2019

SINGULUS TECHNOLOGIES

Innovations for New Technologies

ANNUAL REPORT

Vacuum Deposition
Surface Engineering
Thermal Processing
Wet Chemical

SINGULUS

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 as well as consumer goods and data storage sectors.

At a Glance

Consolidated Key Figures 2019-2018

		2019	2018
Sales	EUR million	**79.4**	127.5
Order intake	EUR million	**39.7**	86.8
Order backlog (Dec. 31)	EUR million	**26.3**	66.0
EBIT	EUR million	**-8.2**	6.8
Earnings before taxes	EUR million	**-10.3**	4.8
Net profit/loss	EUR million	**-11.3**	0.8
Operating cash flow	EUR million	**-3.2**	2.5
Shareholders' equity	EUR million	**7.0**	19.7
Balance sheet total	EUR million	**83.7**	104.1
Research & development expenditures	EUR million	**13.4**	13.4
Employees (Dec. 31)		**351**	343
Weighted average shares outstanding, basic	shares	**8,896,527**	8,896,527
Earnings per share, basic	€	**-1.27**	0.09

Table of Content

03 / 102-151

Consolidated Financial Statements of the SINGULUS TECHNOLOGIES AG

04 / 154-167

Additional Information

Annual Review 2019

Q1

1st Quarter 2019

- China National Building Materials (CNBM) acquires additional 3.64 % of shares of the SINGULUS TECHNOLOGIES AG
- SINGULUS TECHNOLOGIES reports measure pursuant to Art. 8 of the terms of the corporate bond
- Order intake for production line of the DECOLINE II type from the cosmetics sector
- SINGULUS TECHNOLOGIES reports consolidated financial results on March 28, 2019
- **Fairs/exhibitions in the 1st quarter**
  - MMM Intermag, Washington DC, USA
  - PCD Paris, Paris, France
  - MD&M West, Anaheim, USA
  - Flex MEMS & Sensors Technical Congress, Monterey, USA
  - SEMICON China, Shanghai, China

Q2

2nd Quarter 2019

- Delivery of a vacuum coating machine for heterojunction high-performance solar cells to a large manufacturer of solar cells
- Order intake of vacuum coating machines of the POLYCOATER type for the finishing of 3D components from a European customer
- Supervisory Board reappoints Mr. Markus Ehret to the Executive Board of the company for additional five years
- SINGULUS TECHNOLOGIES receives new order for the delivery of processing machines or the cleaning of medical products
- Report for the 1st quarter 2019 published on May 14, 2019
- The Annual General Meeting of the company is held on May 23, 2019
- **Fairs/exhibitions in the 2nd quarter**
  - SVC Annual Technical Conference, Long Beach, USA
  - MEDIA-TECH Conference, Berlin, Germany
  - T4M, Stuttgart, Germany
  - Intersolar Europe, Munich, Germany
  - SNEC, Shanghai, China
  - IEEE PVSC, Chicago, USA
  - Vacuum Coatings Conference, Shenzen, China

Q3

3rd Quarter 2019

- Personnel change in Supervisory Board of the SINGULUS TECHNOLOGIES AG: Dr. Silke Landwehrmann appointed as member of the Supervisory Board
- Financial key figures for the 1st half 2019 reported on August 14, 2019
- SINGULUS TECHNOLOGIES reports reduction of full-year sales and earnings forecasts due to delayed order intake
- **Fairs/exhibitions in the 3rd quarter**
  - SEMICON West, San Francisco, USA
  - EU PVSEC, Marseille, France
  - PACK EXPO Las Vegas, Las Vegas, USA

Q4

4th Quarter 2019

- Dr. rer. nat. Christian Strahberger appointed as member of the Executive Board of the SINGULUS TECHNOLOGIES AG
- Signing ceremony between the subsidiary of the Chinese state-owned enterprise CNBM Group and SINGULUS TECHNOLOGIES takes place in the course of the China International Import Expo (CIIE). Goal is the confirmation of the agreement regarding essential parameters for the delivery of production machines for first expansion stage with 150 MW for the next factory for CIGS solar modules in Xuzhou, China
- The key financial results for the first nine months 2019 are reported on November 14, 2019
- **Fairs/exhibitions in the 4th quarter**
  - K 2019, Dusseldorf, Germany
  - AVS International Symposium & Exhibition, Columbus, USA
  - China International Import Expo, Shanghai, China
  - SEMICON Europe, Munich, Germany
  - Cosmopack Asia, Hong Kong

POLYCOATER

LIFE SCIENCE

Inline vacuum coating system for the environmentally friendly production of decorative and functional layers. This sustainable production method is used for cosmetics as well as plastic parts in the automotive industry and consumer goods.

Report of the Supervisory Board

To the Shareholders of the SINGULUS TECHNOLOGIES AG

Dear Shareholders!
The business year 2019 fell significantly short of our expectations. The decline in the key financial result compared with the previous year are mainly a result of a delay in the conclusion of a major order by our large customer CNBM Group, Beijing (CNBM), in the Solar division. However, it is encouraging that our company was able to record some success in the new business areas.

At the beginning of September 2019 CNBM informed the Executive Board of the SINGULUS TECHNOLOGIES AG that the signing of the contracts for the delivery of machines for the manufacturing solar modules on the basis of the CIGS technology will be further delayed although the expansion plans had been unchanged. The contracts for the site in Xuzhou were then actually signed on January 15, 2020. Contrary to the planning, no sales could be realized for this major order in the business year 2019 anymore. The communicated sales and earnings targets could not be achieved.

In the end, this will only mean a temporary shift of sales, however. The growth outlook in the Solar division continues to be favorable. We expect that photovoltaics will globally establish itself as a promising and the most cost-efficient energy resource of the future. We supply machines for all important technologies for the production of efficient solar modules.

Despite this growth outlook, the Executive Board and the Supervisory Board still aim to reduce the dependency from large scale orders in the Solar segment. It is particularly encouraging that we were able to win promising new orders in the work areas Decorative Coatings and Medical Technology. SINGULUS TECHNOLOGIES sees two segments, which will successfully contribute to sales and earnings in the future: vacuum coating technology and surface treatment. They have the potential to generate successful new products in several interesting market segments.

Details regarding the development of the company are depicted in depth in the Status Report.

Activities of the Supervisory Board in the Business Year 2019

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 2019 the Supervisory Board attended to all legal and statutory duties and adhered to the guidelines of the bylaws governing 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 2019. 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 2019 by the Executive Board of the SINGULUS TECHNOLOGIES AG.

Supervisory Board Matters

During the period under review the Supervisory Board extensively dealt with the new law for the implementation of the second German shareholder rights directive (ARUG II) as well as the planned changes in the German Corporate Governance Code. In this respect the Supervisory Board was instructed and supported by external consultants. In this connection the impact on the work of the Supervisory Board as well as the consulting and monitoring of the Executive Board were reviewed and relevant measures for the implementation of the directive were prepared.

The Supervisory Board is still only comprised of three members and thus is able to work very efficiently. The formation of committees in not required. Pursuant to the new recommendations of the German Corporate Governance Code the Supervisory Board routinely assesses the efficiency of its work in the sense of a self-evaluation and has developed a questionnaire for this purpose to help identify potential for improvement. In December 2019 the Supervisory Board adopted new bylaws for the Supervisory Board, which on the one hand take into account the amendment of the bylaws to the legal change in the German Stock Corporate Act and on the other hand consider new or changed recommendations of the already announced new German Corporate Governance Code. In this connection, the list of business activities requiring approval was updated. The bylaws of the Supervisory Board are publicly available on the website of the SINGULUS TECHNOLOGIES AG under www.singulus.de/de/investor-relations/corporate-governance.html.

Ms. Christine Kreidl, Dipl. Kauffrau, WP/StB, stepped down from her position as member of the Supervisory Board of the SINGULUS TECHNOLOGIES AG as of August 10, 2019 for personal reasons. During her tenure as a member of the Supervisory Board Ms. Kreidl shaped the company with her extraordinary expertise, in particular in the areas of accounting and risk management, as well as with her responsible and committed personality. The Supervisory Board and the Executive Board regretfully acknowledge this step and explicitly thank her for the committed and very good cooperation in the nearly seven past years.

From left to right:
Dr. rer. nat. Rolf Blessing, Member of the Supervisory Board,
Dr. Silke Landwehrmann, Member of the Supervisory Board,
Dr.-Ing. Wolfhard Leichnitz, Chairman of the Supervisory Board

By request from the company, Dr. Silke Landwehrmann, Dipl.-Kauffrau, was appointed by the relevant Local Court Aschaffenburg as member of the Supervisory Board with effect from August 11, 2019 until the next ordinary shareholders' meeting of the company.

Ms. Landwehrmann is Managing Director of the Aufam Asset Management GmbH, Rheinberg, since January 2020. Before that, from the beginning of 2012 until the end of 2019 Dr. Landwehrmann was CFO of the ELG Haniel GmbH, Duisburg. During this period in time Dr. Landwehrmann held numerous mandates in German and international supervising committees. From 2000 until 2011 she held several managerial business positions within the Franz Haniel und Cie. GmbH, Duisburg, amongst others as Head of Group Accounting and at last as Head of Business Administration.

In addition, Dr. Landwehrmann is a member of the Supervisory Board of the Lufthansa Cargo AG. There are no other memberships in Supervisory Board or comparable German and international supervisory committees of business companies.

With her professional know-how Dr. Landwehrmann excellently complements the Supervisory Board of the SINGULUS TECHNOLOGIES AG. At the upcoming Annual General Meeting Dr. Landwehrmann will run for election by the shareholders.

During the business year 2019 nine meetings of the Supervisory Board were convened: There were five meetings in presence and four conference calls. All members of the Supervisory Board appointed at the respective points in time participated in the Supervisory Board meetings held in the business year 2019.

- Meeting in presence on February 27, 2019
- Meeting in presence on March 19 & 20, 2019
- Conference call on May 9, 2019
- Meeting in presence on May 22, 2019
- Extraordinary conference call on July 30, 2019
- Conference call on August 9, 2019
- Meeting in presence on September 17, 2019
- Conference call on November 10, 2019
- Meeting in presence on December 11, 2019

Presence of the Supervisory Board in 2019

	Dr.-Ing. Wolfhard Leichnitz	Dr. rer. nat. Rolf Blessing	Christine Kreidl	Dr. Silke Landwehrmann
February 27 Presence	•	•	•	–
March 19/20 Presence	•	•	•	–
May 9 Conference call	•	•	•	–
May 22 Presence	•	•	•	–
July 30 Extraordinary conference call	•	•	•	–
August 9 Conference call	•	•	•	–
September 17 Presence	•	•	–	•
November 10 Conference call	•	•	–	•
December 11 Presence	•	•	–	•
Total	**9**	**9**	**6**	**3**

Advisory and Monitoring of Executive Board by the Supervisory Board

The Supervisory Board dealt with the course of business of the SINGULUS TECHNOLOGIES AG in the business year 2019 during all of its meetings. The Executive Board regularly reported to the Supervisory Board about the key figures concerning the 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 in all segments, including the trends in the market environments and detailed the order intake and backlog as well as other key financial indicators. The development of the business relationships with the two large customers CNBM and Hanergy and the order situation in particular in view of the large projects in the work area thin-film solar technology was regularly presented to the Supervisory Board and discussed between the Executive Board and the Supervisory Board. The course of business in the year 2019 was compared with the company's forecasts for the business year 2019. All deviations were documented and the required measures for potential adjustments were discussed with the Executive Board. The new breakdown of the segments as well as the increasing importance and the expansion of the new work areas Medical Technology and Decorative Coatings were presented by the Executive Board and discussed with the Supervisory Board. Additional written and oral reports of the Executive Board, by other employees, the auditors as well as by external consultants supplemented the ongoing reporting.

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 regularly and extensively monitored y the Supervisory Board and discussed with the Executive Board. In particular during the second half of the past business year an extensive monitoring of the liquidity and the planned receipts of payments and order intake was monitored. 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 development of the shareholders' equity pursuant to HGB was discussed separately, in particular with respect to the obligation to convene an extraordinary shareholders meeting. Since informing the shareholders in the course of the extraordinary shareholders meeting on November 2017 about the first-time loss of more than half of the nominal capital, this fact has remained unchanged. Due to the different realization of sales pursuant to HGB and IFRS, time and again there are temporary losses pursuant to HGB, which however will be compensated with the completion of the respective projects by means of a complete realization of sales.

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. These 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.

The Executive Board provided the Supervisory Board with the interim reports as well as the half-year report for the business year 2019 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.

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 29 of this Annual Report 2019).

Corporate Governance

The SINGULUS TECHNOLOGIES AG and its Supervisory Board subscribe to the principles of proper and responsible corporate governance. The Executive and Supervisory Board have made a declaration of conformity pursuant to Art. 161 AktG, according to which the company adheres to the recommendations of the German Corporate Governance Code except for the stated and reasoned deviations. The declaration of conformity was renewed in December 2019 and is publicly available on the website of the SINGULUS TECHNOLOGIES AG under www.singulus.de/de/investor-relations/corporate-governance.html. For a detailed representation of the Corporate Governance Report as well as the current Declaration of Conformity, please refer to pages 20 to 29 of the Annual Report 2019.

Executive Board Matters

In the course of its meeting on February 27, 2019 the Supervisory Board reviewed the remuneration of the Executive Board, discussed targets with the Executive Board and resolved these targets. In addition, the level of achievement of the performance for the Executive Board was determined on the basis of the preliminary results. The Supervisory Board asserted that the employment contracts of the two at this time appointed members of the Executive Board were updated in 2018 and the compensation systems was approved by the Annual General Meeting 2018 and thus does not see any cause for action to adjust the compensation of the Executive Board with respect to its level or structure.

In the course of its meeting on March 19, 2019 the Supervisory Board resolved to appoint Mr. Markus Ehret to the Executive Board of the company for additional five years until March 20, 2024 and to conclude a new employment contract accordingly.

In the course of its meeting on September 17, 2019 the Supervisory Board resolved to appoint Dr. rer. nat. Christian Strahberger as a member of the Executive Board of the SINGULUS TECHNOLOGIES AG with effect from November 1, 2019 for a term of three years and to conclude a respective employment contract with Dr. rer. nat. Christian Strahberger. The Supervisory Board deemed the addition to the Executive Board as necessary in order to provide additional capacities on the Executive Board level for the further development of the new work areas.

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.

At its meeting on September 17, 2019, the Supervisory Board received detailed information about the risk management system and the identified main risks addressed by the system as well as the improvements that had been made since last year. At the same time, the status of the implementation of the compliance guidelines, the training courses held and the reporting system for compliance violations were reported. There were no reports.

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 pages 64 to 77 of the Annual Report 2019).

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, 2019 were subject of the Supervisory Board meeting on March 23, 2020 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 2019 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 23, 2020 the responsible auditors were present, who explained the results of the audit and answered the questions of the Supervisory Board members in detail.

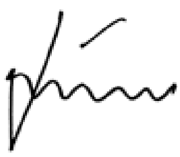
The Supervisory Board extensively continued to discuss the financial statements, the consolidated financial statements, the combined status report as well as the audit by the auditor and did not have any objections. The assumptions, on which the going-concern assumption rested, as well as the conclusions 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, 2019 as well as regarding the audit by KPMG.

In its meeting on March 23, 2020 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 2019 and wishes success for the business year 2020.

Kahl am Main, in March 2020



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!
We are presenting the Annual Report in stormy times. While the Executive Board is drawing up these lines, the SARS-CoV-2 virus is spreading in Germany and the entire world and the resulting social and economic effects are not yet foreseeable. We have resolved essential measures and guidelines for SINGULUS TECHNOLOGIES to lead our company and in particular all of our employees and business partners safe and sound through this period in time.

The impact of the crisis will only be objectively assessable in a couple of weeks. We see that our Chinese partners and customers slowly revert to normal routines and processes or that it is visible that this will take place in the near future. To see this is very important for us, because we were already strongly impacted by the effects of SARS-CoV-2 in Asia in the recent past since the beginning of the year.

We assure you that the Executive Board and the entire staff work closely together as a group to ensure that SINGULUS TECHNOLOGIES withstands this crisis well in order to be able to focus on our customers again as soon as possible.

After casting a view towards the difficult to plan near future, let us now review the past business year. Following a very good year 2018 we started the business year 2019 with positive expectations. Our plans were based on the assumption to be able to realize large projects in China with our partners there. However, there were very substantial delays in 2019 running into the current year. These delays in 2019 were responsible for us missing our targets. Nevertheless, the delayed projects were not cancelled, but are still part of the plans of the customers in the near future. A signal in this positive direction was the signing of contracts in January 2020 for the delivery of machines for the production of CIGS solar modules with a volume of about € 56 million.

The solar market will remain the key market for SINGULUS TECHNOLOGIES in the coming years. Climate change will result in the trend of an above-average increase of renewable energies with respect to global electricity generation capacities. The largest share will be attributed to the expansion of solar capacities. The International Renewable Energy Agency (IRENA) projects an installed total capacity of 2,840 GW for 2030. By the year 2050 the installation should then total 8,519 GW.

In 2018, the capacity was still 480 GW. By the middle of the century, photovoltaics should already cover a quarter of the world's electricity demand.

These framework conditions are also in favor of unchanged growth in the Solar division from the company's point of view. In the next couple of years our focus will rest on the cooperation with our large customers for thin-film solar modules on the basis of the CIGS technology. In addition, for crystalline high-performance solar cells such as heterojunction (HJT) we address the key processing steps with wet-chemical and vacuum coating and were able to commission important reference projects in 2019 in this area.

Our business in the Solar segment should expand substantially in the current year 2020 again and make positive contributions to the results.

New Work Areas in the Focus

Of course, we took advantage of the year 2019 to improve our company's position in the new areas. In addition to the established segments Solar and Semiconductor, SINGULUS TECHNOLOGIES focuses on the newly set-up segment Life Science and extensively expands this area. In this work area SINGULUS TECHNOLOGIES combines the systems for applications in Medical Technology, Decorative Coatings and Data Storage and already had some initial successes.

SINGULUS TECHNOLOGIES focuses its activities on the development, manufacturing and selling of machines and systems in the area of vacuum coating technology, surface processing, wet-chemical as well as thermal processing technology. In the past couple of years we have purposefully expanded our activities in order to establish our technologies in new work areas such as Decorative Coatings, Medical Technology as well as Electronics. We view Medical Technology and Decorative Coatings as growth markets, which we attempt to take advantage of.

At the end of 2017 we entered the market of Medical Technology and were able to book orders in a double-digit million range for the sales of processing machines in 2017 and 2018. In the past business year we received another order from a European customer. With this trend we are already well positioned in the market for Medical Technology.

The product solutions provide all prerequisites to enable a more resource-efficient process than the traditional production finishing of plastic, glass and metal components. In general, the company experiences increased interest in these new, environmentally-friendly and cost-efficient solutions. Besides the medical technology sector, we address the automotive and cosmetics as well as the consumer goods sectors.

In the semiconductor market SINGULUS TECHNOLOGIES intends to reposition itself. Based on the leading position for magnetic layers, which are required for MRAM and magnetic sensors for example, we intend to expand our presence in other application areas such as integrated inductors, microelectromagnetic systems (MEMS), packaging, LED and RF-filter. Here the focus will be increasingly set on machines for the production. In the area of wet-chemical processes our goal is to increase the market share for etching, drying and cleaning steps across all applications.

Overall, SINGULUS TECHNOLOGIES sees good potential for a diversification and the expansion of the business activities within this segment.

SINGULUS TECHNOLOGIES will further develop in the Solar market and will increase its market share. The extensive marketing of our new production machines for consumer goods and medical technology as well as the expansion of the semiconductor activities will support our favorable development. Overall, the sales and earnings situation of the SINGULUS TECHNOLOGIES AG should be positively impacted by this.

Pursuant to IFRS we expect a significant improvement in sales and earnings with positive operating earnings before interests and taxes once again in the current year 2020. This is subject to the course of business for our CIGS activities as planned and further growth in our Life Science segment. The impacts of the COVID-19 pandemic to the results for 2020 cannot be reliably assessed currently. This has to be assessed at a later point in time.

We extend our gratitude to our employees, our customers and suppliers as well as to our shareholders for your trust.

We will continue to work on making SINGULUS TECHNOLOGIES a growing and profitable technology company again in the coming years. At the same time, as the company's management, we will certainly attend to our duty to safeguard the health of our staff, our partners and society in general.

Kahl am Main, in March 2020

Best regards,

SINGULUS TECHNOLOGIES AG

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

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

Dr. rer. nat. Christian Strahberger
Chief Operating Officer,
COO

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 (until October 31, 2019), 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 (until October 31, 2019) and IT.

DR. RER. NAT. CHRISTIAN STRAHBERGER

Dr. rer. nat. Christian Strahberger has taken over the newly created function of Chief Operating Officer (COO) at SINGULUS TECHNOLOGIES on the Management Board on November 1, 2019. An important focus of his duties at SINGULUS TECHNOLOGIES will be the responsibility for the semiconductor segment. He should continue to advance the expansion of this segment in the coming years. Dr. Strahberger is also responsible for Purchasing, Production as well as the set-up of a production site in China.

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 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 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 as of February 7, 2017.

The corporate governance declaration pursuant to Art. 289f HGB is part of the Status Report. Pursuant to Art. 317 Para.2 Sent. 6 HGB, the review of the information pursuant to Art. 289f HGB is limited to the extent whether the information was provided.

1. Declaration of Conformity pursuant to Art. 161 Para.1 Aktiengesetz to the German Corporate Governance Code

Executive Board and Supervisory Board of the SINGULUS TECHNOLOGIES AG have resolved the following declaration pursuant to Art. 161 Para. 1 AktG:

The last declaration of conformity was published in December 2019 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, in December 2019

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

Dr. Silke Landwehrmann
Member of the
Supervisory Board

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

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

Markus Ehret
Executive Board member,
CFO

Dr. rer. nat. Christian Strahberger
Executive Board member,
COO

The declaration of conformity is permanently, publicly available on the website of the SINGULUS TECHNOLOGIES AG under www.singulus.de/de/investor-relations/corporate-governance.html.

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 governing 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 and the Supervisory Board are currently comprised of three members each. The SINGULUS TECHNOLOGIES AG is not subject to the Co-Determination Act.

Risk 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 with the other members of the Executive Board all activities in connection with the risk management of the SINGULUS TECHNOLOGIES AG. In the summer of 2019 the existing risk management guidelines of the SINGULUS TECHNOLOGIES AG were reviewed and revised. The risk management systems was reviewed in October 2019 together with KPMG.

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.html.

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. This 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 intervals 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 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.

The Compliance Officer reports directly to the Supervisory Board on matters that potentially affect a member of the Executive Board.

In 2019 the compliance guidelines continued to be implemented. The employees of the SINGULUS TECHNOLOGIES AG were regularly trained, amongst others with respect to the code of conduct, export controls and embargos, information security, insider trading, information handling and prevention of corruption. There was also a training event for managers by an external consultant.

The compliance management system of the company is a component of the risk management system. In this connection there are quarterly reports to the Chief Financial Officer and annually to the Supervisory Board as well. 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 preferred, 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 Supervisory Board, significant business decisions are subject to the approval by the Supervisory Board. Overall, there were nine Supervisory Board meetings in the business year 2019, 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 three 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, Mr. Markus Ehret and Dr. rer. nat. Christian Strahberger. Since April 1, 2010 Dr.-Ing. Stefan Rinck is the Chief Executive Officer, Mr. Markus Ehret and Dr. rer. nat. Christian Strahberger are members of the Executive Board of the SINGULUS TECHNOLOGIES AG since April 19, 2010 and November 2019, respectively. The employment contract of Dr.-Ing. Stefan Rinck expires on August 31, 2022. The employment contract of Mr. Market Ehret expires on March 20, 2024. The employment contract of Dr. rer. nat. Christian Strahberger expires on October 31, 2022.

As Chief Executive Officer Dr.-Ing. Stefan Rinck is responsible for the departments Production (until October 31, 2019), 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 and IT. Dr. rer. nat. Christian Strahberger is responsible for the areas Procurement, Production, Semiconductor and the set-up of the production in China.

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, Dr. Silke Landwehrmann and Dr. rer. nat. Rolf Blessing.

In the business year 2019 the following changes in the Supervisory Board took place: Ms. Christine Kreidl stepped down from her position as member of the Supervisory Board of the SINGULUS TECHNOLOGIES AG as of August 10, 2019. Dr. Silke Landwehrmann, Dipl. Kauffrau, was recommended to the relevant local court by the Executive Board as a replacement member and was appointed as a member of the Supervisory Board by the court with effect from August 11, 2019 until the next Annual General meeting on May 20, 2020.

In December 2019 the Supervisory Board resolved new bylaws for the Supervisory Board. On the one hand the amendment of the bylaws dealt with the adjustment of the bylaws to legal changes in the German Stock Corporation Act, which have become effective from January 2020 and on the other hand the consideration of new or changed recommendations, which the already announced new German Corporate Governance Code will include. The bylaws are publicly available on the website of the SINGULUS TECHNOLOGIES AG under www.singulus.de/de/investor-relations/corporate-governance.html.

The Supervisory Board continued to refrain from forming an audit committee or other committees in the fiscal year 2019, 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 provided for and stated in the statutes of the company. The Supervisory Board met in nine meetings in the business year 2019.

The Supervisory Board is regularly reviewing the efficiency of its work and identifies potential improvements. The Supervisory Board follows the recommendations of the Corporate Governance Code and regularly assesses the efficiency of the work of the Supervisory Board in the sense of a self-assessment. For this matter a questionnaire was developed. For detailed information about the work of the Supervisory Board in the business year 2019 please refer to the Report of the Supervisory Board on pages 8 to 15 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 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 two management levels below the Executive Board 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.

At the time of the determination and also currently, the Executive Board of the SINGULUS TECHNOLOGIES AG is comprised of three members with no female member. Against the background that at the time of the fixing in January 2018 the Supervisory Board did 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 at this point in time. In the business year 2019, the Supervisory Board resolved to appoint Dr. rer. nat. Christian Strahberger (46) as a member of the Executive Board of the SINGULUS TECHNOLOGIES AG with effect from November 1, 2019. The decision of the Supervisory Board in favor of Dr. Strahberger was based on his professional expertise.

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 set women's quota of 33 % by December 31, 2019 has remained unchanged in the past business year.

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 at the first management level below the Executive Board was close with 30.43 % in the year under review. The target at the second management level was nearly reached with around 13.4 % in the year under review. The reason for this shortfall of the target is the fact that the new employments at the two sites in Kahl and Fürstenfeldbruck were only realized to a very limited extent. In addition, due to the candidate structure it is not always possible to explicitly employ female managers. Nonetheless, the Executive Board aims to meet the determined targets for the share of female managers at the first and second management level.

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 72. 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 special, 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, more than half of the members of Supervisory Board should be independent from the company and the Executive Board. The Supervisory Board has set a target quota for the share of female members of the Supervisory Board.

The Supervisory Board is convinced that the aforementioned competence profile and the diversity concept is still fulfilled with the appointment of one female and two male members and due to the age, educational and professional background also after the leave of Ms. Christine Kreidl and the appointment of Dr. Silke Landwehrmann.

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 pursuant to Art. 17 MAR, 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 segments Investor Relations and Press Releases. To improve transparency and to promote the shares of the SINGULUS TECHNOLOGIES AG the company 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 in the segment “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 2019 took place on May 23, 2019. The deadline to convene the Annual General Meeting within the first eight months of the fiscal year 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 and additional request, 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 2019 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 2019 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 80 to 90 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, 2019:

Shareholdings of Executive and Supervisory Board Members

	December 31, 2019	December 31, 2018
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
Dr. rer. nat. Christian Strahberger, COO	2,000	-

The sitting members of the Executive and Supervisory Boards did not hold subscription rights through stock options or convertible bonds as of December 31, 2019.

2. Directors‘ Dealings

Pursuant to Art. 19 MAR, member of the Executive and Supervisory Boards or related persons were obligated in the business year 2019 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 € 5,000. The company was not notified of any relevant transactions for the business year 2019.

SINGULUS TECHNOLOGIES on the Capital Market

General Environment

The global economy was still in an expansion phase in 2019. However, the momentum continued to weaken and forecasts were lowered over the course of the year. From early 2020, the spread of the SARS-CoV-2 virus turned out to be a decisive development for the global economic activities. Starting from China, the virus spread worldwide and the economic outcome is currently not yet assessable.

Furthermore, many issues already known in 2018 continued to govern political discussions. The still smoldering trade dispute between the US and China was one of those topics. There were initial agreements, but a final agreement has not been reached and it remains to be seen whether progress and solutions will be achieved in this matter in the year 2020. In Europe, the exit of Great-Britain from the European Union causes uncertainties.

Against the background of these political tensions, the effects of the SARS-CoV-2 as well as a slowing growth momentum in the US, the US central bank FED decided to lower interest rates in July 2019 for the first time since the financial crises in 2008. Overall, the FED cut interest rates three times in the year 2019. In the course of its meeting at the end of October 2019, the central bankers signaled a pause in interest rate cuts for the time being. At the end of his tenure in October 2019 the ECB President Mario Draghi announced an increase of the penalty interest rate for bank deposits from -0.4 to -0.5 %. In addition, the resumption of the bond buying program with a monthly volume of € 20 billion from November 1, 2019 was resolved. The key interest rates in the Euro-zone were kept at the historical low of zero.

The capital markets are heavily impacted by the outbreak of the SARS-CoV-2 virus and recorded severe price fluctuations of historic dimensions.

The SINGULUS TECHNOLOGIES Stock

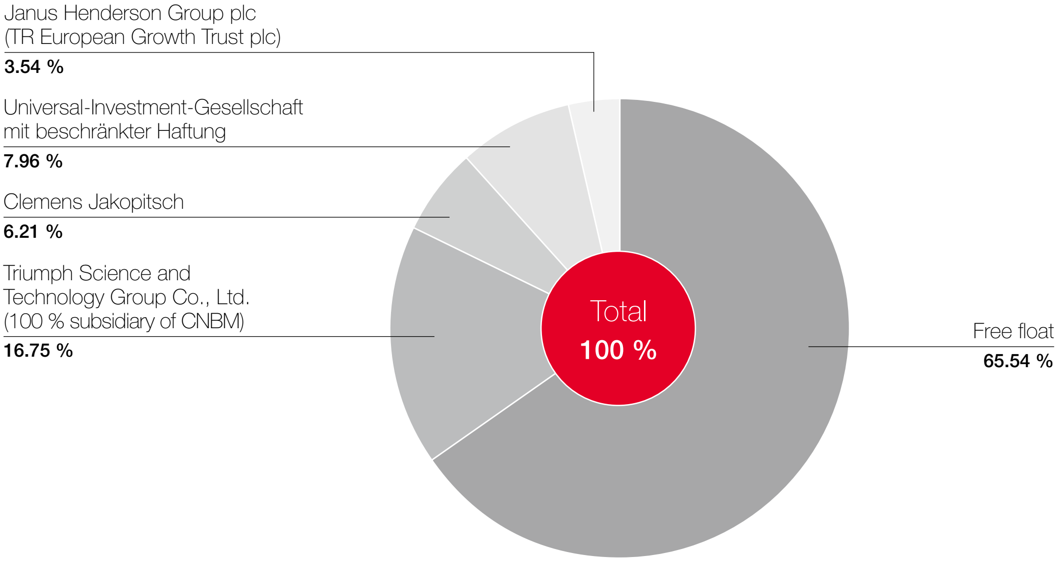
The share price of the SINGULUS TECHNOLOGIES stock started the business year 2019 at around € 10 and was able to maintain this level in the first half of the year. However, in the second half of the year it experienced a period of weakness and the share price slipped to a low around the € 4 level. Towards the end of the year, the shares were able to slightly recover once again. The close of the SINGULUS TECHNOLOGIES shares for the year 2019 amounted to € 5.20. However, the recovery was stopped by the spread of the SARS-CoV-2 virus and the resulting turbulences on the stock markets. On March 30, 2020 the stock traded at € 3.80.

Changes in the Shareholder Structure

The Triumph Science and Technology Group Co., Ltd., a 100 % subsidiary of China National Building Materials, Beijing (CNBM) is still the largest investor with a share of 16.75 %. In addition, Mr. Clemens Jakopitsch informed the company, that he had acquired a holding of 6.21 % of the SINGULUS TECHNOLOGIES AG in the meantime. The two asset management companies Universal-Investment-Gesellschaft mit beschränkter Haftung and the Janus Henderson Group plc (TR European Growth Trust plc) hold 7.96 % and 3.54 %, respectively, of the company.

Shareholder Structure

(As of March 30, 2020)

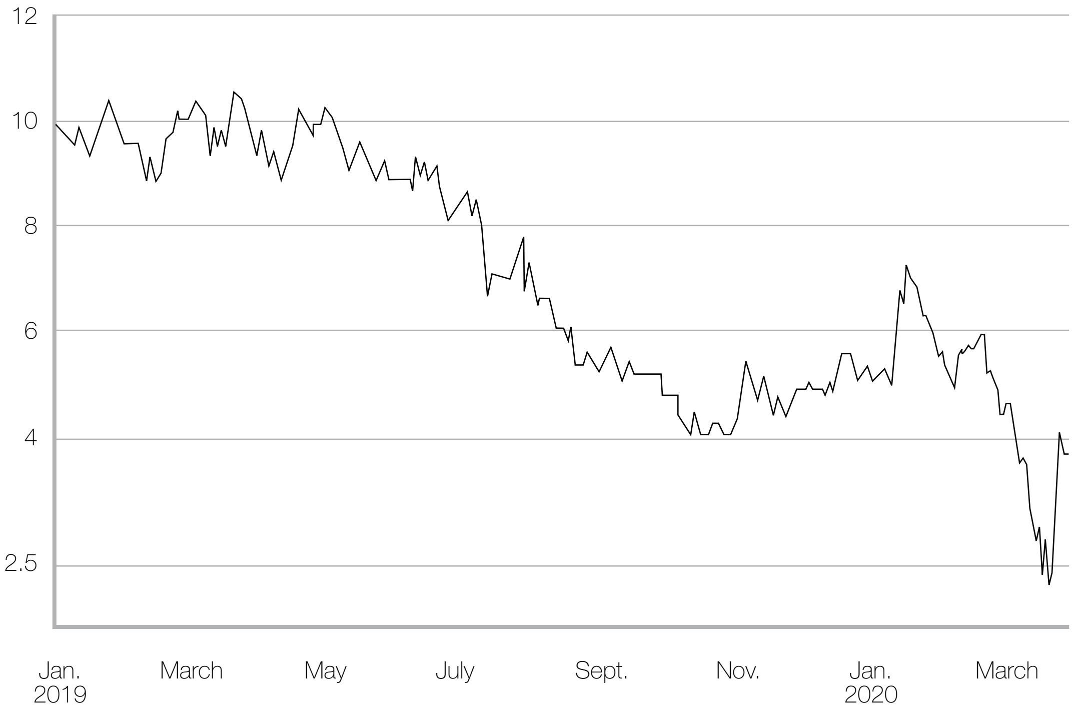


Share Information (as of December 31, 2019)

Shares outstanding	8,896,527
Nominal capital in €	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 EUR 1 each
Prime Standard	Technology

The SINGULUS TECHNOLOGIES Stock

(Xetra close in EUR)

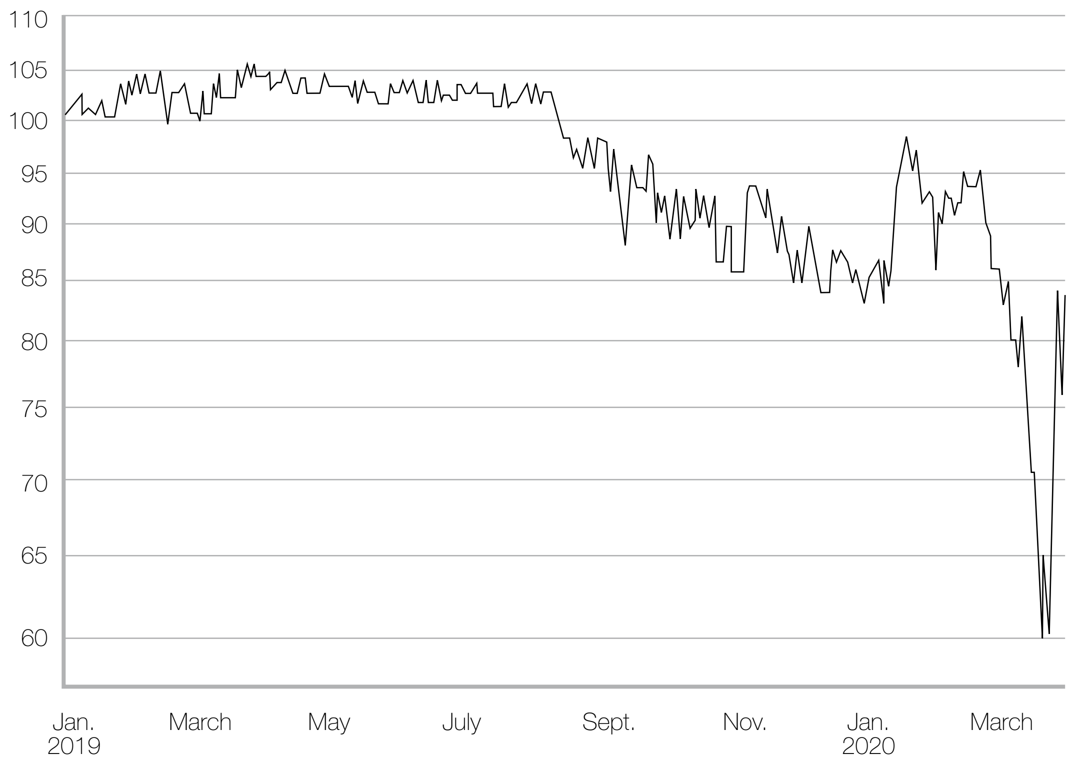


The SINGULUS TECHNOLOGIES Corporate Bond

The bond of the SINGULUS TECHNOLOGIES AG with a nominal value in the amount of € 12.0 million is traded at 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 maturing on July 22, 2021. Similar to the share price, the price of the bond was also stable during the first half of the year and traded above the 100 % level. However, during the further course of the year, the price of the bond also fell and closed at 83 % at the end of the year. On March 30, 2020, the bonds traded at 84 %.

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. The company informs private and institutional investors with publications and during the course of the Annual General Meeting. Throughout the year, SINGULUS TECHNOLOGIES participates in several conferences and road shows in Germany and abroad to particularly present institutional investors the strategic positioning and the future positioning. In addition, it is possible to obtain relevant and current information at all times through our website under http://www.singulus.de in the sections Investor Relations and Credit Relations, respectively.

MEDLINE

LIFE SCIENCE

SINGULUS TECHNOLOGIES offers wet chemical process plants as well as vacuum coating systems, which are used for cleaning or surface coating of disposable lenses, pacemakers and numerous other items.

Management Report

Combined Status Report of the SINGULUS TECHNOLOGIES Group and the SINGULUS TECHNOLOGIES AG

The company exercised its right pursuant to Art 315 Para. 3 German Commercial Code (Handelsgesetzbuch (HGB)) to prepare a combined status report for the SINGULUS TECHNOLOGIES Group and the SINGULUS TECHNOLOGIES AG. Since the course of business, the situation of the company as well as the opportunities and risks of future developments of the SINGULUS TECHNOLOGIES AG and the SINGULUS TECHNOLOGIES Group broadly coincide, the following statements, in particular references to specific data, refer to the SINGULUS TECHNOLOGIES Group, if not stated otherwise. For information regarding the asset, financial and earnings situation of the SINGULUS TECHNOLOGIES AG please refer to the report on pages 48 to 55.

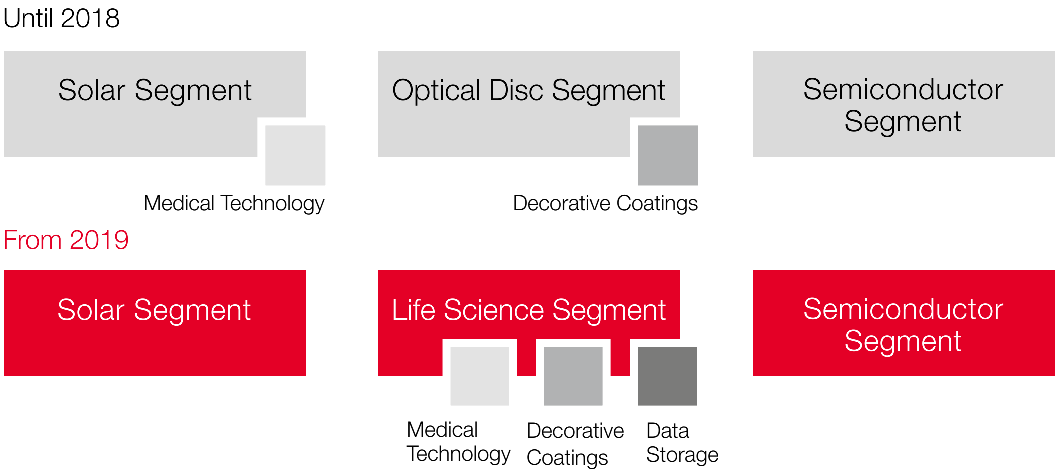
Basics of the Group

Business Model and Divisions of the SINGULUS TECHNOLOGIES Group

SINGULUS TECHNOLOGIES is a globally operating high-tech machine engineering company. The company focuses its activities on the development, manufacturing and selling of machines, plants and systems in the area of vacuum coating technology, surface processing, wet-chemical as well as thermal processing technology. The business activities include all businesses and services including various forms of sales financing in this context. The business activities include the Solar division, the segment Life Science newly set up in 2019 as well as the Semiconductor division.

In the previous two business years the company developed new machines for additional potential application areas based on the technologic know-how. Due to the increasing importance of the new work areas, SINGULUS TECHNOLOGIES has adjusted the segmental structure to these trends. Since January 1, 2019, the products in the work areas Decorative Coatings and Medical Technology have been combined in the segment Life Science. Until the end of the business year 2018 the

Segment structure



activities in the area of Medical Technology had been reported under the Solar division due to the technologic aspects, the activities in the area of Decorating Coating had been included in the Optical Disc division.

In addition to the work areas "Medical Technology" und "Decorative Coatings", the new segment Life Science also includes the work area "Data Storage" (Optical Disc). Furthermore, the company continues to report the segments Solar and Semiconductor.

Solar Segment

In the Solar division SINGULUS TECHNOLOGIES combines its activities for the manufacturing of crystalline solar cells with a focus on high-performance cells as well as for thin-film solar cells on the basis of copper-indium-gallium-diselenide (CIGS) and cadmium-telluride (CdTe). This includes various vacuum coating machines, systems for thermal processes as well as machines for wet-chemical processing. The work area of crystalline silicon solar cells includes production solutions for high-performance cell concepts such as HJT (heterojunction), IBC (interdigitated back contact) as well as TOPCon (tunnel oxide passivated contacts) solar cells. In this market SINGULUS TECHNOLOGIES also supplies complete production lines for crystalline silicon solar cells.

Life Science Segment

In this segment SINGULUS TECHNOLOGIES combined the new product solutions for Medical Technology, Decorative Coatings as well as machine and service solutions of the Data Storage segment (Optical Disc). For several years SINGULUS TECHNOLOGIES has already been working extensively on the introduction of its processes and machines in new market segments. A focus is on vacuum coating machines for the finishing of surfaces as well as on various wet-chemical cleaning machines for applications in the medical technology and consumer goods industries.

For the consumer goods market an integrated production line DECOLINE II as well as the inline vacuum cathode sputtering machine POLYCOATER was developed in the past couple of years. Since the year 2017 SINGULUS TECHNOLOGIES has been marketing the production machine MEDLINE for applications in medical technologies such as for example the manufacturing of contact lenses.

In the segment Data Storage (Optical Disc) machines for the production of the known optical disc formats (CD, DVD, Dual Layer Blu-ray Discs as well as Ultra HD Blu-ray Discs) are offered.

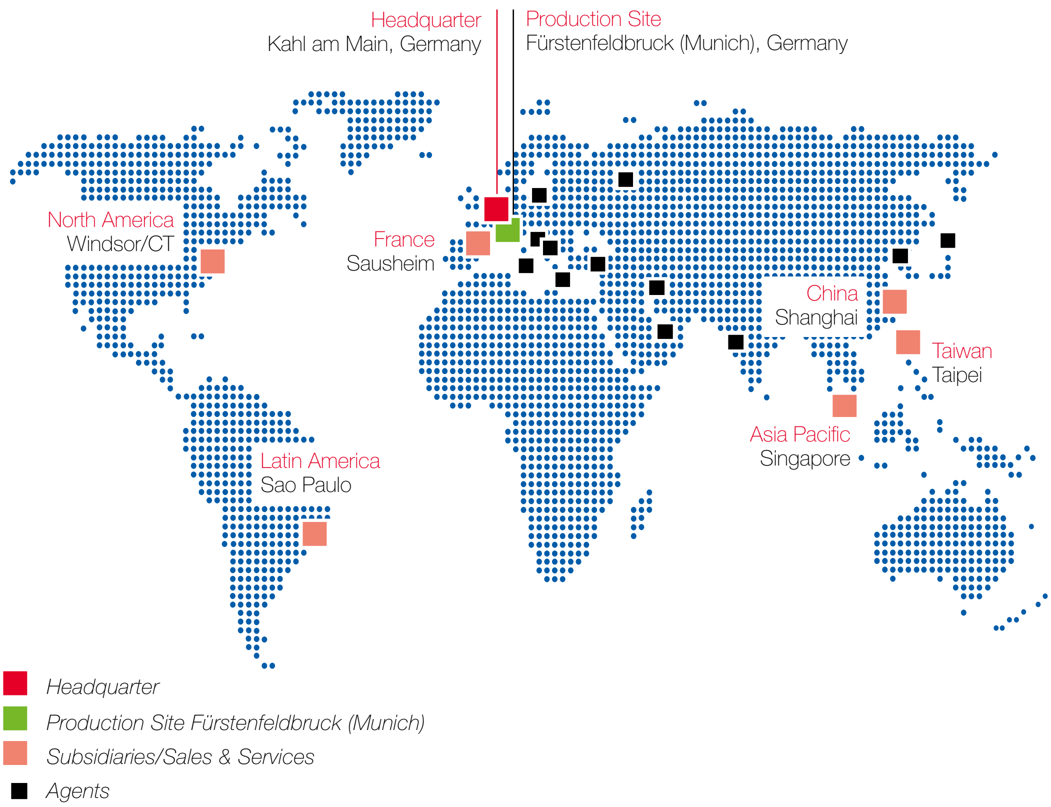
Semiconductor Segment
SINGULUS TECHNOLOGIES is active in the semiconductor market as a supplier of special-purpose machines and offers the machine platforms TIMARIS and ROTARIS. SINGULUS TECHNOLOGIES has also regrouped the newly-developed process solutions for the wet-chemical cleaning of electronic components to this segment.

Corporate Structure

At the site in Kahl am Main machines and plants for all segments are developed, constructed and assembled. Furthermore, at this site the Group's management as well as the Finance department, Sales & Marketing and all central function of the company are located. At the site in Fürstenfeldbruck production machines are exclusively developed and produced for wet-chemical processes, which find applications in the segments Solar and Semiconductor.

The complete machines program of the company is complemented by a global network for replacement parts and service activities. The relevant sales and the corresponding expenses are grouped to the respective segments. SINGULUS TECHNOLOGIES has a marketing & sales and service network in all important regions worldwide and provides consulting and service activities globally. Subsidiaries in key regions are complemented by a network of representations.

SINGULUS TECHNOLOGIES Subsidiaries & Agents worldwide



Goals and Strategy

Development of Markets with interesting Growth Rates

The company sets its focus on markets in which the use of SINGULUS TECHNOLOGIES' machines offers clear differentiation against competitors and generates value-added for our customers. The company targets the opening of markets with attractive growth rates. SINGULUS TECHNOLOGIES' machine and plant portfolio is mainly expanded by our own and partially by supported developments in the course of targeted cooperations with customers or research institutes.

Solar Segment

Focus on promising Cell Concepts for the Future

SINGULUS TECHNOLOGIES' strategy is to take advantage and expand the existing core competencies for production solutions in the photovoltaics sector to promising cell concepts. In addition, in the business year 2019 SINGULUS TECHNOLOGIES clearly focused on the ongoing major projects in the area of CIGS solar as well as selective projects in the area of crystalline cells. The manufacturing and installation of the ordered production machines as well as the acquisition of follow-up orders and in particular also orders for the market of machines for the production of crystalline high-performance solar cells were in the focus of our activities. In the past business year 2019 the GENERIS PVD vacuum cathode sputtering machine as well as in the area wet-chemical a new version of the inline machine LINEX was introduced to the market.

Life Science Segment

Numerous Application areas for existing Core Competencies

SINGULUS TECHNOLOGIES has been selling production solution for medical technology since the end of 2017. The medical sector is one of the most important growth markets of the future in the company's assessment. At the beginning of April 2019 SINGULUS TECHNOLOGIES received a new order from a European customer for the delivery of processing machines for the cleaning of medical products.

The vacuum coating technology provides all prerequisites to enable a more resource-efficient process than the traditional production finishing of plastic, glass and metal components. In general, the company is experiencing increasing interest in new, environmentally-friendly and cost-efficient solutions for the finishing of surfaces in the automotive, consumer goods and packaging sectors.

The trend to download and stream movies and music continues further. Accordingly, the company will target its activities in the work area Data Storage in the coming years on the global replacement part and service activities for the extensively installed machine base.

Semiconductor Segment

Increase of Market Presence through new Applications

In the Semiconductor segment SINGULUS TECHNOLOGIES continues to cooperate with research institutes and industrial partners in the market for semiconductor equipment. The application range for the two machine platforms TIMARIS and ROTARIS includes MRAM (magnetoresistive random access memory), sensory technology, power controllers and microelectromechanical systems (MEMS). The company has also regrouped the process solutions for the wet-chemical cleaning of electronic components to this segment.

It is SINGULUS TECHNOLOGIES' goal to test additional applications in the semiconductor space and to qualify respective machine systems for new applications and therefore to increase its market presence in the coming years.

System for the company's management

To enable the company's management the Group is divided into reportable business segments. The management is aligned with financial earnings measures. For the management of the Group, the key figures "sales" and "EBIT" (earnings before interest and taxes) by segments are predominantly used to make decisions regarding the deployment of resources and to determine the earnings strength of the segments. The financing and liquidity situation is monitored and managed on a Group level. In addition to the aforementioned key performance measures pursuant to IFRS, the sales and earnings before taxes (net profit / loss less other taxes and expenses from income and capital gains taxes) pursuant to commercial law are the main management indicators.

Essential features of the internal monitoring system and the risk management system of the SINGULUS TECHNOLOGIES AG Group with respect to accounting processes

Within the SINGULUS TECHNOLOGIES Group the internal control and risk management system is viewed as a holistic system. Accordingly, an internal monitoring system includes the principles, procedures and measures implemented by the management of the company for the organizational implementation of the decisions of the management. Specifically they include:

- securing the efficacy and efficiency of business operations
- the correctness and reliability of internal and external accounting
- the compliance with regulations relevant for the company

The risk management system includes the entirety of all organizational rules and measures for the identification of risks as well as the handling of identified risks from entrepreneurial activities. with respect to the accounting process and the consolidated accounting process the following structures and processes have been implemented within the SINGULUS TECHNOLOGIES Group:

The overall responsibility for the internal monitoring system with respect to the accounting process and the consolidated accounting process rests upon the Executive Board. By means of a clearly defined management and reporting organization all companies included in the consolidated financial statement are included. In the course of the accounting process and the consolidated accounting process, the characteristics of the internal monitoring and risk management system are deemed important, which substantially affect the consolidated financial statements and the overall statement of the consolidated statements including the consolidated status report. This includes in particular the following elements:

- identification of material risk areas and monitoring the impact on the Group-wide accounting process
- monitoring of the Group-wide accounting process and the relevant results at the Executive Board level

- preventive monitoring measures in the finance and accounting departments of the Group as well as in the subsidiaries included in the consolidated financial statements

In addition, the insights gained from the ongoing reporting process influence the further development of the internal monitoring system.

Research, Development and Engineering

In the Solar division SINGULUS TECHNOLOGIES continues to work together with its customers on the process optimization for the manufacturing of CIGS thin-film modules in order to meet the further increasing requirements within the solar industry with respect to productivity and lower operating expenses at the same time. In the area of crystalline high-performance cells the GENERIS PVD for processing steps in the manufacturing of HJT solar cells was introduced to the market and supplied to a large Asian solar cell producer. The existing inline processing machine LINEX was materially improved to achieve a higher level of efficiency. A prototype was already supplied to a leading solar cell manufacturer.

In the Life Science division the company works on a new wet-chemical machine concept of the MEDLINE type for the manufacturing of contact lenses for the work area Medical Technology as well as on new wet-chemical processes and production machines, which are used in the area of the production of displays.

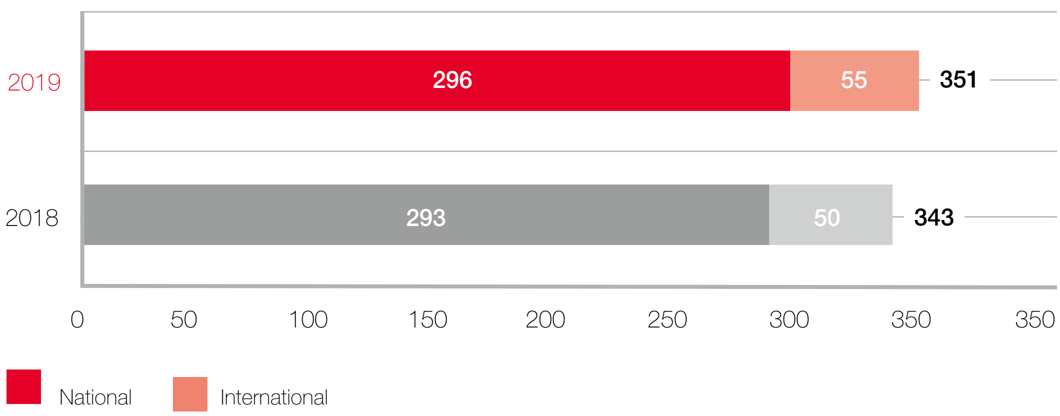
The capitalization ratio in the business year 2019 amounted to 37.0 % (previous year: 26.9 %). The scheduled depreciation on capitalized development expenses amounted to € 1.4 million (previous year: € 1.0 million). The non-capitalized development expenses in the Group amounted to € 8.5 million in 2019 (previous year: € 9.8 million).

In the business year 2019, on average there were 90 full-time employees at SINGULUS TECHNOLOGIES employed in the divisions Research, Development and Construction (previous year: 82 employees).

Employees

In the business year 2019 SINGULUS TECHNOLOGIES deliberately continued to expand its workforce. As of December 31, 2019, the headcount within the SINGULUS TECHNOLOGIES Group increased to 351 full-time employees (December 31, 2018: 343 employees). In Germany, the number of employees as of the year-end amounted to 296 (previous year: 293 employees).

Employees
(as of December 31)



Economic Report

Overall Economic Conditions

Trade Conflict and Geopolitical Uncertainties burden Global Economy

The trade conflict between the US and China weighed on the global economy in the previous business year. The International Monetary Fund (IMF) had lowered its forecast for the year 2019 for the fourth consecutive time in mid-October 2019. In this report the IMF projected a growth rate of 3.0 %.

In July 2019, the IMF had still expected 3.2 %. As one of the reasons of the decline, increasing uncertainties due to geopolitical risks were also mentioned. Overall, the IMF recorded the slowest growth in global trade volumes since 2012.

Also for Germany the economic forecast was slightly revised downwards. Here, a growth rate of only 0.5 % was expected for the year 2019. Germany's economy is particularly dependent on exports and therefore impacted stronger from effects of the trade conflict. According to the IMF, in many countries and economic regions the situation would be materially worse without the very loose monetary policies.

Sector-specific Conditions

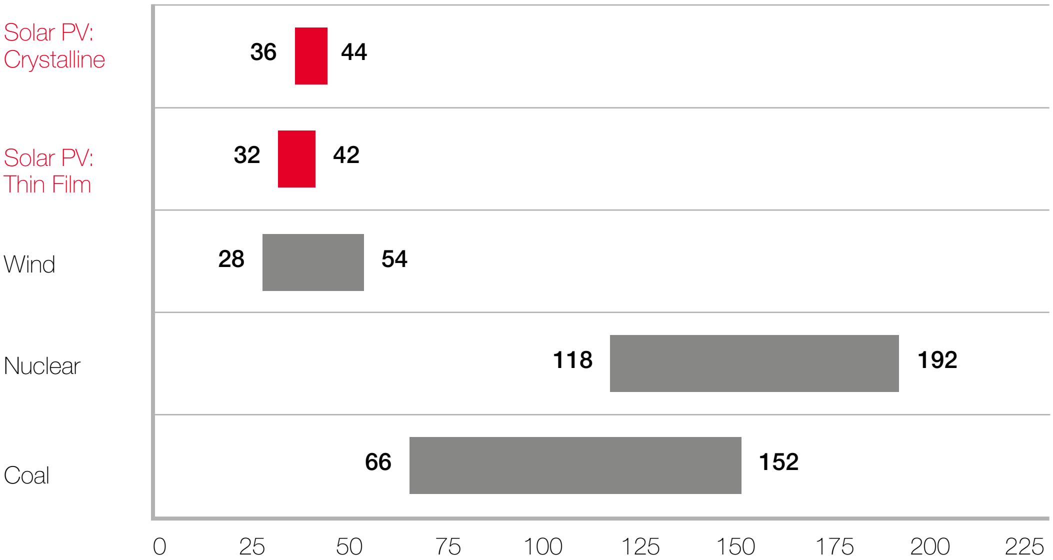
Solar Segment
Reduction in Green-House Gas emissions through Increase of Renewable Energies

At the end of 2018 the Intergovernmental Panel on Climate Change (IPCC) had already presented a special report, which calls for a radical, worldwide reduction in greenhouse gas emissions to reach CO_2 neutrality by the middle of the century. According to the IPCC's assessment with the current emission rates the defined target set by the World Climate Conference in Paris to limit the global rise in temperature to only 1.5 degrees Celsius will already be exceeded in the 2040s. According to the report global warming is currently around one degree Celsius higher than in the pre-industrial era. As a concrete measure, according to the report, amongst others the share of renewable energies in the global electricity mix would have to be increased from currently around 20 % to at least 70 – 85 %.

Cost of Wind and Solar Energy a multiple less than for Fossil Power Generation

Pursuant to a brief study commissioned by Greenpeace Energy the full costs, including the generation and follow-up expenses for environmental, health and climate damage, amount to approximately 7 ct/kWh for new solar parks – the costs for existing fossil power generation amount to 17 ct/kWh on average. Therefore, the environment, health and climate damage of wind and solar

Levelized Cost
($/MWh)



Unsubsidized levelized cost of alternative electricity compared to conventional energy sources
Source: Lazard's Levelized Cost of Energy, 2019

power is a multiple lower than those of fossil power stations. In the year 2020, according to this research each additional kilowatthour electricity generated through photovoltaic and wind plants saves society expenses of around 9.7 cent.

Thus, photovoltaics is also internationally competitive against fossil fuels without subsidies and in parts of the world the cheapest technology to set up new electricity generation capacities.

Stable Growth of the Solar Market of 24 % forecasted for the Year 2019
The market research company IHS Markit forecasts for the year 2019 global installations of 129 GW and a growth rate of the solar market of 24 % compared with the previous year. However, for the world's largest solar market in China a decline of 5 GW for new installations is expected. Nevertheless, this should be compensated by a faster than expected growth in other international markets. According to IHS Markit, in Europe these markets could include the Netherlands, Spain, Germany, Italy, Turkey and also the Ukraine. In addition, there is also remarkable market potential in the APAC region (Asia Pacific) outside of China in several South American markets and South Africa.

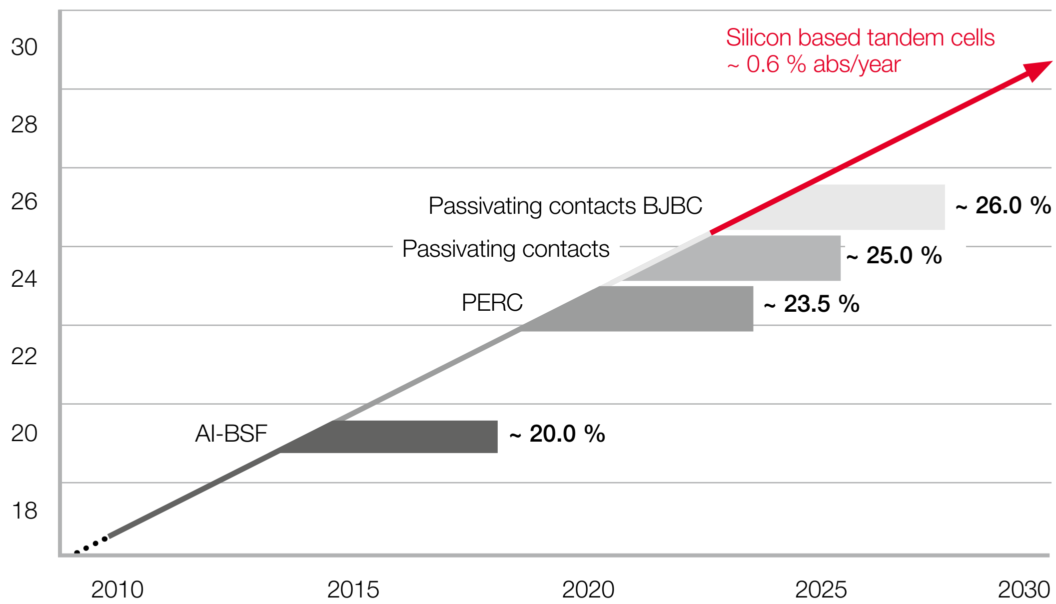
SINGULUS TECHNOLOGIES' Position in the Solar Market

In the market for production machines for CIGS solar cells SINGULUS TECHNOLOGIES has a leading market position and can offer production machines for a majority of the relevant processing steps required for the cell efficiency. Here, the strategic focus rests on the provision of machines or the respective manufacturing processes at the customer side. Although there are commonly providers competing with the machines by SINGULUS TECHNOLOGIES for individual machine types, from the company's current point of view no competitor is able to offer the expertise or the extent of well interacting machine types.

SINGULUS TECHNOLOGIES' largest customer, the Chinese state-owned enterprise China National Building Materials (CNBM), Beijing, China, holds 16.75 % of the shares of the SINGULUS TECHNOLOGIES AG. According to their own statements, in the medium-term CNBM intends to invest in up to 6,000 MW production capacity for the manufacturing of CIGS thin-film solar modules. Following the successful start of production in the first factory for CIGS solar modules in the city of Bengbu, China, CNBM intends to further pursue its expansion plans and to open the third site in China for a 300 MW production in Xuzhou, following the cities Bengbu and Meishan. SINGULUS TECHNOLOGIES is the most important technology provider for this development. On November 9, 2019 a signing ceremony between the subsidiary of the Chinese state-owned enterprise CNBM, Beijing, and SINGULUS TECHNOLOGIES took place in the course of the China

GENERIS PVD
Inline vacuum deposition system for high performance solar cells.

Average Cell Conversion Efficiency
(%)



Source: Fraunhofer ISE, M. Hermle, 2017

International Import Expo (CIIE) in Shanghai. The goal was the confirmation of both parties of the agreement regarding the essential parameters for the delivery of production machines of the first expansion stage with 150 MW for the next factory for CIGS Solar modules in the city of Xuzhou, China, with a project volume of approximately € 56 million. The corresponding delivery contracts were signed on January 15, 2020.

With respect to the silicon solar cells we anticipate a move of the market towards highly efficient, crystalline solar cells, e.g. cells based on heterojunction technology (HJT). In addition to HJT solar cells, the development of completely new cell systems such as for example IBC, HBC, TOPCon and Tandemsolar are progressed.

In the area of crystalline high-performance solar cells the company offers wet-chemical production machines such as the SILEX II. In addition, a new vacuum coating machine (sputtering system) under the product name GENERIS PVD was introduced to the market and a prototype was already delivered to a large Asian solar cell manufacturer. Due to the overall high intensity of competition in the area of crystalline cell formats, SINGULUS TECHNOLOGIES is subject to high competitive pricing pressures for the production of wet-chemical products. For the vacuum coating machines for the crystalline technology there is high competitive pressure with regards to the technologic and pricing environment.

Life Science Segment

Growth of the Global Spending for Health Care is reflected in the positive Development of the Global Market for Medical Technologies

From SINGULUS TECHNOLOGIES' perspective the entry into the market for medical technology applications was a strategically important portfolio expansion for the future. The growth of the global spending for health care is reflected in the positive development of the global market for medical technologies. Overall, the health care and medical technology market with growth rates of more than 4 % are attractive target markets, which offer prospectively numerous application areas for the competencies of SINGULUS TECHNOLOGIES. According to research studies, the market for contact lenses should grow annually by 5.4 % until 2021. The company has aligned the internal processes to the high requirements in the medical technology sector with respect to characteristics and functionality and thus to the quality of the products. The company is currently also offering vacuum coating machines for diverse coatings and surface treatments for this work area for additional target markets. The processing machines of the MEDLINE type for the manufacturing of contact lenses from the first order in 2017 was commissioned at the production site of an internationally operating company. Additional machines will be delivered for a European customer at the beginning of the year 2020.

POLYCOATER
Inline vacuum coating system for the sustainable production of consumer goods for cosmetics and automotive.

Differentiation by environmentally-friendly and cost-efficient Coating Technology for Consumer Goods

Due to its environmentally-friendly and cost-efficient coating technology, the DECOLINE II by SINGULUS TECHNOLOGIES distinguishes itself materially from the traditional coating processes. The line concept can be applied to two- and three-dimensional components with various characteristics. The finishing of surfaces by means of vacuum coating technology enables numerous new applications in the automobile and cosmetics sectors as well as, amongst others, the finishing of fashion products, ball-point pens and smartphones. With the DECOLINE II the Chrome (VI)-free coating of components is economically realized and in the company's view in particular the automotive industry is offered cost savings through integrated production and simplified logistics. The POLYCOATER integrated in the DECOLINE II is also offered as a stand-alone vacuum coating machine and finishes three-dimensional plastic components in vacuum. In the business year 2019 the orders for one production line as well as for several vacuum coating machines were received.

Optical Media as cost-efficient Alternative for Data Storage

For the traditional applications DVD and Blu-ray the company still does not expect any material investments in new production machines. The changing consumer behavior is reflected by a global increase in online services and further enhances the negative impact on the demand for physical media. This does not only impact the demand for production machines but also the service and replacement part business.

The machines designed by SINGULUS TECHNOLOGIES can also be applied for the manufacturing of optical data storage media. These optical media are an inexpensive alternative, in particular Blu-ray Discs with their large storage volume. SINGULUS TECHNOLOGIES sold the first machine for this application in the business year 2019.

Semiconductor Segment

Niche Application in the Semiconductor Market

In the semiconductor market SINGULUS TECHNOLOGIES supplies a niche with special applications such as sensory technology or the application of ultra-thin metallic coating systems and is thus decoupled from the investment cycles of the global semiconductor market. The company offers the machine systems TIMARIS and ROTARIS and on those existing platforms the respective modified manufacturing systems are marketed. Within the realm of the offered semiconductor applications, the company is in a competitive environment with several international competitors.

Business Trends of the SINGULUS TECHNOLOGIES Group

The comparable information for the previous periods was adjusted to the new segmental reporting pursuant to IFRS 8.29. Please refer to the information provided in the chapter "Basics of the Group" on page 36.

Delays in the Solar Segment resulted in missing Full-Year Forecast

In the past business year SINGULUS TECHNOLOGIES was not able to reach its forecast targets and thus missed its projections for the business year 2019. Pursuant to IFRS (International Financial Reporting Standards) the company expects an increase in sales and earnings for the Group compared with the previous business year 2018. In this context, sales in the business year 2019 should be in a range from € 135.0 million to € 155.0 million. The operating earnings before interest and taxes (EBIT) should also develop favorably and are projected to be in a range between € 6.0 million to € 11.0 million. The key sales and earnings drivers should originate from the Solar division and here from large project orders for investments in production lines for CIGS solar modules. The expected improvements within the Group are based on the current project plans with respect to the realization of the current projects as well as the start of expected new projects for the planned expansion and the new CIGS sites of CNBM, respectively.

	Forecast from the Annual Report 2018	**Realized data for the business year 2019**
Consolidated sales	€ 135.0 to € 155.0 million	€ 79.4 million
EBIT	€ 6.0 to € 11.0 million	€ -8.2 million

In September 2019, the Chinese state-owned enterprise CNBM, Beijing, informed the Executive Board of the SINGULUS TECHNOLOGIES AG, that the signing of the contracts for the further expansion of the production capacities for CIGS thin-film solar modules would be delayed. The signing of the contracts, finalized in January 2020, postpones the realization of the respective proportional sales and earnings predominantly to the current business year.

In the past business year 2019 SINGULUS TECHNOLOGIES achieved sales of € 79.4 million (previous year: € 127.5 million). In the period under review the operating result (EBIT) came to € -8.2 million (previous year: € 6.8 million). Earnings before depreciation (EBITDA) of € -4.1 million were also negative (previous year: € 9.1 million).

In particular in the Solar segment the projected growth targets could not be achieved. In terms of sales, overall a considerable increase was expected for the business year 2019 compared with the prior year. The operating result (EBIT) should also improve and amount to a high single-digit million amount. In consideration of the new segmental structure the company projected a slight increase in the sales level as well as a significant improvement in the operating result (EBIT).

The sales in this segment amounted to only € 45.0 million (previous year: € 89.7 million) due to the delay in the contract conclusion for the further expansion of the production capacities for CIGS thin-film modules for the customer CNBM. The operating result (EBIT) amounted to € -7.3 million (previous year: € 5.1 million). Accordingly, the targets in the core segment Solar were substantially missed in the business year 2019.

In the former Optical Disc segment, the company's budgets assumed slightly declining sales. Here, the significant decline in service and replacement part business in the area of Optical Disc activities should partly be compensated by the increasing sales from the work area Decorative Coatings. This segment was expected to break even on an operating level (EBIT). Following the adjustment of the segmental structure, the new segment Life Science includes the activities of the former Optical Disc segment in addition to the activities of Medical Technology. Taking into account the new segmental structure, the company projected an increase in sales as well as slightly positive, but lower earnings.

The sales in this segment amounted to € 28.3 million (previous year: € 28.6 million), the EBIT was balanced at € 0.0 million (previous year: € 1.0 million). Accordingly, the company also missed its sales and earnings forecast here.

Based on a low level of sales in the business year 2018 for the Semiconductor segment, the company anticipated a significant increase in sales for 2019. The operating result (EBIT) was expected to be slightly positive. In the business year 2019 the projections within this segment could not be achieved. Specifically, sales in the Semiconductor segment amounted to € 6.1 million (previous year: € 9.2 million) and the ensuing operating result (EBIT) was negative at € -0.9 million (previous year: € 0.7 million).

Status Report

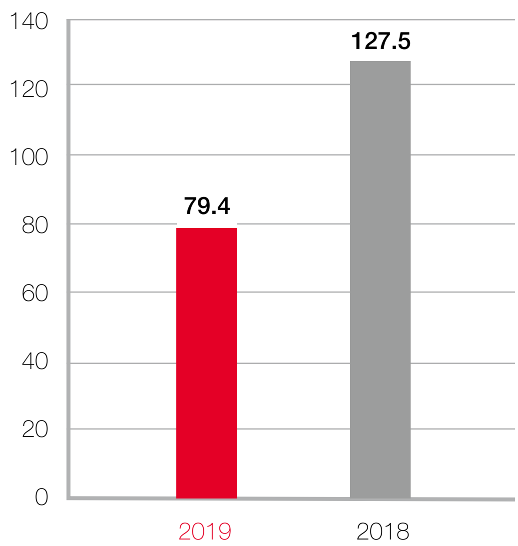
Earnings

Decline in Sales by 37.7 % compared with Prior-Year

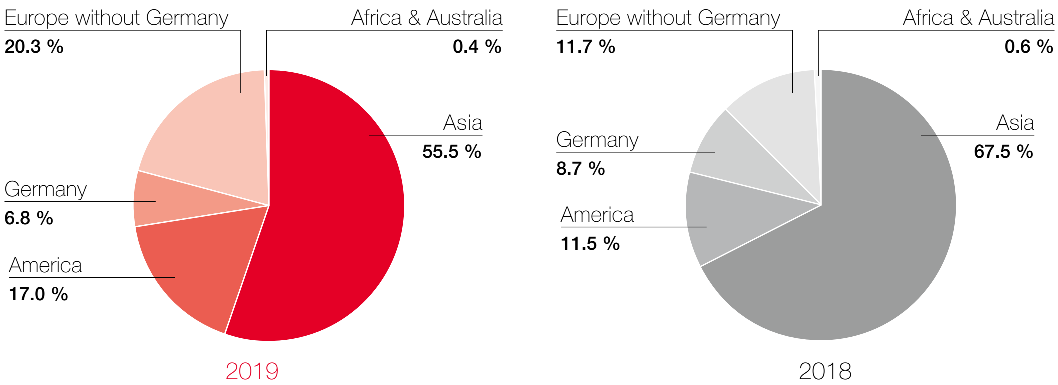
Gross sales of € 79.4 million in the business year 2019 were significantly lower than the previous year's level of € 127.5 million. This corresponds to a decline in sales of 37.7 % compared with the prior-year level.

Sales

(EUR million)



Sales Split by Region
(in %)



Specifically, gross sales in the business year 2019 are split into € 45.0 million in the Solar segment (previous year: € 89.7 million), Life Science at € 28.3 million (previous year: € 28.6 million) and Semiconductor at € 6.1 million (previous year: € 9.2 million).

The declining sales in the Solar segment (€ -44.7 million) are mainly due to the order delay of the customer CNBM. In the past business year the segment Life Science remained at the previous year's level (€ -0.3 million). The Semiconductor segment was below the prior-year level (€ -3.1 million).

Asia remains largest Sales Market

For the business year 2019 the percentage regional sales breakdown was as follows: Asia 55.5 % (previous year: 67.5 %), Europe 27.1 % (previous year: 20.4 %), North and South America 17.0 % (previous year: 11.5 %) as well as Africa and Australia 0.4 % (previous year: 0.6 %).

Gross Margin at Prior-Year Level

In the year under review the gross margin of 28.8 % was around the previous year's level of 28.1 %.

Slight Decline in Operating Expenses before extraordinary Charges

Due to the bankruptcy of a large customer in the Solar segment, the company incurred losses from impairments in the amount of € 3.3 million in 2019. The operating expenses (before other operating expenses and income and impairment losses) came to € 27.7 million in the business year 2019 (previous year: € 30.9 million). This slight decline is mainly due to lower expenses for marketing & sales and customer service (€ -3.2 million) as well as research and development (€ -1.7 million). Specifically, research and development expenditures amounted to € 6.5 million in the year under review (previous year: € 8.2 million). These expenses are mainly in connection with planned write-offs of capitalized development expenses within the Solar division as well as non-capitalized development expenses in the area of crystalline high-performance solar cells. The expenses for sales & marketing and customer service amounted to € 11.0 million in the year under review (previous year: € 14.2 million). The main reasons for this were declining personnel expenses in connection with outstanding phantom stocks due to the lower share price as well as declining expenses for expected bonus

Key financial figures

(EUR million)

	2019	2018
EBIT	-8.2	6.8
EBITDA	-4.1	9.1
Net profit/loss	-11.3	0.8
Financial result	-2.1	-2.0
Earnings per share in €	-1.27	0.09

payments. General and administrative expenditure amounted to € 10.2 million (previous year: € 8.5 million). The increase is mainly attributable to higher consulting expenses. In the year under review the other operating income mainly include income from the reversal of other liabilities and provisions (€ 0.3 million, previous year: € 1.8 million) as well as income from insurance claims (€ 0.3 million, previous year: € 0.3 million).

Decline in Sales weighs on Earnings

The earnings before interest and taxes (EBIT) in the year under review amounted to € -8.2 million (previous year: € 6.8 million). Before taking impairment losses of € 3.3 million in connection with the bankruptcy of a customer in the Solar segment into account, adjusted EBIT for the 2019 financial year was € -4.9 million.

Specifically, the Solar segment recorded a negative EBIT in the amount of € -7.3 million in the year under review (previous year: € 5.1 million). The Life Science segment recorded a balanced EBIT in the amount of € 0.0 million (previous year: € 1.0 million). In the Semiconductor segment an EBIT in the amount of € -0.9 million (previous year: € 0.7 million) was realized.

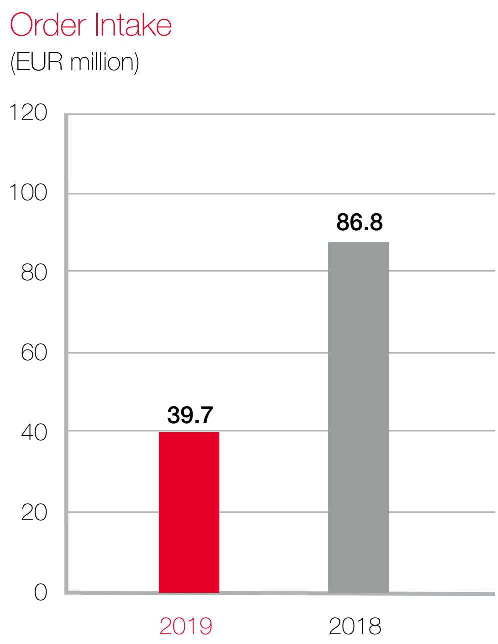
The financial result in the business year 2019 amounted to € -2.1 million (previous year: € -2.0 million). This includes only financing expenses. They resulted predominantly from the financing costs for the corporate bond. The tax expenses for the past business year amounted to € 1.0 million (previous year: € 4.0 million). The tax expenses in the year under review mainly concern deferred tax liabilities, which will be reversed in the following years.

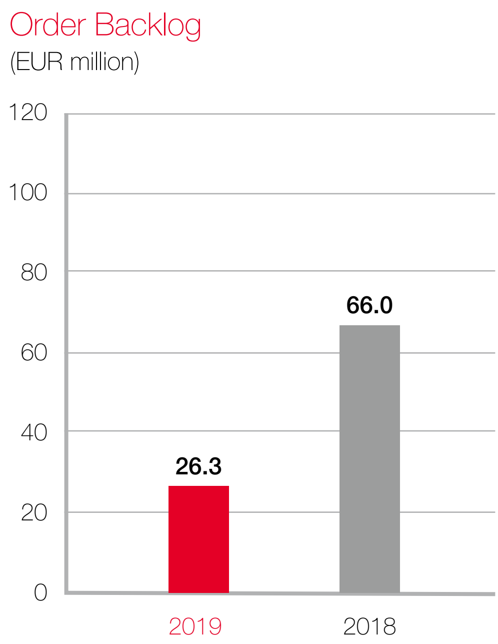
Due to the decline in business activities the net result in the business year 2019 amounted to € -11.3 million (previous year: € 0.8 million).

EBIT by Segments

(EUR million)

	2019	2018
Solar	-7.3	5.1
Life Science	0.0	1.0
Semiconductor	-0.9	0.7





Order Intake and Order Backlog at low Levels

The order intake came to € 39.7 million overall in the year under review (previous year: € 86.8 million) and was substantially below previous year's level. The order backlog amounted to € 26.3 million as of December 31, 2019 (previous year: € 66.0 million).

Financial Situation

Principles and Goals of Financial Management

SINGULUS TECHNOLOGIES has a central financial management for the management of the liquidity. The goal of the financial management is securing liquidity to a sufficient extent. Excess liquidity at subsidiaries is pooled and monitored at the parent company, if possible. Derivatives are used to hedge foreign exchange risks. This predominantly includes foreign exchange forwards. The exclusive purpose of these derivatives is hedging the currency risks stemming from the Group's business activities. Without the existence of a respective underlying business no derivative transactions are entered. To hedge the credit risk of accounts receivable, credit insurance or bank guarantees are used, if possible. For further information about the management of the specific financial risks please refer to No. 37 of the annotations of the consolidated financial statements.

Liquidity management

Currently, the company is mainly financed through a corporate bond with a nominal value of € 12.0 million as well as through prepayments for the contracted projects. The term of the bond amounts to five years and the maturity date is July 22, 2021. The company is currently in talks for the refinancing of the bond. A successful refinancing is an integral component of the long-term securing of the company's liquidity position.

Cash Flow

(EUR million)

	2019	2018
Cash flow from operating activities	-3.2	2.5
Cash flow from investing activities	-5.6	-4.4
Free cash flow	-8.8	-1.9
Cash flow from financing activities	10.0	-11.3
Increase/decrease in cash and cash equivalents	1.2	-13.2
Cash and cash equivalents at the beginning of the fiscal year	13.5	27.2
Impact of exchange rates translation differences	0.1	0.2
Changes in the scope of consolidation	0.0	-0.7
Cash and cash equivalents at the end of the business year	14.8	13.5

Subject to of the bond's terms and conditions, the company took out a secured loan over € 4.0 million in February 2019 with a maturity of twelve months to bolster the liquidity. In March 2020 the maturity of this loan was extended until March 1, 2021. In addition, the company received prepayments in the amount of € 12.4 million at the beginning of the business year 2020 for the large CIGS project of the customer CNBM at the production site in Xuzhou. Further partial payments in the amount of € 5.0 million each are expected in the months April 2020 and May 2020. Moreover, the company is currently negotiating a credit line in the amount of € 10.0 million with a term to maturity of twelve months.

As of December 31, 2019, the group of companies still had guaranteed credit lines in the amount of € 20.8 million at its disposal. Thereof, € 1.6 million were drawn as of the end of the business year. In addition, a single draft guarantee in the amount of € 1.6 million for a prepayment received existed as of the balance sheet date. As of the balance sheet date these loan commitments were mainly secured with 100 % cash deposits. The company is currently negotiating the signing of additional draft guarantees with significantly reduced cash deposits. They are required for additional prepayments stemming from various projects. In particular in the Solar business additional guaranteed financing agreements could become necessary subject to project-specific requirements.

Excess liquidity is exclusively deposited by SINGULUS TECHNOLOGIES as overnight or time deposits. Foreign exchange risks from the business activities in other countries are reviewed in risk analysis. Generally, part of the sales of the SINGULUS TECHNOLOGIES Group is subject to an exchange rate risk, here especially the US-Dollar (USD) currency risk. For this reason derivatives to hedge foreign exchange risks are used. However, in the year under review the share of sales in foreign currencies was immaterial. Foreign exchange risks, if they are material, are continuously reviewed in the course of the risk management system.

The operating cash flow within the group was negative at € -3.2 million in the business year 2019 (previous year: € 2.5 million). The cash flow from investing activities came to € -5.6 million (previous year: € -4.4 million). Within the cash flow from investing activities in 2019, payments for investments in development expenses in the amount of € -4.9 million were recognized (previous year: € -3.6 million). The payments for investments in other intangible assets and fixed assets amounted to € -0.7 million (previous year: € -0.8 million). The cash flow from financing activities amounted to € 10.0 million in the period under review (previous year: € -11.3 million) and mainly resulted from the reduction of restricted financial funds (€ 9.9 million) as well as the inflow from the borrowing through a loan (€ 3.9 million). In total, the level of cash and cash equivalents increased slightly to € 14.8 million (previous year: € 13.5 million).

At the end of the business year 2019 undrawn guaranteed credit amounted to € 19.2 million.

Assets

The balance sheet total declined compared with the prior-year level and amounted to € 83.7 million as of December 31, 2019 (previous year: € 104.1 million).

As of the end of the year under review the long-term assets amounted to € 32.2 million (previous year: € 23.7 million). This increase is mainly due to the capitalization of the rights to use the office and production buildings in Fürstenfeldbrück in the course of the first-time application of IFRS 16 – Leases (€ 3,9 million). In addition, the capitalized development expenses increased to € 9.5 million (previous year: € 6.0 million). This increase is mainly in connection with the capitalization of development expenses for the segment Life Science as well as for machines for the manufacturing of CIGS solar modules and HJT solar cells.

As of the end of the period under review the short-term assets amounted to € 51.5 million and are thus below the prior-year level (previous year: € 80.4 million). The reason for the trend is mainly the decline in accounts receivable from production orders by € 15.8 million to € 4.6 million (December 31, 2018: € 20.4 million). Furthermore, the restricted funds declined by € 9.9 million in the course of the run-off of the ongoing large projects in the Solar division. The restricted financial assets mainly include deposited cash, which serves as security for guarantees for prepayments received.

The level of inventories amounted to € 15.5 million at the end of the year under review and was therefore slightly below the previous year's level (previous year: € 17.1 million).

The short-term debt decreased by € 12.0 million to € 38.2 million compared with the level at the end of the business year 2019 (December 31, 2018: € 50.2 million). This is mainly due to the decline in accounts payable (€ -10.2 million) as well as reduced liabilities from production orders (€ -8.2 million) due to the decline in business activities. In contrast, the company took a secured loan for € 4.0 million in February 2019 with a term to maturity of twelve months, which was prolonged in March 2020 until March 1, 2021.

The long-term debts in the amount of € 38.5 million were slightly above the prior-year level (previous year: € 34.2 million). This increase is mainly due to the capitalization of the leasing contract for the office and production building in Fürstenfeldbruck following the first-time application of IFRS 16 – Leases.

Assets and Capital Structure
(EUR million)

	2019	2018
Cash and cash equivalents	14.8	13.5
Restricted financial assets	4.4	14.3
Accounts receivable and other assets (short-term)	16.8	35.5
Inventories	15.5	17.1
Long-term assets	32.2	23.7
Total assets	**83.7**	**104.1**
Short-term liabilities	38.2	50.2
Long-term liabilities	38.5	34.2
Shareholders' equity	7.0	19.7
Total liabilities and shareholders' equity	**83.7**	**104.1**

Pursuant to IFRS in the period under review the equity within the Group declined by € 12.7 million and amounted to € 7.0 million as of December 31, 2019 (December 31, 2018: € 19.7 million), which is entirely attributable to the shareholders of the parent company. Accordingly, as of December 31, 2019 the equity ratio amounted to 8.4 % (previous year: 18.9 %).

For the trends in shareholders' equity of the SINGULUS TECHNOLOGIES AG pursuant to HGB please refer to the information presented in the chapter "Financial Statements pursuant to HGB".

Capital Management
The general principle holds to cover the future financial requirements through the capital market at appropriate terms and conditions. In this connection, the company is reviewing the existing options with regards to the optimum financing structure at all times.

It is the primary goal of capital management to strengthen the capital structure to safeguard the long-term financing of the company. Currently, the company is mainly financed through a corporate bond with a nominal value of € 12.0 million. The term of the bond amounts to five years and the maturity date is July 22, 2021. The company is currently in talks for the refinancing of the bond.

Forecast Report

Overall Economic Conditions

Due to the impacts of the COVID-19 pandemic the International Monetary Fund (IMF), Washington, D.C., USA, forecasts that the growth of the global economy will be less in 2020 than in the previous year. According to IMF-estimates, the global economy expanded by approximately 2.9 % in 2019. For 2020 the IMF had anticipated a growth rate of 3.3 %. However, there are large uncertainties with respect to the spreading of the virus according to the IMF. As long as it is uncertain how long the pandemic will last and what the impact will be, an exact forecast will be difficult.

Sector-specific Forecasts and Outlook for the Business Year 2020

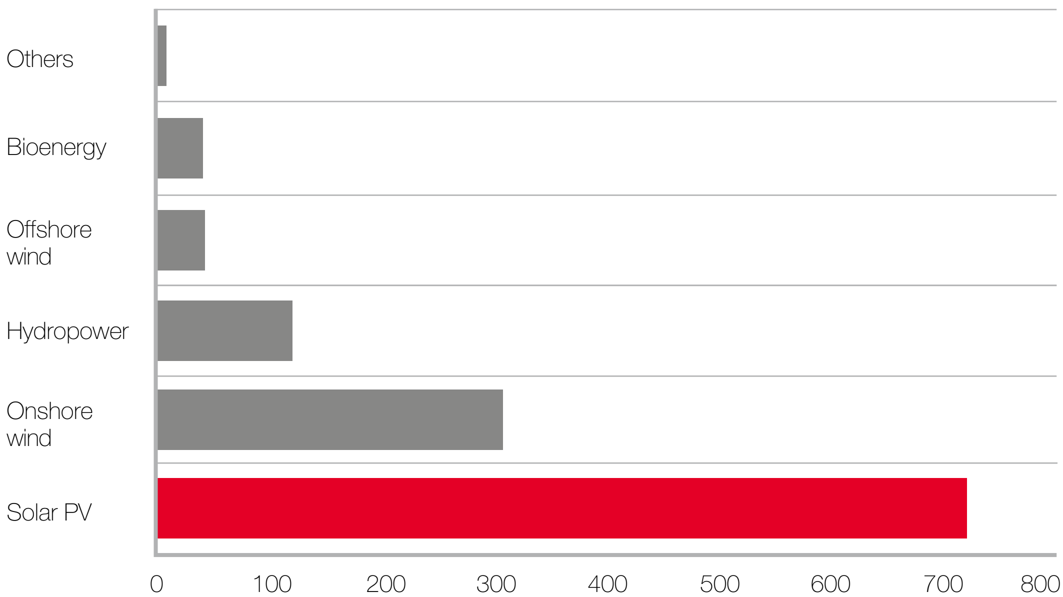
Solar Segment

Long-term favorable Growth Prospects for the Photovoltaics Market

According to the current market report “Renewables 2019” by the International Energy Agency (IEA), which was published at the end of 2019, the overall global renewable electricity capacity is set to grow by 50 % from 2019 until 2024. This would correspond to an increase of 1,200 GW. 60 % of this growth - corresponding to 720 GW - should be accounted for by photovoltaics. Nearly half of this new capacity should be contributed by decentralized solar plants according to the IEA, which also includes commercial and industrial roof installations next to private installations. Accordingly, the IEA has lifted its forecast for the growth of photovoltaic installation by 14 % compared with the previous report.

PV Solar drives strong Rebound in Renewable Capacity Expansion

(Renewable capacity growth between 2019 and 2024 by technology, GW)

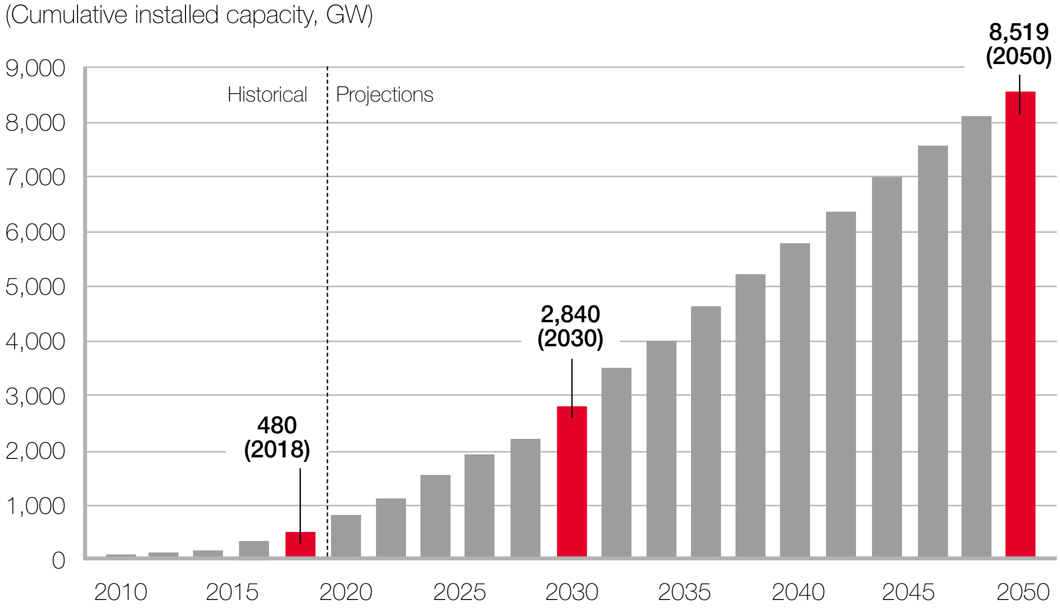


Renewables expand by 50 % through 2024, with distributed PV alone growing as much as onshore wind. The IEA forecast is 14 % higher than last year due to improved policies and increasing competitivness.

Source: IEA, 2019

Cumulative Solar PV Capacity 2010-2050

(Cumulative installed capacity, GW)

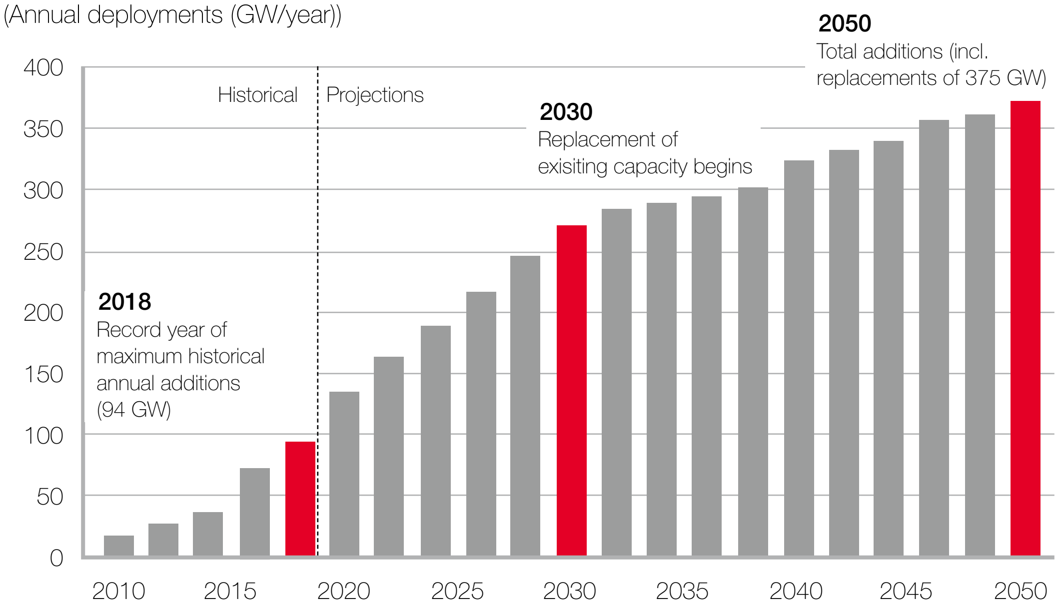


Source: Historical values based on IRENA's renewable energy statistics (IRENA 2019 c) and future projections based on IRENA's analysis (2019 a)

The International Renewable Energy Agency (IRENA) has an even brighter outlook for Solar PV than the IEA. On the basis of globally installed solar PV capacity of around 480 GW in 2018, IRENA projects an overall installed capacity of 2,840 GW for 2030. By the year 2050 the installation should then total 8,519 GW. Solar PV is anticipated to globally generate 25 % in total of the required energy

Annual Global Solar PV Additions 2010-2050

(Annual deployments (GW/year))



Annual global solar PV additions are expected to reach to 270 GW in 2030 and 372 GW in 2050 under the REmap scenario, compared with 94 GW in 2018.

Source: Historical values based on IRENA (2019 b) and future projections based on IRENA (2019 a) production. Together with wind and hydro energy the renewable energies should generate 86 % of the global energy consumption. An accelerated PV use in connection with a deep electrification could thus result in a reduction of CO_2 emissions of around 21 % by 2050 (nearly 4.9 gigatons per year). Asia would still dominate solar energy with an installed capacity of more than 50 % followed by North America (20 %) and Europe (10 %).

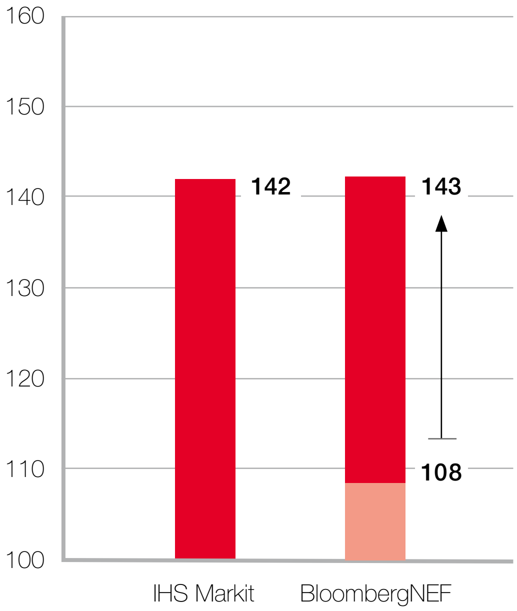
In the short-term Markets outside of China gain Momentum

According to the analyses by IHS Markit, the photovoltaics increase for the year 2020 will amount to a growth rate of 14 % to then 142 GW newly installed photovoltaic output. It is expected that the markets outside of China will once again gain importance and that two thirds of the newly installed photovoltaics output will be attributable to these regions. Analysts at Bloomberg New Energy Finance (BloombergNEF) reduced their forecast for the photovoltaic expansion in the current year at the beginning of March 2020 due to the current crisis resulting from the COVID-19 pandemic. They currently anticipate a globally new installed output between 108 and 143 gigawatt.

There are numerous initiatives to once again strengthen Europe's position in the solar PV industry and to set up a production site for high-performance solar cells in the EU. Accordingly, the VDMA published a report in 2019 which shows that cells could be produced in Europe at similar cost levels as in China. Such a factory would have to have a capacity of 5 – 10 GW. The European Solar Manufacturing Council (ESMC) also works on the realization of this goal. This association is a cooperation of European photovoltaic manufacturers, research institutes and engineering companies to strengthen their industrial-political positions in the EU.

Global solar power capacity addition forecast for 2020

(GW)



Source: PV Magazine/IHS/BNEF 1/2020

SINGULUS TECHNOLOGIES' specific Trends in Photovoltaics

The general framework conditions are also in favor of continuous growth in the Solar division from the company's point of view. In the coming years, SINGULUS TECHNOLOGIES will focus on the specialized markets for thin-film based solar modules (e.g. CIGS) and the new crystalline, high-performance solar cells (e.g. HJT).

On part of the Chinese government substantial expansion plans for thin-film based solar factories were published. In particular our customer CNBM receives a high level of importance with a planned expansion of 6 GW production capacity.

In the area of the new high-performance solar cells such as heterojunction (HJT), a competitive range of products of production machines is required. Here, SINGULUS TECHNOLOGIES has developed own machines for the cell production. In addition to the machines for the wet-chemical treatment of cells, this in particular concerns the new vacuum coating machines for cathode sputtering ("PVD"). With the sale of a GENERIS PVD to a strategically important customer, a first step was realized. The company's goal in the coming business year is to establish itself with the production of highly efficient cells with its machines for the key process steps.

The business activities in the Solar segment should increase substantially once again in 2020. Here, the projects for our customer CNBM are particularly important. Specifically, this assumes the commissioning of the CIGS production site in Meishan as planned as well as the scheduled work on the supply contract for the site in Xuzhou signed in January 2020.

In terms of sales for the Solar division, a considerable increase is once again expected for the business year 2020 compared with the prior year. Compared with 2019 sales in this segment should almost double. The operating result (EBIT) should also improve substantially and come in at a slightly positive level.

Life Science Segment

Stable Growth in the Market for Contact Lenses

For medical technology SINGULUS TECHNOLOGIES offers machine technology for wet-chemical processes as well as various methods of vacuum coating technology. The company meets the high requirements of medical technologies with regards to characteristics and functionality and thus to the quality of the products as well as the required production and handling processes. SINGULUS TECHNOLOGIES has introduced the required quality management measures. It safeguards the product quality and the fulfillment of the distribution binding requirements by the health authorities and here in particular the guidelines of the "FDA - U.S. Food and Drug Administration" (FDA/21 CFR).

Within the business activities for medical technology application the company mainly operated in the market for contact lenses in the past business year. This focus will probably be continued in the current business year. According to research studies the market for contact lenses should grow annually by 5.4 % until 2021.

Environmental Friendliness, Sustainability as well as Cost Saving characterize Trend in the Consumer Goods Sector

The developments and market opportunities in the work area Decorative Coatings are mainly characterized by the factors environmental friendliness and sustainability as well as cost savings. The use of galvanics is not part of these processes. With these machines the Chrome (VI)-free coating of parts for various application areas is now made possible. In addition to applications in the cosmetics sector, such processes can also be used by supplier companies to the automotive industry for components in chrome appearance for control elements such as push buttons and levers for switches. SINGULUS TECHNOLOGIES is focused on these markets with its products.

Data Storage Technology remains Niche Business

In the work area Data Storage the service and replacement part activities shadows the declining trend of optical storage media. New applications in the area of data storage technology will remain a niche market.

In terms of sales for the Life Science division, a considerable increase is expected for the business year 2020 compared with the prior year. The operating result (EBIT) should also improve significantly and come in at a low single-digit million amount.

MEDLINE
Cleaning and coating system for medical parts e.g. daily lenses or pacemakers.

Semiconductor Segment

Broader Application in MRAM Technology for Storage Components expected

According to the Semiconductor Equipment and Materials International (SEMI), Milpitas, USA, in the current business year 2020 the investment volume for all semiconductor production equipment will increase by 27.5 % to USD 67.5 billion overall. The largest increase is projected for the memory storage area.

Currently, SINGULUS TECHNOLOGIES addresses niches in this market with specialized applications. In addition to MRAM applications, with its machine family the company continues to focus on new potential application of vacuum coating technology, such as in the area of sensory technology, as well as on wet-chemical process solutions for the cleaning of electronic components. Accordingly, from SINGULUS TECHNOLOGIES' view the further development and importance of MRAM as a potential storage technology of the future is still uncertain.

For MRAM a broader application of this technology for memory components is expected for the coming years. According to the report "Emerging Memories Ramp up" by Objective Analysis & Coughlin Associates, MRAM memory should be subject to the most significant growth of all upcoming memory technologies in the next couple of years. Here, sales are forecast to 170-fold from 2018 until 2029 and to reach sales of nearly USD 4 billion. The delivery of capacities will probably increase from around 0.1 petabyte in the year 2019 to nearly 1 million petabyte in the year 2029.

Starting from a low level in the Semiconductor segment, we expect a significant increase in sales for the business year 2020 compared with 2019. The operating result (EBIT) is anticipated to be slightly positive.

TIMARIS
Ultra-high vacuum deposition system for the semiconductor industry.

Outlook for the Business Years 2020 and 2021

As an internationally operating company SINGULUS TECHNOLOGIES continuously monitors the current developments in connection with the COVID-19 pandemic and its economic consequences for our company. However, it is currently impossible for the company to conclusively assess the implications and impacts on the business activities. The management is closely monitoring the situation in order to be able to implement required countermeasures.

Despite the challenging and by uncertainties characterized environment, SINGULUS TECHNOLOGIES forecasts a substantial increase in sales and earnings pursuant to IFRS for the current business year compared with the business year 2019 based on the current forecasts. In this context, sales in the business year 2020 should be in a range from € 120 million to € 140 million. The operating earnings before interest and taxes (EBIT) should also develop favorably and come in at a mid-single-digit million amount. The achievement of these financial results is subject to a development of business activities as planned. A material impact of the projects by the COVID-19 pandemic could result in a significant reduction in the sales and earnings targets for the business year 2020.

in EUR million	Forecast 2020	Actual 2019
Sales	€ 120 to € 140 million	€ 79.4 million
EBIT	mid-single-digit million amount	€ -8.2 million

The key sales and earnings driver should result from the Solar segment and here from the planned run-off of the delivery contracts for the site in Xuzhou signed in January 2020 as well as the planned commissioning of the CIGS production site in Meishan. Furthermore, in the course of the year significant orders are expected for the Life Science segment, which would have a very positive impact on the sales and EBIT figures.

Both in view of achieving the expected financial results and also in terms of the future trend of the liquidity situation, the SINGULUS TECHNOLOGIES Group is to a large extent dependent on the further development of the business activities with select, large customers. A sufficient level of liquidity for the company in the business years 2020 and 2021 can only by maintained if the plans can be realized in the next two years. It is an essential prerequisite for the planning that the partial payments, which are due based on the already contracted large order, will actually be made without material delay. In addition, winning another large order, for example in the Segment Life Science or a combination of equivalent alternative projects is required in the current business year. A successful and timely refinancing of the corporate bond over € 12.0 million due in July 2021 is a central component of the long-term safeguarding of the company's liquidity position. However, the Executive Board expects with a high probability the receipt of the payable partial payments as planned, the signing of another large order or a combination of equivalent alternative projects as well as a successful refinancing of the corporate bond. From the company's perspective, financing on the basis of the current corporate planning for the current business year is probable.

For the year 2021 the company forecasts a further increase in sales based on the average of the aforementioned range. The operating result (EBIT) should improve correspondingly. Here, the Life Science segment is set to contribute materially to the increase in sales and earnings. In addition, to achieve the forecast, a further growing solar market in particular for the CIGS sector is required.

If the actual development will fall short of these expectations in the coming months, this would have material impacts on the asset, financial and earnings situation up to the threatening of the continuation of the company.

For the outlook for the business year 2020 pursuant to HGB accounting principles please refer to the chapter describing the annual accounts pursuant to HGB on page 95 of this status report.

Risks and Opportunities Report

The SINGULUS TECHNOLOGIES Group is subject to a multitude of risks, which are tied to entrepreneurial actions within the operating segments and which result from internal and external factors. A risk means the possibility that events, trends or actions cause the Group or one of its segments to fail to reach its goals. At the same time it is important for the SINGULUS TECHNOLOGIES Group to identify opportunities in order to take advantage of these in the course of entrepreneurial actions and therefore to safeguard and expand the competitiveness of the company. To identify and manage the entrepreneurial risks and opportunities at an early stage is the direct responsibility of the operating segments and divisions. For this, efficient management and monitoring systems are implemented to identify, assess and consistently handle risks and opportunities at an early stage. An offsetting of risks and opportunities is not implemented.

The following information applies to the parent company SINGULUS TECHNOLOGIES AG as well as to the SINGULUS TECHNOLOGIES Group. In the course of our opportunities and risk management the parent company occupied a leading role.

Goals and Principles of the Risk Management

The 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 at SINGULUS TECHNOLOGIES is characterized by the following principles:

- The risk management is primarily implemented by the operating segments in the course of the management duties;
- The risk management must not be limited to financial risks, but must also include all risks associated with the business activities;
- The risk management has to be an integral part of the business processes;
- The precondition for an effective risk management is the clear and unambiguous assignment of tasks and responsibilities and a systematic risk management process;
- Support and active participation on part of the management team;
- Functionality and reliability of the risk management are to be supervised continuously and adjusted, if necessary;

- The risk management system has to be documented in a suitable manner, principles and guidelines of the risk management have to be in written form and communicated to the relevant people;
- Opportunities are not a component of the risk management.

In particular, risk management should make the following contributions:

- to improve the risk awareness and risk transparency;
- to identify, suitably manage and monitor all essential risks;
- to show accumulation of risks;
- to provide reliable management information about the risk situation of the company.

Organization of the Risk Management

For the identification of risks the risk development is reviewed annually in the course of the company's planning and new risks for the business development from the company's perspective within all of SINGULUS TECHNOLOGIES' producing sites as well as sales subsidiaries are discussed. Due to a weak independence of the sales subsidiaries their risks are directly included within the parent company. The respective department heads are responsible for the subsequent formulation and implementation of measures to handle risks. The departments Controlling and Finances support the department heads throughout the individual steps of the risk management process. The risk manager has the method and guideline competence within the company and coordinates the reporting about the risks within the SINGULUS TECHNOLOGIES Group.

The Executive Board has the overall responsibility for the implementation of an appropriate and functioning risk management, to safeguard the timely identification and mastering of trends threatening the continuation of the company.

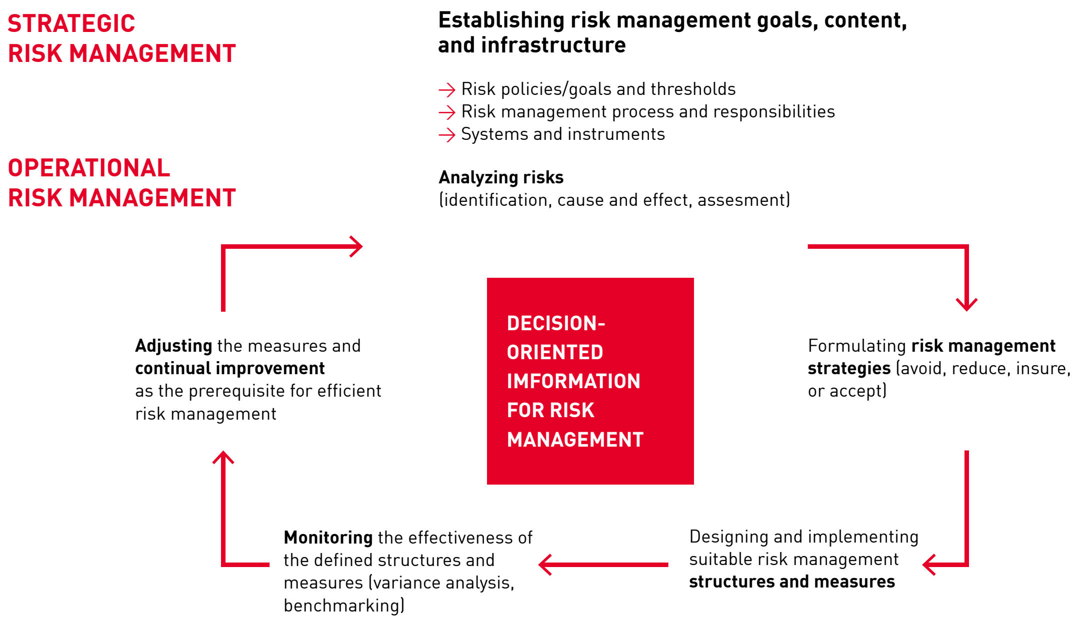
Risk management organization of the SINGULUS TECHNOLOGIES AG:

The Risk Management Process in the SINGULUS TECHNOLOGIES Group

Overall, the risk management system is a continuous process according to the business risk management process:

Level 1: Identification of Goals, Extent and Infrastructure

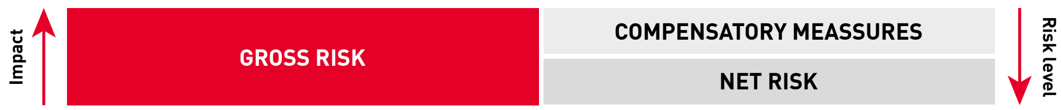
The basis of the strategic risk management process is formed by the alignment of risk policies (including targets and thresholds), the risk management processes and the definition of the required relevant systems and instruments. The original definitions are subsequently amended or modified in the course of a long-term control cycle.



Level 2: Analysis of Risks

In a second step risks are initially identified and documented, afterwards analyzed from different perspectives and finally evaluated, if possible. To safeguard a complete risk inventory, a theoretical risk portfolio is applied. The analysis and updating were performed in the course of the annual planning. On a quarterly basis, a risk reporting is established to document the essential risks.

The evaluation of risks is performed on an ordinal scale. The gross damage is evaluated. This assessment is renewed on a quarterly basis.



The gross damage is defined as the negative earnings impact on the Group's forecast EBIT. The probability of occurrence is the subjective assessment of the probability of the event occurring in the business year. Specifically, a low, medium or high probability is classified. The evaluation is performed on a "gross" basis, i.e. existing controls and measures are not taken into account. The relevant figures for the classification of the gross risk are defined in the following table. Here, the assumptions with regards to the specific maximum damage (based on the Group's shareholders' equity) are derived from long-term historic analysis of the financial results. In addition, the short- and medium-term liquidity risk is continuously monitored.

Relevance	**Characteristics**	**Maximum damage**	
		from	to
1	Insignificant risks, not materially impacting EBIT.	€ 0	€ 0.5 million
2	Medium risks, with a significant impact on EBIT.	€ 0.5 million	€ 2.5 million
3	Significant risks, materially impacting the EBIT and significantly reducing the company value.	€ 2.5 million	€ 10 million
4	Major risks resulting in a negative EBIT and materially reducing the company value.	€ 10 million	€ 20 million
5	Continuation-threatening risks, which threaten the continuation of the company.	> € 20 million	

Subsequently, the probability of occurrence (classification high, medium, low) is estimated for the individual risks.

Level 3: Formulating Risk Handling Strategies

On the basis of risk handling, strategies, specific measures can be derived. The definition of these strategies is made with respect to the overall strategy and the risk preference of the company. Basically, management has the following alternative for the handling of risks at its disposal:

→ **Eliminate risks**
The elimination of risks results in a complete elimination of the risk, e.g. by leaving a risky or unprofitable business.

→ **Reduce risks**
The goal of the reduction of risks is to lower the probability of occurrence and/or the impact on the EBIT or the company's target to an acceptable level, e.g. by improving the early detection of risks and thus the implementation of counter-measures.

- **Transfer (insure) risks**
  In case of an insurance / cover the potential damage is transferred to a third party, e.g. with a respective insurance cover.
- **Bear (accept) risks**
  With the acceptance of risks the direct form of risk financing is carried out by SINGULUS TECHNOLOGIES, e.g. through financial cover via the addition of provisions. The development of the risks is monitored by the involved employees without introducing specific measures for the handling of risks.

Level 4: Design and Implementation of appropriate Structures and Measures
On the basis of the above-formulated risk handling strategy, subsequently the required structures and measures are derived and implemented.

Level 5: Monitoring of Efficiency
The implemented measures are regularly monitored and reviewed with respect to their efficiency. In addition, the legal documentation requirements are met.

Level 6: Adjusting the Measures and continuous Improvement Process
The dynamic nature of the environment demands the risk management to be understood as a continuous process. For this reason continuous adjustments of the risk management process to external and internal developments are essential. To enable this, intensive knowledge management is still necessary. The starting point for the risk management process of SINGULUS TECHNOLOGIES is the corporate strategy, on which the definition and communication of the business goals is based.

The review of the risk management systems is performed by impartials, i.e. people who are not directly involved in the management of risks. The following principle review requirements apply:

- **Supervisory Board**
  The Supervisory Board is responsible for the review of the efficiency of the risk management. For this, the Executive Board at least annually informs the Supervisory Board about the current state of the risk management.
- **Audit**
  In the course of the audit of the annual financial statements pursuant to Art. 317 Para. 4 HGB the audit includes the assessment, whether the Executive Board has performed the measures pursuant to Art. 91 Para. 2 AktG in an appropriate manner and whether the accounting monitoring system is appropriate to identify developments threatening the continuation of the company at an early stage.

Risk Report

As an internationally operating company SINGULUS TECHNOLOGIES continuously monitors the current developments in connection with the outbreak of the COVID-19 pandemic and its economic consequences for our company. The management is closely monitoring the situation in order to be able to implement required countermeasures.

In summary, for the year under review the following relevance scores for the individually identified, material risk group as well as their probability of occurrence each compared with the previous year's assessment resulted.

	2019		2018	
	Relevance*	**Probability of occurrence**	**Relevance***	**Probability of occurrence**
Sales market risk in Solar segment	● ● ● ● ●	high	● ● ● ● ●	medium
Sales market risks Life Science segment	● ● ● ●	high	-	-
Project risks	● ● ● ● ●	medium	● ● ● ● ●	medium
Technological risks	● ● ●	medium	● ● ●	medium
Financial risks	● ● ● ● ●	high	● ● ● ● ●	medium
Procurement market risks	● ● ●	medium	● ● ●	medium

** Measured using relevance indicators from 1 through 5*

The following paragraphs explain the risk areas and individual risks, which are able to materially affect the assets, the financial and the earnings position of the SINGULUS TECHNOLOGIES AG and of the Group from today's perspective, on the basis of the overall Group and which could result in a shortfall of the targets.

In addition, risks that are not known today or which are not assessed as being material, could impact the asset, financial and earnings situation of the company.

Sales Market Risks

Risk description:
The company is generally subject to global economic cycles and geopolitical risks, which could impact the course of business. In particular, SINGULUS TECHNOLOGIES depends on the willingness of its international customers to invest into new production machines. Drops in demand or misjudgments in terms of the development of markets and products could have negative impacts on the company's results.

From today's perspective the global economy is to a large extent dependent on the future development of the COVID-19 pandemic. As a result, the global economy, in particular in important sales markets for the company, could further weaken. However, the impacts cannot be quantified from today's point of view.

Solar Segment

The market development for photovoltaic installations in the past couple of years relied to a large extent on the regulatory framework and global subsidies for investments in photovoltaic equipment. Even though the dependency of the competitiveness of photovoltaic installations from government subsidies is gradually decreasing due to the reduction in system costs for photovoltaic equipment, the market for these installations depends on the implementation of national energy policies and on the continuation of public support programs in the future as well. This holds mainly true for the main markets China and the US. In particular due to the enormous importance of China as the driver of growth for the solar industry in the past couple of years, the further development of the regulatory framework conditions and the public subsidy programs in this country pose a substantial risk with respect to the main business activities of the company. In case the Chinese government repositions its energy policy or adjusts it and with that shift in the solar section in the course of its subsidy programs to other technologies than CIGS, HJT or towards other new production processes or even no longer implement the expansion of the production capacities to the currently announced extent, this would have material negative effects on the sales of the company.

Furthermore, investments in the photovoltaics sector could be refrained from in general or partially or to a significantly smaller extent than expected by SINGULUS TECHNOLOGIES, since the solar technology could become less accepted in competition with other methods of electricity generation from renewable energy source in the future or other technologies could develop more favorably than photovoltaics from a technical, economic, regulatory or other reasons.

In the Solar segment the company is currently engaged in business with a small number of large customers. This holds particularly true with respect to the current large orders as well as the future business relationships with the Chinese state-owned group CNBM. The liquidity and earnings situation is accordingly volatile and also dependent on large-volume projects in the short-term. Due to the current customer and project concentration, singular delays, considerable reduction or even a break-up of the respective business activities could have a material impact on the asset, financing and earnings situation. In such a case it will be improbable that the company will be successful in compensating for the lack of business volume by new customers in the short- or medium-term.

Moreover, the competitive intensity could further increase due to mergers or cooperation of individual competitors or the market entry of new competitors. Increasing competition could result in reduced prices for production machines of the company or even to a material loss of market share.

Impact:

Due to the decline in the order situation since the end of the previous business year, the market risk in the Solar segment is rated with a relevance score of 5 (previous year: 5). Due to the sustained delays in contract conclusions in the Solar segment during the course of the business year the probability of occurrence is assessed to be high (previous year: medium). Even after the signing of the delivery contracts with CNBM for the production site in Xuzhou and the receipt of the first prepayment, the company currently assesses the probability of occurrence of the sales market risk as being high. Accordingly, the risk is still rated to be existential.

The management expects sustained high sales in the solar segment in the next couple of years. Despite the entry into new business areas, this business segment will continue to provide the largest share of sales and earnings contributions in the current business year. If the expansion of renewable energies will be subject to a reduced priority on part of the Chinese government and the expansion of solar parks in the country will slow down significantly in the coming years, this would have a material impact on the willingness of Chinese customers to invest and thus on the most important sales market for the company. In particular, there is a high level of dependence on the customer CNBM as well as its additional demand for CIGS production equipment. As of today, the majority of the order backlog is already targeted for the Chinese market. If the assumed order intake in this segment falls short of expectations in the following business years, this would threaten the continuation of the company.

Measures:
The company is continuously monitoring the market trend in China. In particular, this includes talks with our customers as well as with institutes in China. In addition, a reduction in the dependency on the Chinese solar market is targeted by the diversification in other markets and applications.

Life Science Segment
Besides the core segment Solar, the new segment Life Science is very important for the further course of business. After the sale of first machines within the two work areas Medical Technology and Decorative Coatings, for the current year the company expects to realize a large order and thus a significant expansion of the business activities in this sector.

Impact:
Due to the increasing importance of this segment for the financial results of the company, the segment receives a relevance score of 4 as well as a high probability of occurrence. If the anticipated order intake in this segment will fall significantly short of expectations in the current business year and the company will not be successful in winning equivalent alternative projects, this would threaten the continuation of the company.

Measures:
External data such as market research results but also close contacts with our customers as well as monthly reviews of actual and forecast results help to improve the evaluation of future trends at an early stage.

Semiconductor Segment
Due to the low volumes in terms of the realizable sales the Semiconductor segment is still viewed as not being material.

Measures:
External data such as market research results but also close contacts with our customers as well as monthly reviews of actual and forecast results help to improve the evaluation of future trends at an early stage.

Project Risks

Risk description:

According to our definition project risks include orders, which concern non-standardized machines with a sales price usually exceeding € 3.0 million. Specifically, the resulting risks are the exceeding of forecast costs as well as of the project schedule, the failure of acceptance criteria as well as order cancellations and the resulting non-acceptance of machines and the resulting contractual risks.

Impact:

If risks materialize in connection with the order processing, they could have a material adverse impact on the business activities in particular in connection with the implementation of larger projects. In particular, the risk of missing the project schedule as well as failing to meet the acceptance criteria is viewed as being material. In particular, the work as planned for the delivery of machines for the production of CIGS solar modules for the large customer CNBM is of great importance for the continuation of the company. After significant delays the respective machines for the first expansion stage of the factory in Bengbu, China, have mainly passed the process towards final acceptance in the previous business year. The final acceptance for a large part of the machines was already received at the balance sheet date. For the production site in Meishan the company expects the final acceptance of the machines in close cooperation with the customer by the end of the business year 2020. However, we point out that the realization of project risks within these activities would have material negative impacts on the asset, financial and earnings situation of the company. If the projects fail as a whole or in parts or the planned economic success is not sufficiently realized, this could have material negative impacts up to threatening the existence of the company.

Negative implications on the course of the projects could also result in connection with the COVID-19 pandemic. If measures to contain the virus are maintained over a prolonged period of time or expanded, this could lead to substantial delays in the completion of the projects.

In summary, we assess the project risks unchanged with the relevance score of 5 (previous year: 5). The probability of occurrence is assessed as medium, unchanged to the previous year.

Measures:

To manage the risks, already in the proposal stage project calculations, project schedules as well as project-specific risk assessments and liquidity forecasts are conducted. With a continuing monitoring of changes in the parameters alongside to the project's progress, potential project risks should be identified at an early stage and necessary measures initiated. To reduce the risk of cancellations, prepayments as well as partial payments according to project progress are routinely agreed.

Financial Risks

Risk description:

The SINGULUS TECHNOLOGIES Group is exposed to financial risks in particular with respect to liquidity risks. Here, this particularly includes the failure to receive partial payments in connection with the completion of large projects as well as the refinancing of the bond in July 2021. Furthermore, there are credit risks relating to accounts receivable by customers. In all segments additional financing agreements could become necessary subject to project-specific requirements. In particular, prepayments made by our customers in the project operations are often secured with guarantee pledges. For this, the company has to deposit a large proportion of liquid funds with the guarantors as security. This guarantee pledge is not at the company's disposal for the financing of working capital and could result in liquidity squeezes subject to the course of the projects.

The payment behavior of customers in general as well as of our largest customer CNBM is of essential importance for the future development of the liquidity situation and the further improvement of the creditworthiness of the company.

The future development of the COVID-19 pandemic could have negative impacts on the course of business in particular with respect to the demand situation as well as the course of the projects of essential customer orders. In this connection there could be substantial delays or even the failure to receive relevant partial payments.

A sufficient level of liquidity for the company in the business years 2020 and 2021 can generally only be maintained if the plans can be realized in the next two years. The essential prerequisites for the planning are that the agreed partial payments due to the already contracted large orders are actually made or not made with a material delay and that the orders taken into account for the liquidity budget are completed as planned. These events and conditions indicate the existence of material uncertainty, which can cast considerable doubt on the company's ability to continue its business activities and which pose an existence-threatening risk.

Impact:
Currently, we still rate the liquidity risk unchanged with a relevance score of 5 (previous year: 5), the credit risk with a relevance score of 3 (previous year: 3). Despite the receipt of additional partial payments of the customer CNBM during the period under review and during drawing up the accounts, we rate the probability of occurrance as being high (previous year: medium). In particular, the contractually agreed receipt of additional partial payments by the customer CNBM as well as by other large projects is required. Material delays in payments or credit losses within these projects could not be compensated for.

Furthermore, in terms of the financing commitments of the banks and insurers for required loan facilities in the current business year 2020 the required cash deposited have to be reduced. In particular, the financing of large projects could require a substantially higher flexibility of the unrestricted liquid funds.

Measures:
To safeguard the financial solvency as well as the financial flexibility of the SINGULUS TECHNOLOGIES Group at all times, a liquidity reserve in the form of cash is held. To detect liquidity risks at an early stage liquidity projections are performed on a regular basis and compared with the actual developments. The company is currently negotiating the granting of guarantee pledges with substantially reduced security deposits. In addition, in March 2020 the company has extended the loan with a volume of € 4.0 million until March 1, 2021 to further secure the liquidity situation. Furthermore, the company is currently in talks about the refinancing of the corporate bond with a nominal value of € 12.0 million. The bond is due on July 22, 2021. The company expects a successful implementation of the refinancing in the course of a favorable trend in the course of business. In addition, the company received prepayments in the amount of € 12.4 million at the beginning of the business year 2020 for the large CIGS project of the customer CNBM at the production site in Xuzhou. Further partial payments in the amount of € 5.0 million each are expected in the months April 2020 and May 2020. Moreover, the company is currently negotiating a credit line in the amount of € 10.0 million with a term to maturity of twelve months.

To analyze default risks the portfolios of accounts receivable of the individual companies in the SINGULUS TECHNOLOGIES Group are reviewed in short time intervals. As the main instrument to hedge defaults of international customers we employ export credit insurance. The creditworthiness and payment behavior of customers are constantly monitored and relevant credit limits are determined. In addition, on a case by case basis risks are limited through credit insurances and bank guarantees, if possible.

Technology Risk

Risk description:
The SINGULUS TECHNOLOGIES Group is operating in competitive markets. If the further or new development of products leads to erroneous trends, this could result in substantial costs.

Impact:
We are currently assessing the risk of faulty or delayed developments with an unchanged relevance score of 3 compared with the prior year and an unchanged medium probability of occurrence.

Measures:
A key aspect of the review of the technology risks is the analysis of market requirements. We reduce the risk of faulty or delayed developments through the cooperation with partners, research institutes and a continuous evaluation process, which continuously reviews the efficiency, opportunities and general conditions of the development projects. An essential part of this is the monitoring of the planning of the different development projects. For all capitalized development expenses not deemed recoverable the required write-offs are incurred. The analysis of success probabilities as well as the identification and seizing of these opportunities, which safeguards the competitiveness of the company and increases it, is therefore an essential aspect of the strategic planning.

Procurement Market Risks

Risk description:
The availability, unexpected price increases and inadequate quality of procured components pose a risk for SINGULUS TECHNOLOGIES. An additional risk results from high inventory levels.

Impact:
We rate the inventory risk with respect to the level of inventories currently unchanged to the previous year with a relevance score of 3 (previous year: 3) und still assess the probability of occurrence as being low (previous year: low). From today’s point of view, we overall expect this to sufficiently cover the inventory risks through the recognition of balance sheet write-offs. The risk with respect to availability, quality and price increase of procurement parts is assessed with a relevance score of 3 (previous year: 3) at the end of the business year, the probability of occurrence is assessed to be medium (previous year: medium). In the short- and medium term we do not anticipate significant price increases from current contract negotiations and from the analysis of market expectations. The average backlog rate and the number of quality complaints over the course of the year were mainly within the target range.

Measures:
The deliverability as well as the fulfilling of our quality requirements for supplied parts is constantly monitored. We are currently reviewing the impacts of the COVID-19 pandemic on the supply chains. As of today, the company does not see any material adverse consequences for the business operations. The management is closely monitoring the situation as well as the future development in order to be able to implement potentially required countermeasures. A further part of the risk management is performed through inventory management. This area includes regular frequency and reach analyses of goods and procurement parts. To avoid unexpected price increases long-term contracts are partially concluded with suppliers.

At the end of the reporting year 2018 the company had validated the impacts of a disorderly Brexit. Even in the case of occurrence, the company does not anticipate any material impacts on the procurement process due to the low procurement volumes and the existence of alternative suppliers. This assessment remained unchanged in the business year 2019.

Compliance Risks

Risk description:
As an internationally operating company the SINGULUS TECHNOLOGIES Group is exposed to a multitude of legal, tax and regulatory risks in addition to the operating and financial risks. In particular they include risks from the fields product liability, patent rights and corporate laws. The outcome of legal disputes as well as legal proceedings could inflict substantial harm to the reputation and the business activities of the company or could at least incur high expenses.

In addition, the disregard of laws, regulatory requirements and referenced guidelines could have serious negative impacts, such as for example reputation damage or punitive payments, for the company. This includes for example risks in connection with corruption as well as violations of export regulations.

Impact:
Compliance violations could result in legal proceedings. The outcome of legal proceedings is uncertain and can result in material economic consequences. These could possibly not be covered or not to the full extent be covered by insurances and will thus have an impact on our business operations as well as the corresponding financial results.

There are currently no material ongoing legal proceedings against the SINGULUS TECHNOLOGIES AG and no significant compliance violations are known. The impact of compliance violations is rated with a relevance score of 3 (previous year: 3), the probability of occurrence is still assessed as being low.

Measures:
Legal risks are identified using a systematic approach and attended to with the help of external lawyers.

The SINGULUS TECHNOLOGIES Group has established a group-wide Code of Conduct to prevent possible violations of laws. This code is intended to provide employees with specific rules of conduct in various situations. An additional measure to prevent compliance violations are individual employee trainings with respect to specific issues of various legal regulations.

Opportunities Report

SINGULUS TECHNOLOGIES addresses the global market for machines and systems for the manufacturing of various formats of solar cells. In the segment CIGS the efforts are mainly focused on the further expansion plans of the Chinese company CNBM. CNBM as the largest customer plans an output volume of 6 GW at four sites in China. This means a set-up of approximately 20 factories with an output volume of 300 MW each. While the first factory in the city of Bengbu is already producing, the factories in the cities of Meishan and Xuzhou are being established in 2020. The fourth site is intended to be in the city of Weihai according to information provided. Following the signing of a new contract at the beginning of January 2020 it is expected to expand sales and generate positive results in this segment with the machines for the CIGS thin-film solar technology.

In the area of crystalline high-performance solar cells SINGULUS TECHNOLOGIES intends to offer a one-stop solution for the key production steps, i.e. in addition to the wet-chemical treatment also the various steps of the vacuum coating technology. In the market for HJT solar cells new projects are announced internationally, for which SINGULUS TECHNOLOGIES is in talks with the corresponding customers. For example, the expansion of existing production capacities for HJT solar cells is currently discussed with customers at different locations such as Italy and Eastern Europe.

This provides SINGULUS TECHNOLOGIES opportunities for new large projects in the two segments for the current business year: the crystalline HJT and the thin-film solar technology.

In the Life Science segment we see opportunities to generate sales in the future with vacuum coating machines for the processing of surfaces in the consumer goods sector as well as in the medical technology industry. The developments and market opportunities in the work area Decorative Coating are mainly characterized by the factors environmental friendliness and sustainability as well as cost savings. Following the delivery of the first machines predominantly in the cosmetics sector in the past two business years, the company sees good opportunities to sell additional machines, for example to the automotive supplier industry.

The wet-chemical cleaning machines for various applications in the medical technology industry offer the possibility to generate additional sales and earnings contributions. Beside the successful market entry in the market for contact lenses, the company sees opportunities to develop additional application areas.

In the Semiconductor segment there are opportunities to sell vacuum coating machines in this area amidst increasing demand on the basis of numerous MRAM development projects. In addition, for the coming years we expect further opportunities for new application areas for extremely precise layer systems, such as for example for sensory technology. For wet-chemical processing machines we see the possibility to market production machines for electronic components and semiconductor applications.

Summary of Risks and Opportunities

The project and the sales market risk for the Solar segment as well as the liquidity risk are still the material risks within the Group from today's point of view.

The Solar division is expected to provide the largest proportion of sales and earnings contributions in the current business year. Also against the background of establishing new business areas, the development of the solar market remains a critical criterion for the future continuation of the company.

In addition, the company anticipates a significant increase in the business activities in the Life Science segment. If the forecast sales will not materialize in the coming years, this would have material impacts on the asset, financial and earnings situation of SINGULUS TECHNOLOGIES.

If the risk of the order completion of current and future large projects materializes, this could have material negative impacts on the business operations of the company.

A sufficient level of liquidity of the company in the business years 2020 and 2021 can only be maintained, if the plans in the next two years are realized. The essential prerequisites for the plans are that the partial payments of the customers, which are payable due to the already contracted large orders, are actually made without material delays. Moreover, winning an additional large order or a combination of equivalent alternative projects in the current business year is required. Furthermore, a successful and timely refinancing of the corporate bond in the amount of € 12.0 million due in July 2021 is a central component of securing the liquidity situation within the company.

These events and conditions indicate the existence of substantial uncertainty, which can cast significant doubt on the company's ability to continue its business operations and which pose an existence-threatening risk. However, from today's point of view, the company has sufficient available liquid funds to safeguard the course of business and therefore draws up the financial statement according to the going concern assumptions.

*Environment and Sustainability**

Responsible and sustainable corporate governance is very important to the SINGULUS TECHNOLOGIES AG. For the Executive and Supervisory Boards this means responsible and sustainable leadership and management of the company aligned for the long-term success. The principles of corporate governance safeguard a targeted and efficient cooperation between Executive Board and Supervisory Board, the respect for the interests of our shareholders and employees, suitable handling of risks and transparency as well as responsibility for all corporate decisions.

With its products for the solar technology SINGULUS TECHNOLOGIES actively works on the introduction and establishment of environmentally-friendly energy generation. The company's products are continuously improved to follow the spirit of sustainability and to lower the energy consumption within its business operations. Here, sustainable thinking already starts with the design of the machines. The recycling of used materials within the company goes without saying.

SINGULUS TECHNOLOGIES has installed an energy management system in the company and adheres to the following rules:

- the energy consumption is systematically evaluated
- the energy flows are recorded and kept up-to-date
- energy saving programs are planned and introduced
- the planned activities to improve the energy efficiency are continuously updated
- the Executive Board publishes the goals with respect to the energy management

An energy management manager monitors and reviews the development to implement the energy policy. In order to adhere to corporate diligence duties, all strategic and operating targets as well as all required measures are specified in an energy management handbook.

In 2019, approximately 6.597 GWh total energy was consumed at the sites in Kahl am Main and in Fürstenfeldbruck. This number includes electricity and gas. In 2018, this number came to 5.909 GWh. Parts of the consumed energy are generated by us through our solar panels at our site in Fürstenfeldbruck. At both sites, the complete lighting of the halls as well as the exterior lighting was gradually converted to modern and efficient LED lighting appliances.

SINGULUS TECHNOLOGIES regards sustainability as an opportunity to position itself with innovative products that follow this fundamental idea.

In the focus are:

- environmental awareness
- efficient use of resources
- avoidance of unnecessary CO_2 pollution

* Non-audited statements

SINGULUS TECHNOLOGIES supplies machines and systems for the production of high-performance solar cells. The idea of sustainable energy generation cannot be realized in the future without solar technology.

Compensation Report

This compensation report is an integral part of the combined status report for the SINGULUS TECHNOLOGIES Group and the SINGULUS TECHNOLOGIES AG. It includes information, which according to the regulations of German commercial law (Art. 289a Para. 2 in connection with Art. 285 No. 9 HGB) is an integral part of the Appendix pursuant to Art. 314 Para. 1 No. 6 HGB and of the Status Report pursuant to Art. 315a Para. 2 HGB. Pursuant to the legal regulations and the recommendations of the German Corporate Governance Code as amended on February 7, 2017 (the Code), the compensation report sets forth the basics and the structure of the compensation system for the Executive Board and the Supervisory Board of the SINGULUS TECHNOLOGIES AG and also details the compensation of the individual members of the Executive and Supervisory Board for their attending to their duties for the company in the business year 2019. In addition, it takes into account the requirement of the German accounting standard No. 17 (DRS).

A. Compensation of the Executive Board

I. Members of the Executive Board in the Business Year 2019

Dr.-Ing. Stefan Rinck

Chief Executive Officer; Executive Board member responsible for Production (until October 31, 2019), Marketing & Sales, Technology, Research & Development as well as Strategy and International

Dipl.-Oec. Markus Ehret

Executive Board member responsible for Finance, Controlling, Investor Relations, Human Resources, Procurement (until October 31, 2019) and IT

Dr. rer. nat. Christian Strahberger
(since November 1, 2019)

Executive Board member responsible for Procurement, Production, Semiconductor and set-up China production

II. Description of the Compensation Structure

1 Overview Compensation Structure

1.1 Design and Goals of Compensation Structure

The compensation of the individual members of the Executive Board is determined and regularly analyzed by the Supervisory Board. It is the goal to appropriately remunerate the Executive Board members according to their functions and responsibilities and to consider the individual performance as well as the economic situation, the success and the future prospects of the company.

The compensation structure is aligned with a sustainable development of the company and includes a fixed as well as variable compensation components. The fixed, non-performance-based part is composed of a fixed salary, a company financed pension plan and benefits in kind. The performance-related components are split in a variable bonus and a share-based compensation component (phantom stocks). The variable bonus aims to increase the motivation and willingness to perform of each member of the Executive Board and to strengthen the loyalty to the company. The variable bonus is tied to achieving individual targets, which include financial, operating and strategic goals. These targets are reset annually by the Supervisory Board and individually agreed with the members of the Executive Board following the adoption of the budget for the subsequent year. The phantom stock program is aimed at providing a long-term incentivation and loyalty effect by the coupling of the compensation with the share price performance of the company and thus the performance of the company and its sustainable performance. After the lapse of a waiting period of two years the phantom stocks can be exercise in tranches of 25 % semi-annually if the share price of the company exceeds a specified minimum percentage level above the exercise price. The phantom stocks thus provide a compensation component with multiple-year criteria, which achieves a high alignment of interest between the beneficiaries and the shareholders.

Both the variable bonus as well as the phantom stocks and the total compensation have maximum amounts as recommended by the German Corporate Governance Code.

The Supervisory Board sets the level of target income at the compensation paid by comparable companies to the members of their management as well as at the vertical appropriateness in comparison to the salary of other employees in the company. The Supervisory Board aims to commit the members of the Executive Board to the company in the long-term and to incentivize them to increase the company value. The variable compensation should also promote the motivation and commitment of the members of the Executive Board and provides an opportunity to take into account the economic situation of the company for the determination of the bonus as well. The Supervisory Board regularly reviews the compensation in the course of its first Supervisory Board meeting of the year. In the review the Board takes into consideration the individual performance and the extent of the responsibilities assumed compared with the other members of the Executive Board as well as the economic situation of the company.

By resolution of the Supervisory Board as of January 26, 2017 the appointment of Dr.-Ing. Stefan Rinck as member of the Executive Board was extended by five years until August 31, 2022 and the former employment contract was replaced with a newly concluded employment contract with effect from September 1, 2017. By resolution of the Supervisory Board as of January 25, 2018 the employment contract of Mr. Markus Ehret was newly concluded for the remaining tenure until December 31, 2019 with effect from January 1, 2018. By resolution as of March 20, 2019, the appointment of Mr. Markus Ehret as member of the Executive Board was extended for five years until March 20, 2024 ahead of schedule and a new employment contract was concluded with effect from January 1, 2020, which replaces the previous employment contract. By resolution of the Supervisory Board as of September 17, 2019 Dr. rer. nat. Christian Strahberger was appointed as member of the Executive Board for three years from November 1, 2019 and an employment contract was concluded with effect from November 1, 2019. The effective compensation system for the members of the Executive Board was approved by the Annual General Meeting by resolution as of June 28, 2018.

1.2 Composition of the Compensation

The compensation generally includes fixed and performance-related components.

The non-performance-based part is composed of a fixed salary, a company financed pension plan and benefits in kind. The benefits in kind include company cars, insurances as well as a company-financed, defined contribution pension plan.

The performance-based components are split in a variable bonus and phantom stocks (virtual shares). Furthermore, the contracts of the members of the Executive Board provide the Supervisory Board the possibility to grant one-off special payments for extraordinary performance in addition to the variable compensation components.

The variable bonus is tied to achieving individual targets, which include financial, operating and strategic goals. These targets are reset annually by the Supervisory Board and individually agreed with the members of the Executive Board following the adoption of the budget for the subsequent year. Generally, the targets consist of 50 % financial, 30 % operating and 20 % strategic targets. The variable bonus may not exceed 80 % of the fixed compensation, so that the target compensation in case of a maximum bonus consists of around 56 % fixed salary and around 44 % annual bonus payments. If the annual targets are exceeded by the respective member of the Executive Board, the Supervisory Board may increase the target achievement to up to 120 % on a case by case evaluation at its sole discretion. In case of an assumed 100 % achievement of the annual targets on average the bonus corresponds to the maximum bonus. If the targets are not achieved or only partially by less than 50 %, the Supervisory Board decides at its sole discretion if and to what extent a bonus will be paid.

Since the business year 2011, every year the company has been granting phantom stocks to members of the Executive Board according to the in the meantime amended guidelines of the phantom stock program resolved by the Supervisory Board. The phantom stocks program is aimed to result in long-term incentivation and commitment due to tying the compensation to the performance of the company and its long-term share performance. The phantom stocks provide a compensation component with multiple-year criteria, which achieves a high alignment of interest between the beneficiaries and the shareholders and therefore creates shareholder value in the long-term. The allocation of phantom stocks is free of charge as an additional compensation component. Each individual phantom stock is designed as a virtual option and entitles after the lapse of a waiting period and the achievement of a success target to receive a payment which corresponds to the difference at exercise between the respective exercise price and the reference price for a bearer share of the company with a nominal value of € 1.00 each. The exercise price corresponds to the simple average of the closing prices (or a relevant subsequent closing price) of the shares of the company on the Xetra platform (or a functionally equivalent subsequent system to the Xetra platform) at the Frankfurt Stock Exchange on the five trading days before the issue date. The reference price corresponds to the (non-weighted) simple average of the closing prices (or a relevant subsequent closing price) of the shares of the company on the Xetra platform (or a functionally equivalent subsequent system to the Xetra platform) at the Frankfurt Stock Exchange on the five trading days before the exercise date. The phantom stocks can be exercised for the first time after a vesting period of two years, which starts at the time of issuing the stocks. The term of the phantom stocks is five years each after the respective issue date. Phantom stocks, which are not exercised by the end of this term, expire without replacement and compensation. After the lapse of the waiting period the exercise can be made in a period of time of 14 trading days starting with the sixth trading day (including) after the publication of the quarterly results for the first or third quarter until June 20 or December 20, respectively of the business year (exercise period). If the exercise was not possible during the exercise period due to a self-exemption pursuant to Art. 17 Para. 4 German Market Abuse Regulation (MMVO), the exercise period is extended by the time of the self-exemption. During each exercise period only up to 25 % of the granted phantom stocks can be newly exercised. If an exercise tranche is not exercised during the exercise period, it can be additionally exercised during later exercise periods. Furthermore, the exercise of the phantom stocks is only possible upon reaching the success target, i.e. if the reference price at the time of the exercise is at least 15 % higher than the exercise price.

Within the term of the phantom stocks the phantom stocks can also be exercised prematurely, i.e. outside of the respective exercise period and before the completion of the waiting period, if a takeover offer in the meaning of Art. 29 Para 1 German Securities and Takeover Act (WpÜG) is published for the shares of the company or if a person gains control in the meaning of Art. 29 Para. 2 WpÜG. In these cases, all phantom stocks can be exercised irrespective of the achievement of the performance targets.

At exercise, phantom stocks exclusively entitle to a payment in the form of a cash compensation. The cash compensation is limited to three times the exercise price of each phantom stock. In addition, the employment contracts of the members of the Executive Board include an additional upper limit according to which the payable cash compensation within one year is limited to the amount of the annual fixed salary. It is not possible to settle the claims from the phantom stocks with the company's own shares.

1.3 Maximum Levels

Art. 4.2.3 Para. 2 S. 6 of the Code recommends that the compensation for the members of the Executive Board should have absolute maximum levels overall and maximum levels in terms of the variable share of compensation. The Supervisory Board generally deems maximum levels for the Executive Board remuneration as reasonable and has implemented these as follows:

The employment contracts for the three sitting members of the Executive Board include maximum levels for the variable compensation components, which result from the system of the compensation structure and which are monitored by the Supervisory Board. The Supervisory is authorized to discretionarily increase the variable bonus of the respective member of the Executive Board upon exceeding the annual targets by up to 120 % of the target amount. However, the variable bonus may not exceed 80 % of the fixed salary; this also holds true if the target achievement exceeds 100 %.

In addition, the members of the Executive Board receive phantom stocks. The Supervisory Board determines the number of granted phantom stocks at its own discretion. However, the granted cash compensation upon exercise of the phantom stocks is limited to three times the exercise price of each phantom stock. In addition, the granted cash compensation from the phantom stocks programs within a period of one year may not exceed the amount of the annual fixed salary. This also holds true if exercise trances become due within one year, which result from phantom stock programs from different years. This limit is not applicable in case of a premature exercise of the phantom stocks in case of a takeover offer or a change in control (see above).

A potential one-time extraordinary payment granted by the Supervisory Board may only amount to halve of the fixed salary and is subject to the overall limit of the compensation, which the member of the Executive Board may receive during the course of one year.

The maximum compensation, which the respective member of the Executive Board may receive during the course of one year (fixed and variable compensation including ancillary benefits, a potential extraordinary payment and pension contributions) is limited to 3.5 times the respectively set fixed salary. Potential severance payments and payments under the phantom stocks program during early exercise of the phantom stocks after a change in control are not subject to the maximum level.

2 Fixed salary

The fixed, non-performance based, annual salary of the members of the Executive Board is paid in twelve equal partial payments at the respective end of the months and for the last time for the full month during which the employment contract terminates. It is reviewed annually according to appropriateness and adjusted, if required. An adjustment can also be made by granting one-time extraordinary payments. The annual fixed salary of the members of the Executive Board for the business year 2019 amounted to € 440,000 for Dr.-Ing. Stefan Rinck, € 300,000 for Mr. Markus Ehret and € 300,000 for Mr. Dr. rer. nat. Christian Strahberger.

Overall, the fixed salary paid to the members of the Executive Board in the business year 2019 amounted to € 790,000.

3 Short-term variable Compensation

In addition to the fixed salary, the company grants the members of the Executive Board an annually set variable gross compensation (bonus). The respective amount is determined by the Supervisory Board for the respective business year on the basis of annually agreed targets. Based on the concluded target agreements with the respective members of the Executive Board for the business year 2019, the Supervisory Board has set the achievement of the targets for the members of the Executive Board for the business year 2019 at 60 % each. The variable compensation granted on the basis of the individual target agreements and pursuant to the achievement of the targets for the business year 2019 amounted to € 175,800 for Dr.-Ing. Stefan Rinck, € 112,000 for Mr. Markus Ehret and € 18,667 for Dr. rer. nat. Christian Strahberger, in total amounting to € 306,467.

In addition, the Supervisory Board is entitled to grant the members of the Executive Board a special payment for extraordinary performance at its own discretion. The Supervisory Board refrained from granting a special payment to the members of the Executive Board for the business year 2019.

4 Long-term variable Compensation (Phantom Stocks)

The SINGULUS TECHNOLOGIES AG grants the members of the Executive Board each year phantom stocks pursuant to the phantom stock program resolved by the Supervisory Board. In the business year 2019 the company granted the members of the Executive Board in total 250,000 (previous year: 250,000) phantom stocks, of which 150,000 stocks were attributable to Dr.-Ing. Stefan Rinck (previous year: 150,000) and 100,000 stocks to Mr. Markus Ehret (previous year: 100,000). The attributable time value at the point in time of granting these virtual shares amounted to € 3.443 per phantom stock (previous year: € 4.554). Dr. rer. nat. Christian Strahberger does not hold any phantom stocks. Accordingly, the Executive Board held 862,500 phantom stocks at the end of the business year 2019 including the 250,000 phantom stocks issued in the business year 2019 and less the phantom stocks exercised in the business year 2019.

On May 21, 2019 Dr.-Ing. Stefan Rinck exercised phantom stocks as follows and received the following compensation payment: program 2016: 31,250 shares, € 146,956.25. On May 21, 2019 Mr. Markus Ehret exercised phantom stocks as follows and received the following compensation payment: program 2016: 25,000 shares, € 117,565.00.

As of the end of the business year 2019 Dr.-Ing. Stefan Rinck held 512,500 virtual shares, which are composed as follows: (i) 62,500 remaining virtual shares from the program 2016, (ii) 150,000 virtual shares from the program 2017, (iii) 150,000 for virtual shares granted in the business year 2018 and (iv) 150,000 virtual shares granted in the business year 2019. As of the end of the business year 2019 Mr. Markus Ehret held 350,000 virtual shares, which are composed as follows: (i) 50,000 remaining virtual shares from the program 2016, (ii) 100,000 virtual shares from the program 2017, (iii) 100,000 for virtual shares granted in the business year 2018 and (iv) 100,000 virtual shares granted in the business year 2019.

The accrued split of the attributable time value for the virtual shares resulted in an income in the amount of € 0.8 million for the business year 2019. The virtual shares of Dr.-Ing. Stefan Rinck account for an income in the amount of € 482,000 (previous year: expense € 400,000), to virtual shares of Mr. Markus Ehret an income in the amount of € 358,000 (previous year: expense € 276,000).

5 Other Compensation

In addition, the members of the Executive Board receive fringe benefits in kind, such as company cars or lump-sum compensation for use of private cars for professional purposes as well as casualty and personal liability insurances. Each individual Executive Board member has to pay taxes on these fringe benefits as part of the overall compensation.

The other compensation for the business year 2019 amounted to € 47,000 for Dr.-Ing. Stefan Rinck, € 27,000 for Mr. Markus Ehret and € 2,000 for Dr. rer. nat. Christian Strahberger. The members of the Executive Board did not receive additional compensation in the business year 2019 for their activities as managing directors of subsidiaries. A lump-sum share in the amount of 15 % of the fixed salary and the annual variable compensation is deemed to be the compensation for these activities.

6 Pension Plans

The members of the Executive Board receive a company pension plan financed by the company in the form of defined contributions. The company pays the members of the Executive Board an annual pension contribution in the amount of a specific percentage of their gross fixed annual salary set out in the employment contracts. This form of pension enables the company to reliably calculate the annual - and accordingly also the long-term - expenses. The amount of the pension payment was calculated as a percentage of the fixed salary on the basis of an approximately targeted pension level, a hypothetical tenure and the expected interest rate development according to actuarial principles. However, the actual pension level is not fixed for a defined-contribution pension, since it depends on the tenure as an Executive Board member and the interest rate development.

The annual pension contribution for Dr.-Ing. Stefan Rinck amounts to 59.97 % since January 2012, for Mr. Markus Ehret to 31.58 % since January 1, 2018 and for Dr. rer. nat. Christian Strahberger to 35.00 % since November 1, 2019 of the annual fixed salary. The annual pension contributions for the company paid in the year 2019 amounted to approx. T€ 377 (previous year: T€ 359), with approx. T€ 264 (previous year: T€ 264) attributable to Dr.-Ing. Stefan Rinck, approx. T€ 95 (previous year: T€ 95) attributable to Mr. Markus Ehret and approx. T€ 18 to Dr. rer. nat. Christian Strahberger.

In 2011 the pension benefits were outsourced from the company to the incorporated society Towers Watson Second e-Trust e.V. ("Incorporated Society"). The pension benefits include pensions and surviving dependents' pensions. With respect to the pension it is determined that if a member of the Executive Board retires from the company after completion of the age of 63, a monthly pension or a lump sum will be paid. If a member of the Executive Board retires from the company before the age of 63 but after completion of the age of 60, as an early pension an early monthly pension or an early lump sum will be paid, if the member of the Executive Board asks for the payment of the early pension benefits at the time of leaving the company. The amount of the (early) pension benefits depends an actuarial principles corresponding to the pay scale of the liability insurer. The Incorporated Society concludes a corresponding liability insurance to insure the pension benefits. The Incorporated Society is exclusively entitled to the rights from these contracts. In case of death of a member of the Executive Board before claiming (early) pension benefits, the surviving spouse will receive a surviving dependents' lump sum. The amount of the surviving dependents' lump sum is calculated upon occurrence of the death and corresponds to the payable repayment of contributions in case of death before retirement resulting from the liability insurance concluded for the members of the Executive Board by the Incorporated Society.

In case of death after claiming the (early) pension benefits through monthly payments, but before the lapse of 20 years after retirement, the surviving spouse will receive a temporarily limited surviving dependent's pension until the lapse of this 20-year period. If there is no surviving spouse entitled for benefits, under certain conditions the surviving children will receive surviving dependents' payments in equal parts.

If a member of the Executive Board leaves the SINGULUS TECHNOLOGIES AG before the pension benefits are due, the proportional claim for pension benefits remains, regardless whether at the time of leaving the legal vesting applies pursuant to the relevant regulations of the employers' retirement benefits law.

III. Individual Compensation

In the business year 2019, the granted total compensation for the members of the Executive Board amounted to T€ 2,614 overall (Min.: T€ 1,242, Max.: T€ 3,130) (previous year: T€ 2,790). Thereof, T€ 790 (previous year: T€ 740) was attributable to fixed, non-performance-based and T€ 511 (Min.: T€ 0, Max.: T€ 632 previous year T€ 480)) to variable, annual performance-based compensation components. T€ 76 (previous year: T€ 73) were attributable to non-performance-based benefits in kind and ancillary benefits as well as T€ 376 (previous year: T€ 359) to pension contributions. The virtual shares (phantom stocks) granted to the members of the Executive Board in the business year 2019 amounted 250,000 shares in total (previous year: 250,000 shares) with an attributable time value at the time of granting (granting value) of € 3.443 for each phantom stock (previous year: € 4.554). For the individual members of the Executive Board the following granted compensation resulted for the year under review (with respect to the attributable total compensation please refer to the attribution table):

	Dr.-Ing. Stefan Rinck **Chief Executive Officer** Date of entry: September 1, 2009				**Dipl.-Oec. Markus Ehret** **Executive Board member** Date of entry: April 19, 2010				**Dr. rer. nat. Christian Strahberger** **Executive Board member** Date of entry: November 1, 2019		
Granted compensation	**2018** [in EUR]	**2019** [in EUR]	**2019** (Min.) [in EUR]	**2019** (Max.) [in EUR]	**2018** [in EUR]	**2019** [in EUR]	**2019** (Min.) [in EUR]	**2019** (Max.) [in EUR]	**2019** [in EUR]	**2019** (Min.) [in EUR]	**2019** (Max.) [in EUR]
Fixed compensation	440,000	440,000	440,000	440,000	300,000	300,000	300,000	300,000	50,000	50,000	50,000
Fringe benefits	45,691	47,220	47,220	47,220	27,225	27,115	27,115	27,115	1,965	1,965	1,965
Total	**485,691**	**487,220**	**487,220**	**487,220**	**327,225**	**327,115**	**327,115**	**327,115**	**51,965**	**51,965**	**51,965**
One-year variable compensation	293,000[1]	293,000[2]	0	352,000	186,667[1]	186,667[2]	0	240,000	31,111[2]	0	40,000
Special payments	0	0	0	220,000[3]	0	0	0	150,000[3]	0	0	25,000[3]
Multi-year variable compensation	**683,100**[4]	**516,450**[4]	**0**	**516,450**[4]	**455,400**[4]	**344,300**[4]	**0**	**344,300**[4]	**0**[4]	**0**	**0**[4]
Phantom Stocks 2018 (exercise from April 9, 2020 until April 9, 2023)	683,100	0	0	0	455,400	0	0	0	0	0	0
Phantom Stocks 2019 (exercise from April 12, 2021 until April 11, 2023)	0	516,450[4]	0	516,450[4]	0	344,300[4]	0	344,300[4]	0	0	0
Total	**1,461,791**	**1,296,670**	**487,220**	**1,575,670**	**969,292**	**858,082**	**327,115**	**1,061,415**	**83,076**	**51,965**	**116,965**
Pension plans	263,868	263,868	263,868	263,868	94,740	94,740	94,740	94,740	17,500	17,500	17,500
Granted total compensation	**1,725,659**	**1,560,538**	**751,088**	**1,839,538**[5]	**1,064,032**	**952,822**	**421,855**	**1,156,115**[6]	**100,576**	**69,465**	**134,465**

[1] The actually granted one-year variable compensation amounted to € 278,350 for Dr.-Ing. Stefan Rinck and € 177,344 for Mr. Markus Ehret upon 95 % achievement of targets.

[2] The actually granted one-year variable compensation for the business year 2019 amounted to € 175,800 for Dr.-Ing. Stefan Rinck, € 112,000 for Mr. Markus Ehret and € 18,667 for Dr. rer. nat. Christian Strahberger upon 60 % achievement of targets.

[3] Maximum amount, which the member of the Executive Board can receive in one year.

[4] Fair market value of the phantom stocks at time of granting; an exercise of the phantom stocks is possible for 50 % in the business year 2020 at the earliest (phantom stocks 2018) and for 50 % in the business year 2021 at the earliest (phantom stocks 2019). Upon exercise of the phantom stocks the entitled person receives the difference between the exercise price at the time of granting and the reference price upon exercise of the option, subject to a maximum of three times the exercise price for each phantom stock. The compensation payments granted during the course of one year may not exceed the amount of the annual fixed salary of the respective member of the Executive Board.

[5] Maximum amount of € 1,540,000 according to employment contract; includes pension benefits; does not include phantom stocks that were granted in the business year, but not exercised. A maximum amount for phantom stocks is only set with respect to the cash flow and thus with the exercise of this compensation component.

[6] Maximum amount of € 1,050,000 according to employment contract; includes pension benefits; does not include phantom stocks that were granted in the business year, but not exercised. A maximum amount for phantom stocks is only set with respect to the cash flow and thus with the exercise of this compensation component.

	Dr.-Ing. Stefan Rinck **Chief Executive Officer** Date of entry: September 1, 2009		**Dipl.-Oec. Markus Ehret** **Executive Board member** Date of entry: April 19, 2010		**Dr. rer. nat. Christian Strahberger Executive Board member** Date of entry: November 1, 2019
Cash flow	**2018** [in EUR]	**2019** [in EUR]	**2018** [in EUR]	**2019** [in EUR]	**2019** [in EUR]
Fixed compensation	440,000	440,000	300,000	300,000	50,000
Fringe benefits	45,691	47,222	27,225	27,115	1,965
Total	**485,691**	**487,222**	**327,225**	**327,115**	**51,965**
One-year variable compensation	234,400	278,350	149,334	177,334	0
Extraordinary payments	0	0	0	0	0
Multi-year variable compensation	**214,677**	**146,956**	**171,742**	**117,565**	**0**
Phantom Stocks 2015 (exercise from April 9, 2017 until July 9, 2020)	1,471		1,177		0
Phantom Stocks 2016 (exercise from November 30, 2018 until November 30, 2021)	213.206	146.956	170.565	117.565	0
Others	0	0	0	0	0
Total	**934,768**	**912,528**	**648,301**	**622,014**	**51,965**
Pension plans	263,868	263,868	94,740	94,740	17,500
Total compensation	**1,198,636**	**1,176,396**	**743,041**	**716,754**	**69,465**

The cash flow of the total compensation for the members of the Executive Board in the business year amounted to T€ 1,963 overall (previous year: T€ 1,941). Thereof, T€ 790 (previous year: T€ 740) were attributable to fixed, non-performance-based compensation components and T€ 720 (previous year: T€ 770) to variable one-year and multi-year performance-based compensation components. T€ 76 (previous year: T€ 73) were attributable to non-performance-based benefits in kind and ancillary benefits as well as T€ 376 (previous year: T€ 359) to pension contributions.

IV. Committed Benefits in Case of Termination of Employment and by Third Parties, Change of Control Clauses

1 Severance Policies

In case of an early termination of the employment contract through statutory notice of termination or in case of termination of appointment to the Executive Board, the members of the Executive Board receive a severance payment limited to two years' compensation (severance cap). The amount is set according to the fixed salary excluding benefits in kind and ancillary benefits in addition to a lump-sum variable compensation in the amount of 25 % of the respective fixed salary considering the pension benefits. If the remaining term of the respective Executive Board employment contract is less than two years, the severance payment is reduced pro rata temporis to the remaining term of the employment contract. In case of an extraordinary dismissal for cause, there is no right to a severance payment.

2 Benefits by Third Parties

No benefits by third parties were granted or promised to members of the Executive Board with respect to their work as Executive Board members during the period under review.

3 Change of Control Clauses

The employment contracts of the Executive Board members include a change of control clause. In the case of a change in control the members of the Executive Board of the SINGULUS TECHNOLOGIES AG have an extraordinary termination right, which entitles them to terminate their employment within a period of one year after the change in control at any time with a notice period of six months. A change in control exists in this meaning, if (i) a shareholder has gained control in the meaning of Art. 29 WpÜG, or (ii) a controlling agreement pursuant to Art. 291 AktG has been concluded and become effective with the company as dependent company, or (iii) the company is merged to a different non-Group entity pursuant to Art. 2 Umwandlungsgesetz (UmwG), provided that the value of the different entity amounts to less than 50 % of the value of the company according to the agreed exchange ratio, or (iv) the completion of a take over or mandatory offer in the meaning of the WpÜG.

If the employment contract is terminated because of member of the Executive Board has exercised the extraordinary termination right or the employment contract is not extended after a change in control, the member of the Executive Board is entitled to an extraordinary payment in the amount of the sum of (i) the last paid fixed salary for three years, (ii) the sum of the variable compensation (bonus payments), which were paid for the last three years as well as (iii) the addition to pension benefits for three years. The entitlement to a special payment only exists if the employment contract at the time of a change in control has a remaining term of more than nine months. Furthermore, the employment contracts include clauses that the claim also persists in case of leave or termination of the employment contract by the company after a change in control.

Within the term of the phantom stocks programs the option rights from the phantom stocks can also be exercise ahead of schedule, i.e. outside of the respective exercise periods and before the completion of the waiting time, if for the shares of company (i) a takeover offer in the meaning of Art. 29 Para 1 WpÜG has been published or (ii) a person in the meaning of Art. 29 Para. 2 gains control. In these cases, all phantom stocks can be exercised irrespective of the achievement of the performance targets.

B. Compensation of the Supervisory Board

The compensation for the Supervisory Board is set out in Art. 11 of the articles of incorporation of the SINGULUS TECHNOLOGIES AG. It is based on the duties and responsibilities of the Supervisory Board members.

In addition to the reimbursement of expenses, the members of the Supervisory Board receive a fixed compensation in the amount of € 40,000 for each full business-year of being a member of the Supervisory Board, which is paid after completion of the business year. The Chairman of the Supervisory Board receives twice this amount, the Deputy Chairman one and a half times the fixed compensation. Members of the Supervisory Board, who are only members of the Supervisory Board or who are Chairperson or Deputy Chairperson in the Supervisory Board for parts of the business year, receive a pro-rated fixed compensation.

The company is reimbursing each member of the Supervisory Board the value-added tax on their compensation.

The total compensation of the members of the Supervisory Board amounted to € 172,000 in the business year 2019 (previous year: € 180,000) in addition to value-added tax in the amount of € 32,680 (previous year: € 34,200). Specifically, the members of the Supervisory Board are entitled to fixed compensation for the business year 2019 as follows:

	Gesamt 2019 in '000 EUR	**Gesamt 2018 in '000 EUR**
Dr.-Ing. Wolfhard Leichnitz	80	80
Dr. Silke Landwehrmann[1)]	16	0
WP/StB Christine Kreidl[2)]	36	60
Dr. rer. nat. Rolf Blessing	40	40
Total	**172**	**180**

1) Appointed as member of the Supervisory Board of the SINGULUS TECHNOLOGIES AG by the Local Court Aschaffenburg as of August 11, 2019.
2) Resigned from the Supervisory Board of the SINGULUS TECHNOLOGIES AG as of August 10, 2019.

In the year under review, the members of the Supervisory Board did not receive any compensation or benefits for personally-performed services, in particular consulting or agency services.

C. Loans granted to the members of the Executive and Supervisory Board

The company did not grant any members of the Executive Board or the Supervisory Board advance payments or loans during the year under review.

Status Report pursuant to Art. 289a Para. 1, Art. 315a Para. 1 HGB

1. Composition of the Subscribed Capital

As of December 31, 2019 the nominal capital of the SINGULUS TECHNOLOGIES AG amounted to € 8,896,527.00, divided into 8,896,527 bearer shares with a nominal value of € 1.00 each. The nominal capital has been completely paid. There are not different types of shares; all shares are common shares. All shares entitle to the same rights and duties. Each share has one vote and the same share to profits. The rights and duties from the shares result from the legal regulations. A claim of the shareholders of physical delivery of the shares has been excluded pursuant to Art. 6.4 of the articles of incorporation of the company. In case of a capital increase the profit sharing of new shares can be determined pursuant to Art. 6.5 of the articles of incorporation of the company, dissenting from Art. 60 AktG.

2. Restrictions concerning the Voting Rights or Transfer of Shares

Generally there are not restrictions concerning the voting rights or the transferability of the shares of the company. All shares of the company are unrestricted to be traded pursuant to the legal regulation governing the bearer unit shares.

3. Direct or indirect Ownership of the Capital exceeding ten Percent of the Voting Rights

Pursuant to the German Securities Trading Act (WpHG) investors are obligated to report to the company any direct or indirect voting right thresholds gained through purchases, sales or in different manners pursuant to Art. 33 WpHG to a stock-listed company.

As of the balance sheet date December 31, 2019, the company was only informed that the Triumph Science and Technology Group Co., Ltd. directly or indirectly held more than 10 % of the voting rights of the SINGULUS TECHNOLOGIES AG amounting to 16.75 % of the voting rights. The voting rights held by the Triumph Science and Technology Group Co., Ltd. are attributable to the following reportable entity: People's Republic of China and China National Building Material Group Co., Ltd.

4. Shares with Special Rights granting Controlling Authority

There are no shares with special rights granting controlling authority.

5. Type of Voting Right monitoring if Employees hold Capital of the Company and do not directly exercise the Monitoring Rights

There are no investments of employees in the capital of the company where the employees do not directly exercise their monitoring rights.

6. Appointment and Dismissal of Members of the Executive Board; Changes in the Articles of Incorporation

The appointments and dismissals of members of the Executive Board are performed in adherence to the regulation of Art. 84, 85 AktG. Accordingly, members of the Executive Board are appointed by the Supervisory Board with a maximum term of five years. A repeated appointment or extension of the tenure is only authorized for a maximum of five years. Pursuant to Art.7.1 of the articles of incorporation of the company the Executive Board of the company is comprised of at least two members. Furthermore, the Supervisory Board determines the number of members of the Executive Board. Pursuant to Art. 84 AktG and Art. 7.1 of the articles of incorporation of the company the Supervisory Board can appoint a Chairperson of the Executive Board as well as a Deputy Chairperson of the Executive Board. Pursuant to Art. 7.1. of the articles of incorporation deputy members of the Executive Board can be appointed.

Pursuant to Art. 179 Para. 1 Sent. 1 AktG the amendment of the articles of incorporation of the company is effected by resolution of the Annual General Meeting. Pursuant to Art. 179 Para. 2 AktG resolutions of the Annual General Meeting regarding changes of the bylaws require the capital majority representing at least three fourths of the nominal capital present at the resolution, if the articles of incorporation do no set out a different majority vote. Pursuant to Art. 15.2 of the articles of incorporation of the company, in cases where the legal regulations require a majority of the nominal capital present during the time of the resolution and the law does not explicitly require a qualified majority, the simple majority of the nominal capital present is sufficient. Pursuant to Art. 5.2. and Art. 17.1 the Supervisory Board is authorized to resolve changes of the by laws only affecting amendments. This also holds true for the amendment of the bylaws due to a change in the nominal capital.

7. Authorization of the Executive Board to issue and buy-back Shares

7.1. Authorized Capital

By resolution of the General Annual Meeting on June 28, 2018 the Executive Board was authorized to increase the nominal capital of the company with approval of the Supervisory Board against payment in cash and/or in kind by the issuance of up to 4,448,263 new, bearer shares with a nominal capital of € 1.00 (Authorized Capital 2018/1). Generally, the shareholders are granted subscription rights. The new shares can also be acquired by one or several financial institutions with the obligation to offer these shares to shareholders (indirect subscription right). However, the Executive Board is authorized to exclude the subscription rights of the shareholders in total or partially upon the approval of the Supervisory Board, if (1) it is required to set-off odd-lot amounts;

(2) if the new shares are issued against payment in kind at an issue price not materially lower than the exchange share price of the company in the meaning of Art. 186 Para. 3 Sent. 4 AktG and the attributable amount of the shares issued pursuant to Art. 186 Para. 3 Sent. 4 AktG under exclusion of subscription rights does not exceed 10 % of the nominal capital of the company at the time of entry of this authorization in the Commercial register or – if this amount is lower – at the respective point in time of the exercise of this authorization. The limitation includes the shares, which have been issued by the company during the term of the authorization under exclusion of the subscription rights pursuant and corresponding to Art. 186 Para. 3 Sent. 4 AktG in the course of a cash capital increase or which have been sold after a buyback. In addition, shares have to be included to the 10 % threshold with respect to shares, which based on option and convertible bonds or profit participation rights, which have been issued by the company or its subordinated companies within the Group during the term of this authorization under exclusion of subscription rights pursuant to Art. 221 Para. 4 Sent. 2 in conjunction with Art. 186 Para. 3 Sent. 4 AktG and for which an option or conversion rights, a conversion or option obligation or in favor of the company a share delivery right exits; (3) if required, to grant owners or creditors of option rights or convertible bonds or profit participation rights, which have been or will be issued the SINGULUS TECHNOLOGIES AG or its subordinated companies within the Group, an exchange or subscription right to new shares to the extent available to them after exercise of the option or conversions rights or option obligations; (4) for capital increases in kind, in particular for the acquisition of companies, parts of companies or investments in companies.

7.2. Conditional Capital

The nominal capital of the company is conditionally increased by up to € 24,465,157.00 through the issuance of up to 24,465,157 bearer shares with a nominal capital of € 1.00 each (Authorized Capital 2015/I). The conditional capital increase will only be performed if the bearers of option or conversion rights or the parties obligated to convert or exercise options due to options or convertible bonds, which are issued or guaranteed pursuant to the authorization from the Annual General Meeting on June 9, 2015 under Agenda Item 8 by the SINGULUS TECHNOLOGIES AG or a Group company of the SINGULUS TECHNOLOGIES AG in the meaning of Art. 18 AktG, which the SINGULUS TECHNOLOGIES AG directly or indirectly holds at least 90 %, or if the SINGULUS TECHNOLOGIES AG exercises a right to completely or partly issue common shares of the SINGULUS TECHNOLOGIES AG instead of the payment of the amount due. The conditional capital increase is not implemented if a cash compensation is granted or own shares or shares from authorized capital or of a different stock-listed company is used for the payment.

7.3. Share buyback Authorization

There are not authorizations for the Executive Board to buy back shares of the company.

8. Material Agreements of the Company subject to a Change-in-Control due to a Takeover Offer and resulting Effects

Pursuant to the terms and conditions of the corporate bond issued by the SINGULUS TECHNOLOGIES AG in July 2016 with a total nominal value of € 12,000,000.00, in the case of a change in control bondholders are entitled to terminate their bonds and request the immediate repayment or, subject to the company's discretion, to request the purchase by the company or a third party at a price of € 100.00 per bond in addition to accrued interest.

The bondholders have to exercise the put-option within a period of time ("put exercise period") of 30 days after the notification about the change in control was published. However, an exercise of the put only becomes effective, if, within the put exercise period, the company receives put exercise declarations from bondholders with an overall amount of at least 25 % of the total nominal capital of at that time still outstanding bonds. A change in control is present if the following event take place: (i) the company is notified that a party or cooperating parties in the meaning of Art. 2 Para 5 German Securities Acquisition and Takeover Act (WpÜG) is or are the legal or economic owner(s) (directly or indirectly) of more than 30 % of the voting rights of the company; or (ii) the merger of the company with a party or to a third party or the merger of a third party with or to the company, excluding in connection with legal actions, as a consequence the owner of 100 % of the voting rights of the company hold at least the majority of the voting rights of the surviving entity directly after such a merger.

9. Compensation Agreement of the Company made with the Members of the Executive Board or Employees in Case of a Takeover Offer

In the case of a change in control the employment contracts of the members of the Executive Board of the SINGULUS TECHNOLOGIES AG set out an extraordinary termination right for the members of the Executive Board. If the employment of a member of the Executive Board is terminated after a change in control because the member of the Executive Board has exercised its extraordinary termination right or if the employment contract is not extended after a change in control, subject to the case that the employment contract had a remaining term of more than nine months at the time of the change in control, the respective member of the Executive Board is entitled to an extraordinary payment. The same holds true in case of a leave or the termination of the employment contract by the company after a change in control. The amount of this extraordinary payment is limited. For a detailed description of the change in control clauses and the compensation payments, please refer to the compensation report (see information on page 89).

Financial Accounts pursuant to HGB

The consumption of more than half of the nominal capital pursuant to HGB was incurred in the business year 2017 and was reported on September 21, 2017. The extraordinary shareholders' meeting took place on November 29, 2017. As of December 31, 2019 the losses not covered by shareholders' equity amounted to € -47.5 million (previous year: € -29.9 million).

The development of the shareholders' equity pursuant to HGB is particularly dependent on the acceptance of machines for the factories in the cities of Bengbu and Meishan by the customer CNBM as well as on several other major projects. A delay in these projects significantly contributed to a lack of recovery of shareholders' equity until now despite the first final acceptances.

At the beginning of May 2019 the first three of nine acceptances of machines for the factory in Bengbu were successfully completed. In December 2019 three more machines received the final acceptance. Accordingly, at the end of the business year six machines were invoiced. The Executive Board expects further acceptance for the factory in Bengbu as well as for other significant projects in the coming months of the business year 2020.

The company anticipated material payments from its customers for ongoing major projects in the next couple of months. Here, in particular the payments of the customer CNBM have to pointed out and play a significant role for the further development of the liquidity position of the company. The company expects a receipt of the payments for the projects according to the contractual agreements. Furthermore, the company is currently in talks for the refinancing of the corporate bond with a nominal value of € 12.0 million. The bond is due on July 22, 2021. The company expects a successful implementation of the refinancing in the course of a favorable trend in the course of business. In addition, the partially already implemented step-wise reduction of the cash deposits of draft guarantees for the reduction of the tied liquidity is projected.

On the basis of the currently available liquid funds as well as the expected course of receipt of payments as depicted above as well as the timely receipt of additional major orders and the refinancing of the corporate, there is a positive going concern forecast and a respective accounting pursuant to the going concern principles.

Asset, financial and earnings Situation of the SINGULUS TECHNOLOGIES AG Financial Accounts pursuant to HGB

(EUR million)

	2019	2018
Sales	91.8	23.8
Total output	87.0	76.8
Cost of goods sold	-50.4	-57.1
Personnel expenses	-28.0	-30.1
Balance of operating income and expenses	-14.6	-12.0
Net result	-17.6	-30.8
Fixed assets	23.6	29.3
Current assets (excluding bank deposits)	6.0	7.3
Bank deposit thereof restricted	15.6 4.4	24.2 14.3
Loss exceeding shareholders' equity	47.5	29.9
Provisions	24.4	24.3
Provisions	12.0	12.0
Other liabilities	56.5	54.7

In the following the effects with a material impact on the assets, liabilities, financial situation and the earnings in the previous business year are discussed.

The sales pursuant to HGB in the business year 2019 were nearly quadrupled in comparison to the previous year due to the final acceptances of the first machines of the large CIGS order from CNBM for the production site in Bengbu as well as due to other large projects. Overall, the company achieved sales in the amount of € 91.8 million in the year under review (previous year: € 23.8 million). Sales in the Solar segment amounted to € 56.4 million compared with € 5.7 million in the previous year. In the Life Science division sales at € 23.9 million exceeded the prior-year level (previous year: € 11.3 million). Within the Semiconductor division sales amounted to € 11.3 million (previous year: € 6.8 million).

Overall output (sales including inventory changes and capitalized expenses) increased to € 87.0 million in the business year 2019 (previous year: € 76.8 million).

The other operating income in the amount of € 1.9 million (previous year: € 4.2 million) mainly include deferred income in the amount of € 1.1 million mainly resulting from the reversal of provisions (€ 0.9 million).

The material expenses declined from € 57.1 million to € 50.4 million. The material expense ratio (material expenses / overall output) accordingly came to 57.9 % (previous year: 74.4 %). The decline in the cost of goods sold ratio is mainly due to the significant increase in sales with a contemporaneous declining change in inventories compared with the previous year.

Personnel expenses in the amount of € 28.0 million (previous year: € 30.1 million) were lower than the prior-year level. The reason here were mainly declining personnel expenses in connection with outstanding phantom stocks due to the weaker share price as well as declining expenses for expected bonus payments. In the past business year the SINGULUS TECHNOLOGIES AG employed 332 permanent employees based on an annual average (previous year: 319).

The other operating expenses in the amount of € 16.5 million (previous year: € 16.1 million) mainly include legal, consulting and auditing expenses, occupancy expenses, shipping and packaging expenses as well as travel and entertainment and rent expenses. The write-offs on accounts receivable amounted to € 0.2 million (previous year: € 0.2 million).

The income from loans of financial assets in the amount of € 0.2 million (previous year: € 0.2 million) essentially results from the interest income from loans to affiliated companies. Interest and similar expenses were at the level of the previous year at € -2.8 million (previous year: € -2.9 million). Specifically, the interest expense from bonds issued in 2019 was € 0.8 million (previous year: € 0.8 million). Interest expenses of € 0.3 million resulted from the taking out of a secured loan of € 4.0 million in 2019.

The write-offs on financial assets amounted to € -3.5 million (previous year: € 0.2 million). Primarily, a write-off on an investment in the amount of an intangible asset recognized in the previous year was performed.

Overall, a net loss of € -17.6 million (previous year: € -30.8 million) resulted.

The balance sheet total of the company came to € 92.9 million as of December 31, 2019 around the prior-year level (previous year: € 91.0 million).

The fixed assets accounted for 25.4 % of the balance sheet total and amounted to € 23.6 million as of the balance sheet date (previous year: € 29.3 million). The fixed assets amounted to € 11.6 million (previous year: € 11.2 million). Furthermore, this includes intangible assets (€ 5.4 million), which mainly result from the merger with the SINGULUS STANGL SOLAR GmbH in the business year 2015 (€ 5.0 million). The decline by € 3.4 million to € 5.4 million primarily results from the scheduled write-off of the assets.

The prepayments received in the amount of € 153.9 million exceeded the level of inventories (€ 123.3 million) as of the end of the year under review. The excess amount is recognized on the liability side of the balance sheet (€ 32.8 million). The prepayments received mainly result from the orders in the Solar segment.

As of the balance sheet date the accounts receivable amounted to € 2.3 million and thus increased by € +0.9 million compared with the previous year.

The liquid funds declined in the past business year. They amounted to € 15.6 million as of December 31, 2019 (previous year: € 24.2 million). Thereof, in the course of collateral management, mainly for draft guarantees, € 4.4 million overall were transferred to blocked accounts (previous year: € 14.3 million). As of the end of the year under review, the available liquid funds amounted to € 11.2 million (previous year: € 9.9 million).

The shareholders' equity further declined by € 17.6 million in the year under review. Accordingly, as of the end of the year under review the SINGULUS TECHNOLOGIES AG reports losses in the amount of € 47.5 million not covered by shareholders' equity (previous year: € -29.9 million). With regards to the assessment of the company to the future development of the shareholders' equity pursuant to HGB please refer to the information provided at the beginning of this chapter.

The debt amounted to € 92.9 million as of December 31, 2019 (previous year: € 91.0 million).

The provisions remained around the prior-year level and stood at € 24.4 million as of the balance sheet date (previous year: € 24.3 million). The other provisions amounted to € 11.5 million as of December 31, 2019 (previous year: € 12.9 million). This mainly includes personnel provisions (€ 4.4 million), provisions for warranties (€ 2.7 million), provisions for contingent losses in connection with the under-utilization of production capacities (€ 1.5 million), provisions for accounts receivable (€ 1.1 million) as well as provisions for lagging production costs (€ 1.0 million).

The liabilities at € 68.5 million as of December 31, 2019 were slightly above the prior-year level (previous year: € 66.7 million). The bond liabilities still amount to € 12.0 million. The accounts payable declined slightly from € 10.1 million the prior year to € 7.8 million as of December 31, 2019 due to the slower course of business.

In addition, there are other liabilities from financing contracts in the amount of € 7.8 million (previous year: € 4.9 million). These result to the full amount from leasing liabilities for the office and production buildings on the site of the company.

Forecast for the SINGULUS TECHNOLOGIES AG pursuant to HGB for the Business Years 2020 and 2021

The sales and the earnings before taxes pursuant to HGB in the business year 2019 fell significantly short of expectations. The reason for this was in particular delays in the final acceptance for the machines of the large CIGS order by CNBM at the production site in Meishan as well as the expansion of the factory in Bengbu. These machines will presumably be accepted by the customer in 2020 and then materially contribute to sales and earnings pursuant to HGB. As a result, the company forecasts significantly higher sales in 2020 compared with the previous year, especially within the Solar division. Overall, we project sales for the SINGULUS TECHNOLOGIES AG pursuant to HGB for the business year 2020 within a range from € 145.0 to 165.0 million. The earnings before taxes* should come in a range from € 24.0 to 30.0 million. Due to the anticipated large projects in the Solar and Life Science segments for 2021 we forecast a further significant increase in sales compared with 2020. For the earnings before taxes* for 2021 the company also project a substantial improvement compared with 2020.

With respect to the current impact of the COVID-19 pandemic on the company please refer to the outlook of the SINGULUS TECHNOLOGIES Group on page 62.

* Earnings before taxes are defined as net income/net loss less other taxes and income taxes.

*Corporate Governance Declaration pursuant to Art. 289F and Art. 315D HGB**

The corporate governance declaration pursuant to Art. 289f and Art. 315d HGB as well as the diversity concept with respect to the composition of the management and supervisory boards of the company is included in the corporate governance report and available on the company's website under www.singulus.de/de/investor-relations/corporate-governance.html.

Kahl am Main, March 23, 2020

SINGULUS TECHNOLOGIES AG

The Executive Board

Dr.-Ing. Stefan Rinck   Dipl.-Oec. Markus Ehret   Dr. rer. nat. Christian Strahberger

* Non-audited statements

VISTARIS

SOLAR

SINGULUS TECHNOLOGIES supplies production systems for the production of thin-film Solar cells (CdTe and CIGS) that are used worldwide and are positioning themselves with production equipment in the market launch of new cell formats such as Heterojunction.

Consolidated Balance Sheet

as of December 31, 2019 and December 31, 2018

Assets	**Note**	**12/31/2019 EUR million**	**12/31/2018 EUR million**
Cash and cash equivalents	(6)	**14.8**	13.5
Financial assets subject to restrictions on disposal	(7)	**4.4**	14.3
Trade receivables	(8)	**5.8**	6.1
Receivables from construction contracts	(8)	**4.6**	20.4
Other receivables and other assets	(9)	**6.4**	9.0
Total receivables and other assets		**16.8**	35.5
Raw materials, consumables and supplies		**8.8**	7.9
Work in process		**6.7**	9.2
Total inventories	(10)	**15.5**	17.1
Total current assets		**51.5**	**80.4**
Property, plant and equipment	(12)	**15.6**	10.7
Capitalized development costs	(11)	**9.5**	6.0
Goodwill	(11)	**6.7**	6.7
Other intangible assets	(11)	**0.4**	0.3
Total non-current assets		**32.2**	**23.7**
Total assets		**83.7**	**104.1**

Equity and Liabilities

	Note	12/31/2019 EUR million	12/31/2018 EUR million
Trade payables		**8.3**	18.5
Prepayments received	(14)	**2.6**	1.0
Liabilities from construction contracts	(8)	**6.6**	14.8
Financing liabilities from the loan borrowed	(17)	**4.0**	0.0
Financial liabilities from the issuance of bonds	(16)	**0.8**	0.9
Current leasing liabilities		**2.4**	1.1
Other liabilities	(13)	**9.1**	11.3
Provisions for restructuring measures	(20)	**0.2**	0.6
Provisions for taxes		**0.9**	0.5
Other provisions	(19)	**3.3**	1.5
Total current liabilities		**38.2**	**50.2**
Financial liabilities from the issuance of bonds	(16)	**12.0**	12.0
Non-current leasing liabilities		**7.3**	3.8
Provisions for restructuring measures	(20)	**0.0**	1.5
Pension provisions	(18)	**16.2**	13.9
Deferred tax liabilities	(22)	**3.0**	3.0
Total non-current liabilities		**38.5**	**34.2**
Total liabilities		**76.7**	**84.4**
Subscribed capital	(21)	**8.9**	8.9
Capital reserves		**19.8**	19.8
Other reserves*	(21)	**-3.7**	-2.3
Retained earnings*		**-18.0**	-6.7
Equity attributable to owners of the parent		**7.0**	**19.7**
Total equity		**7.0**	**19.7**
Total equity and liabilities		**83.7**	**104.1**

* Prior-year figures and designation adjusted (see note 4.21)

Consolidated Income Statement

for the period from January 1 to December 31, 2019 and 2018

		1/1 - 12/31			
		2019		2018	
	Note	EUR million	in %	EUR million	in %
Revenue (gross)	**(5)**	**79.4**	**101.9**	**127.5**	**101.3**
Sales deductions and direct selling costs	(24)	**-1.5**	**-1.9**	-1.6	-1.3
Revenue (net)		**77.9**	**100.0**	**125.9**	**100.0**
Cost of sales		**-55.5**	**-71.2**	-90.5	-71.9
Gross profit on sales		**22.4**	**28.8**	**35.4**	**28.1**
Research and development	(29)	**-6.5**	**-8.3**	-8.2	-6.5
Sales and customer service		**-11.0**	**-14.1**	-14.2	-11.3
General administration	(28)	**-10.2**	**-13.1**	-8.5	-6.8
Other operating expenses	(28)	**-0.1**	**-0.1**	-0.7	-0.6
Other operating income	(30)	**0.5**	**0.6**	3.0	2.4
Impairment losses	(31)	**-3.3**	**-4.2**	0.0	0.0
Total operating expenses		**-30.6**	**-39.3**	-28.6	-22.7
Operating result (EBIT)		**-8.2**	**-10.5**	**6.8**	**5.4**
Finance income	(32)	**0.1**	**0.1**	0.0	0.0
Finance costs	(32)	**-2.2**	**-2.8**	-2.0	-1.6
EBT		**-10.3**	**-13.2**	**4.8**	**3.8**
Tax expense/income	(22)	**-1.0**	**-1.3**	-4.0	-3.2
Profit or loss for the period		**-11.3**	**-14.5**	**0.8**	**0.6**
Thereof attributable to:					
Owners of the parent		**-11.3**		0.8	
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)	**-1.27**		0.09	
Diluted earnings per share based on the profit for the period (in EUR) attributable to owners of the parent	(23)	**-1.27**		0.09	

Consolidated Statement of Comprehensive Income

for the period from January 1 to December 31, 2019 and 2018

	Note	2019 EUR million	2018 EUR million
Profit or loss for the period		**-11.3**	**0.8**
Items that will never be reclassified to profit and loss:			
Actuarial gains and losses from pension commitments	(18)	**-1.7**	-0.7
Changes in the scope of consolidation		**0.0**	-0.7
Items that may be reclassified to profit and loss:			
Exchange rate differences in the fiscal year	(21)	**0.3**	0.1
Total income and expense recognized directly in other comprehensive income		**-1.4**	-1.3
Total comprehensive income		**-12.7**	**-0.5**
Thereof attributable to:			
Owners of the parent		**-12.7**	-0.5
Non-controlling interests		**0.0**	0,0

Consolidated Statement of Changes in Equity

for the period from January 1 to December 31, 2019 and 2018

	Equity Attributable to owners of the Parent		
			Other reserves*
	Subscribed Capital	Capital Reserves	Currency Translation Reserves
	EUR million	EUR million	EUR million
Note	(21)		(21)
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**
As of January 1, 2019	8.9	19.8	3.6
Profit or loss for the period	0.0	0.0	0.0
Other comprehensive income	0.0	0.0	0.3
Total comprehensive income	0.0	0.0	0.3
As of December 31, 2019	8.9	19.8	3.9

* Prior-year figures and designation adjusted (see note 4.21)

Equity Attributable to owners of the Parent			Non-Controlling Interests	Equity
Other reserves*	Retained earnings*			
Actual Gains and Losses from Pension Commitments	Other Reserves	Total		
EUR million	EUR million	EUR million	EUR million	EUR million
(18)			(21)	
-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
-5.9	**-6.7**	**19.7**	**0.0**	**19.7**
0.0	**-11.3**	**-11.3**	**0.0**	**-11.3**
-1.7	**0.0**	**-1.4**	**0.0**	**-1.4**
-1.7	**-11.3**	**-12.7**	**0.0**	**-12.7**
-7.6	**-18.0**	**7.0**	**0.0**	**7.0**

Consolidated Cash Flow Statement

for the period from January 1 to December 31, 2019 and 2018

	Note	2019 EUR million		2018 EUR million	
Cash flows from operating activities					
Profit or loss for the period			**-11.3**		0.8
Adjustment to reconcile profit or loss for the period to net cash flow					
Amortization, depreciation and impairment of non-current assets	(11/12)	**4.2**		2.3	
Contribution to the pension provisions	(18)	**0.1**		0.4	
Profit/loss from disposal of non-current assets		**0.3**		0.1	
Other non-cash expenses/income		**-1.5**		-0.7	
Net finance costs	(32)	**2.1**		2.0	
Net tax expense	(22)	**1.0**		4.0	
Change in trade receivables		**0.3**		-3.9	
Change in construction contracts		**7.6**		-8.1	
Change in other receivables and other assets		**2.7**		-1.8	
Change in inventories		**1.0**		0.8	
Change in trade payables		**-10.1**		8.4	
Change in other liabilities		**-0.6**		-0.7	
Change in prepayments		**1.7**		0.2	
Change in provisions from restructuring measures		**-1.9**		-0.4	
Change in further provisions		**1.4**		-0.1	
Interest paid	(32)	**-0.2**	**8.1**	-0.6	
Income tax paid	(22)	**0.0**		-0.2	1.7
Net cash from/used in operating activities			**-3.2**		**2.5**

	Note	2019 EUR million	2018 EUR million
Cash flows from investing activities			
Cash paid for investments in development projects	(11)	**-4.9**	-3.6
Cash paid for investments in other intangible assets and property, plant and equipment	(11/12)	**-0.7**	-0.8
Net cash from/used in investing activities		**-5.6**	-4.4
Cash flows from financing activities			
Cash used to pay bond interest	(16)	**-0.9**	-0.8
Cash received/used on the issuance of loans	(17)	**3.9**	0.0
Cash used for prepayment of loan	(17)	**0.0**	-4.1
Cash used to pay loan interest		**-0.3**	-0.2
Cash used to pay leasing liabilities		**-2.6**	-0.7
Cash received/used on financial assets subject to restrictions on disposal		**9.9**	-5.5
Net cash from/used in financing activities		**10.0**	-11.3
Cash and cash equivalents at the beginning of the reporting period		**1.2**	**-13.2**
Effect of exchange rate changes		**0.1**	0.2
Changes in the scope of consolidation		**0.0**	-0.7
Cash and cash equivalents at the beginning of the reporting period		**13.5**	**27.2**
Cash and cash equivalents at the end of the reporting period		**14.8**	**13.5**

Cash and cash equivalents comprise monetary investments with a remaining maturity of up to three months at the time of acquisition.

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.

SINGULUS TECHNOLOGIES Group

Notes to the Consolidated Financial Statements as of December 31, 2019

Note 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") adopted by the EU 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 2019 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.

On September 21, 2017, the Company disclosed that half of its share capital under HGB had been eroded in fiscal year 2017. An extraordinary general meeting was convened on November 29, 2017.

At this time, the changes in the parent company's equity under HGB were particularly dependent on the customer CNBM's acceptance of the equipment for Fab 4 (Bengbu) and Fab 5 (Meishan). Delays to these projects contributed significantly to the failure to rebuild the share capital thus far. As of December 31, 2019, the deficit not covered by equity amounted to EUR 46.7 million.

Changes to equity under HGB accounting are contingent in particular on not only CNBM's acceptance of the equipment for the plants in Bengbu and Meishan, but also on other individual major projects. Delays to these projects contributed significantly to the failure to rebuild the share capital thus far. The equipment for the Bengbu site has largely been successfully accepted. The Executive Board expects more equipment for the plant in Bengbu and other projects to be accepted in the coming months.

However, it is currently believed that the Company will have sufficient cash funds available to secure its business activities and has therefore prepared its accounts on a going concern basis. Nevertheless, it bears noting that the Company's ability to continue as a going concern in line with its liquidity planning is dependent on its ability to realize this planning within the next two years. A key requirement in the planning is that the installments to be paid on the basis of major orders already contracted are actually made or not subject to a material delay. In addition, the Company needs to win another major order or a combination of equivalent alternative projects during the current fiscal year. Furthermore, the successful and timely refinancing of the EUR 12 million corporate bond that falls due in July 2021 will also represent a key element of the Company's strategy for securing its liquidity. If the corresponding cash inflows are not realized as planned, the Company will not have sufficient cash and cash equivalents during the course of 2020 to satisfy its payment obligations in full. In this respect, the Company's and therefore the Group's ability to continue as a going concern is in jeopardy.

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 (2) sentence 3 HGB.

Note 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, data storage (optical disc), decorative coatings and medical technology areas of application.

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

Note 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 2019.

- IFRS 16 – "Leases"
- Amendments to IFRS 9 – "Prepayment Features with Negative Compensation"
- IFRIC 23 – "Uncertainty over Income Tax Treatments"
- Amendment to IAS 28 – "Long-term Investments in Associates and Joint Ventures"
- Amendment to IAS 19 – "Plan Amendment, Curtailment or Settlement"
- Amendments to IFRS 2015 – 2017 – "Amendments to IFRS 3, IFRS 11, IAS 12 and IAS 23"

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

- IFRS 16 – "Leases"

The Group applied IFRS 16 for the first time as of January 1, 2019.

The Group applied the modified retrospective method to IFRS 16, whereby cumulative adjustments from the first-time application as of January 1, 2019 are recognized in retained earnings. Therefore, the comparative information for 2018 was not restated and is thus presented as previously in accordance with IAS 17 and the relevant interpretations. Details of the changes in accounting policies are described below. Moreover, the disclosure requirements set out in IFRS 16 are generally not applied to comparative information.

A. Definition of a lease
Previously, the Group determined whether an arrangement was, or contained, a lease at the inception of the contract based on IFRIC 4 "Determining whether an Arrangement contains a Lease". The Group now determines whether a contract is, or contains, a lease on the basis of the definition of a lease, as discussed in Note 4.13. On transition to IFRS 16, the Group decided to apply the practical expedient that allows it to assess which transactions are leases. The Group applies IFRS 16 only to those contracts that had previously been identified as leases. Contracts that were not previously identified as containing a lease applying IAS 17 and IFRIC 4 were not reassessed to determine whether they are, or contain, a lease under IFRS 16. Therefore, the definition of a lease under IFRS 16 was applied only to contracts that were entered into or modified on or after January 1, 2019.

B. The Group as a lessee
As a lessee, the Group leases various assets, including real estate, motor vehicles and IT equipment. Previously, the Group classified leases either as operating leases or as finance leases on the basis of its assessment of whether the lease transferred substantially all the risks and rewards incidental to ownership of the underlying asset to the Group. In accordance with IFRS 16, the Group recognizes right-of-use assets and lease liabilities for most of these leases, i.e., these leases are reported in the balance sheet.

At the inception date or upon modification of a contract that contains lease components, the Group allocates the consideration in the contract to each lease component on the basis of the relative stand-alone price of the lease component.

i. Leases that had been classified as operating leases in accordance with IAS 17
Previously, the Group classified real estate leases and motor vehicle leases as operating leases in accordance with IAS 17. Upon transition, the lease liabilities related to these leases were measured at the present value of the lease payments not yet paid and discounted them using the interest rate implicit in the lease or the Group's incremental borrowing rate as at January 1, 2019.

The Group tested its right-of-use assets for impairment on the transition date. As of December 12, 2018, a provision for expected losses due to vacancies had been recognized in connection with the material lease for the production and administration building at the Fürstenfeldbruck site. This provision was offset against the recognized amount in connection with the first-time application of IFRS 16.
In applying IFRS 16, the Group applied a number of practical expedients to leases that had previously been classified as operating leases in accordance with IAS 17. Specifically, the Group:

- has not recognized any right-of-use assets or lease liabilities for leases in which the lease term ends within 12 months of the date of initial application;
- has not recognized any right-of-use assets or lease liabilities for leases for which the underlying asset is of low value (less than USD 5,000) (primarily IT equipment);
- did not include the initial direct costs of the lease when measuring the right-of-use asset at the date of initial application and determined the term of leases retrospectively.

ii. Leases that had been classified as finance leases in accordance IAS 17
The Group leases a production and administration building in Kahl am Main. This lease was classified as a finance lease under IAS 17. For this finance lease, the carrying amount of the right-of-use asset and the lease liability as of January 1, 2019 was recognized at the carrying amount of the leased asset and the lease liability immediately prior to this date in accordance with IAS 17.

The Group has not entered into any leases as the lessor.

D. Effect on the financial statements

i. Effect as of the date of transition*

At the date of transition to IFRS 16, the Group recognized additional right-of-use assets and lease liabilities. Upon recognition of the right-of-use assets, the provision for expected losses due to vacancies amounting to EUR 1.9 million was offset against the assets to be recognized. The effects as of the transition date are summarized below.

EUR million	January 1, 2019
Right-of-use assets – property, plant and equipment	5.5
Lease liabilities	7.4

* For information on the effect of IFRS 16 on the income statement and statement of cash flows for the period, please refer to Note 33. For information on the effect of IFRS 16 on the segments and EBITDA, please refer to Note 5.

Upon measuring the lease liabilities from operating leases, the Group discounted the lease payments using the interest rate implicit in the lease or the incremental borrowing rate as of January 1, 2019. The weighted average rate of interest amounted to approximately 5.4%.

EUR million	January 1, 2019
Liabilities from operating leases as of December 31, 2018, as reported in accordance with IAS 17 in the consolidated financial statements	11.8
Discounted using the incremental borrowing rate as of January 1, 2019	-4.1
Liabilities from finance leases as of December 31, 2018	5.3
Leases for which the underlying asset is of low value and for which the recognition exemption was exercised	-0.1
Lease liabilities as of January 1, 2019	12.9

→ 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.

There was no significant impact on the consolidated financial statements of SINGULUS TECHNOLOGIES AG.

→ IFRIC 23 – "Uncertainty over Income Tax Treatments"

IFRIC 23 clarifies how to apply the recognition and measurement requirements in IAS 12 when there is uncertainty over income tax treatments. In order to recognize and measure an uncertainty, judgments and estimates must be made, e.g. whether each uncertainty is considered separately or together with one or more other uncertain tax treatments, whether the most likely amount or the expected value is used to reflect the effect of the uncertainty, and whether there were any changes compared to the prior year. Detection risk is ignored when accounting for uncertain tax treatments. When accounting for uncertain tax treatments, the entity shall assume that a taxation authority will examine amounts it has a right to examine and have full knowledge of all related information when making those examinations.

The aforementioned estimates, assumptions and judgments must be disclosed in the notes to the financial statements. Furthermore, information on the potential effects of the uncertain tax treatment must be disclosed as a tax-related contingent liability in accordance with IAS 12.88.

There was no significant impact on the consolidated financial statements of SINGULUS TECHNOLOGIES AG.

→ Amendment to IAS 28 – "Long-term Investments in Associates and Joint Ventures"

The amendments clarify that IFRS 9 must be applied to long-term interests in associates or joint ventures that are not accounted for in accordance with the equity method.

There was no impact on the consolidated financial statements of SINGULUS TECHNOLOGIES AG.

→ Amendment to IAS 19 – "Plan Amendment, Curtailment or Settlement"

In accordance with IAS 19, pension obligations must be remeasured using updated assumptions whenever plan amendments, curtailments or settlements take place.
The amendments clarify that updated assumptions must be used to determine the service cost and net interest for the remainder of the period after the change to the plan.

There was no significant impact on the consolidated financial statements of SINGULUS TECHNOLOGIES AG.

→ Amendments to IFRS 2015 – 2017 – "Amendments to IFRS 3, IFRS 11, IAS 12 and IAS 23"

Four IFRSs were amended in connection with the Annual Improvements to IFRS Standards 2015–2017 Cycle.
The amendments to IFRS 3 clarify that a company must apply the requirements for a business combination achieved in stages when it obtains control of a business in which it previously held an interest as a joint operation. The interest previously held by the acquirer must be remeasured.

The amendments to IFRS 11 clarify that an entity does not remeasure its previously held interest in a joint operation when it obtains joint control of the business.

The amendments to IAS 12 clarify that all income tax consequences of dividend payments must be accounted for in the same way as the income on which the dividends are based. The amendments to IAS 23 clarify that to the extent that an entity borrows funds generally and uses them for the purpose of obtaining a qualifying asset, the entity shall determine the amount of borrowing costs and exclude from this calculation borrowing costs applicable to borrowings made specifically for the purpose of obtaining a qualifying asset until substantially all the activities necessary to prepare that asset for its intended use or sale are complete.

These amendments have no impact on the consolidated financial statements of SINGULUS TECHNOLOGIES AG.

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:

→ Amendments to IAS 1 and IAS 8 – "Definition of Material"

The amendments provide a more uniform and precise definition what makes information in the financial statements material, ensure that this definition is consistent across all IFRSs and provide guidance in the form of accompanying examples. In this connection, the definitions in Conceptual Framework, IAS 1, IAS 8 and IFRS Practice Statement 2 Making Materiality Judgements are being harmonized. The amendments are applicable for the first time as of January 1, 2020. Earlier application is permitted.

→ Conceptual Framework – "Amendments to References to the Conceptual Framework in IFRS Standards"

The revised Conceptual Framework is structured into a new introductory section entitled "Status and purpose of the Conceptual Framework" and eight chapters.

The Conceptual Framework now includes the chapters "The reporting entity" and "Presentation and disclosure"; the chapter entitled "Recognition" was renamed "Recognition and derecognition".

Substantive amendments were also made. For example, with regard to income, a distinction would no longer be drawn between revenue and gains.

References to the Conceptual Framework in various standards have been updated in line with the revised Conceptual Framework.

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:

→ Amendments 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.

→ IFRS 17 – "Insurance Contracts"

IFRS 17 replaces IFRS 4 and for the first time establishes principles for the recognition, measurement, presentation and disclosure of insurance contracts, reinsurance contracts and investment contracts with discretionary participation features. The measurement model of IFRS 17 requires entities to measure groups of insurance contracts based on estimates of discounted future cash flows with an explicit risk adjustment for non-financial risks ("fulfillment cash flows") as well as a contractual service margin, representing the expected (i.e. unearned) profit for the provision of insurance coverage in the future.

Instead of reporting premium income when it is received, insurance revenue is reported when it is earned by recognizing in each period the changes in the liability for providing coverage for which the insurance entity receives compensation as well as the part of the premiums that cover acquisition costs. Receipts and payments relating to savings components are not recognized as revenue or as profit or loss in the income statement. Insurance finance income and expenses result from discounting effects and financial risks. For each portfolio of insurance contracts, they may either be recognized in the income statement or in other comprehensive income.

Changes in assumptions that do not relate to interest rates or financial risks are not recognized directly in the income statement but are booked against the contractual service margin and hence spread across the remaining coverage period. Changes in estimates are only recognized immediately in profit or loss in the case of those groups of insurance contracts that are expected to be loss-making.

IFRS 17 includes an approximation method for short-term contracts that captures the liability for providing insurance coverage through unearned premiums, as has been the case to date. Liabilities from outstanding claims must be discounted using current interest rates under IFRS 17. IFRS 17 modifies the general valuation model for large parts of life insurance business by requiring that changes in the shareholders' share in the change of returns on the items underlying the participation feature also be recognized in the contractual service margin and spread over the remaining period for which coverage is provided.

IFRS 17 must be applied for reporting periods beginning on or after January 1, 2021 – subject to an adoption into EU law. Earlier application is permitted. If retrospective application is not possible, the contractual service margin at the transition date can be determined using a modified retrospective method or by comparing the expected value of the discounted cash flows and risk adjustment with the fair value at the transition date.

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

→ Amendments to IFRS 10 and IAS 28 – "Sale or Contribution of Assets between an Investor and its Associate or Joint Venture"

The amendments address a known inconsistency between the requirement of IFRS 10 and IAS 28 (2011) concerning the disposal of assets to an associate or joint venture or the contribution of assets to an associate or joint venture.

In accordance with IFRS 10, a parent entity must recognize in full the gain or loss on the disposal of a subsidiary in profit or loss when control is lost. By contrast, in accordance with the currently applicable IAS 28.28, the gains or losses on disposal resulting from transactions between an investor and an equity investment accounted for in accordance with the equity method – be it an associate or a joint venture – must be recognized only to the extent of the other investor's interest in the associate or joint venture.

Going forward, the gain or loss on a transaction should only be recognized in full if the assets that are sold or contributed constitute a business as defined in IFRS 3. This applies regardless of whether the transaction is structured as a share or asset deal. By contrast, if the assets do not constitute a business, the gains or losses may only be partially recognized. The IASB has indefinitely deferred the date of first-time application of the amendments.

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

→ Amendments to IFRS 9, IFRS 39 and IFRS 7 – "Interest Rate Benchmark Reform"

The amendments address existing uncertainties in connection with the IBOR reform. Under existing hedge accounting rules, the pending changes in the interest rate benchmarks in many cases would have led to the discontinuation of hedging relationships. Existing hedging relationships can continue to be recognized on the balance sheet during the transition period. To this end, the amendments provide relief from applying specific previous hedge accounting requirements, e.g., assessing whether a forecast transaction is highly probable in the context of cash flow hedges.

The amendments must be applied for reporting periods beginning on or after January 1, 2020 – subject to an adoption into EU law. Early application is permitted, but in the EU the amendments must generally first be endorsed by the EU.

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

Early application of standards and interpretations that are not yet mandatory is not currently planned.

Note 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 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 control of the Company. A company is consolidated if the Group owns all voting rights in said 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 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

SINGULUS TECHNOLOGIES IBERICA S.L. was in liquidation as of December 31, 2019. The deconsolidation is anticipated to be made upon conclusion of the liquidation during the 2020 fiscal year. The liquidation of SINGULUS TECHNOLOGIES ITALIA S.R.L. was completed with effect from January 31, 2019.

Due to the acquisition of the shares in CIS Solar Tec, the share of equity attributable to minority interests is no longer reported separately as of December 31, 2019 (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 36.

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 4.14 "Impairment of non-financial 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". 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 term of such agreements may be extended at the Group's discretion. Please refer to our comments below under Note 4.13 and Note 33.

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. This is especially the case with provisions for warranties. For a description of leases, please refer to our comments under Note 19.

4.4 Revenue recognition

The Group generates revenue solely from contracts with customers. There are no sources of other revenue in accordance with IFRS 15.113. For the disaggregation of revenue in accordance with IFRS 15.114, please refer to Note 5.

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 for manufacturing optical data storage devices in the Life Science 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. Revenue from the sale of individual components of equipment or replacement parts is recognized at a point in time when control is transferred (generally at the time of shipping) in accordance with the underlying agreements.

Given that the Solar, Life Science and Semiconductor operating segments do not manufacture the other equipment in serial batches but rather to individual customer order for which the Company has no alternative use, revenue for the majority of the equipment is recognized over time. The claim for payment of the service rendered is reviewed at the same time (IFRS 15.35(c)).

The relevant stage of completion is calculated using the input-oriented cost-to-cost method. The selected method enables the Company to make the most precise estimate of the percentage of completion because the Company uses an IT-based project controlling system that reliably estimates the budgeted costs and continuously monitors the total costs. 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. Once the final invoice has been issued, the closing balance is reclassified as trade receivables. If it is probable that the total contract costs exceed the total contract revenue, the expected loss is immediately expensed.

Whether the requirements for recognizing revenue over time are met in accordance with IFRS 15.35(c) is reviewed on an individual basis at the start of a customer order.

Revenue is recognized net of VAT, returns, sales deductions, credits and direct selling costs. Potential contractual penalties are assessed on a case-by-case basis.

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). In accordance with 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, in the case of business combinations (full goodwill method). 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. In addition to the technical feasibility of completing the intangible asset, this includes the generation of probable future economic benefits from the intangible asset (IAS 38.57(d)) and the ability to measure reliably the expenditure attributable to the intangible asset during its development (IAS 38.57(f)). Cost comprises all costs directly attributable to the development process as well as appropriate shares of development-related overheads.

Profitability calculations (project calculations) are used to demonstrate the condition under IAS 38.57(d). The respective net present value of the development project is calculated on the basis of specific budgeted figures for revenue/contribution margins attributable to the project, applying the company-specific discount rate.

From the point at which they can be used, the developed products are amortized on a straight-line basis over a term of five years.

At each balance sheet date, it must be reviewed whether there are any indications of impairment. If this is the case, the asset must be tested for impairment and, if necessary, an impairment charge recognized. Prior-period impairment charges must be reviewed annually to determine whether there are any indications that the impairment can be reversed.

Updated project calculations are used for the impairment tests and to calculate the recoverable amount of the capitalized development costs. Furthermore, an additional impairment test is performed at a higher level for own work capitalized allocated to the Solar operating segment as part of the goodwill impairment testing for the Solar operating segment.

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

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 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 100% 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, if necessary, written down to their net realizable value.

4.10 Financial assets and liabilities

Recognition and subsequent measurement

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 are measured at amortized cost if they are held within a business model whose objective is to hold financial assets in order to collect contractual cash flows.

i. *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 insolvencies and 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.

For details on the recognition of foreign currency receivables and the related hedging transactions, please see our comments under 4.11 "Hedge accounting" and 4.2 "Foreign currency translation".

ii. 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. 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.

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.

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

Financial liabilities include liabilities from bond issues, liabilities from loans, trade payables and other liabilities. The Group initially recognizes financial liabilities at the date they arise. These liabilities are measured at amortized cost.

Derecognition

Financial assets are derecognized if 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.

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

4.11 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.

4.12 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 lives of the buildings at the production site in Kahl am Main were 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.

4.13 Leases

The Company is a lessee of property, plant and equipment, primarily relating to two administration and production buildings in Kahl am Main and Fürstenfeldbruck. The Company has also entered into leases for motor vehicles and forklifts. These leases are accounted for in accordance with the criteria defined in IFRS 16 and recognized as right-of-use assets under property, plant and equipment and lease liabilities.

The Group also leases IT equipment; these leases are either short-term leases or their underlying assets are of low value. The Group has opted to not recognize any right-of-use assets or lease liabilities for these leases.

For more information, please refer to Note 33.

4.14 Impairment of non-financial 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. The goodwill recognized reflects the current and future business activities in the Solar operating segment and is tested for impairment on this basis.

4.14.1 Key assumptions used in the recoverable amount calculation

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 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 2020 to 2022 (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 2023 and 2024 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 7.80% market risk premium (previous year: 7.00%), beta factors, assumptions regarding country and credit risk premiums and the debt ratio using market data. The pre-tax discount rate applied to the cash flow projections is 14.2% (previous year: 15.2%) in the Solar operating segment.

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.

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

4.14.2 Sensitivity of assumptions made

For the Solar operating segment, the value in use exceeds the carrying amount by EUR 19.7 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 9.4% 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 5.6% by 2024. In the event the actual EBIT margin in the five-year planning period, as well as the perpetual annuity, is more than 2.6 percentage points lower than the assumed margin, the carrying amounts would be written down as a result.

4.15 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.

4.16 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.

4.17 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.

4.18 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.

For warranty claims, percentages are derived from experience for each product type and range between 2.75% and 5.50%.

4.19 Share-based payment

The Management Board and senior executives are granted share-based payments ("phantom stock") 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.

4.20 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.

4.21 Change in presentation of equity

In order to present the financial statements more clearly, the Company has decided to adjust the structure and designation of individual equity items. This has resulted in the following changes:

(i) The equity items "Reserves" and "Loss carryforwards" were renamed "Other reserves" and "Retained earnings".

(ii) In prior reporting periods the actuarial gains and losses from pension commitments had been allocated to "Loss carryforwards". The Company now reclassified these effects to "Other reserves". The prior-year figures have been restated accordingly.

This change does not affect the net assets or results of operations of the Group.

Note 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:

By the end of the 2018 fiscal year, the new fields of activity defined in previous years, medical technology and decorative coatings, had been allocated to the Solar and Optical Disc segments on the basis of their technical properties.

Due to the increasing importance of these new fields of activity, the Company reorganized its internal reporting structure in 2019. The new Life Science segment comprises the business activities in the medical technology, decorative coatings and data storage (previously optical disc) fields of activity. The Company is also continuing its Solar and Semiconductor segments.

The comparative figures for prior periods have been restated for the new reportable segments in accordance with IFRS 8.29.

Solar segment

In the Solar segment, SINGULUS TECHNOLOGIES bundles its activities for manufacturing crystalline solar cells with the focus on high-efficiency cells and thin-film solar cells based on copper indium gallium diselenide (CIGS), and cadmium telluride (CdTe). 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), and TOPCon (tunnel oxide passivated contacts) solar cells. SINGULUS TECHNOLOGIES offers complete crystalline silicon solar cell production lines in this market.

Life Science segment

In the Life Science segment, SINGULUS TECHNOLOGIES bundles its new production solutions for decorative coatings, medical technology, and the equipment and service solutions for the data storage (optical disc) field of activity. The focus is on vacuum coating machines for surface improvement and various wet chemical cleaning machines for application in medical technology and consumer goods area.

In recent years, the DECOLINE II integrated production line and the POLYCOATER inline vacuum cathode sputtering system were developed for the consumer goods area. Since 2017, SINGULUS TECHNOLOGIES markets the MEDLINE production machine for applications in the medical technology area. Machinery to produce common optical disc formats (CD, DVD, dual-layer Blu-ray discs and Ultra HD Blu-ray Discs) is offered in the data storage field of activity.

Semiconductor segment

In the semiconductor market, SINGULUS TECHNOLOGIES is a provider of special machinery and offers the TIMARIS and ROTARIS system platforms. The scope of application of the two system platforms includes magnetoresistive random access memory (MRAM), sensors, voltage regulators, and microelectromechanical systems (MEMS). The Company has also allocated the process solutions for wet chemical cleaning of electronic components to this segment.

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

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 2019:

	"Solar" operating segment		"Life Science" operating segment		"Semiconductor" operating segment		SINGULUS TECHNOLOGIES Group	
	2019	**2018**	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**
	EUR m	**EUR m**	**EUR m**	**EUR m**	**EUR m**	**EUR m**	**EUR m**	**EUR m**
Gross revenue	45.0	89.7	28.3	28.6	6.1	9.2	79.4	127.5
Sales deductions and direct selling costs	-0.4	-0.2	-1.1	-1.3	-0.1	-0.1	-1.6	-1.6
Net revenue	44.6	89.5	27.2	27.3	6.0	9.1	77.8	125.9
Operating result (EBIT)	-7.3	5.1	0.0	1.0	-0.9	0.7	-8.2	6.8
Amortization, depreciation and impairment	-2.8	-1.8	-1.1	-0.4	-0.2	-0.1	-4.1	-2.3
Financial income/expense							-2.1	-2.0
EBT							-10.3	4.8

Additions to capitalized development costs are attributable to the Solar segment (EUR 2.8 million; previous year: EUR 2.1 million) and the Life Science segment (EUR 2.1 million; previous year: EUR 1.5 million).

In fiscal year 2019, significant revenue was generated with one customer in the Solar segment. Of that revenue, EUR 28.4 million or 35.8 % of total revenue was attributable to this customer. In the reporting period, significant revenue was generated with one customer in the Life Science segment. Of that revenue, EUR 8.2 million or 10.3 % of total revenue was attributable to this customer.

Due to the first-time application of IFRS 16, amortization, depreciation and impairment increased in the reporting year by EUR 0.9 million in the Solar segment and by EUR 0.1 million apiece in the Life Science and Semiconductor segments.

The table below shows information by geographical region as of December 31, 2019 based on assets:

	Germany EUR m	Rest of Europe EUR m	North & South America EUR m	Asia EUR m	Africa & Australia EUR m
Assets	74.5	0.4	5.3	3.5	0.0

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

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

Outside of Germany, significant revenue was generated in China (EUR 34.8 million; previous year: EUR 73.4 million) and the USA (EUR 10.9 million; previous year: EUR 11.3 million) during the fiscal year.

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

January 01 to December 31, 2019	Solar EUR m	Life Science EUR m	Semicon-ductor EUR m	Total EUR m
Revenue by destination				
Germany	3.8	1.0	0.6	5.4
Rest of Europe	1.9	10.5	3.7	16.1
North & South America	3.9	9.0	0.6	13.5
Asia	35.4	7.5	1.2	44.1
Africa & Australia	0.0	0.3	0.0	0.3
	45.0	**28.3**	**6.1**	**79.4**
Revenue by country of origin				
Germany	42.9	18.7	4.2	65.8
Rest of Europe	0.0	0.3	0.2	0.5
North & South America	1.5	8.0	1.6	11.1
Asia	0.6	1.3	0.1	2.0
Africa & Australia	0.0	0.0	0.0	0.0
	45.0	**28.3**	**6.1**	**79.4**
Products and services				
Production facilities	41.5	16.3	4.7	62.5
Service and spare parts	3.5	12.0	1.4	16.9
	45.0	**28.3**	**6.1**	**79.4**
Revenue recognition date				
Periodic revenue recognition	41.2	15.3	4.7	61.2
Revenue recognition as of a specific date	3.8	13.0	1.4	18.2
	45.0	**28.3**	**6.1**	**79.4**

The Group reported more than EUR 26.3 million as outstanding order backlogs for performance obligations not yet rendered in full. These are expected to be rendered in the next 12 months.

January 01 to December 31, 2018	Solar EUR m	Life Science EUR m	Semiconductor EUR m	Total EUR m
Revenue by destination				
Germany	8.6	2.5	0.0	11.1
Rest of Europe	3.6	4.6	6.7	14.9
North & South America	4.0	10.2	0.5	14.7
Asia	73.5	10.5	2.0	86.0
Africa & Australia	0.0	0.8	0.0	0.8
	89.7	**28.6**	**9.2**	**127.5**
Revenue by country of origin				
Germany	87.2	18.2	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
	89.7	**28.6**	**9.2**	**127.5**
Products and services				
Production facilities	86.1	13.6	8.0	107.7
Service and spare parts	3.6	15.0	1.2	19.8
	89.7	**28.6**	**9.2**	**127.5**
Revenue recognition date				
Periodic revenue recognition	86.1	12.3	8.0	106.4
Revenue recognition as of a specific date	3.6	16.3	1.2	21.1
	89.7	**28.6**	**9.2**	**127.5**

The Group reported more than EUR 26.3 million as outstanding order backlogs for performance obligations not yet rendered in full. These are expected to be rendered in the next 12 months.

Note 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 14.8 million (previous year: EUR 13.5 million). For reasons of materiality, no loss allowances are recognized on the basis of the expected credit loss model because the bank balances are available at short notice and the selected banks have excellent credit ratings (Standard & Poor's A-3 or better).

Note 7

Financial assets subject to restrictions on disposal

The Company has cash deposits of EUR 4.4 million (previous year: EUR 14.3 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.

Note 8

Trade receivables and receivables from construction contracts

	2019 EUR m	2018 EUR m
Trade receivables – current	6.9	7.3
Receivables from construction contracts	4.6	20.4
Less allowances	-1.1	-1.2
	10.4	**26.5**

As of December 31, 2019, bad debt allowances of a nominal EUR 1.1 million had been charged on trade receivables (previous year: EUR 1.2 million). The development of the valuation allowances is presented below:

	2019 EUR m	2018 EUR m
As of January 1	1.2	1.1
Allowances recognized in profit or loss	0.0	0.3
Utilization	-0.1	-0.1
Reversals	0.0	-0.1
As of December 31	**1.1**	**1.2**

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 EUR m	Not due EUR m	Overdue by less than 30 days EUR m	30 to 60 days EUR m	60 to 90 days EUR m	90 to 180 days EUR m	more than 180 days EUR m
2019	10.4	8.9	1.3	0.1	0.1	0.0	0.0
2018	26.5	25.9	0.5	0.1	0.0	0.0	0.0

The overdue trade receivables are secured 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 0.0 million (previous year: EUR 0.2 million). This included expenses from additions to specific bad debt allowances amounting to EUR 0.0 million (previous year: EUR 0.3 million). In the reporting period, income was also generated from the reversal of specific bad debt allowances amounting to EUR 0.0 million (previous year: EUR 0.1 million).

As of the balance sheet date, trade receivables included EUR 1.1 million in receivables from construction contracts. for which final invoices have been issued.

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:

	2019 EUR m	2018 EUR m
Aggregate amount of costs incurred and recognized profits (less any recognized losses)	55.8	60.3
Prepayments received	-51.2	-39.9
Receivables from construction contracts	4.6	20.4

Receivables from construction contracts are secured through letters of credit. The underlying credit risk within the meaning of the expected credit loss model relates to the creditworthiness of the banks. For reasons of materiality, secured receivables from construction contracts are not subject to impairment.

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:

	2019 EUR m	2018 EUR m
Aggregate amount of costs incurred and recognized profits (less any recognized losses)	92.7	112.5
Prepayments received	-99.3	-127.3
Liabilities from construction contracts	-6.6	-14.8

Revenue from construction contracts of EUR 50.7 million (previous year: EUR 106.4 million) was recognized in the fiscal year.

Revenue from construction contracts include contract commissions amounting to EUR 0.2 million.

Deviations in the projected manufacturing costs mean that EUR 6.5 million less in revenue would have been attributable in prior periods. This effect was recognized during the reporting period and reduced income.

Of the EUR 14.8 million in liabilities from construction contracts as of December 31, 2018, EUR 11.6 million was invoiced in the fiscal year.

Due to project delays, liabilities from construction contracts amounting to EUR 3.2 million were not invoiced during the fiscal year.

Note 9

Other receivables and other assets

Other receivables and other assets break down as follows:

	2019 EUR m	2018 EUR m
Prepayments made	4.4	7.0
Tax assets	0.3	1.1
Miscellaneous	1.7	0.9
	6.4	**9.0**

Tax assets for fiscal year 2019 essentially concern SINGULUS TECHNOLOGIES AG (EUR 0.3 million) and result primarily from claims for VAT reimbursements. Prepayments to suppliers are generally short-term in nature. The creditworthiness of the individual suppliers is reviewed on a regular basis.

Note 10

Inventories

The Group's inventories break down as follows:

	2019 EUR m	2018 EUR m
Raw materials, consumables and supplies	20.6	19.1
Work in process	17.4	19.9
Less allowances	-22.5	-21.9
	15.5	**17.1**

The inventory allowances relate to reductions in value in accordance with the "lower of cost or net realizable value" principle.

During the 2019 fiscal year, EUR 1.3 million in write-downs to the net realizable value of inventories were reported (previous year: EUR 1.7 million).

The carrying amount of inventories recognized at net realizable value amounts to EUR 12.3 million (previous year: EUR 12.9 million).

In the reporting year, gains of EUR 0.1 million were generated from the reversal of impairment losses (previous year: EUR 0.3 million). This resulted from the sale of impaired parts.

Note 11

Intangible assets

In fiscal years 2019 and 2018, intangible assets developed as follows (all amounts in EUR m):

	Goodwill	Other intangible assets	Capitalized development costs	Total
Cost				
As of Jan. 1, 2018	**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**
Additions	0.0	0.3	4.9	5.2
Disposals	0.0	-0.1	0.0	-0.1
As of Dec. 31, 2019	**21.7**	**76.0**	**117.7**	**215.4**
Amortization and impairment				
As of Jan. 1, 2018	**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**
Additions to amortization (scheduled)	0.0	0.1	1.4	1.5
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, 2019	**15.0**	**75.6**	**108.2**	**198.8**
Carrying amounts Dec. 31, 2018	**6.7**	**0.3**	**6.0**	**13.0**
Carrying amounts Dec. 31, 2019	**6.7**	**0.4**	**9.5**	**16.6**

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 4.14 "Impairment of non-financial assets".

EUR 4.9 million of the development costs incurred in fiscal year 2019 qualifies for recognition as an asset under IFRSs (previous year: EUR 3.6 million). Amortization and impairment of capitalized development costs is recognized under research and development expenses in the consolidated income statement.

Note 12

Property, plant and equipment

In fiscal years 2019 and 2018, 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, 2018	**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**
Recognition of right-of-use assets due the first-time application of IFRS 16	4.9	0.0	0.6	5.5
Restated as of January 1, 2019	**17.1**	**11.0**	**8.3**	**36.4**
Additions	0.0	1.6**	0.6	2.2
Disposals	0.0	0.0	-0.1	-0.1
As of Dec. 31, 2019	**17.1**	**12.6**	**8.8**	**38.5**
Depreciation and impairment				
As of Jan. 1, 2018	**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**
Additions to depreciation (scheduled)	1.5	0.6	0.6	2.7
Disposals	0.0	0.0	0.0	0.0
As of Dec. 31, 2019	**6.7**	**8.4**	**7.8**	**22.9**
Carrying amounts Dec. 31, 2018	**7.0**	**3.2**	**0.5**	**10.7**
Carrying amounts Dec. 31, 2019	**10.4**	**4.2**	**1.0**	**15.6**

* of which EUR 1.0 million from reclassifications of inventories

** of which EUR 1.5 million from reclassifications of inventories

Note 13
Other liabilities

Other liabilities are broken down as follows:

	2019 EUR m	2018 EUR m
Outstanding liabilities to personnel	2.0	2.9
Executive Board and employee bonuses	2.0	4.1
Outstanding invoices	1.3	1.5
Financial reporting, legal and consulting fees	0.6	0.5
Services to be provided	1.0	0.5
Miscellaneous	2.2	1.8
	9.1	**11.3**

In the fiscal year, commitments for performance-related payments of EUR 2.0 million (previous year: EUR 4.1 million) to members of the Executive Board, managing directors of subsidiaries, senior executives and employees were recognized as a liability. Of this amount, EUR 0.9 million related to share-based payments. For more information, please refer to Note 15.

Note 14
Prepayments received

	2019 EUR m	2018 EUR m
Prepayments from customers	2.6	1.0

Prepayments received as of December 31, 2019 mainly relate to advances for orders received by the Life Science segment for equipment in the data storage (optical disc) field of activity, which are reported in inventories under work in process.

Note 15
Share-based payment

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

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.

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 12.0160.

Phantom Stock Program 2019 (PSP XV and PSP XVI)

By resolution dated April 11, 2019, the Supervisory Board resolved to issue 250,000 stock options to the Executive Board (PSP XV). A further 140,000 stock options were issued to senior executives (PSP XVI). The underlying phantom stock program corresponds to the 2015 program. The exercise price of these stock options is EUR 9.1000.

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 IX 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 XVI, 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 IX 2019		**PSP X 2019**	
Change in stock options	**Number of stock options**	**Average exercise price (EUR)**	**Number of stock options**	**Average exercise price (EUR)**
Outstanding as of beginning of the fiscal year	168,750	4.5974	92,000	4.5974
Issued in the fiscal year	-	-	-	-
Revoked in the fiscal year	-	-	-	-
Exercised during the fiscal year	56,250	9.3000	18,500	9.0851
Expired in the fiscal year	-	-	-	-
Outstanding at the end of the fiscal year	112,500	4.5974	73,500	4.5974
Exercisable at the end of the fiscal year	56,250	-	46,000	-

	PSP XI 2019		**PSP XII 2019**	
Change in stock options	**Number of stock options**	**Average exercise price (EUR)**	**Number of stock options**	**Average exercise price (EUR)**
Outstanding as of beginning of the fiscal year	250,000	8.7950	120,000	8.7950
Issued in the fiscal year	-	-	-	-
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 2019 Number of stock options	PSP XIII 2019 Average exercise price (EUR)	PSP XIV 2019 Number of stock options	PSP XIV 2019 Average exercise price (EUR)
Outstanding as of beginning of the fiscal year	250,000	12.0160	130,000	12.0160
Issued in the fiscal year	-	-	-	-
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	12.0160	130,000	12.0160
Exercisable at the end of the fiscal year	-	-	-	-

Change in stock options	PSP XV 2019 Number of stock options	PSP XV 2019 Average exercise price (EUR)	PSP XVI 2019 Number of stock options	PSP XVI 2019 Average exercise price (EUR)
Outstanding as of beginning of the fiscal year	-	-	-	-
Issued in the fiscal year	250,000	9.1000	140,000	9.1000
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	9.1000	140,000	9.1000
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 IX	PSP X	PSP XI	PSP XII
Grant date	11/9/2016	11/9/2016	7/21/2017	7/21/2017
Exercise price	4.5974 €	4.5974 €	8.7950 €	8.7950 €
Dividend yield	0.00%	0.00%	0.00%	0.00%
Interest rate	-0.65%	-0.65%	-0.61%	-0.61%
Volatility of SINGULUS TECHNOLOGIES	50.45%	50.45%	53.85%	53.85%
Fair value of each stock option as of December 31, 2019	1.458 €	1.441 €	0.859 €	0.838 €

	PSP XIII	PSP XIV	PSP XV	PSP XVI
Grant date	4/9/2018	4/9/2018	4/11/2019	4/11/2019
Exercise price	12.0160 €	12.0160 €	9.1000 €	9.1000 €
Dividend yield	0.00%	0.00%	0.00%	0.00%
Interest rate	-0.58%	-0.58%	-0.53%	-0.53%
Volatility of SINGULUS TECHNOLOGIES	54.52%	54.52%	95.94%	95.94%
Fair value of each stock option as of December 31, 2019	0.681 €	0.665 €	2.099 €	2.079 €

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 income of EUR 1,255 thousand during the fiscal year (previous year: expense of EUR 1,564 thousand).
The program was treated as a cash-settled share-based payment within the meaning of IFRS 2.

Note 16

Financial liabilities from bond issue

The secured 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 secured primarily through cash (EUR 12.8 million), receivables (EUR 2.6 million), inventories (EUR 13.9 million), property, plant and equipment (EUR 2.3 million), and intangible assets (EUR 9.5 million) of SINGULUS TECHNOLOGIES AG. The above figures are the carrying amounts recognized in accordance with IFRS as of December 31, 2019. The joint representative checks the Company's compliance with the bond terms and conditions on a regular basis. In the event of a violation, the bond may be terminated early.

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 attributable to interest. Please refer to Note 37.

Note 17

Liabilities from loans

In February 2019, 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 March 2021 in March 2020. 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 secure the loan. This was senior in relation to the bondholders. The effective interest rate amounts to 9,97% p.a.

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

Please refer to Note 36.

Note 18

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, 2019 and 2018 is presented in the following tables:

Change in pension obligations:	**2019 EUR m**	**2018 EUR m**
Present value at the beginning of the fiscal year	13.9	13.3
Recognized in profit or loss:		
Service cost	0.2	0.1
Interest expense	0.2	0.2
Recognized in other comprehensive income:		
Actuarial gains/losses from:		
financial assumptions	1.7	0.7
demographic assumptions	0.0	0.2
experience-based adjustments	0.7	0.1
Miscellaneous:		
Payments made	-0.5	-0.6
Present value at the end of the fiscal year	16.2	13.9

Net pension expenses break down as follows:

	2019 EUR m	2018 EUR m
Service cost	0.2	0.1
Interest expense	0.2	0.2
	0.4	**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:

	2019 EUR m	2018 EUR m	2017 EUR m	2016 EUR m	2015 EUR m
Present value of the defined benefit obligation	16.2	13.9	13.3	13.8	12.3

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

Biometrics	**2019 Heubeck 2018 G actuarial tables**	**2018 Heubeck 2018 G actuarial tables**
Discount rate (future pensioners)	0.90 %	1.77 %
Discount rate (current pensioners)	0.90 %	1.32 %
Estimated future wage and salary increases	2.00 %	2.00 %
Estimated future pension increases	1.60 %	1.60 %

As of December 31, 2019, the weighted average term of the defined benefit obligation was 16.8 years.

Contributions by the Company to the statutory pension insurance system amounted to EUR 1.8 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)	-1.3	1.4
Estimated future wage and salary increases (0.25 percentage point change)	0.1	-0.1
Estimated future pension increases (0.25 percentage point change)	0.5	-0.5
Life expectancy (+1 year change)	1.0	-

The premiums expected for fiscal year 2020 amount to EUR 0.5 million.

Note 19

Other provisions

Other provisions developed as follows in the fiscal year:

	1/1/2019 EUR m	Utilizations EUR m	Reversals EUR m	Additions EUR m	12/31/2019 EUR m
Warranties	0.3	0.0	-0.2	2.6	2.7
Miscellaneous	1.2	-0.7	0.0	0.1	0.6
	1.5	**-0.7**	**-0.2**	**2.7**	**3.3**

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 5.50 % (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, 2019.

Note 20

Provisions for restructuring measures

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

	1/1/2019 EUR m	Effect IFRS 16 initial turn EUR m	Additions EUR m	Utilizations EUR m	Reversals EUR m	12/31/2019 EUR m
Provisions for restructuring measures	2.1	-1.9	0.0	0.0	0.0	0.2

The provisions for restructuring measures in the previous year mainly contained provisions for underutilization of office and production facilities leased for wet-chemical processes within the Solar segment (EUR 1.9 million). Upon initial application of IFRS 16 on January 1, 2019, the assets to be recognized were written down by the amount of the provision due to vacancies. The impairment charge was offset against the provisions for restructuring measures.

Note 21

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, 2019, 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.

Other reserves

Other reserves includes currency translation differences from translating the financial statements of foreign entities as well as actuarial gains and losses from pension commitments.

Capital reserves

The capital reserves amounting to EUR 19.8 million result from capital increases in previous years.

For information on the capital management principles, please refer to the management report.

Note 22

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

The disclosures on income taxes for 2019 and 2018 are as follows:	**2019 EUR m**	**2018 EUR m**
Current income taxes		
Germany	-0.3	-0.3
International	-0.1	-0.1
Sub-total	-0.4	-0.4
Deferred taxes		
Germany	-0.6	-3.4
International	0.0	-0.2
Sub-total	-0.6	-3.6
Total tax expense/income	**-1.0**	**-4.0**

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:

	2019 EUR m	**2018 EUR m**
Inventories	4.8	5.6
Pension provisions	2.7	2.1
Trade receivables	0.1	0.1
Provision for restructuring measures	0.4	0.5
Goodwill	0.5	0.5
Other intangible assets	0.0	0.1
Deferred taxes on loss carryforwards	4.7	5.2
Other liabilities	0.2	0.1
	13.4	14.2
Netting with deferred tax liabilities	-13.4	-14.2
Deferred tax assets	**0.0**	**0.0**

The deferred tax assets (before netting with deferred tax liabilities) of EUR 13.4 million were below the prior year's level (EUR 14.2 million). After being offset against deferred tax liabilities, there were no deferred tax assets (previous year: EUR 0.0 million).

Deferred tax assets developed as follows:

	2019 EUR m	2018 EUR m
Balance as of Jan. 1	0.0	0.3
Recognized in other comprehensive income: Change in actuarial gains and losses from pension commitments	0.7	0.2
Recognized through profit and loss: Change in temporary differences	0.0	-0.1
Netting with deferred tax liabilities	-0.7	-0.4
Balance as of Dec. 31	**0.0**	**0.0**

As of December 31, 2019, SINGULUS TECHNOLOGIES AG (excl. foreign operating facilities) had preliminary corporate income tax loss carryforwards in the amount of EUR 175.2 million (previous year: EUR 168.6 million) and municipal trade tax loss carryforwards of EUR 167.7 million (previous year: EUR 161.2 million). In 2019, EUR 1.5 million was added to the EUR 12.8 million in interest carryforwards from previous years; these amounted to EUR 14.3 million as of December 31, 2019.

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:

	2019 EUR m	2018 EUR m
Receivables and liabilities from construction contracts	13.8	15.6
Capitalized development costs	2.5	1.6
Other receivables	0.1	0.0
	16.4	17.2
Netting with deferred tax assets	-13.4	-14.2
	3.0	**3.0**

Deferred tax liabilities total EUR 16.4 million (before being offset against deferred tax assets), lower than the previous year's figure (EUR 17.2 million). This is a result of lower temporary differences for receivables and liabilities from construction contracts. After being offset against deferred tax assets, deferred tax liabilities amounted to EUR 3.0 million (previous year: EUR 3.0 million).

Deferred tax liabilities developed as follows:	2019 EUR m	2018 EUR m
Balance as of Jan. 1	3.0	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	16.4	17.2
Netting with deferred tax assets	-13.4	-14.2
Balance as of Dec. 31	**3.0**	**3.0**

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:

	2019 EUR m	2018 EUR m
Consolidated earnings before taxes	-10.3	4.8
Anticipated tax*	-3.0	1.4
Adjustment of temporary differences and loss and interest carryforwards of the current period for which no deferred taxes were recognized	3.5	3.0
Recognized directly in other comprehensive income	0.0	-0.2
Other permanent differences	0.5	-0.2
Current taxes	**1.0**	**4.0**

* 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.

Note 23

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:

	2019 EUR m	2018 EUR m
Profit attributable to owners of the parent for calculating basic earnings per share	-11.3	0.8
Weighted average number of ordinary shares used to calculate basic earnings per share	8,896,527	8,896,527
Dilutive effect	-	-
Weighted average number of common shares, adjusted for dilutive effect	**8,896,527**	**8,896,527**

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.

Note 24
Sales deductions and direct selling costs

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

Note 25
Cost of materials

The cost of sales for fiscal year 2019 includes material costs of EUR 38.2 million (previous year: EUR 67.8 million).

Note 26
Personnel expenses

The income statement for fiscal year 2019 includes personnel expenses in the amount of EUR 31.3 million (previous year: EUR 33.5 million). Expenses for wages and salaries in the year under review totaled EUR 25.6 million (previous year: EUR 28.2 million); expenses for social security contributions totaled EUR 5.2 million (previous year: EUR 4.7 million); post-employment expenses were EUR 0.5 million (previous year: EUR 0.6 million).

Note 27
Depreciation and amortization

Depreciation and amortization expenses amounted to EUR 4.2 million (previous year: EUR 2.3 million). The effect from the first-time application of IFRS 16 amounted to EUR 1.1 million.

Note 28
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.

Note 29
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 1.4 million (previous year: EUR 1.0 million).

Totaling EUR 13.4 million in 2019, the expenditures for research and development (including development services included in cost of sales) were bat the prior-year level (EUR 13.4 million). EUR 4.9 million of these expenditures were capitalized (previous year: EUR 3.6 million).

The Company received national and EU subsidies amounting to EUR 0.7 million in the fiscal year (previous year: EUR 0.5 million).

Note 30
Other operating income/expenses

In the reporting year, other operating income includes primarily income from the reversal of provisions amounting to EUR 0.3 million (previous year: EUR 1.8 million).

Other operating expenses in the fiscal year primarily included foreign currency losses amounting to EUR 0.1 million (previous year: EUR 0.3 million).

Note 31

Impairment losses

In 2019, the Group recognized impairment losses of EUR 3.3 million due to the insolvency of a major customer in the Solar segment.

Note 32

Finance income and finance costs

Finance income/costs break down as follows:

	2019 EUR m	2018 EUR m
Interest income from time/ overnight deposits	0.1	0.0
Interest expenses from leases	-0.5	-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	-0.7	-0.9
	-2.1	**-2.0**

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

Note 33

Leases

As a lessee, the Group leases various assets, including real estate, motor vehicles and IT equipment. The remaining terms of the real estate leases amount to three years for the production and administration building in Kahl am Main and four years for the production and administration building in Fürstenfeldbruck. At the end of the term, ownership of the building in Kahl am Main will transfer to the Company. The terms of the other leases are between three and five years.

The leases for IT equipment are of low value, meaning that no right-of-use assets or lease liabilities are recognized in accordance with IFRS 16.

i. Right-of-use assets

None of the right-of-use assets in connection with real estate leases meet the definition of investment property. These properties are reported under property, plant and equipment. Please refer to Note 12 for more information.

EUR m	Land and buildings	Operating and office equipment	Total
January 1, 2019	10.4	0.6	11.0
Depreciation charge	-1.3	-0.2	-1.5
Additions of right-of-use assets	0.0	0.0	0.0
Disposals of right-of-use assets	0.0	0.0	0.0
December 31, 2019	**9.1**	**0.4**	**9.5**

ii. Amounts recognized in the income statements

2019	EUR m
Interest expenses for lease liabilities	0.5
Expenses for leases with underlying assets of low value	0.1
Total	**0.6**

iii. Amounts recognized in the statement of cash flows

2019	EUR m
Total cash outflows for right-of-use assets	2.5
Total cash outflows for assets of low value	0.1

As of December 31, 2019, the future minimum payments arising from leases in the Group were:

	EUR m
2020	3.0
2021	2.9
2022	2.8
2023	1.4
2024 and thereafter	1.0
	11.1

Note 34

Events after the balance sheet date

The Company has entered into agreements for a major project at the Xuzhou site with the customer (CNBM) Bengbu Design and Research Institute of Glass Industry Co., Ltd., Bengbu, China, a subsidiary of China National Building Materials Group (CNBM), Beijing, China, for the delivery of production systems for CIGS solar modules. The order volume is about EUR 56 million.

The prepayment has been received partly in 2020.

As a company with international operations, SINGULUS TECHNOLOGIES is monitoring the current developments with regard to the COVID-19 pandemic and the economic effect it could have on our Company. However, at the present time, the Company cannot assess the implications or effects of the pandemic on the Company's operations. The management is monitoring the situation closely in order to implement any necessary countermeasures.

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

Note 35

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 2019 were:

Dr.-Ing. Wolfhard Leichnitz, Essen. . . . . Chairman
Christine Kreidl, Regensburg . . . . Deputy Chairman[1]
Dr. Silke Landwehrmann, Düsseldorf. . . . . . . Member[2]
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 172 thousand (previous year: EUR 180 thousand). In addition, the Supervisory Board members were reimbursed expenses of EUR 8 thousand.

Dr.-Ing. Leichnitz held a total of 245 shares in the Company as of December 31, 2019 (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).

[1] Resigned from the Supervisory Board of SINGULUS TECHNOLOGIES AG on August 10, 2019.
[2] Appointed by the Local Court (Amtsgericht) of Aschaffenburg as a member of the Supervisory Board of SINGULUS TECHNOLOGIES AG on August 11, 2019.

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.

During the period from January 1 to December 31, 2019, revenue amounting to EUR 28.4 million was generated from the manufacturing and delivery of equipment for CNBM. As a result, receivables from construction contracts of EUR 2.4 million were outstanding as of December 31, 2019.

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
Dr. Silke Landwehrmann[1]	Diplom-Kauffrau, managing director of Aufam Asset Management GmbH, Rheinberg,	Lufthansa Cargo AG, Frankfurt am Main, Member of the Supervisory Board
Christine Kreidl[2]	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

1 Appointed by the Local Court (Amtsgericht) of Aschaffenburg as a member of the Supervisory Board of SINGULUS TECHNOLOGIES AG on August 11, 2019.

2 Resigned from the Supervisory Board of SINGULUS TECHNOLOGIES AG on August 10, 2019.

Members of the Executive Board in fiscal year 2019 were:

Dr.-Ing. Stefan Rinck, Chairman of the Executive Board
Dipl.-Oec. Markus Ehret, Head of finance
Dr. rer. nat. Christian Strahberger, Chief Operating Officer (Since November 1, 2019)

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

	Fixed remuneration EUR k	**Other compensation[1] EUR k**	**2019 Variable remuneration EUR k**	**Components with long-term incentive[2] EUR k**	**Total EUR k**
Dr.-Ing. Stefan Rinck	440	47	176	516	1,179
Dipl.-Oec. Markus Ehret	300	27	112	344	783
Dr. rer. nat. Christian Strahberger	50	2	19	0	71
	790	**76**	**307**	**860**	**2,033**

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

	Fixed remuneration EUR k	**Other compensation[3] EUR k**	**2018 Variable remuneration EUR k**	**Components with long-term incentive[4] EUR k**	**Total 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.
3 Other compensation includes ancillary benefits such as insurance and company vehicles.
4 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 2019 was EUR 377 thousand (previous year: EUR 359 thousand), of which EUR 264 thousand (previous year: EUR 264 thousand) was for Dr.-Ing. Stefan Rinck, EUR 95 thousand (previous year: EUR 95 thousand) for Mr. Markus Ehret, and – for the first time – EUR 18 thousand for Dr. Christian Strahberger.

Former members of the Executive Board of SINGULUS TECHNOLOGIES AG received total remuneration of EUR 0.4 million in the fiscal year. As of December 31, 2019, the provisions for pension claims for former board members stood at EUR 7.2 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:

	2019 No.	2018 No.
Dr.-Ing. Stefan Rinck	122	122
Dipl.-Oec. Markus Ehret	43	43
Dr. rer. nat. Christian Strahberger	2,000	-
	2,165	**165**

Note 36

Disclosures on shareholdings

	Equity interest %	Equity EUR k	Net income/ loss EUR k
Germany			
SINGULUS CIS Solar Tec GmbH, Kahl am Main, Germany	100	14	-1
SINGULUS New Heterojunction Technologies GmbH, Kahl am Main, Germany	100	-309	-3,999
Foreign*			
SINGULUS TECHNOLOGIES Inc., Windsor, CT, USA	100	8,927	344
SINGULUS TECHNOLOGIES MOCVD Inc., Windsor, USA	100	-648	0
SINGULUS TECHNOLOGIES ASIA Pacific Pte. Ltd., Singapore	100	1,335	581
SINGULUS TECHNOLOGIES LATIN AMERICA Ltda., Sao Paolo, Brazil	98.8	-4,575	-513
SINGULUS TECHNOLOGIES IBÉRICA S.L., Sant Cugat del Vallés, Spain	100	-1,458	0
SINGULUS TECHNOLOGIES FRANCE S.A.R.L., Sausheim, France	100	375	-49
SINGULUS TECHNOLOGIES TAIWAN Ltd. Taipei, Taiwan	100	-1,558	-85
SINGULUS TECHNOLOGIES SHANGHAI Co., Ltd., Shanghai, China	100	569	-161
STEAG HamaTech Asia Ltd. Hong Kong, China	100	0	0
HamaTech USA Inc., Austin, TX, USA	100	-987	8

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

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

1.2% of the interest in SINGULUS TECHNOLOGIES LATIN AMERICA Ltda. is held by New Heterojunction Technologies GmbH.

STEAG HamaTech Asia Ltd. discontinued its operating business in April 2003.
SINGULUS TECHNOLOGIES IBERICA S.L. was in liquidation as of December 31, 2019.
The liquidation of SINGULUS TECHNOLOGIES ITALIA S.R.L. was completed with effect from January 31, 2019. The deconsolidation effect amounted to EUR 0.0 million.

The minority interest (33%) previously held in SINGULUS CIS Solar Tec GmbH was transferred to SINGULUS TECHNOLOGIES AG. The effect amounted to EUR 0.0 million.

Note 37

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 2019 or 2018, 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 EUR m	Effect on equity EUR m
2019	+10%	0.4	0.4
	-10%	-0.4	-0.4
2018	+10%	0.5	0.5
	-10%	-0.4	-0.4

The effect of potential changes in the USD exchange rate on SINGULUS TECHNOLOGIES' earnings results from bank balances, unhedged trade receivables and payables as well as unhedged intragroup receivables and payables denominated in USD. As of the balance sheet date, the net value of these items amounted to USD 3.9 million.

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 2020 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 1.6 million of these had been drawn down as of the end of the fiscal year. Furthermore, as of the balance sheet date there was a bank guarantee amounting to EUR 1.6 million for a prepayment that had been 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, 2019. The disclosures are made on the basis of the contractual, non-discounted payments.

Fiscal year ended December 31, 2019	**Payable on demand EUR m**	**Up to 3 months EUR m**	**3 to 12 months EUR m**	**1 to 5 years EUR m**	**More than 5 years EUR m**	**Total EUR m**
Bond repayment	0.0	0.0	0.0	12.0	0.0	12.0
Bond interest	0.0	0.4	0.4	0.0	0.0	0.8
Liabilities from loans	0.0	0.0	0.0	4.0	0..0	4.0
Other liabilities	1.7	2.4	5.0	0.0	0.0	9.1
Tradepayables	2.4	5.9	0.0	0.0	0.0	8.3
	4.1	**8.7**	**5.4**	**16.0**	**0.0**	**34.2**

Fiscal year ended December 31, 2018	**Payable on demand EUR m**	**Up to 3 months EUR m**	**3 to 12 months EUR m**	**1 to 5 years EUR m**	**More than 5 years EUR m**	**Total 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
Tradepayables	3.5	11.1	3.9	0.0	0.0	18.5
	5.1	**16.0**	**9.6**	**13.6**	**0.0**	**44.3**

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 since none of the interest-bearing liabilities are subject to a variable interest rate.

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 and the Group's receivables from construction contracts and other receivables. The Group uses 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 the current perspective, the Group assumes sufficient coverage of the receivables default risk.

On the basis of expected credit losses in accordance with IFRS 9, loss allowances are recognized for unsecured trade receivables according to the following probabilities of default. The effect on earning as of the end of the year amounted to EUR 0.0 million (previous year: EUR 0.0 million).

	Carrying amount EUR m	Estimated loss rate (weighted average)
Not overdue	4.3	0.00%
1-30 days overdue	1.3	0.10%
31-60 days overdue	0.1	0.63%
61-90 days overdue	0.1	0.89%
91-180 days overdue	0.0	1.50%
More than 180 days overdue	0.0	28.19%
Total	**5.8**	

The future probability of default was derived from historical credit losses. Due to its business model, the Group has a limited number of customers and can thus ensure that it can estimate the credit losses of its individual customers.
For more information on the application of the expected credit loss model, please refer to Notes 6, 8 and 9.

Significance of the credit risk:

The carrying amounts of the financial assets and receivables from construction contracts (contract assets) correspond to the maximum credit risk. The Group's maximum credit risk as of the reporting date is presented below:

	2019 EUR m	2018 EUR m
Cash and cash equivalents	14.8	13.5
Financial assets subject to restrictions on disposal	4.4	14.3
Trade receivables	5.8	6.1
Receivables from construction contracts	4.6	20.4
Other receivables	6.4	9.0
	36.0	63.3

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:

	2019 EUR m	2018 EUR m
Cash and cash equivalents	14.8	13.5
Financial assets subject to restrictions on disposal	4.4	14.3
Financial liabilities from bond issue	-12.8	-12.9
Liabilities from loans	-4.0	0.0
Net liquidity	2.4	14.9

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.

Note 38

Financial instruments

Fair values

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 2019 EUR m	Carrying amount 2018 EUR m	Fair value 2019 EUR m	Fair value 2018 EUR m
Financial assets					
Cash and cash equivalents**	AC	14.8	13.5	14.8	13.5
Financial assets subject to restrictions on disposal**	AC	4.4	14.3	4.4	14.3
Derivative financial instruments					
Hedging derivatives**	HD	-	-	-	-
Trade receivables**	AC	5.8	6.1	5.8	6.1
Other receivables	AC	6.4	9.0	6.4	9.0
Financial liabilities					
Bond*	AC	12.8	12.9	10.8	12.9
Liabilities from loans	AC	4.0	0.0	4.0	0.0
Derivative financial instruments					
Hedging derivative**	HD	-	-	-	-
Trade payables**	AC	8.3	18.5	8.3	18.5
Other liabilities	AC	9.1	11.3	9.1	11.3
Total	**AC**	**65.6**	**85.6**	**63.6**	**85.6**
Total	**HD**	**0.0**	**0.0**	**0.0**	**0.0**

Abbreviations:
AC: Financial assets and liabilities measured at amortized cost
HD: Hedging Derivatives

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, taking into account the expected credit loss model. The same applies for current liabilities from loans, trade receivables and other assets.

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.

* 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.

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, 2019 EUR m	Additions EUR m	Cash flows for interest and principal payments EUR m	As of December 31, 2019 EUR m
Bond	12.0	0.0	0.0	12.0
Interest	0.9	0.8	-0.9	0.8
Liabilities from loans	0.0	4.3	-0.3	4.0
	12.9	**5.1**	**-1.2**	**16.8**

Note 39

Headcount

In the fiscal year, the Company had an annual average of 354 (previous year: 327) permanent employees. The annual average distribution of employees (FTEs) by functional area in the fiscal year is presented below:

	2019	2018
Assembly, production and logistics	113	108
Development	90	82
Sales	107	98
Administration (excluding Executive Board members)	44	39
	354	**327**

The Group had 351 employees as of December 31, 2019 (previous year: 343).

Note 40

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:

	2019 EUR k
a) for the audit of the financial statements	365
b) other	19
Total	**384**

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.

Note 41

Corporate governance

The Executive Board and the Supervisory Board made the declaration required under section 161 AktG in December 2019 and have made it available to shareholders on a permanent basis on the Company's website at https://www.singulus.com/en/investor-relations/corporate-governance/declaration-of-conformity/2019-december.html.

Note 42

Publication

The consolidated financial statements of SINGULUS TECHNOLOGIES AG were released for publication by the Executive Board on March 23, 2020.

Kahl am Main, March 23, 2020

SINGULUS TECHNOLOGIES AG

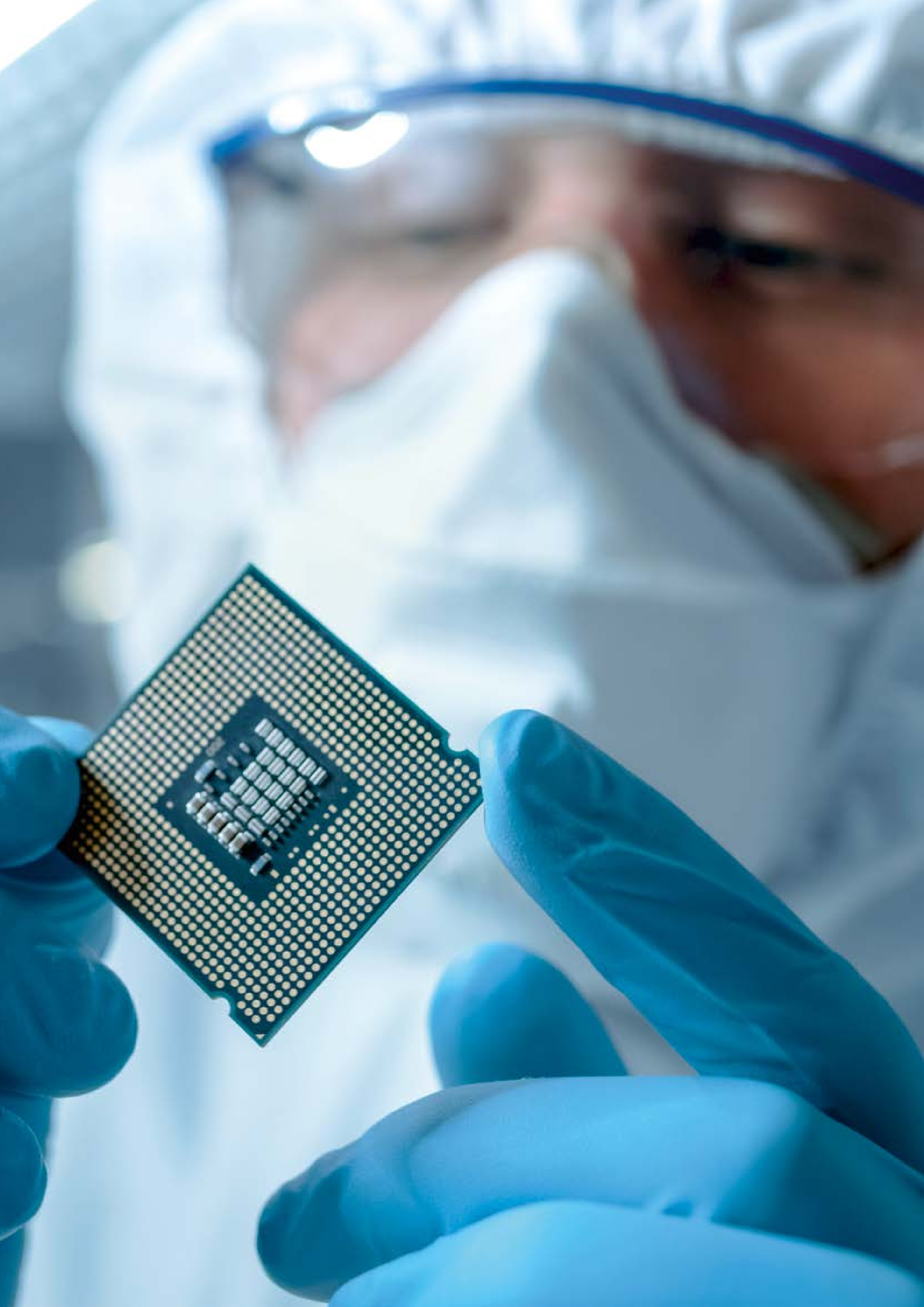
The Executive Board

Dr.-Ing. Stefan Rinck   Dipl.-Oec. Markus Ehret   Dr. rer. nat. Christian Strahberger

TIMARIS

SEMI-CONDUCTOR

The TIMARIS and ROTARIS system platforms address new applications in semiconductor technology, especially for mobile devices, applications in the automotive industry and medical technology.



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, 2019, 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, 2019, 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, 2019. We have not audited the content of those parts of the management report listed in the "Other Information" section of our auditor's report in accordance with the German legal requirements.

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, 2019, and of its financial performance for the financial year from January 1 to December 31, 2019, 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. Our audit opinion on the management report does not cover the content of those parts of the management report listed in the "Other Information" section of our auditor's report.

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 management report of the Singulus Group and Singulus AG. In those sections, the Executive Board disclosed that the Company would only be able to maintain sufficient liquidity in fiscal years 2020 and 2021 if the planning can be realized in the next two years. A key requirement in the planning is that the installments to be paid on the basis of major orders already contracted are actually made or not subject to a material delay. In addition, the Company needs to win another major order or a combination of equivalent alternative projects during the 2020 fiscal year. Furthermore, the successful and timely refinancing of the EUR 12.0 million corporate bond that falls due in July 2021 will also represent a key element of the Company's strategy for securing its liquidity.

As part of our audit, we thus identified as a significant risk the appropriateness of the going concern assumption and the appropriate presentation in the consolidated financial statements of the material uncertainty relating to the Company's ability to continue as a going concern, and performed the following audit procedures, among others:

Our first step was to analyze the Company's current liquidity situation. On that basis, in a second step we examined the liquidity planning for the period through December 31, 2021. This liquidity planning is based on the Group's current three-year business plan.

We began by gaining an understanding of the planning process and discussed the material planning assumptions with the persons responsible. Furthermore, we assessed the accuracy of the Group's prior forecasts by comparing the projections for prior fiscal years against the actual results, and analyzed deviations. Due to missed planning targets, we assessed in particular the key assumptions such as revenue development.

For this purpose, we used a risk-oriented sample to assess the order backlog as of December 31, 2019, and assessed changes in the order backlog up to the date of our auditor's report. We checked the planning for plausibility, which was based in particular on the findings of an external expert (restructuring consultant) whom the Company had engaged to prepare an opinion on the going concern assumption as of December 31, 2021. In this connection, the external expert conducted a detailed examination and assessment of the Company's planning. With the involvement of our internal KPMG restructuring specialists, we satisfied ourselves as to the propriety of the external expert's procedures and discussed in detail the findings identified in the report.

In his opinion on the going concern assumption dated March 10, 2020, the external expert listed four prerequisites, all of which need to be met to secure the Company's liquidity in the period through December 31, 2021. Of these four prerequisites, three were not (fully) met as of the date of our auditor's report.

In its written going concern forecast, the Executive Board subsequently outlined its reasons for assuming with reasonable certainty that these prerequisites will be met. We examined in detail the feasibility of those criteria on the basis of this written going concern forecast. To factor in the existing forecast uncertainty, we analyzed the effects of various scenarios on the Company's ability to continue as a going concern.

We do not provide a separate audit opinion on these matters.

The assumptions made by the Executive Board and the presentation in the notes to the consolidated financial statements and in the management report are credible.

Nevertheless, it bears noting that the Company's ability to continue as a going concern in line with its liquidity planning is dependent on its ability to realize the planning within the next two years. A key requirement in the planning is that the installments to be paid on the basis of major orders already contracted are actually made or not subject to a material delay. In addition, the Company needs to win another major order or a combination of equivalent alternative projects during the 2020 fiscal year. Furthermore, the successful and timely refinancing of the EUR 12.0 million corporate bond that falls due in July 2021 will also represent a key element of the Company's strategy for securing its liquidity. If the corresponding cash inflows are not realized as planned, the Company will not have sufficient cash and cash equivalents during the course of fiscal years 2020 and 2021 to satisfy its payment obligations in full. In this respect, the Company's and therefore the Group's ability to continue as a going concern is in jeopardy.

As presented in section A: "General" in the notes and the disclosures in the section entitled "Report on risks and opportunities" of the management report, 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, 2019. 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 4.14 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, 2019, goodwill amounted to EUR 6.7 million, or 95.7 % of Group equity and 8.0 % of total assets.

Goodwill relates solely to the "Solar" operating segment and is tested for impairment in accordance with IAS 36 at this level annually and when there are indications of impairment. 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, 2019. 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 per period were to fall beneath the target by more than 9.4 % or if the planned EBIT margin per period were to fall more than 2.6 percentage points below the target, this would result in goodwill being written down to the value in use.

The consolidated 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 an expert opinion 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 the Company's prior forecasts by comparing the projections for prior fiscal years 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.

Recognition of revenue from construction contracts

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 for the financial statements

Income from construction contracts amounted to EUR 50.7 million in fiscal year 2019. Receivables from construction contracts amounted to EUR 6.6 million as of December 31, 2019, taking into account prepayments received of EUR 4.6 million and liabilities from construction contracts.

The Singulus Group 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 the Singulus Group expects to be entitled.

The Singulus Group 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 addition, we focused our audit on assessing the executive directors' interpretation of the criteria for recognizing revenue over time. For this purpose, we assessed a risk-based sample of 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

The Singulus Group'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.

Capitalization of development costs
Please refer to note 4.6 to the consolidated financial statements for information on the accounting policies applied. Disclosures on the amount of capitalized development costs can be found in note 11 to the consolidated financial statements.

Risk for the financial statements
As of December 31, 2019, the capitalized development costs recognized under intangible assets amounted to EUR 9.5 million. Of this figure, EUR 4.6 million was attributable to developments capitalized for the first time in fiscal year 2019.

The Singulus Group recognizes assets arising from development at cost, provided the requirements of IAS 38.57 are met. In addition to the technical feasibility of completing the intangible asset, this includes the generation of probable future economic benefits from the intangible asset (IAS 38.57(d)) and the ability to measure reliably the expenditure attributable to the intangible asset during its development (IAS 38.57(f)).

The capitalized development costs are amortized over a period of five years from when the asset is made available for use.

At each balance sheet date, it must be reviewed whether there are any indications of impairment. If this is the case, the asset must be tested for impairment and, if necessary, an impairment charge recognized. Prior-period impairment charges must be reviewed annually to determine whether there are any indications that the impairment can be reversed.

The Singulus Group uses profitability calculations (project calculations) to demonstrate the condition under IAS 38.57(d). The respective net present value of the development project is calculated on the basis of specific budgeted figures for revenue/contribution margins attributable to the project, applying the company-specific discount rate.

Updated project calculations are used for the impairment tests and to calculate the recoverable amount of the capitalized development costs. Furthermore, an additional impairment test is performed at a higher level for own work capitalized allocated to the Solar operating segment as part of the goodwill impairment testing for the Solar operating segment.

Calculating the recoverable amount using project calculations involves estimates of future earnings contributions from the individual projects and is complex and depends on judgments. These include expected revenue and earnings contributions from the projects, and the discount rate used. There is a risk for the financial statements that the requirements for capitalization in accordance with IAS 38.57 are not met, and that impairment existing as of the end of the reporting period was not identified.d

Our audit approach
On the basis of our acquired understanding of the process, we have assessed the design, establishment and functionality of the internal controls identified in respect of the criteria for initial recognition of capitalized development costs and the respective impairment testing in subsequent periods.

For selected development costs capitalized for the first time, we verified the assumptions made by the executive directors with respect to fulfillment of the recognition criteria by inspecting the Company's internal records (e.g., approval reports, development department records, development approvals, project calculations) and/or discussed the individual projects with the relevant contacts at the Company (Executive Board, development department, controlling). We also reconciled the project calculations with the corresponding details in the overall business plan. Furthermore, we assessed the procedure used to determine the costs eligible for capitalization, and recalculated the amount of the development costs capitalized.

In testing the capitalized development costs for impairment, we compared the development of selected projects in the fiscal year with the prior-year planning, and reconciled the updated project calculations with the corresponding details in the overall business plan.

In addition, we assessed whether the impairment test carried out on goodwill in the Solar operating segment gave rise to indications of impairment with respect to the capitalized development costs allocated to that segment (please refer to our remarks on goodwill impairment).

Our conclusions
The Singulus Group's approach to capitalizing development costs is appropriate. The calculation of cost on initial capitalization of development costs and the calculation of the recoverable amount on subsequent measurement is appropriate.

Other Information
The executive directors and the supervisory board are responsible for the other information. The other information comprises the following non-audited parts of the management report:

- the statement on corporate governance included in the section entitled "Corporate governance declaration in accordance with § 289f and § 315d HGB",
- the disclosures not forming part of the management report that are marked as unaudited.

The other information comprises further the remaining parts of the annual report that are expected to be made available to us after the date of this auditor's report.

The other information does not include the consolidated financial statements, the audited disclosures in the management report and our corresponding auditor's report.

Our audit opinions on the consolidated 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 consolidated financial statements, with the audited disclosures in the management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

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 May 23, 2019. We were engaged by the Supervisory Board of Singulus AG on September 18, 2019. 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 Dirk Janz.

Frankfurt am Main, March 23, 2020

KPMG AG
Wirtschaftsprüfungsgesellschaft

gez. Janz
Wirtschaftsprüfer (German Public Auditor)

gez. Horn
Wirtschaftsprüfer (German Public Auditor)

SINGULUS TECHNOLOGIES AG

Balance Sheet as of 31. December 2019

Assets	12/31/2019		12/31/2018	
	EUR k	EUR K	EUR K	EUR K
A. Anlagevermögen				
I. Intangible fixed assets				
1. Purchased industrial and similar rights and assets	**1,567**		2,019	
2. Goodwill	**3,789**		6,630	
3. Prepayments	**79**		139	
		5,435		8,788
II. Tangible fixed assets				
1. Land, land rights and buildings, including buildings on third-party land	**7,121**		8,074	
2. Plant and machinery	**3,835**		1,883	
3. Other equipment, operating and office equipment	**670**		671	
4. Construction in process	**0**	**11,626**	592	11,220
III. Long-term financial assets				
Shares in affiliates		**6,583**		9,288
		23,644		**29,296**
B. Current assets				
I. Inventories				
1. Raw materials, consumables and supplies	**7,301**		14,080	
2. Work in process	**109,181**		114,376	
3. Prepayments	**4,645**		7,042	
4. Prepayments received	**-121,127**	**0**	-135,498	0
II. Receivables and other assets				
1. Trade receivables	**2,338**		1,414	
2. Receivables from affiliates	**2,874**		4,412	
3. Other assets	**789**	**6,001**	1,435	7,261
III. Cash and bank balances		**15,601**		24,248
		21,602		**31,509**
C. Prepaid expenses		**207**		**247**
D. Deficit not covered by equity		**47,459**		**29,907**
Total assets		**92,912**		**90,959**

Equity and liabilities

	12/31/2019		12/31/2018	
	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		**-76,052**		-58,500
IV. Deficit not covered by equity		**47,459**		29,907
		0		**0**
B. Provisions				
1. Provisions for pensions and similar obligations		**12,250**		**10,994**
2. Provisions for taxes		**643**		**405**
3. Other provisions		**11,476**		**12,870**
		24,369		**24,269**
C. Liabilities				
1. Bonds		**12,000**		12,000
2. Payments received on account of orders		**32,780**		32,400
3. Trade payables		**7,809**		10,102
4. Verbindlichkeiten gegenüber verbundenen Unternehmen		**6,311**		5,827
5. Other liabilities from financing contracts		**7,780**		4,923
6. Other liabilities - thereof in relation to taxes EUR 383k (PY: EUR 622k)		**1,859**		1,431
		68,539		**66,683**
D. Deferred items		**4**		**7**
Deferred items		**92,912**		**90,959**

SINGULUS TECHNOLOGIES AG

Income Statement for the Period from January 1 to December 31, 2019

	2019		2018	
	EUR k	EUR K	EUR K	EUR K
1. Revenue		**91.804**		23.833
2. Decrease) (PY: Increase) in work in progress		**-5.195**		52.330
3. Own costs capitalized		**428**		589
4. Other operating income - thereof currency translation gains EUR 34k (PY: EUR 205k) - thereof from unrealized currency effects EUR 34k (PY: EUR 205k)		**1.944**		4.171
5. Cost of materials				
a) Cost of raw materials, consumables and supplies and of purchased merchandise	**-34.635**		-37.501	
b) Cost of purchased services	**-15.773**	**-50.408**	-19.643	-57.144
6. Personnel expenses				
a) Wages and salaries	**-21.831**		-24.746	
b) Social security, pension and other benefit costs - thereof for old-age pensions EUR 1.760k (PY: EUR 1.425k)	**-6.127**	**-27.958**	-5.371	-30.117
7. Amortization or depreciation of intangible and tangible fixed assets		**-5.381**		-5.187
8. Sonstige betriebliche Aufwendungen - davon Aufwendungen aus der Währungsumrechnung TEUR 135 (i. Vj. TEUR 24) - davon aus unrealisierten Währungseffekten TEUR 135 (i. Vj. TEUR 24)		**-16.535**		-16.149
9. Income from long-term loans - thereof from affiliates EUR 214k (PY: EUR 203k)		**214**		203
10. Other interest and similar income - thereof income from discounting EUR 45k (PY: EUR 31k)		**45**		31
11. Write-downs of financial assets		**-3.474**		-150
12. Interest and similar expenses - thereof to affiliates EUR 722k (PY: EUR 684k) - thereof expenses from interest EUR 452k (PY: EUR 381k)		**-2.772**		-2.856
13. Tax income		**-232**		-300
14. Earnings after taxes		**-17.520**		**-30.746**
15. Other taxes		**-32**		-36
16. Net loss for the year		**-17.552**		**-30.782**
17. Loss carryforward		**-58.500**		-27.718
18. Balance sheet loss		**-76.052**		**-58.500**

Declaration of the Executive Board
pursuant to Art. 297 Para. 2 S. 4, Art. 315 Para. 1 S. 5 HGB

We assert to our best knowledge and belief that pursuant to the applied principles of correct consolidated reporting the consolidated financial accounts pursuant to IFRS reflect the true situation of the asset, financial and earnings situation of the SINGULUS TECHNOLOGIES Group, that the combined status report of the SINGULUS TECHNOLOGIES AG as well as of the SINGULUS TECHNOLOGIES Group depicts the course of business including the business events and the situation of the SINGULUS TECHNOLOGIES Group in a way reflecting the true situation and that the material opportunities and risks of the foreseeable development of the Group have been described.

Kahl am Main, March 23, 2020

SINGULUS TECHNOLOGIES AG
The Executive Board

SINGULUS TECHNOLOGIES

Corporate Calendar 2020

February/March 2020

Quiet Period
Ahead of the report of the quarterly and annual results SINGULUS TECHNOLOGIES only conducts limited communication with the capital market. 02/20 to 03/23

March 2020

Annual Press Conference 03/24

March 2020

Analysts' conference 03/24

May 2020

Interim Report Q1 2020 05/12

May 2020

Annual General Meeting
10 am
DVFA Deutsche Vereinigung für Finanzanalyse und Asset Management GmbH
Mainzer Landstrasse 37, 60329 Frankfurt am Main 05/20

June/Juli 2020

Equity Forum Spring Conference
Frankfurt am Main 06/30 to 07/02

July/August

Quiet Period
Ahead of the report of the quarterly and annual results SINGULUS TECHNOLOGIES only conducts limited communication with the capital market. 07/24 to 08/11

August 2020

Half-year report 2020 08/12

August 2020

Bankhaus Lampe Deutschlandkonferenz
Baden-Baden 08/18 to 08/19

November 2020

Interim Report Q3 2020 11/13

November 2020

Deutsches Eigenkapitalforum
Frankfurt am Main 11/16 to 11/18

Consolidated Key Figures
2015-2019

		2019	2018	2017	2016[1]	2015
Sales (gross)	EUR m	79.4	127.5	91.2	68.8	83.7
Sales (net)	EUR m	77.9	125.9	90.0	67.6	82.3
Sales Germany	%	6.8	8.7	11.8	11.6	7.2
Sales Rest of Europe	%	20.3	11.7	7.6	12.6	9.1
Sales Americas	%	17.0	11.5	18.3	35.6	30.7
Sales Asia	%	55.5	67.5	61.6	37.9	51.4
Sales Africa/Australia	%	0.4	0.6	0.7	2.3	1.6
Order intake	EUR m	39.7	86.8	88.0	152.1	96.3
Order backlog (Dec. 31)	EUR m	26.3	66.0	106.7	109.9	26.6
EBIT	EUR m	-8.2	6.8	-1.2	-17.4	-34.5
EBIT margin	%	-10.5	5.4	-1.3	-25.7	-41.9
EBITDA	EUR m	-4.1	9.1	0.7	-14.1	-27.0
Earnings before taxes	EUR m	-10.3	4.8	-2.8	20.4	-43.3
Net profit/loss	EUR m	-11.3	0.8	-3.2	20.2	-43.4
Operating cash flow	EUR m	-3.2	2.5	-14.1	14.1	-10.5
Operating cash flow in % of net sales		-4.1	2.0	-15.7	20.9	-12.8
Property, plant & equipment	EUR m	15.6	10.7	4.9	4.8	5.3
Goodwill	EUR m	6.7	6.7	6.7	6.7	6.7
Current assets	EUR m	51.5	80.4	72.4	80.1	71.1
Shareholders' equity	EUR m	7.0	19.7	20.2	13.3	-21.5
Equity ratio	%	8.4	18.9	23.0	14.0	-23.3
Balance sheet total	EUR m	83.7	104.1	87.9	95.1	92.1
Research & development expenditures	EUR m	13.4	13.4	8.6	12.3	11.2
(in % of net sales)		17.2	10.6	9.6	18.2	13.6
Employees (Dec. 31)		351	343	315	318	335
Number of shares, outstanding		8,896,527	8,896,527	8,896,527	8,087,752	305,814
Stock price at year-end	€	5.20	9.15	14.89	4.21	44.80
Earnings per share	€	-1.27	0.09	-0.39	5.48	-141.92

[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
Studio Krause GmbH & Co. KG

Concept and Content
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Text
Bernhard Krause
SINGULUS TECHNOLOGIES

Photography
Marc Krause
Shutterstock Stock Photo Agency

Artwork/DTP
Studio Krause GmbH & Co. KG
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Publication
March 31, 2020

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