and similar rights and assets	2,019		2,598	
2. Goodwill	6,630		9,471	
3. Prepayments	139	8,788	26	12,095
II. Tangible fixed assets				
1. Land, land rights and buildings, including buildings on third-party land	8,074		9,041	
2. Plant and machinery	1,883		1,063	
3. Other equipment, operating and office equipment	671		762	
4. Anlagen im Bau	592	11,220	0	10,866
III. Long-term financial assets				
Shares in affiliates		9,288		9,677
		29,296		**32,638**
B. Current assets				
I. Inventories				
1. Raw materials, consumables and supplies	14,080		5,413	
2. Work in process	114,376		62,046	
3. Prepayments	7,042		4,315	
4. Prepayments received	-135,498	0	-71,774	0
II. Receivables and other assets				
1. Trade receivables	1,414		1,158	
2. Receivables from affiliates	4,412		1,466	
3. Other assets	1,435	7,261	2,287	4,911
III. Cash and bank balances		24,248		31,143
		31,509		**36,054**
C. Prepaid expenses		**247**		**508**
D. Deficit not covered by equity		**29,907**		**0**
Total assets		**90,959**		**69,200**

Equity and liabilities

	12/31/2018		12/31/2017	
	EUR k	EUR k	EUR k	EUR k
A. Equity				
I. Subscribed capital		8.896		8.896
II. Capital reserves		19.697		19.697
III. Balance sheet loss		-58.500		-27.718
IV. Deficit not covered by equity		29.907		0
		0		**875**
B. Provisions				
1. Provisions for pensions and similar obligations		10.994		10.333
2. Provisions for taxes		405		17
3. Other provisions		12.870		12.910
		24.269		**23.260**
C. Liabilities				
1. Bonds		12.000		12.000
2. Payments received on account of orders		32.400		9.279
3. Trade payables		10.102		7.395
4. Liabilities to affiliates		5.827		5.252
5. Other liabilities from financing contracts		4.923		10.067
6. Other liabilities - thereof in relation to taxes EUR 622k (PY: EUR 336k)		1.431		1.072
		66.683		**45.065**
D. Rechnungsabgrenzungsposten		**7**		**0**
Total equity and liabilities		**90.959**		**69.200**

SINGULUS TECHNOLOGIES AG

Income Statement for the Period from January 1 to December 31, 2018

	2018		2017	
	EUR K	**EUR K**	**EUR K**	**EUR K**
1. Revenue		23,833		61,676
2. Increase (PY: Decrease) in work in progress		52,330		-899
3. Andere aktivierte Eigenleistungen		589		0
4. Other operating income - thereof currency translation gains EUR 205k (PY: EUR 444k)		4,171		7,394
5. Cost of materials a) Cost of raw materials, consumables and supplies and of purchased merchandise b) Cost of purchased services	-37,501 -19,643	-57,144	-34,263 -11,571	-45,834
6. Personnel expenses a) Wages and salaries	-24,746		-21,596	
b) Social security, pension and other benefit costs - thereof for old-age pensions EUR 1.425k (PY: EUR 1.003k)	-5,371	-30,117	-4,835	-26,431
7. Amortization or depreciation of intangible and tangible fixed assets		-5,187		-6,710
8. Other operating expenses - thereof currency translation losses EUR 24k (PY: EUR 73k)		-16,149		-14,550
9. Income from long-term loans - thereof from affiliates EUR 203k (PY: EUR 291k)		203		291
10. Other interest and similar income - there Erträge aus der Abzinsung EUR 31k (PY: EUR 21k)		31		47
11. Write-downs of financial assets		-150		-2,331
12. Interest and similar expenses - thereof to affiliates EUR 684k (PY: EUR 571k) - thereof expenses from interest EUR 381k (PY: EUR 399k)		-2,856		-2,639
13. Tax income		-300		0
14. Earnings after taxes		**-30,746**		**-29,986**
15. Other taxes		-36		-44
16. Net loss for the year (PY: net income for the year)		**-30,782**		**-30,030**
17. Loss carryforward (PY: profit carryforward)		-27,718		2,312
16. Balance sheet loss		**-58,500**		**-27,718**

STATEMENT OF THE EXECUTIVE BOARD

IN ACCORDANCE WITH §§ 297 (2) SENTENCE 4, 315 (1) SENTENCE 6 HGB

To the best of our knowledge, we declare that in according to the generally accepted reporting principles for consolidated financial reporting, the consolidated financial statements in accordance with IFRS give a true and fair view of the SINGULUS TECHNOLOGIES Group's net assets, earnings and financial position, the Group management report of SINGULUS TECHNOLOGIES AG and that of the SINGULUS TECHNOLOGIES Group represents the course business including the results of operations and the situation of the SINGULUS TECHNOLOGIES Group in such a way that it provides a true and fair view and that the material risks and opportunities and the foreseeable development of the Group have been described.

Kahl am Main, March 15, 2019

SINGULUS TECHNOLOGIES AG
The Executive Board

SINGULUS TECHNOLOGIES

Operating globally

January 2019

MMM Intermag	January 14 - 18, 2019	Washington, D.C., USA
PCD Paris	January 30/31, 2019	Paris, France

February 2019

MDM West	February 5 - 7, 2019	Anaheim, USA
FlexMEMS & Sensors Technical Congress	February 18 - 21, 2019	Monterey, USA

March 2019

SEMICON China	March 20 - 22, 2019	Shanghai, China

April 2019

SVC Annual Technical Conference	April 27 - Mai 2, 2019	Long Beach, USA

May 2019

MEDIA-TECH Conference	May 2, 2019	Berlin, Germany
T4M	May 7 - 9, 2019	Stuttgart, Germany
Intersolar Europe	May 15 - 17, 2019	Munich, Germany

June 2019

SNEC	June 4 - 6, 2019	Shanghai, China
IEEE PVSC	June 16 - 21, 2019	Chicago, USA

July 2019

SEMICON West	July 9 - 11, 2019	San Francisco, USA

September 2019

EU PVSEC	September 9 - 13, 2019	Marseille, France

October 2019

AVS International Symposium & Exhibition	October 20 - 25, 2019	Columbus, USA

November 2019

SEMICON Europa	November 12 - 15, 2019	Munich, Germany

SINGULUS TECHNOLOGIES

Company Calendar 2019

March 2019	
Annual Press Conference	3/28/19
March 2019	
Analyst Conference	3/28/19
May 2019	
Interim Report Q1/2019	5/14/19
May 2019	
Annual Shareholders Meeting 10:30 am DVFA Deutsche Vereinigung für Finanzanalyse und Asset Management GmbH Mainzer Landstrasse 37, 60329 Frankfurt am Main	5/23/19
August 2019	
Half Year Report 2019	8/14/19
November 2019	
Interim Report Q3/2019	11/14/19

Consolidated Key Figures

2014-2018

		2018	2017	2016[1]	2015	2014
Sales (gross)	EUR m	127.5	91.2	68.8	83.7	66.8
Sales (net)	EUR m	125.9	90.0	67.6	82.3	65.8
Sales Germany	%	8.7	11.8	11.6	7.2	15.9
Sales Rest of Europe	%	11.7	7.6	12.6	9.1	17.3
Sales Americas	%	11.5	18.3	35.6	30.7	46.0
Sales Asia	%	67.5	61.6	37.9	51.4	18.6
Sales Africa/Australia	%	0.6	0.7	2.3	1.6	2.2
Order intake	EUR m	86.8	88.0	152.1	96.3	60.6
Order backlog (Dec. 31)	EUR m	66.0	106.7	109.9	26.6	14.0
EBIT	EUR m	6.8	-1.2	-17.4	-34.5	-49.1
EBIT margin	%	5.4	-1.3	-25.7	-41.9	-74.6
EBITDA	EUR m	9.1	0.7	-14.1	-27.0	-24.1
Earnings before taxes	EUR m	4.8	-2.8	20.4	-43.3	-51.7
Net profit/loss	EUR m	0.8	-3.2	20.2	-43.4	-51.6
Operating cash flow	EUR m	2.5	-14.1	14.1	-10.5	-10.1
Operating cash flow in % of net sales		2.0	-15.7	20.9	-12.8	-15.3
Property, plant & equipment	EUR m	10.7	4.9	4.8	5.3	6.3
Goodwill	EUR m	6.7	6.7	6.7	6.7	6.7
Current assets	EUR m	80.4	72.4	80.1	71.1	98.5
Shareholders' equity	EUR m	19.7	20.2	13.3	-21.5	20.1
Equity ratio	%	18.9	23.0	14.0	-23.3	15.4
Balance sheet total	EUR m	104.1	87.9	95.1	92.1	130.2
Research & development expenditures	EUR m	13.4	8.6	12.3	11.2	11.0
(in % of net sales)		10.6	9.6	18.2	13.6	16.7
Employees (Dec. 31)		343	315	318	335	352
Number of shares outstanding		8,896,527	8,896,527	8,087,752	305,814	48,930,314[2]
Stock price at year-end	EUR	9.15	14.89	4.21	44.80	0.68[2]
Earnings per share	EUR	0.09	-0.39	5.48	-141.92	-1.05[2]

[1] Prior-year figures partially adjusted
[2] Before capital reduction in the business year 2016 (160:1)

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Published by
SINGULUS TECHNOLOGIES AG,
Kahl am Main

Production
MetaCom GmbH

Concept and Content
Bernhard Krause

Text
Bernhard Krause
SINGULUS TECHNOLOGIES

Photography
Marc Krause
Shutterstock Bildagentur

Artwork/DTP
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Publication
March 28, 2019

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