manz

ANNUAL REPORT 2019

Manz AG at a glance

2020 Financial Calendar

May 5, 2020	Publication of the 1st quarter 2020 quarterly report
June 30, 2020	Annual General Meeting 2020
0August 4, 2020	Publication of the 2020 semi-annual report
November 3, 2020	Publication of the 3rd quarter 2020 quarterly report

Overview of Consolidated Net Profits

(in EUR million)	2019	2018	Change in %
Revenues	264.4	296.9	–11.0
Total operating revenues	259.5	299.4	–13.3
EBITDA	9.2	9.5	–3.1
EBITDA margin (in %)	3.6	3.2	–0.4 pp
EBIT	–7.6	–3.4	–125.3
EBIT margin (in %)	–2.9	–1.1	–1.8 pp
EBT	–9.9	–4.9	–102.4
Consolidated net profit	–11.2	–8.0	–40.2
Earnings per share (in EUR)	–1.43	–1.00	–42.4
Cash flow from operating activities	–24.1	14.9	–261.8
Cash flow from investing activities	6.3	–15.2	+141.8
Cash flow from financing activities	10.3	3.8	+172.7

	Dec. 31. 2019	Dec. 31. 2018	Change in %
Total assets	341.5	345.7	–1.2
Shareholders' equity	132.4	150.0	–11.7
Equity ratio (in %)	38.8	43.4	–4.6 pp
Financial liabilities	57.9	43.3	33.7
Liquid funds	44.0	51.0	–13.7
Net debt	13.9	–7.7	208.7

THE YEAR 2019

APRIL 4

World's largest manufacturer of LCD flat panel displays places order for display production lines

MAY 7

Manz presents the modular production platform of the BLA series for manufacturing laminated and stacked lithium-ion cells at Battery Show Europe

JULY 1

Jürgen Knie, former Managing Director of Manz Slovakia s.r.o., is appointed Chief Operating Officer

AUGUST 22

Manz wins follow-up orders for LightAssembly assembly platform from a long-standing client in the electronics industry

OCTOBER 29

Manz expands successful partnership with leading battery manufacturer and wins follow-up order for equipment to manufacture wound lithium-ion battery cells

DECEMBER 4

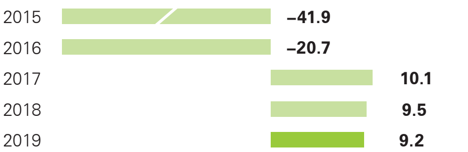
Research partner NICE Solar Energy achieves new world record efficiency for CIGS thin-film modules with 17.6 percent

Revenues

(in EUR million)

EBITDA

(in EUR million)



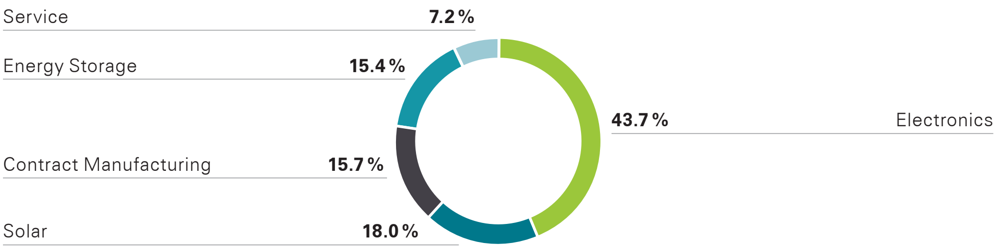
EBIT

(in EUR million)

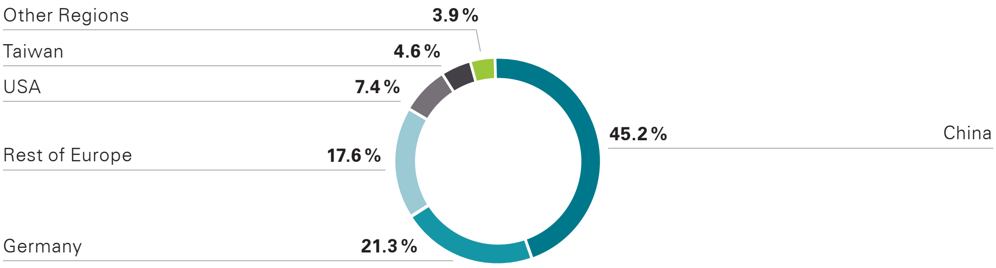
EBIT by Business Segments 2019

(in EUR million)

Revenues by Business Segment January 1 to December 31, 2019



Revenue Distribution by Region January 1 to December 31, 2019



MANZ AG MISSION STATEMENT

With many years of expertise in automation, laser processing, vision and metrology, wet chemistry, and roll-to-roll processes, we as a high-tech equipment manufacturing company offer manufacturers and their suppliers innovative production solutions in the areas of photovoltaics, electronics and lithium-ion battery technology. Our product portfolio includes both customer-specific developments and single machines and modules that can be linked together to form individual system solutions. We are involved in customer projects from a very early stage, and thus contribute significantly to the success of our customers with high quality, needs-oriented solutions.

In addition to the CIGS*fab* turnkey production line in the Solar segment, we focus specifically on the automotive industry in the Electronics and Energy Storage segments. With our efficient and competitive lithium-ion battery manufacturing equipment – from cell to the finished pack – and automated assembly lines for cell contacting systems, we are an important industry partner for the conversion from the classic to the electric powertrain.

WE ACT IN A SUSTAINABLE MANNER. IN ALL AREAS. TO ALL CHALLENGES.

Opening up opportunities. Enabling further education. Accepting social responsibility. Pushing innovation. Conserving resources.

Sustainability is more than just a slogan at Manz. We have therefore decided to put the spotlight on sustainability also on this year's Annual Report and appropriately summarize our diverse activities around environmental issues, employee concerns, social concerns, respect for human rights and fight against corruption and bribery in a separate sustainability report.

This report with interesting facts and backgrounds concerning the key topics for us can be found on our website.

For the sake of better readability, we consistently avoid gender-differentiating formulations (e.g. "his/her" or "he/she"). The corresponding terms apply to all genders for the purposes of equal rights. This is done solely for editorial purposes and does not imply a judgment of any kind.

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HISTORY OF MANZ AG

1987 Company founded by Dieter Manz

Shipped the first automation solution for the FPD industry to Asia **1994**

2000 Shipped the first automation system for a completely automated production line for crystalline solar cells

Entered the thin-film market with equipment for mechanically scribing solar panels **2005**

2006 IPO on the Entry Standard market of the Frankfurt Stock Exchange

Entered the market for lithium-ion batteries **2009**

2012 Acquired the CIGS innovation line from Würth Solar
Opened facility for solar and display production systems in Suzhou, China

Acquisition of mechanical engineering division of Kemet Electronics Italy (formerly Arcotronics) for enlargement of technology portfolio in Battery division **2014**

2016 Shanghai Electric becomes strategic anchor investor of Manz AG

Manz expands successful partnership with leading battery manufacturer **2019**

TO OUR SHAREHOLDERS

LETTER FROM THE MANAGING BOARD

Dear Shareholders,

For Manz, 2019 was a year full of high points and lows. We started the year with a sense of optimism and full order books, convinced that we would be able to continue the positive trend from the prior year. In particular, our expectations were based on good prospects of receiving large orders in the E-Mobility segment as well as the successful completion of solar projects planned for 2019 with expectations of additional CIGS follow-on orders. However, we experienced significant project delays in the Solar segment on the part of customers during the course of the year. In addition, major investments in establishment of a European battery production in the E-Mobility segment were postponed. This resulted in the need to adjust our original forecast. This adjusted forecast was accomplished with the achieved revenue of EUR 264.4 million, which corresponds to a decline in revenue of 11 %, along with an EBITDA margin of 3.6 % and an EBIT of EUR –7.6 million. We were able to report improvements in earnings over the previous year in individual segments, although overall earnings continued to be negatively affected by the lower revenue level at the same order-related cost basis.

Irrespective of this, given current order levels of some EUR 170 million, we are confident that growth opportunities and prospects in the core segments remain positive on the whole, even if the effects of the corona pandemic remain difficult to forecast. For example, prevailing conditions could postpone project completion for CIGS orders in the Solar segment into the 2021 financial year. In the event of the continued spread of the corona pandemic with accompanying economic disruptions, it is possible that this could result in uncertainties in the markets, causing customers to postpone scheduled investments.

The recent growth in orders in the Energy Storage segment bolsters our sense of optimism. The increasingly positive growth in orders experienced during the course of 2019, with a total value of some EUR 75 million, underscores the potential presented by consumer electronics and electronic devices in the segment Energy Storage. In addition, we were able to acquire German company Akasol AG, a pioneer in the field of battery systems for hybrid and fully electric utility vehicles, as a customer. We were also able to strengthen our market position by entering into a strategic cooperation with Shenzhen Yinghe Technology Co. Ltd. Like Manz, Yinghe is engaged in research and development, production and sales of intelligent automation solutions for the manufacture of lithium-ion battery cells. As part of this cooperation, Manz and Yinghe will jointly offer their customers the best equipment technology from their respective product portfolios in the form of a licensing arrangement.

As a high-tech equipment manufacturer, we operate in the realm of highly-dynamic, forward-looking industries that constantly pose both technological and organizational challenges for

us. For example, if we consider the Electronics segment in 2020, we have seen saturation of demand for production capacity in the LCD market as a result of significant expansion of capacities in China. Despite this situation, we nevertheless believe that we have the ability to make advances in other industries thanks to our innovative technology portfolio and our favorable market position: For example, in the case of assembly solutions for manufacturing components for electric power trains or in the area of fan-out panel level packaging for the semiconductor industry.

We believe that we will be able to generate profitable growth in 2020. We expect a slight to moderate increase in revenues compared to 2019 and a positive EBIT margin in the low single-digit percentage range.

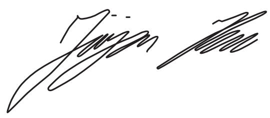
This forecast considers the currently assessable effects of the corona pandemic on the economic development of our company. However, it is currently not possible to make any reliable assumptions about the future reactions of our customers or about possible further restrictions – including political restrictions. Against the background of these considerable uncertainties and the highly dynamic nature of the situation, the economic effects on the Group and the forecast cannot be adequately determined at present. The further development of the Corona crisis and its possible effects on the further development of the business are therefore constantly evaluated by the Management Board.

We would like to thank all our employees for their great commitment and inventiveness that contribute to our status as an innovative German high-tech equipment manufacturer. We also thank you, our shareholders, for your support. Come with us on our journey towards sustainable, profitable growth.

Reutlingen, March, 2020

The Managing Board





Martin Drasch   Manfred Hochleitner   Jürgen Knie

STAND ARDS PROCE SSES CON TROLS

Compliance with our values, along with standards of conduct and ethics that we have defined on a Group-wide basis in our Code of Conduct and our Business Partner Code of Conduct, is critical for our long-term success. As a result, we evaluate compliance with these standards twice a year as part of our risk management system. In this manner, we first of all protect our company from potential legal and economic risks and, second, from potential negative impacts on our reputation.

Code of Conduct

The Code of Conduct represents our Group-wide code of conduct. It is provided to every employee all of which in turn commit to comply with its terms. It describes our values and principles of conduct and covers topics such as the careful use of resources, the protection of trade and business secrets as well as how to act with moral and ethical integrity.

We ensure that legal violations are avoided and that standards of conduct and internal company guidelines are observed by means of our Group-wide compliance system. A central compliance contact person is available at all times to answer any questions concerning their practical implementation. In addition, employee training courses are conducted annually by outside compliance experts.

Compliance

Whistleblower
Any suspected or actual violation of the law or our corporate policies must be reported. We have set up an anonymous whistleblower system for our employees and business partners for this purpose that ensures that all reports are handled confidentially.

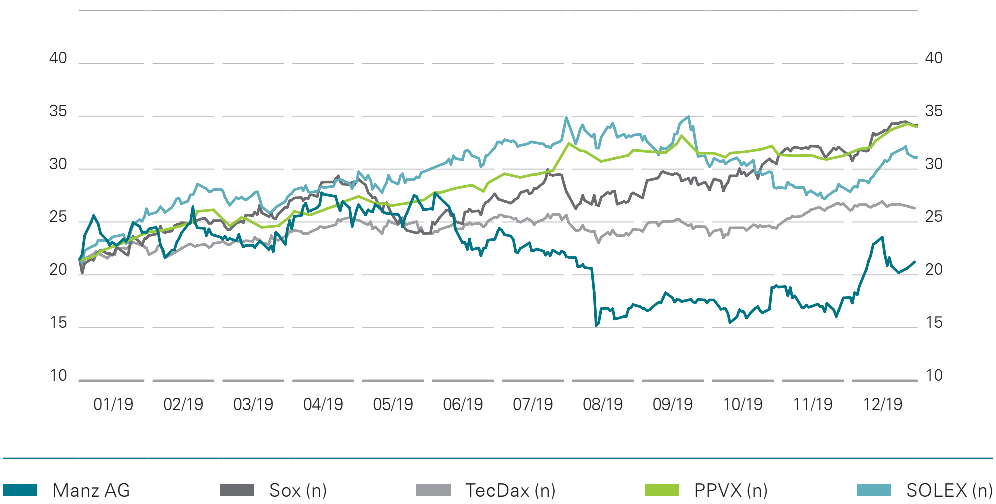
Values

MANZ AG STOCK

CHANGE IN SHARE PRICE

The Manz AG share began the financial year 2019 on January 2, 2019 at a price of EUR 21.65. Until the middle of the year, pricing for the share was largely oriented to the benchmark indices and reached its annual high of EUR 27.95 on April 17, 2019. Shares began to decline in June, falling to their annual low on August 14, 2019 closing at EUR 15.40. In December, the Manz AG share recovered sharply, closing at EUR 21.40 on December 30, 2019, corresponding to a market capitalization of approximately EUR 165.7 million. At the start of 2020, shares moved within a range of EUR 20 to 23.

Chart Showing Manz AG Stock (XETRA, in EUR)



Stock Key Data and Performance Indicators

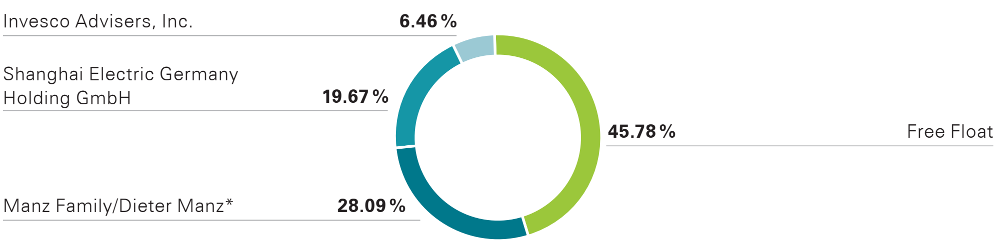
German Securities Identification Number	A0JQ5U
International Securities Identification Number (ISIN)	DE000A0JQ5U3
Ticker Symbol	M5Z
Trading segment	Regulated market (Prime Standard)
Share types	Registered, common, no-par value bearer shares, each with a proportionate value of EUR 1.00 of capital stock
Capital Stock	**EUR 7,744,088**
IPO	September 22, 2006
Opening Price	EUR 19.00
Share price at the beginning of the reporting period*	EUR 21.65
Share price as at December 31, 2019*	EUR 21.40
Percentage change in the reporting period	**–1.15 %**
Period high	EUR 27.95
Period low	EUR 15.40

* Respectively the closing prices of the XETRA trading system of Deutsche Börse AG

SHAREHOLDER STRUCTURE

As of December 31, 2019, Manz AG had a free float of 45.78 % and a broad shareholder base. Dieter Manz, founder and member of the Supervisory Board of Manz AG, and his family hold a total of 28.09 % of the shares in the company; Shanghai Electric Germany Holding GmbH held 19.67 % of the company's shares as of December 31, 2019. Investment company Invesco Advisers, Inc. holds 6.46 % of the shares.

Shareholder Structure



* Dieter Manz 12.32 %, Ulrike Manz 5.44 %, Stephan Manz 5.16 %, Laura Manz 5.16 %

INVESTOR RELATIONS

Manz AG attaches great importance to active dialogue with shareholders, institutional investors, analysts and financial journalists, and has maintained a continuous, proactive exchange of information in the financial year 2019. The regular and prompt publication of reports relevant to the company underscores its goal of providing comprehensive information on the company's developments. In doing so, Manz AG, with its listing in the Prime Standard Segment of the Frankfurt Stock Exchange, fully complies with the highest transparency requirements. Manz AG strives to exceed this standard.

In addition to the legal obligations, Manz AG participated in nine capital market conferences and three road shows in Germany and abroad in 2019. Manz published 14 corporate news and press releases as well as one ad-hoc release. Manz AG contributes to the greatest possible transparency in its capital market communications by regularly offering conference calls with a web cast for the publication of financial reports and audio displays as an online offer on the company website.

In the course of financial year 2019, Manz AG was covered by the following institutions:

- Bankhaus Lampe
- Warburg Research
- Pareto Securities
- montega AG
- MainFirst Bank AG

ANNUAL GENERAL MEETING

Manz AG's Annual General Meeting for the financial year 2019 was held on July 2, 2019 in the FILharmonie in Filderstadt. A total of 209 shareholders attended and heard the Managing Board report on the development of the business in 2018 and the outlook for the financial year 2019. At the Annual General Meeting, a clear majority of all of the represented shareholders approved the 6 agenda items. A total of 60.35 % of capital stock with voting rights was represented (previous year: 59.29 %). Detailed voting results can be found at any time on the company's website www.manz.com under Investor Relations/annual general meeting.

2020 FINANCIAL CALENDAR

May 5, 2020	Publication of the 1st quarter 2020 quarterly report
June 30, 2020	Annual General Meeting 2020
August 4, 2020	Publication of the 2020 semi-annual report
November 3, 2020	Publication of the 3rd quarter 2020 quarterly report

REPORT OF THE SUPERVISORY BOARD

Dear shareholders,

During the reporting year 2019, the Supervisory Board also advised the Managing Board on a regular basis with regard to the company's management and continuously monitored its business activities. In doing so, we meticulously carried out the duties incumbent upon us by law, the company's Articles of Incorporation, and our rules of procedure, satisfying ourselves that the Managing Board's work was legally compliant, orderly, and appropriate. The Supervisory Board discussed the organization of the company with the Managing Board. The Managing and Supervisory Boards have also continuously agreed on the strategic alignment of the company. The Supervisory Board was involved in all significant decisions regarding the company and the Group.

The Managing and Supervisory Boards remained in close and intensive contact throughout the 2019 financial year. In this context, the Managing Board complied with its duty to provide information as set out by law and the rules of procedure, notifying us in a regular, detailed and timely manner in both written and oral form about all measures and events relevant to the company. The Managing Board also discussed deviations in the business performance from the plans and goals that had been set up and gave reasons for the deviations. As a result, the Supervisory Board was always kept informed with respect to the company's business situation and performance, the company's intended business policy, and the short-, medium- and long-term planning, including investment, financial and human resources planning, as well as the company's profitability and organizational measures, and the Group's overall situation. In addition, information regarding the company's risks and risk management activities was regularly provided.

The members of the Supervisory Board always had sufficient opportunity to critically discuss the reports presented and the resolutions proposed by the Managing Board, and to present their own suggestions. In particular, we intensively discussed all business transactions significant to the company based on the Managing Board reports, and carefully examined them for plausibility. The Supervisory Board approved individual transactions to the extent necessary for the Managing Board under the law, the Articles of Incorporation or the rules of procedure.

In addition to the Supervisory Board meetings, the chairman of the Supervisory Board was also in regular contact with the Managing Board and obtained information concerning the current development of the business situation and significant business transactions.

Focus of Deliberations in the Supervisory Board

The financial year 2019 was another very challenging year for all divisions of Manz AG. The focal point for advisory support and controls on the part of the Supervisory Board remained the strategic further development of the company in its various segments to achieve the objective of a sustained profitable business model, improvement of the business situation, financial performance and cash flows, capacity utilization and risk management. In addition to reporting to the Managing Board on strategic and operational issues, the discussions in the Supervisory Board were dominated by the large CIGS orders in the Solar business segment and the developments in the other business segments. Furthermore, the Supervisory Board approved individual transactions during the reporting year to the extent necessary for the Managing Board under the law, the Articles of Incorporation or the rules of procedure.

During the reporting year, the Supervisory Board held a total of five meetings, in which all members of the Supervisory Board participated. Members of the Managing Board also attended Supervisory Board meetings, insofar as these meetings did not include discussions of those members' personal matters. In addition, 6 written resolutions were adopted by the Supervisory Board.

The following topics were the focus of deliberations at the Supervisory Board meetings and resolutions:

At its first regular meeting on February 28, 2019, the Supervisory Board discussed the preliminary numbers for the 2018 financial year based on the Managing Board's reporting, along with the current business developments and incoming orders as well as the planning activities in the various business segments. We also discussed the company's financial position in this context, particularly regarding the development of the segments and their contributions to the result. In addition, the Managing Board presented strategic measures in order to bolster the structural development of the Manz Group with the aim of improving competitiveness, developing new markets and achieving sustained profitability. As part of this process, the intent is to secure the successes in restructuring and optimization efforts (Manz 2.0) on a long-term basis as part of a continual improvement project. Other topics included the development of major CIGS orders in the Solar segment, the commissioning of the internal audit department and the appointment of a member of the Managing Board for Operations. On the basis of the deliberations by the Supervisory Board, the Board subsequently decided, by way of a written resolution of June 6, 2019, to appoint Mr. Jürgen Knie as a member of the Managing Board. In connection with the strengthening of the Managing Board by the new COO, the Managing Board presented the new schedule of responsibilities.

At the meeting on March 26, 2019, the Managing Board reported on current business developments, including the orders on hand, and planning for the individual segments in the current financial year 2019. The focal points of this meeting were the annual financial statements as of December 31, 2018, the management report, the consolidated financial statements as of December 31, 2018, and the consolidated management report, as well as the audit report of the auditor. Following a discussion with the auditors, we approved the consolidated financial statements and adopted the financial statements for the finan-

cial year 2018. The Supervisory Board also discussed and approved the report from the Supervisory Board to the annual general meeting, the Corporate Governance Statement and the Corporate Governance Report for the financial year 2018. The draft resolutions for the 2019 Manz AG Annual General Meeting were discussed at the meeting and were adopted by the Supervisory Board on May 6, 2019, by written ballot. The Managing Board discussed the main risks at the Manz Group on the basis of the annual risk report.

The meeting on May 6, 2019, focused on the report by the Managing Board regarding the end of the first quarter of 2019 and a discussion of the current business and financial situation. In this context, we once more discussed the development of the various segments and their profitability, as well as measures designed to retain expertise carriers and managers in the company. Other topics included the liquidity and financial situation, incoming orders, proposed resolutions for the Annual General Meeting and the appointment a new member of the Managing Board for Operations. Finally, the Supervisory Board reviewed the compensation system for the Managing Board, particularly for the current financial year and the new Manz Performance Share Plan 2019 proposed at the Annual General Meeting, and decided to continue the current version of the compensation system in a written resolution dated October 14, 2019.

At the meeting on August 12, 2019, the Managing Board reported on the interim financial statements for the first half of 2019, the net assets, financial position and results of operations as well as the business prospects in the individual segments and their sales activities. In this context, the Board addressed the Energy Storage and Electronics segments in particular. In this regard, the Managing Board reported that slowdowns in incoming orders have occurred within the two segments In addition, the Managing Board focused particularly on the status of production for two CIGS production lines. Other topics included the liquidity and financial situation, the Managing Board's report on the ongoing internal audit and opportunity trends in the segments.

At the last meeting for the reporting year on October 24, 2019, the Managing Board reported on the business developments in the first three quarters, the liquidity and earnings situation, as well as the business outlook for the entire year. In this context, we discussed in detail the planning and profitability in the individual segments, taking into account the incoming orders. The Supervisory Board discussed the financial and liquidity planning of the Manz Group and the related risk management based on the Managing Board report. Finally, the Managing Board reported on the results of the internal audit, along with associated recommendations and actions, as well as the current status of major projects. In addition, the Managing Board presented the measures to simplify the Group structure, to refine the product portfolio and to strengthen the sales structure.

On the basis of the audit of the compliance with the recommendations of the German Corporate Governance Code by Manz AG, the Supervisory Board together with the Managing Board adopted the statement of compliance pursuant to section 161 of the German Stock Corporation Act (AktG) on November 26, 2019.

Work in the Economic Committee of the Supervisory Board

Manz AG's Economic Committee, which consists of two members, is to assume certain supervisory tasks and prepare the deliberations and draft resolutions of the Supervisory Board, particularly in the areas of accounting, auditing, finance including planning, Managing Board matters, corporate governance and compliance. Prof. Dr. med. Heiko Aurenz and Dieter Manz are members of the committee.

The Economic Committee met nine times during the reporting year. Regular discussion topics included the current business situation, liquidity and earnings situation, including orders on hand, the status of major projects as well as strategic measures for the further structural development of the Manz Group. In addition, it also discussed the annual and consolidated financial statements for December 31, 2018, the Corporate Governance Statement and the Corporate Governance Report for the financial year 2018, the proposed resolutions for the regular 2019 Manz AG Annual General Meeting and the annual risk report. It was also concerned with the composition of the Managing Board and prepared the decisions of the Supervisory Board, also with regard to the Managing Board contracts and remuneration. The Economic Committee and the Managing Board also discussed measures to reduce costs, potential cooperation partners in the Energy Storage segment, the planning for the financial year 2019 and the filling of executive positions within the company.

Conflicts of Interest

There are no conflicts of interest on the part of members of the Managing or Supervisory Boards that must be disclosed to the Supervisory Board, nor does the handling thereof have to be disclosed at the Annual General Meeting.

German Corporate Governance Code

In the financial year 2019, the Managing and Supervisory Boards once again dealt in detail with the further development of corporate governance and the recommendations of the German Corporate Governance Code. The Managing and Supervisory Boards issued a joint statement of compliance pursuant to section 161 Stock Corporation Act (AktG), according to which the company complies and will comply with the recommendations in the Code with only one exception. The statement of compliance from November 2019 is permanently available to the public on the Manz AG website.

Annual and consolidated financial statements for the financial year 2019

The annual and consolidated financial statements as of December 31, 2019, prepared by the Managing Board, and the management report and consolidated management report for the financial year 2019 were audited by the company's and Group's auditor, Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, and given an unqualified auditor's opinion.

The documents mentioned above were provided to us by the auditor. The Supervisory Board examined the annual financial statements and the management report, the consolidated financial statements and the consolidated management report including the auditor's reports submitted to the members of the Supervisory Board prior to the meeting. The financial statements shown above were discussed in detail at the meeting of the Economic Committee on February 6, 2020 as part of a preliminary examination. At the meeting of the Economic Committee and the annual accounts meeting of the Supervisory Board on March 24, 2020, the Managing Board explained the financial statements of Manz AG and the Group comprehensively in the presence of the auditors. The auditor reported on the scope, focus and significant findings in its audit, focusing in particular on the states of affairs particularly important to the audit and the audit procedures performed in the annual accounts meeting of the Supervisory Board. The auditor also provided information about its findings regarding the internal controlling and risk management systems in relation to the accounting process. The Economic Committee also reported to the Supervisory Board on its own audit of Manz AG's financial reporting and consolidated financial statements, its discussions with the Managing Board and the auditor, and its monitoring of the accounting process.

After examining and discussing the annual financial statements and management report, the consolidated financial statements and the consolidated management report as well as the non-financial consolidated statement along with the auditors' reports, the Supervisory Board approved the result of the audit conducted by the auditors.

No objections were raised based on the definitive finding of the Supervisory Board's review. In a resolution dated March 24, 2020, the Supervisory Board approved Manz AG's consolidated financial statements and adopted the annual financial statements as of December 31, 2019.

Changes in the Managing and Supervisory Boards

On July 1, 2019, Jürgen Knie joined the Managing Board of Manz AG to assume responsibility over Operations. He thus succeeds the current Chairman of the Management Board Martin Drasch, who held the position until September 30, 2018.

The composition of the Supervisory Board remained unchanged in the financial year 2019.

Thanks and Acknowledgment

The Supervisory Board wishes to thank the Managing Board for the constantly open and constructive collaboration in the past financial year. We would also like to express our gratitude to our employees for the commitment they have demonstrated during the financial year 2019. Last but not least, we would like to thank you, our valued shareholders, for the trust you have placed in us and for your willingness to shape the future of Manz AG together with us.

Reutlingen, March 24, 2020

Prof. Dr. Heiko Aurenz
Chairman of the Supervisory Board

FUTURE ETHICS PLANNING

Sustainable action means for us: Taking responsibility. For our colleagues, partners, and customers. For society. For the environment. That is why equal opportunity and opportunities for development, careful treatment of resources, and unconditional respect for human rights throughout the supply and production chain are the foundation of everything we do. A foundation that is not negotiable.

Process Management

The open door culture is crucial to us in dealing with our stakeholders and shareholders. We maintain a continuous dialogue with employees, customers, suppliers or investors, analysts, and banks. We involve our employees in the further development of our company through regular surveys on current topics.

For the present and future generations, we commit ourselves to the careful use of our resources. This is an essential factor in our daily work – for example, by reducing emissions year after year and continuously increasing our share of self-produced solar power.

Environment

Society

Open up opportunities where there are hardly any: We assume social responsibility, for example through the annual support of social institutions in the Neckar-Alb region.

GROUP MANAGEMENT REPORT

BASIC GROUP INFORMATION

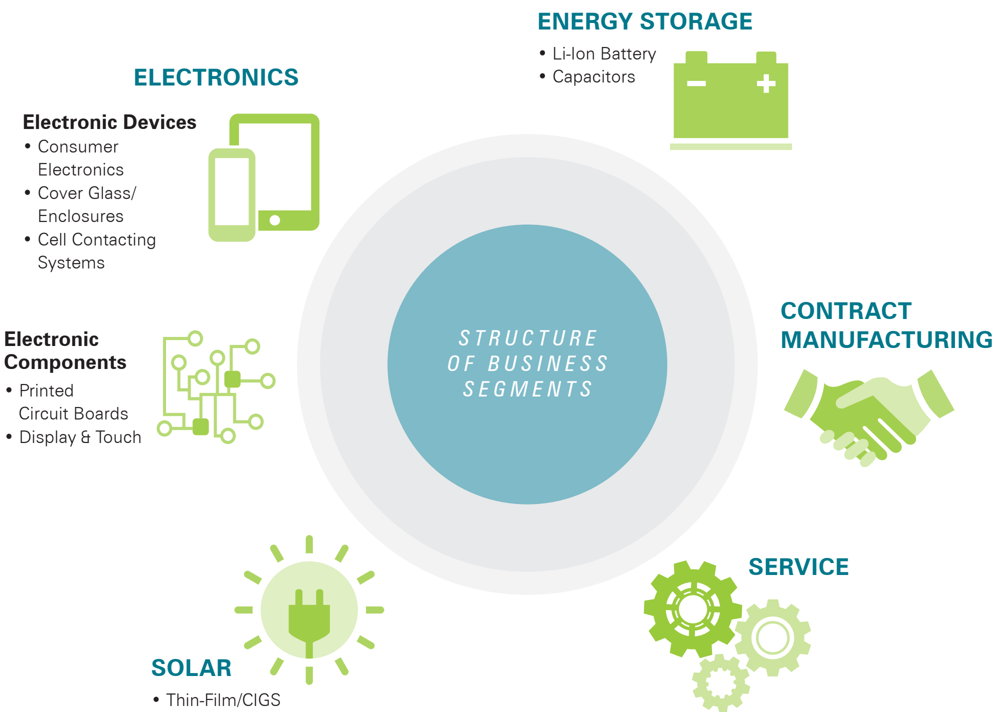
BUSINESS MODEL AND STRATEGY

Founded in 1987, Manz AG is a global high-tech equipment manufacturing company. Its business activities consist of five segments: Solar, Electronics, Energy Storage, Contract Manufacturing, and Service. With many years of expertise in automation, laser processing, vision and metrology, wet chemistry and roll-to-roll processes, the company offers manufacturers and their suppliers in various industries a broad portfolio of products and solutions. In addition to customized production solutions, this also includes individual machines and modules that can be linked together to form complete, individual system solutions. The company also offers a comprehensive range of services around Manz AG's core technological competencies: From simulation and factory planning to process and prototype development, customer training and after-sales service. Manz AG is a development partner for industrial companies, and in this role helps to support new technologies to market maturity.

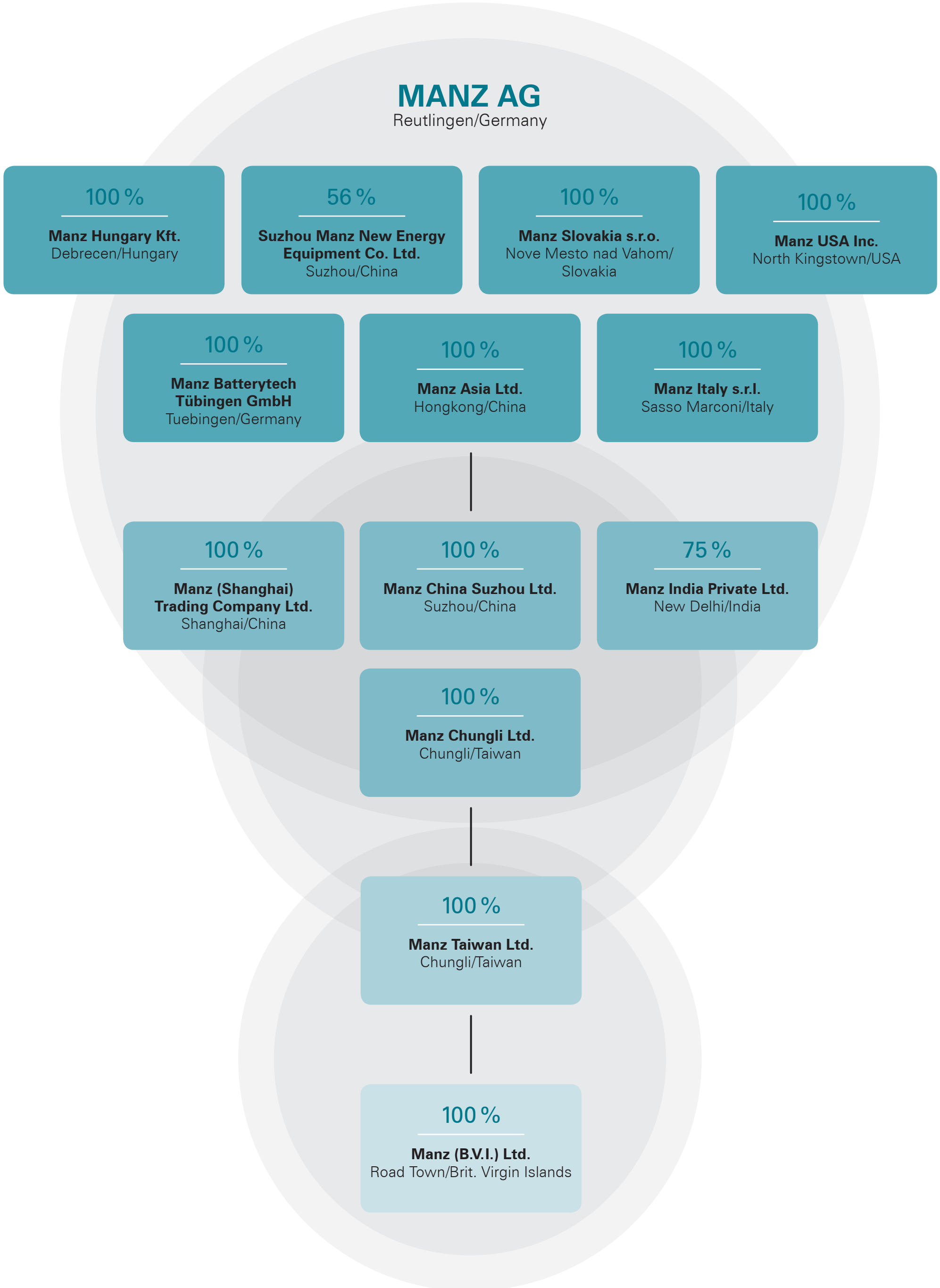
The core of the company's strategy is to make use of the technology portfolio across all industries and regions. This cross-segment exchange of technology and expertise not only offers a high level of flexibility in the realization of individual customer solutions, but also the possibility of generating internal synergies and making economic use of them.

Manz AG maintains business relationships with manufacturers and their suppliers, particularly in the solar, consumer electronics, displays and printed circuit board, automotive and energy storage sectors. As a high-tech equipment manufacturing company, Manz operates internationally and has development and production sites in Germany, Slovakia, Hungary, Italy, China and Taiwan as well as further sales and service branches in India and the US. Manz AG has long-standing customer relationships and a strong presence, above all in the Asian region, which is a key region for the company's target industries: around 600 employees at its locations in Taiwan and China, comprising some 40 % of Manz employees in this region, offer excellent access to this growth market.

Manz AG's goal is to achieve a sustained increase in competitiveness with earnings-oriented growth. The strategic cooperation in the solar sector with the Shanghai Electric Group and China Energy Investment Corporation Limited (formerly the "Shenhua Group") represents a significant stability factor in the solar segment. With a strong focus on the development, production and marketing of modules and fully linked, individual system solutions and equipment, as well as the expansion of the worldwide customer base, we intend to increase our competitiveness and profitability. The cross-regional use of technological expertise and its standardization beyond industry boundaries significantly reduces development effort and time and continuously creates new unique selling points creating opportunities for additional possible applications. Growth opportunities likewise arise from individual development projects for customer-specific pilot lines with corresponding scaling potential. In addition, continuous targeted organizational, procedural and process improvements in all areas of the Group are intended to contribute to further increasing the competitiveness and profitability of the company.



GROUP STRUCTURE AND HOLDINGS



Locations and Employees

LOCATIONS

1 **Germany**
Reutlingen, Tübingen
Production, Sales & Service

2 **Hungary**
Debrecen
Production & Service

3 **Slovakia**
Nove Mesto nad Vahom
Production, Sales & Service

4 **Italy**
Sasso Marconi
Production, Sales & Service

5 **USA**
North Kingstown, Cupertino
Sales & Service

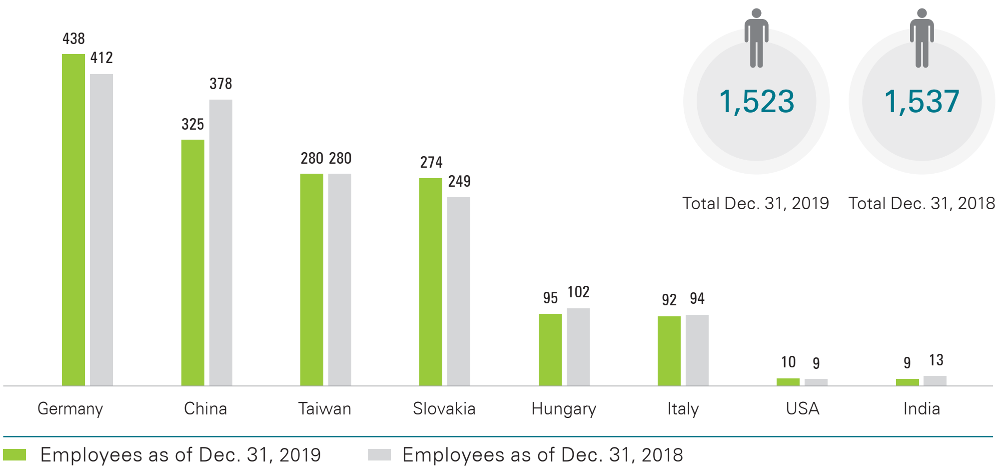
6 **Taiwan**
Chungli
Production, Sales & Service

7 **China**
Shanghai, Suzhou, Hongkong
Production, Sales & Service

8 **India**
New Delhi
Sales & Service

LOCATIONS AND EMPLOYEES

Employees by country



CONTROL SYSTEM AND PERFORMANCE INDICATORS

At the Group level, Manz AG is organized for the purpose of corporate management by product and service segments and consists of the five business segments: Solar, Electronics, Energy Storage, Contract Manufacturing, and Service. In order to decide on the allocation of resources and control the profitability of the divisions, they are monitored separately by management. Details of the course of business are provided to the entire Managing Board through regular reports and management meetings. As a result, it is possible for the respective Managing Board to control the company in a timely manner.

Principles and goals of the financial management

Manz AG's key performance indicators for corporate development are revenues, earnings before interest, taxes, depreciation and amortization (EBITDA), earnings before interest and taxes (EBIT), and the equity ratio.

The Managing Board has defined the following target values for the long term (five years):

- Revenue: an annual average revenue increase of between 10 % and 20 % is forecasted.
- EBIT margin: after application of IFRS 16, a target margin of 10 % is defined for the EBIT margin from 2019.
- EBITDA margin: a target of more than 15 % is defined for the EBITDA margin after the application of IFRS 16 in 2019.
- Equity ratio: the target corridor for shareholders' equity as a percentage of total assets is between 40 % and 60 %.

- Gearing: Manz AG has defined gearing as a ratio of net financial liabilities (short-term and long-term bank liabilities less cash and cash equivalents) to equity before minority interests of less than 50 % as a target.

Performance indicators

in %	2019	2018[1]	2017[1]
Revenue (in EUR million)	264.4	296.9	266.1
EBITDA margin	3.6	3.2	3.8
EBIT margin	–2.9	–1.1	0.2
Equity ratio	38.8	43.4	48.0
Gearing	10.5	–5.1	–5.3

1 Adjustment after restatement due to deconsolidation of a company

Manz AG's financial management system is centrally organized. To minimize risks and leverage Group-wide optimization potential, the company bundles decisions on financing, cash investments and currency hedges of subsidiaries within the Group. In this context, the company follows value-based financing principles in order to secure its liquidity at all times, limit financial risks and optimize the cost of capital. In addition, Manz strives for a well-balanced debt maturity profile. Further information on the management of the individual financial risks can be found in the notes to the consolidated financial statements under "Reporting on financial instruments".

RESEARCH AND DEVELOPMENT

Research and development also played an important role in financial year 2019 for Manz as a high-tech equipment manufacturer. With over 500 engineers, technicians and scientists at its development sites, Manz AG focuses on the development of manufacturing, assembly and handling technologies, integrated into modularized individual machines, facilities and linked system solutions. The Manz AG comprehensive "R&D Council" is intended to enable internal cross-segment integration of competencies.

Manz maintains numerous cooperative arrangements with research institutions, universities and colleges. The Center for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW) is Manz AG's cooperation and development partner of many years. ZSW in Stuttgart, among others, conducts photovoltaic materials research and development for thin-film technologies and supports Manz in the further development of CIGS technology in the context of strategic cooperation with Shanghai Electric Group and China Energy Investment Corporation Limited. Development activities for CIGS thin-film solar technology were significantly intensified at the beginning of 2017 through cooperation with the Chinese partners as well as the participation in the research and development company NICE PV Research

Ltd. The efficiency world record for CIGS thin-film solar modules set by NICE Solar Energy GmbH (formerly Manz CIGS Technology GmbH) on Manz's equipment in December 2019 is impressive proof of this. The aim remains to accelerate the further development of CIGS technology and thus to increase the potential it offers for further increases in efficiency and for reducing manufacturing costs. In addition to the existing innovation/production facility for CIGS thin-film solar modules at Schwäbisch Hall, a further research/production facility with a capacity of 44 MW will therefore be built in Beijing.

ZSW is also one of 19 partners that joined forces with Manz AG within the lithium-ion batteries (KLiB) competence network at the end of 2017 to form a consortium. The research and development of processes for large-scale production of lithium-ion battery cells began at the start of 2018 as part of the Fab4Lib project. Other project partners include BMZ Battery Assembly Group GmbH, SGL CARBON GmbH, Umicore AG & Co. KG, Siemens AG, ThyssenKrupp System Engineering GmbH and RWTH Aachen University. The 18-month project is funded by the Federal Government with around EUR 5.5 million. The aim of the project is to define or develop the basis for a competitive production line with an annual capacity of 6 GWh. This modular line is then to be set up where the corresponding capacity is required. Fab4Lib combines necessary competencies in order to completely plan German mass battery cell production and to realize cell production in a timely and cost-effective manner. The KomVar project (Competitive variant production for lithium batteries), which is sponsored by the German Federal Ministry of Economics and Energy (BMWi), is pursuing a similar goal. As a contractual partner, Manz AG is contributing its in-depth knowledge in the area of equipment and a production system. Plans call for developing and setting up a flexibly shaped demonstrator cell production line for high-quality lithium-ion battery cells in small to medium volumes within the scope of the two-year project. At the EU level, Manz AG, in addition to Saft S.A., Solvay S.A. and Siemens AG, is also a member of the "EU Battery Alliance", a complementary initiative to the "Horizon 2020" EU program.

Manz Taiwan Ltd., in cooperation with the Industrial Technology Research Institute (ITRI), the largest research institute in Taiwan, is developing further improvements in wet-chemical processes as well as innovative production solutions in the flat panel display environment. Manz Taiwan Ltd. and ITRI also cooperate in the fan-out panel-level packaging (FOPLP) technology for the semiconductor industry. Manz is working in this area with PEP Innovation PTE Ltd., a Singapore-based technology company, to develop production solutions for the packaging of microchips. Microchips are manufactured on the basis of silicon wafers, to which chip manufacturers transfer the layout of circuits by means of photo lithography. Chips are then encapsulated with an epoxy compound after the production process to protect them and facilitate contacting. This process is called packaging. The latest packaging process, fan-out panel-level packaging, plays a decisive role in realizing the increasing miniaturization, that is, ever smaller components with ever higher performance capability. In addition to a significant reduction in volume, thickness, weight and manufacturing cost of the packaging while doubling the number of pins, the process also has positive effects on the thermal conductivity and speed of the components.

Overall, Manz AG has a ratio of 7.3 % for research and capitalized development services for the reporting period (previous year: 5.0 %). The increase is due to an absolute increase in development expenses and a simultaneous decrease in total output. The research expense ratio amounts to 1.9 % (previous year: 1.6 %) when only the capitalized development costs are considered. Investments in R&D amounting to EUR 18.9 million were well above the previous year's level of EUR 14.9 million.

Scheduled depreciation on activated development services of EUR 4.7 million (previous year: EUR 3.3 million) was charged in the reporting period 2019. The company will also continue to place a clear emphasis on R&D activities in future. Manz AG strives for an annual rate of R&D to sales of 5 % on average in order to provide sustained and long-term consolidation of its technological positioning and its innovations in the relevant target markets.

SUSTAINABILITY REPORT AND NON-FINANCIAL STATEMENT

Manz AG is required to prepare a sustainability report or to submit a non-financial statement in accordance with the European Corporate Social Responsibility Directive and the provisions of sections 315b and 315c in conjunction with section 289c HGB (German Commercial Code). The non-financial consolidated statement is published separately from the consolidated management report in a separate sustainability report. For this purpose, the Managing Board of Manz AG has decided to use the German Sustainability Code (DNK) as a framework. The sustainability report and the non-financial Group statement can be viewed on our website www.manz.com in the "Investor Relations" section under "Publications" and in the "Company" section under the heading "Sustainability".

OPINIONFORUMDIALOGUE

The identification of the various interest groups (stakeholders and shareholders) and their involvement in a continuous dialogue is a central pillar in the sustainability process of Manz AG. This dialogue not only ensures maximum transparency in our dealings. By cultivating it in all directions and offering suitable platforms, we ensure that complex ideas and interests find their place and positively influence the further development of the company.

Feedback

Let's talk about it

We regularly consult our employees on current topics and include this feedback in decision-making processes. Individual feedback discussions on a regular basis are also a matter of course for us.

Discussion

Insights that help everyone

The "Innovation Forum" is an online discussion platform that is open to all employees. The focus is on key topics such as new technologies, markets, target groups, and cost savings. But general suggestions for improvement can be made at any time

Communication on all sides

We provide regular and timely information on all company-relevant developments. In doing so, we seek a direct dialogue with investors, analysts, and banks using the usual communication channels – in addition to print media, social media, telephone conferences, and webcasts, this also includes regular participation in capital market conferences and roadshows in Germany and abroad.

Information

BUSINESS REPORT

GENERAL ECONOMIC ENVIRONMENT AND INDUSTRY-SPECIFIC CONDITIONS

Economic market environment

Economic sentiment darkened significantly in the course of 2019. According to the Kiel Institute for the World Economy (IfW), the global economy expanded at 3.0 %. The more expansive US interest rate policy had a slightly stabilizing effect. However, increasing trade conflicts worldwide lead to inhibited growth. According to information from the IfW, the economy in the US itself continued to slow in 2019, registering growth of 2.3 % (previous year: 2.9 %). The European economy was likewise weaker with growth of 1.2 % (previous year: 1.9 %). The economic upswing in Germany also lost momentum, with growth of 0.5 % in 2019 (previous year: 1.5 %). According to IfW, the Chinese economy grew by 6.2 % in 2019, slightly less than in 2018 (6.6 %).

Engineering industry

The Mechanical Engineering Industry Association (VDMA) expects no growth for 2019. In China, the industry reported growth of 4 % in 2019 after growth of 8 % in 2018. In Germany, mechanical engineering companies experienced a decline in growth of –2 %, significantly below the previous year's 3 %. At –5 %, German mechanical engineering companies for assembly and handling solutions also performed noticeably worse than in the previous year (9 %). Incoming orders for German mechanical engineering companies also reflected the general downturn in the period from January to November, reporting a decline of –9 % compared to the same period last year.

Core segment sectors

Revenue expectations in the photovoltaics industry were significantly worse in September 2019 than they had been in April in the last VDMA survey. Whereas a year-on-year decline in sales of –6.8 % for 2019 had already been anticipated in April, estimated decline in revenues was –15.9 % in September. Among the industry's most important target markets, there was a slight decline in the Asian market and an increase in the Western industrialized nations. In terms of shares in revenue, Asia accounted for 67 % (April 2019: 70 %), followed by Germany with 13 % (April 2019: 8 %) and North America with 11 % (April 2019: 7 %). IHS Markit expected newly installed PV capacity of 125 GW for 2019, compared to 104 GW in the previous year. This corresponds to a 20.2 % increase.

The mood dampener in the VDMA business climate issue was less pronounced among German manufacturers of electronics production equipment. After the surveyed companies had expected 1.0 % growth in April 2019, the anticipated revenue growth in October 2019 was 6.4 %. Companies in the Asian sector constituted the most important buyer markets, accounting for 32.6 % of the total revenue (April 2019: 44.2 %), followed by Germany with 28.7 % (April 2019: 22.9 %) and the rest of Europe with 21.9 % of the revenue (April 2019: 18.2 %). According to IHS Markit, global revenue of LCD and AMOLED displays fell by 3.3 % in 2019 compared to the previous year. This development is justified by a significant oversupply and the resulting drop in prices, which weighed down the revenue figures. The market share of LCD displays was 76.8 %, corresponding to a 23.2 % market share for AMOLED displays. By contrast, global printed circuit board revenue grew slightly by 2.9 % in 2019, albeit slower than in the previous year (3.8 %), according to Prismark.

In the field of electric mobility, there was a slowdown in the two largest sales markets, China and the United States, in 2019. While the registration figures for hybrid plug-ins and purely electrical vehicles in China fell by –4 % compared to 2018, new registrations in the US were down by even –10 %. This was due to a reduction in purchasing incentives as well as the economic downturn caused by the trade disputes between China and the US. A completely different picture can be seen in Germany, where the number of new registrations rose by more than 50 % compared to 2018. This means that Germany, behind China and the US, had the highest number of new registrations worldwide in 2019.

A decline in growth momentum was expected by the VDMA in the area of battery production equipment. The companies in this industry expected sales growth in the September VDMA survey for 2019 of 4 %, significantly less than in March 2019 (12 %). The critical market here is Europe with a 32.4 % share of revenue (March 2019: 26.0 %), followed closely by the Asian market (31.9 %) which had still been the leader in March 2019 at 37.1 %. Germany is in third place with a revenue share of 19.7 % (March 2019: 23.7 %). Electromobility also drove global demand for lithium-ion batteries to some 200 GW in 2019, much higher than in 2018 (160 to 170 GW), as estimated by the Fraunhofer Institute.

ANALYSIS OF THE FINANCIAL, LIQUIDITY AND EARNINGS POSITION OF THE GROUP

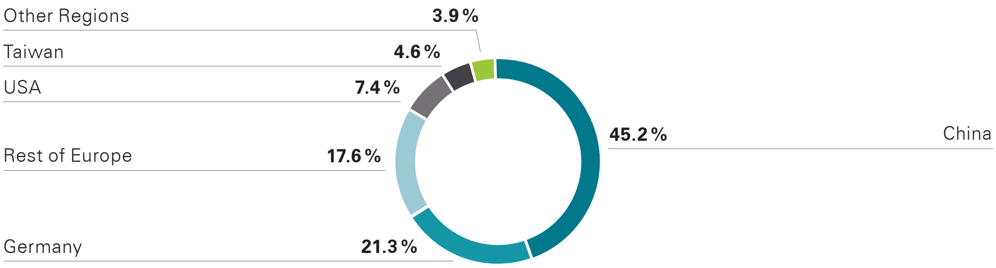
Earnings position

Based on consolidated revenues of EUR 296.9 million in financial year 2018, Manz AG's Managing Board had forecast an increase in revenues of 10–14 % and an EBIT margin in the low single-digit postitive percentage range for 2019. In light of economic growth in the market segments Manz serves, hesitation from customers as well as isolated project delays caused by customers, which led to a time lag in revenues and earnings, the Managing Board adjusted its forecast in the second half of 2019. From now on, the Managing Board expected a positive EBITDA margin in the lower single-digit percentage range and a negative EBIT in the upper single-digit million range for the financial year 2019, with revenue slightly below the previous year's level.

This adjusted forecast was achieved with the achieved revenue of EUR 264.4 million (previous year EUR 296.9 million), which corresponds to a decline in revenue of 11.0 %. In terms of earnings, this forecast was also met with an EBITDA margin of 3.6 % and EBIT of EUR –7.6 million.

Changes in inventories of finished goods and work in progress totaled EUR –9.7 million (previous year: EUR –2.4 million) due to the sale of machines in stock. Own work capitalized amounted to EUR 4.9 million and thus amounted to the level of the previous year (previous year: EUR 4.9 million). This resulted in a total output of EUR 259.5 million (previous year: EUR 299.4 million).

Revenue Distribution by Region January 1 to December 31, 2019



At EUR 9.7 million, other operating income was up on the previous year's figure of EUR 6.7 million and among others comprises subsidies amounting to EUR 3.3 million (previous year: EUR 0.5 million) in connection with research activities at subsidiaries in Italy and Taiwan.

The material costs amounted to EUR 160.8 million (previous year: EUR 182.5 million) and are in line with the lower level of revenues. The material cost ratio thus remained almost constant at 62.0 % (previous year: 61.0 %). Personnel expenses rose slightly to EUR 71.6 million (previous year: EUR 70.2 million). Due to the lower revenues level, the personnel expenses ratio increased from 23.5 % in the previous year to 27.6 %. At EUR 36.4 million, other operating expenses were below the previous year's figure of EUR 41.3 million. The reason for the decline relates to the first-time application of IFRS 16 and a decline in research-related project-specific expenses that are primarily related to CIGS contracts. Earnings before interest, taxes, depreciation and amortization (EBITDA) amounted to EUR 9.2 million (previous year: EUR 9.5 million) and were characterized, among other things, by the decline in other operating expenses in connection with the first-time application of IFRS 16, with a positive effect in the amount of roughly EUR 4.3 million. This corresponds to an EBITDA margin of 3.6 % after 3.2 % in the previous year. Depreciation of EUR 16.8 million was above the previous year's level of EUR 12.9 million. The year-on-year increase is largely due to depreciation and amortization from rights of use from leasing agreements reported for the first time in connection with the first-time application of IFRS 16. Earnings before interest and taxes (EBIT) of EUR –7.6 million reflect the business development and are below the previous year's figure of EUR –3.4 million.

Financial income amounted to EUR 94,000 in 2019 (previous year: EUR 96,000), while financial expenses rose from EUR 1.6 million in 2018 to EUR 2.4 million in 2019 due to the increase in working capital financing and the discounting of leasing liabilities in accordance with the IFRS 16, from EUR 1.6 million in 2018 to EUR 2.4 million in 2019. Earnings before taxes were consequently EUR –9.9 million (previous year: EUR –4.9 million). Income taxes of EUR 1.3 million were incurred (previous year: EUR 3.1 million). The consolidated net profit was therefore EUR –11.2 million (previous year: EUR –8.0 million). This results in earnings per share of EUR –1.43 for 2019 (previous year: EUR –1.00) based on a weighted average of 7,744,088 shares.

Financial position of the Group

The balance sheet total as at December 31, 2019, fell only slightly from EUR 345.7 million to EUR 341.5 million compared to the balance sheet date of the previous year. Equity dropped from EUR 150.0 million on December 31, 2018 to EUR 132.4 million at the end of 2019. This development is largely due to the negative consolidated net profit. This resulted in an equity ratio of 38.8 % (December 31, 2018: 43.4 %).

Non-current liabilities rose from EUR 15.7 million at the end of 2018 to EUR 29.3 million at the end of 2019. This increase is due to the first-time reporting of non-current financial liabilities from lease in the amount of EUR 12.3 million in accordance with IFRS 16. At EUR 179.8 million as of December 31, 2019, current liabilities remained at the level of the previous year (December 31, 2018: EUR 180.0 million). At EUR 57.2 million as of the 2019 balance sheet date, current financial liabilities were higher than the EUR 42.2 million as of December 31, 2018. The reason for the increase is an increased demand for financing working capital in project management. Interest expenses also rose accordingly compared with the previous year. Trade payables decreased to EUR 57.4 million as of December 31, 2019 due to the advanced processing of the CIGS order, compared to EUR 69.7 million as of the prior-year reporting date. At EUR 35.7 million, contractual liabilities were sharply below from the previous year's figure (December 31, 2018: EUR 42.3 million) due to the progressive adjustment of larger orders. The decrease in other current provisions to EUR 10.7 million (December 31, 2018: EUR 12.0 million) was due to a decrease in personnel-related provisions; other current liabilities were nearly unchanged at of the end of 2019 compared to the prior year, amounting to EUR 14.8 million (December 31, 2018: EUR 13.5 million).

On the asset side, long-term assets increased to EUR 144.8 million as of December 31, 2019 (December 31, 2018: EUR 128.7 million). Intangible assets decreased slightly to EUR 60.8 million (December 31, 2018: EUR 62.3 million). At EUR 44.0 million, property, plant and equipment was significantly higher than the comparable figure of EUR 29.2 million at the end of 2018. The increase is attributable to the first-time application of IFRS 16. In summary, the shares in associated companies and financial assets of EUR 33.1 million were slightly above the previous year's figure of EUR 31.8 million. Financial assets decreased to EUR 11.7 million (December 31, 2018: EUR 20.0 million). The reason for this was a normal devaluation of the share in NICE PV Research Ltd. Deferred taxes amounted to

EUR 5.7 million as at December 31, 2019 and were thus above the level of EUR 4.9 million as at December 31, 2018. These are offset by shares in affiliated companies accounted for using the equity method. Their increase by EUR 8.8 million (December 31, 2018: EUR –2.6 million) was essentially due to positive net income for the period attributable to Talus Manufacturing Ltd.

Current assets totaled EUR 196.7 million as of December 31, 2019 (December 31, 2018: EUR 217.0 million). Inventories decreased to EUR 35.7 million at the end of 2019 (December 31, 2018: EUR 49.4 million). This development was due to the sale of machines from inventories as well as necessary allowances on inventories. Trade receivables also rose to EUR 42.8 million as of the reporting date, compared with EUR 30.1 million at year-end 2018, primarily due to the increased volume of business in Asia. In addition, contract assets of EUR 59.9 million are also reported (December 31, 2018: EUR 51.0 million). The reason for the increase is the progressing project course. As of December 31, 2019, restricted cash in the amount of EUR 6.8 million (previous year: EUR 21.0 million) was reported under other current assets. Cash and cash equivalents amounted to EUR 44.0 million as of the 2019 reporting date (December 31, 2018: EUR 51.0 million).

Liquidity position of the Group

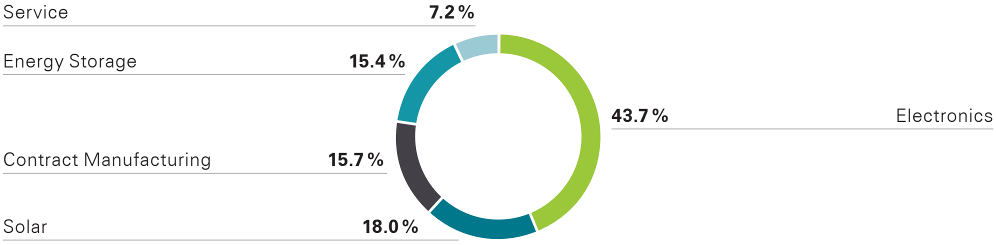
The starting point for the cash flow from operating activities of EUR –24.1 million (previous year: EUR 14.9 million) is the negative consolidated net profit of EUR –11.2 million (previous year: EUR –8.0 million). In comparison with the previous year, the cash flow from operating activities is largely determined by a decrease in inventories, trade payables and contractual liabilities totaling EUR 19.6 million. Cash flow from investing activities amounted to EUR 6.3 million in the financial year 2019 (previous year: EUR –15.2 million). The inflow of funds mainly results from released funds in the amount of EUR 14.2 million, which were not available in the previous year. In the previous year, these funds were committed as cash deposits of guarantees.

Cash flow from financing activities in the financial year 2019 amounted to EUR 10.3 million (previous year: EUR 3.8 million) and resulted on the one hand from an increase in current financial liabilities for temporary project funding of a large project in Asia, while at the same time fewer non-current financial liabilities were repaid than in the previous year. Considering the exchange rate variations, Manz AG had financial assets of EUR 44.0 million as of December 31, 2019 (December 31, 2018: EUR 51.0 million). The unused cash and guarantee credit lines with banks amounted to EUR 18.0 million as of the 2019 balance sheet date (December 31, 2018: EUR 14.6 million).

With bank balances of EUR 44.0 million (previous year: EUR 51.0 million), net financial liabilities (short and long-term bank liabilities, less cash and cash equivalents) amounted to EUR 13.9 million (previous year: EUR –7.7 million). Concerning additional statements regarding liquidity and the types of financing in the Group, please refer to the liquidity and financing risks in the Risk Report.

SEGMENT REPORT

Revenues by Business Segment January 1 to December 31, 2019



Solar

In the Solar segment, Manz AG, in cooperation with its Chinese partners Shanghai Electric Group Co. Ltd. and China Energy Investment Corporation Limited, focuses on the sale and further development of production solutions for the manufacture of CIGS thin-film solar modules. In the medium term, CIGS thin-film solar modules offer the potential for significantly lower production costs per watt compared to crystalline solar cells and thus a potential competitive advantage.

In financial year 2019, revenues in the Solar segment of EUR 47.5 million fell short of the original expectations of a 30–40 % decline in revenue in comparison to 2018. This corresponds to 18.0 % of consolidated sales (previous year: EUR 105.0 million or 35.4 %). Furthermore, the segment is characterized by the implementation of CIGS major orders in China. However, there were delays on the part of the customer in the overall project, because the buildings for the CIGS*fab* and the CIGS*lab* were not completed in a timely manner. The building for the large-scale equipment has now been completed to such an extent that Manz AG started moving the equipment in the first quarter of 2020. As a result of the postponed realization of revenues, segment EBIT totaled EUR –2.0 million compared to EUR 14.4 million last year.

Electronics

Manz AG offers its customers production, assembly and handling systems for the production of LCD, OLED and AMOLED flat screen displays, touch sensors, printed circuit boards and chip carriers, as well as smart phones, tablet computers, laptops, wearables and other consumer electronics in the Electronics segment. In addition, the automated assembly solutions provide "tier 1 and tier 2 companies" in the automotive industry with transformation solutions from the classic drive train to the future e-drive train. Here, the company would like to profit from the increasing digitization and automation of production and final assembly. With its production facilities in Taiwan and China, Manz AG is active in the key regions of its target industries.

Revenues in the Electronics segment in 2019 totaled EUR 115.7 million, significantly up on the previous year's figure of EUR 93.9 million, due to the processing of a major order for production equipment for display manufacturing. This corresponds to a 43.7 % share of consolidated revenue (previous year: 31.6 %). However, the sales growth of around 23 % was below the forecast range of 30–40 % in comparison to 2018. At EUR –7.6 million, the segment EBIT showed a further improvement over the previous year (EUR –12.0 million) but remained well below the target of a balanced EBIT. The result was negatively impacted by the lower revenues level and negative effects from the processing of a large individual order.

Energy Storage

In the Energy Storage segment, Manz AG offers production, assembly and handling equipment for lithium-ion battery cells, modules, and packs, as well as for capacitors. The product portfolio encompasses production solutions for lithium-ion batteries and (super) capacitors in the areas of electronic end devices such as tablet PCs, mobile phones and laptops, battery-powered power tools and gardening equipment, stationary energy storage for private households and large-scale photovoltaic systems as well as in the focus market e-mobility.

The Energy Storage segment achieved revenue growth of 15.0 % to EUR 40.7 million (previous year: EUR 35.4 million). This corresponds to a revenue contribution to the Group of 15.4 % after 11.9 % in the previous year. The increase in revenue reflects the successful expansion of the customer base. However, due to the reluctance to invest in the e-mobility sector and the later than anticipated receipt of orders in the second half of the year from customers in the consumer electronics industry, significant revenues could no longer be generated in 2019. Accordingly, the forecast revenue increase of 70–90 % could not be achieved. At EUR –11.3 million, the goal of a balanced segment EBIT was also clearly not achieved.

Contract Manufacturing

Operating activities in the Contract Manufacturing segment are carried out primarily by the locations in Slovakia and Hungary as well as by an associated company at the Taiwan location. Among other things, equipment for the semiconductor industry is built there. Furthermore, at these locations Manz AG is also a high-tech partner for equipment manufacturing, parts manufacturing and assembly work for clients from a wide range of industries.

In 2019, revenues in this segment totaled EUR 41.5 million; this represents a 15.7 % share of consolidated revenues (previous year: EUR 43.1 million or 14.5 %). The targeted sales growth of 15–20 % could not be achieved. At EUR 11.5 million (previous year: EUR 1.2 million), the EBIT target of a margin in the high single-digit percentage range was exceeded. This includes the result of Talus Manufacturing Ltd., with EUR 8.8 million (previous year: EUR –2.6 million), which is included in the Manz Group's group of consolidated companies as an associated company. Talus Manufacturing Ltd. acts as a global center for reconditioning and modernizing existing machines and assembling new machines for a leading US manufacturer of equipment for the semiconductor industry. In the previous year, EBIT was significantly affected by a negative special effect of EUR 4.7 million resulting from the cable fire at the Taiwan location.

Service

In the Service segment, Manz AG combines all of its after-sales services, such as repairs and maintenance or the conversion and upgrade of machines and assemblies. In 2019, the Service segment contributed 7.2 % of the Group's total revenues with revenues amounting to EUR 19.1 million (previous year: EUR 19.5 million or 6.6 %). The EBIT segment in 2019 was EUR 1.6 million and therefore below the previous year's level of EUR 3.9 million. The development of revenues and margins was below expectations in each case and is essentially characterized by a reduced machine base in the Electronics segment.

GENERAL STATEMENT ON BUSINESS DEVELOPMENT IN 2019

In financial year 2019, Manz AG's revenues and earnings growth was significantly impacted by customer project delays in the Solar and Electronics segments as well as the lack of major investments from the electromobility segment in the establishment of European battery production. Manz reported improvements in earnings over the previous year in individual segments, although overall earnings continued to be negatively affected by the lower revenues level at the same cost basis. Irrespective of this, the Managing Board is confident that the growth opportunities and prospects in the core segments remain fully intact overall. With orders on hand totaling EUR 168.5 million, in particular the developments on the market for electromobility and the dynamic growth in the consumer electronics segment underscore the potential for Manz AG. Further information on the achievement of targets can be found in the corresponding section of the forecast report.

RESEARCH INNOVATION TECHNOLOGY

Over 500 engineers, technicians, and scientifically trained employees, as well as numerous partnerships with renowned universities, colleges, and institutes, demonstrate the importance of research and development at Manz. We not only ensure the sustainable development of our company with continuous innovation, but we also make a significant contribution to the success of our customers with our high-quality, demand-oriented products and services.

CORPORATE GOVERNANCE

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

The corporate governance statement in accordance with sections 289f and 315d of the German Commercial Code (HGB) was prepared jointly for Manz AG and the Manz Group and published under the heading "Manz AG Corporate Governance Statement and Corporate Governance Report for the Financial Year 2019" on the company's website www.manz.com in the Investor Relations section under the heading "Corporate Governance – Corporate Governance Statement".

DISCLOSURES IN ACCORDANCE WITH SECTION 315A (1) HGB AND NOTES PURSUANT TO SECTION 176 (1), SENTENCE STOCK CORPORATION ACT (AKTG) ON THE DISCLOSURES IN ACCORDANCE WITH SECTIONS 289A (1) AND 315A (1) HGB (PRIOR VERSION)

Composition of subscribed capital

Manz AG's subscribed capital amounts to EUR 7,744,088.00 and is divided into 7,744,088 no-par-value bearer shares. All shares are associated with the same rights and duties. Each share grants its holder one vote at the annual general meeting. Each share offers the same share of profits. This would exclude treasury shares held by Manz AG, which do not entitle the company to any rights. At the present time, the company does not hold any treasury shares. Otherwise, the rights and obligations of the shareholders arise from the provisions of the German Stock Corporation Act, in particular from sections 12, 53a et seqq., 118 et seqq. and 186 Stock Corporation Act (AktG).

Restrictions that apply to voting rights or the transfer of shares

The Managing Board of Manz AG does not know of any agreements pertaining to restrictions on the use of voting rights or the transfer of shares.

Shareholdings that exceed 10 % of voting rights

As a result of notifications received regarding major holdings of voting rights pursuant to sections 33 and 34 of the German Securities Trading Act (Wertpapierhandelsgesetz – WpHG) and transactions involving company shares executed by managers pursuant to Article 19 of the Market Misuse Directive, the Managing Board is aware of the following direct and indirect holdings in the company's capital that exceed 10 % of the voting rights:

	Number of voting rights	Percentage of voting rights
Dieter Manz, Schlaitdorf	2,175,199	28.09 %
thereof, directly	953,942	12.32 %
thereof, attributed	1,221,257	15.77 %
People's Republic of China, acting through the State-owned Asset Supervision Commission (SASAC) of the People's Government of Shanghai, People's Republic of China	1,523,480	19.67 %
Full chain of subsidiaries:		
Shanghai Electric (Group) Corporation		
Shanghai Electric Group Company Limited		
Shanghai Electric Hongkong Co. Limited		
Shanghai Electric Germany Holding GmbH (shareholder)		

Shares with special rights that confer authority to exercise control

The company does not have shares with special rights that confer authority to exercise control.

Type of voting right controls when employees are issued shares of company stock and do not directly exercise their control rights

Employees with holdings in the capital of Manz AG may directly exercise any control rights to which they are entitled based on the shares transferred to them in accordance with provisions of the company's Articles of Incorporation and the law.

Legal requirements and provisions of the Articles of Incorporation regarding the appointment and dismissal of members of the Managing Board and regarding amendments to the Articles of Incorporation

The appointment and dismissal of members of the Managing Board is governed by sections 84 and 85 of the German Stock Corporation Act (AktG). These sections stipulate that members of the Managing Board are to be appointed by the Supervisory Board for a period lasting a maximum of five years. Members may be repeatedly appointed or have their term extended, in either case for another period lasting a maximum of five years. Pursuant to section 5 of the company's Articles of Incorporation, the Managing Board may consist of one or more persons. The Supervisory Board appoints the members of the Managing Board pursuant to the provisions of the German Stock Corporation Act and determines their number. The Supervisory Board may appoint a member as chairperson of the Managing Board. Pursuant to section 84 (3) of the German Stock Corporation Act (AktG), the Supervisory Board may revoke the appointment of a member of the Managing Board and the appointment of a chairperson of the Managing Board for good cause.

Amendments to the Articles of Incorporation are governed by sections 133 et seqq. and 179 et seqq. of the German Stock Corporation Act (AktG). In general, amendments require a resolution passed at the annual general meeting. A resolution passed at the annual general meeting requires a majority of at least three-quarters of the capital stock represented at the time the resolution is adopted. The Articles of Incorporation may determine a different, but only greater capital majority, for any amendment to the corporate purpose of the company.

Pursuant to Article 16(1) of the company's Articles of Incorporation, resolutions are to be passed at the annual general meeting by a simple majority of the votes cast, unless mandatory provisions of the German Stock Corporation Act stipulate otherwise. Where the German Stock Corporation Act also stipulates that a majority of the represented capital stock is required to pass a resolution, a simple majority of the represented capital fulfills this requirement, as permitted by law.

Authority of the Managing Board to issue or repurchase company shares

The Managing Board may issue new shares only on the basis of resolutions passed at the annual general meeting in respect of an increase in capital stock or in respect of authorized and conditional capital. Purchasing treasury shares is governed by section 71 et seqq. of the German Stock Corporation Act (AktG) and, in certain cases, is permitted by operation of law or as a result of authorization given at the annual general meeting.

Authorized capital

On the basis of a resolution passed by the Annual General Meeting of July 12, 2016 pursuant to Article 3, sentence 3 of the Articles of Incorporation, the Managing Board is authorized to increase the company's capital stock, with Supervisory Board approval, in the period until July 11, 2021, on a one-time basis or in partial contributions, up to a total of EUR 3,872,044.00 through the issuance of a total of 3,872,044 new bearer shares (no-par-value shares) by means of cash or non-cash contributions (Authorized Capital 2016).

In principle, the new shares must be offered to shareholders for subscription. The new shares may also be assumed by banks designated by the Managing Board with the obligation to offer them to the shareholders for subscription (indirect subscription right). However, the Managing Board was authorized, with Supervisory Board approval, to exclude shareholders' subscription rights

- in the event of a capital increase for cash consideration, if the issue amount of the new shares is not significantly less, within the meaning of section 203 (1) and (2) and section 186 (3) sentence 4 of the German Stock Corporation Act (AktG), than the stock exchange price of shares of the company of the same type at the time of establishment of the issue price, which is to be as close in time as possible to the time of issue of new shares. This authorization to exclude the subscription right applies only to the extent that shares to be issued in the capital increase do not in total represent a proportionate amount of the capital stock of more than EUR 774,408.00 and overall do not comprise more than 10 % of the capital stock at the time the authorization is exercised. The proportionate amount of capital stock of shares which are issued or sold during the period of this authorization based on other authorizations in direct or corresponding application of section 186 (3), sentence 4 of the German Stock Corporation Act (AktG), with exclusion of subscription rights, is to be credited toward this maximum amount for the exclusion of subscription rights;

- in the case of capital increases in return for non-cash contributions for the acquisition of companies, parts of companies or participations in companies or other assets or for the purpose of business combinations;

- to the extent that it is necessary to give holders of warrants or convertible bonds, profit-sharing rights, or profit-sharing bonds (or combinations of these instruments) issued by the company or direct or indirect affiliated companies of the company a subscription right to new shares to the same extent as they would be entitled upon exercising their option or conversion right or after fulfilling their conversion obligation;

- to exclude fractional amounts from the subscription right.

The Managing Board is authorized, with Supervisory Board approval, to determine the further details of the implementation of the capital increases based on the authorized capital.

Authorization to issue partial debentures with options or conversion rights or conversion obligations, profit-sharing rights, and profit-sharing bonds (or combinations of these instruments), as well as Conditional Capital I

At the annual general meeting on July 2, 2019, a resolution was passed authorizing the Managing Board, with Supervisory Board approval, to issue bearer warrant or convertible bonds, profit-sharing rights and/or profit-sharing bonds, or a combination of these instruments (collectively referred to as “bonds”), up to a total nominal value of EUR 150 million on one or more occasions until July 1, 2024. In addition, the Managing Board was also authorized to grant holders of warrants option rights and holders of convertible bonds conversion rights for bearer shares of the company with a proportionate amount of capital stock totaling up to EUR 3,100,000.00, in accordance with the detailed terms and conditions of the warrants/convertible bonds.

The statutory subscription right is granted to the shareholders in the way that the bonds are underwritten by a bank or a syndicate of banks with the obligation to offer them for subscription to shareholders. If bonds are issued by a Manz AG group company within the meaning of section 18 Stock Corporation Act (AktG), the Company must accordingly ensure the granting of statutory subscription rights for the shareholders of Manz AG.

The Managing Board is however authorized, with Supervisory Board approval, to exclude fractional amounts from shareholders' subscription rights and also to exclude the shareholders' subscription rights to the extent necessary in order to give holders of already issued bonds with options or conversion rights and/or conversion obligations a subscription right to the extent to which they would be entitled after exercising their options or conversion rights or upon fulfilling their conversion obligation.

Furthermore, the Managing Board is authorized, with Supervisory Board approval, to completely exclude shareholders' subscription rights to bonds issued with an option and/or conversion right or conversion obligation, provided the Managing Board, after dutiful examination, arrives at the view that the issue price of the bonds is not significantly below their hypothetical market value as calculated according to accepted and, in particular, actuarial methods. This authorization to exclude the subscription right applies to bonds issued with an option and/or conversion right or a conversion obligation, carrying an option and/or conversion right or a conversion obligation for shares with a total proportionate amount of the capital stock, which may not exceed 10 % of the capital stock, either at the time the authorization becomes effective or – in the event that this amount is lower – at the time this authorization is exercised. The following are offset against the aforementioned ten percent limit:

- new shares issued from authorized capital excluding subscription rights in accordance with section 186 (3), sentence 4 of the Stock Corporation Act (AktG) during the term of this authorization up to issue of bonds with options and/or conversion rights or conversion obligations pursuant to section 186 (3) sentence 4 AktG, and

- such shares as are acquired on the basis of an authorization granted at the annual general meeting and are disposed of, with exclusion of the subscription right, pursuant to section 71 (1) no. 8, sentence 5 of the German Stock Corporation Act (AktG), in conjunction with section 186 (3), sentence 4 AktG during the term of this authorization up to the issue, subject to the exclusion of subscription rights pursuant to section 186 (3), sentence 4 AktG, of the bonds carrying an option and/or conversion right or conversion obligation.

Where profit-sharing rights or profit-sharing bonds without an option right or conversion right/obligation are issued, the Managing Board is authorized, with Supervisory Board approval, to completely exclude shareholders' subscription rights if these profit-sharing rights or profit-sharing bonds have the characteristics of a debenture; i.e., do not give rise to any membership rights in the company, do not grant a share in the liquidation proceeds, and the interest payable is not calculated on the basis of the net income for the year, net retained profit, or the dividend. Moreover, in such a case, the interest payment and the issue price of the profit-sharing rights or profit-sharing bonds must reflect current market conditions at the time of issue.

Pursuant to Article 3(4) of the Articles of Incorporation, the capital stock of the company has been conditionally increased by up to EUR 3,100,000.00 through the issue of up to 3,100,000 no-par-value bearer shares (Conditional Capital I). The contingent capital increase will only be carried out to the extent that the holders of option or conversion rights or those obliged to convert from warrant or convertible bonds, profit participation rights or participating bonds issued by the Company or a Group company within the meaning of section 18 of the Stock Corporation Act (AktG) on the basis of issued or guaranteed at the annual general meeting on July 2, 2019 under agenda item 5, exercise their option or conversion rights or, if they are required to convert, fulfill their obligation to convert, unless a cash settlement is granted or treasury shares or shares of another listed company. The new shares are issued at the option or conversion price to be determined in each case in accordance with the authorization resolution described above. The new shares are to participate in profit from the beginning of the financial year in which they are created on the basis of the exercise of options or conversion rights or of the fulfillment of conversion obligations. The Managing Board is authorized, with Supervisory Board approval, to establish the further details of the execution of the conditional capital increase.

Authorization to issue share subscription rights within the scope of the Manz Performance Share Plan 2019 as well as Conditional Capital III

At the annual general meeting held on July 2, 2019, a resolution was passed authorizing the Managing Board, with Supervisory Board approval, to issue a total of up to 95,000 subscription rights for subscription of a total of up to 190,000 shares in the company to executives of affiliated companies of the company, as well as Manz's own managers below the executive level and managers of affiliated companies, both domestic and foreign, below the executive level on one or more occasions through June 30, 2024. The Supervisory Board was authorized to grant one or several times a total of up to 85,000 subscription rights for the purchase of up to 170,000 shares in the company to members of the company's Managing Board until June 30, 2024.

Subscription rights are to be granted, structured and exercised in accordance with the provisions in the resolution of the annual general meeting on July 2, 2019.

The authorization of July 7, 2015 was revoked by resolution passed at the annual general meeting of July 2, 2019, insofar as no subscription rights had yet been issued on the basis of the authorization.

Pursuant to Article 3(6) of the Articles of Incorporation, the company's capital stock has been conditionally increased by up to EUR 360,000.00 through the issue of up to 360,000 no-par-value bearer shares (Conditional Capital III). The conditional capital increase serves to secure the rights of the holders of subscription rights granted on the basis of the authorization granted by the annual general meeting on July 2, 2019. The shares will be issued at the issue amount established in the authorization adopted at the annual general meeting on July 2, 2019. The contingent capital increase will be carried out only to the extent subscription rights are exercised and the company does not issue either treasury shares or a cash settlement for the purpose of fulfillment of the subscription rights. The new bearer shares will be equivalent to already issued shares of the same class with respect to their dividend entitlement. The Managing Board and, to the extent members of the Managing Board are affected, the Supervisory Board are authorized to establish the further details of the conditional capital increase and its implementation.

Authorization to issue share subscription rights within the scope of the 2015 Manz Performance Share Plan as well as Conditional Capital II

At the annual general meeting held on July 7, 2015, a resolution was passed authorizing the Managing Board, with Supervisory Board approval, to issue a total of up to 59,000 subscription rights ("Performance Shares") for a total of up to 118,000 shares in the company to executives of affiliated companies as well as Manz's own managers below the executive level and managers of affiliated companies, both domestic and foreign, below the executive level on one or more occasions through June 30, 2020. The Supervisory Board was given authorization to issue a total of up to 56,000 subscription rights ("Performance Shares") for a total of up to 112,000 shares in the company to members of Manz's Managing Board, on one or more occasions, through June 30, 2020.

Subscription rights are to be granted, structured and exercised in accordance with the provisions in the resolution of the annual general meeting on July 7, 2015.

Pursuant to Article 3(5) of the Articles of Incorporation, the company's capital stock has been conditionally increased by up to EUR 230,000.00 through the issue of up to 230,000 no-par-value bearer shares (Conditional Capital II). The conditional capital increase serves to secure the rights of the holders of subscription rights ("Performance Shares") granted on the basis of the authorization granted by the annual general meeting on July 7, 2015. The shares will be issued at the issue amount established in the authorization adopted at the annual general meeting on July 7, 2015. The contingent capital increase will be carried out only to the extent subscription rights are exercised and the company does not issue either treasury shares or a cash settlement for the purpose of fulfillment of the subscription rights. The new shares will be equivalent to already issued shares of the same class with respect to their dividend entitlement. The Managing Board and, to the extent members of the Managing Board are affected, the Supervisory Board are authorized to establish the further details of the conditional capital increase and its implementation.

Authorization to purchase and dispose of treasury shares

The annual general meeting held on July 2, 2019, authorized the Managing Board of the company to acquire treasury shares until July 1, 2024, pursuant to section 71 (1) number 8 of the German Stock Corporation Act (AktG) with a proportional value of up to 10 % of the capital stock at the time this authorization becomes effective or of the existing capital stock of the company at the time of exercise of the authorization, if such amount is lower, whereby at no point in time more than 10 % of the capital stock of the company may be represented by the shares acquired on the basis of this authorization together with other shares of the company, which the company has already acquired and still possesses or which are attributable to it pursuant to sections 71d and 71e AktG. The provisions in section 71 (2), sentences 2 and 3 AktG must be observed.

The acquisition may take place only through the securities exchange or by means of a public purchase order and must satisfy the principle of equal treatment of shareholders (section 53a Stock Corporation Act (AktG)).

The Managing Board was authorized to sell the treasury shares acquired on the basis of the above authorization also in manners other than through the stock exchange or through an offer to other shareholders, under the condition that the sale is for cash and is at a price that is not significantly below the stock-exchange price, at the time of the sale, of company shares with the same features. This authorization of use is restricted to shares with a proportionate amount of capital stock that in total does not exceed 10 % of the capital stock of the company, neither at the time of coming into effect of this authorization, nor – if such amount is lower – at the time of exercise of the above authorization. The maximum limit of 10 % of the capital stock is to be reduced by the proportionate amount of the capital stock that is attributable to those shares that are issued or sold during the term of this authorization with exclusion of the subscription rights pursuant to or in accordance with section 186 (3), sentence 4 AktG. The maximum limit of 10 % of the capital stock is to be further reduced by the proportionate amount of the capital stock represented by those shares that were to be issued in order to service bonds with option or conversion rights and/or option or conversion obligations to the extent such bonds are issued during the term of this authorization with exclusion of subscription rights in analogous application of section 186 (3), sentence 4 AktG.

The Managing Board was further authorized to transfer treasury shares acquired on the basis of the above authorization to third parties insofar as this is for the purpose of acquiring companies, parts of companies or interests in companies or other assets, or to carry out business combinations.

The Managing Board and – to the extent there is an obligation with respect to members of the Managing Board – the Supervisory Board were further authorized to use the treasury shares acquired on the basis of the above authorization for the purpose of fulfilling the subscription rights that were or are issued in the framework of the Manz Performance Share Plan 2015 resolved at the annual general meeting of July 7, 2015, under item 6 of the agenda or in the framework of the Performance Share Plan 2019 adopted at the annual general meeting of July 2, 2019, under item 6 of the agenda.

The Managing Board was also authorized to use the treasury shares acquired on the basis of the above authorization for the purpose of fulfillment of the subscription and conversion rights that result from exercising option or conversion rights or fulfilling option or conversion obligations that have been granted or imposed within the framework of issuing convertible or warrant bonds, profit-sharing rights, or profit-sharing bonds (or combinations of these instruments) of the company or its subsidiaries.

The Managing Board was further authorized to transfer treasury shares acquired on the basis of the above authorization to employees of the company or employees or members of governing bodies of subordinate affiliated companies of the company within the meaning of sections 15 et seqq. AktG.

Significant company agreements that are conditional on a change of control as a result of a takeover bid

Patent and expertise license agreement with ZSW

There is a patent and expertise license agreement from the year 2017 between Manz AG and the Center for Solar Energy and Hydrogen Research Baden-Württemberg (Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, ZSW), which is a foundation under German civil law and a research institution of the state of Baden-Württemberg, under which the ZSW grants Manz AG certain licenses to its patents and expertise with regard to CIS and/or CIGS technology for the manufacture of thin-film solar cells. The new patent and expertise license agreement can be terminated by ZSW for good cause if a competitor of ZSW acquires or exceeds 30 % of voting rights in Manz AG in terms of section 33 et seqq. WpHG.

Patent and expertise license agreement with NICE Solar Energy GmbH

In addition, there is a patent and expertise license agreement from 2017 between Manz AG and NICE Solar Energy GmbH (formerly Manz CIGS Technology GmbH), a subsidiary of NICE PV Research Ltd, in which China Energy Investment Corporation Limited (formerly Shenhua Group), Shanghai Electric Group Co. Ltd. and Manz AG hold interests, according to which NICE Solar Energy GmbH (formerly Manz CIGS Technology GmbH) grants Manz AG certain licenses for patents and expertise with regard to CIS and CIGS technology for the production of thin-film solar cells. The patent and expertise licensing agreement can be terminated by NICE Solar Energy GmbH (formerly Manz CIGS Technology GmbH) for good cause if a third party directly or indirectly acquires at least 30.0 % of the shares in Manz AG where a direct or indirect purchase of shares by Shanghai Electric Group Co. Ltd., China Energy Investment Corporation Limited (formerly Shenhua Group) exceeding 30.0 % or such acquisition by Dieter Manz does not give rise to the right of termination.

Talus Manufacturing Ltd.

An agreement exists between the subsidiary Manz Taiwan Ltd. and a leading US manufacturer of equipment for the semiconductor industry regarding Talus Manufacturing Ltd. in Chungli, Taiwan, in which Manz Taiwan Ltd. holds an 80.5 % stake and the partner holds a 19.5 % stake. The Partner has a right to terminate the contract in the event that shares of the Manz AG are sold by their existing shareholders to third parties, with the result that a person or company from the People's Republic of China is involved in the amount of more than 30 % directly or indirectly in the company. If the right of termination is exercised, the Partner has the right to buy shares of Manz Taiwan Ltd. at Talus Manufacturing Ltd. to be acquired against payment of the participation value (purchase option).

Apart from the agreements mentioned above and in the section below, there are no significant company agreements that are conditional on a change of control as a result of a takeover bid.

Compensation agreements of the company that have been made in the event of a takeover bid with members of the Managing Board or with employees

In the event of a change of control, the employment contract of Managing Board member Martin Drasch stipulates that the Managing Board member is entitled to terminate the employment contract with a notice period of three months to the end of a calendar month and to resign from his office as member of the Managing Board with the same deadline. These rights may be exercised only within six months after the change of control has occurred.

A change of control is to be deemed to have taken place when the company receives notification from a notifying party in accordance with section 33 (1), sentence 1 WpHG that the notifying party, with inclusion of the voting rights attributable to him pursuant to section 34 WpHG, has reached or exceeded a 25 % or higher share of voting rights in the company.

In the event of a termination of the employment contract pursuant to the above provisions, the member of the Managing Board shall receive a severance payment. This severance payment shall consist of the total amount of the fixed salary owed for the remaining term of the employment contract and the total amount of the cash bonus owed for the remaining term of the employment contract, whereby for the calculation of the amount, the average of the EBT return in the last financial year before the termination and the EBT return that is expected to be realized in the current financial year according to the forecast of the company are to be taken as the basis. The severance payment is limited to the amount that corresponds to 150 % of the severance cap. The value of two years' annual compensation is deemed to be the severance cap. If the remaining employment term on the date the resignation becomes effective amounts to more than two years, the severance payment is reduced, insofar as it is being granted for the exceeding period, by 75 % for the purposes of offsetting the severance payment with a lump sum equal to the member's expected income from other sources after ending employment. In addition, the amounts used in the calculation of the severance payment must also be discounted at 3 % p.a. each to the date on which the severance payment is due.

In other respects, the company has not entered into any agreements with members of the Managing Board or with employees that make provision for compensation payments in the event of a takeover bid.

COMPENSATION REPORT

The following compensation report presents the basic principles of the compensation systems for the Managing and Supervisory Boards of Manz AG, as well as the salaries earned by the members of the Managing and Supervisory Boards in the financial year 2019.

System of compensation for the Managing Board

The aim of the compensation system is to compensate the members of the Managing Board commensurately according to their area of activity and responsibility, taking into account not only the personal performance of each respective Managing Board member, but also the company's overall situation and business success. The compensation structure is geared toward sustainable corporate growth.

The compensation paid to members of the Managing Board consists of fixed and variable components. When assessing the amount of the remuneration elements, a distinction is made between the Chairman of the Managing Board and the other members of the Managing Board.

Fixed elements of compensation

The fixed components of Managing Board compensation consist of a fixed monthly salary, benefits in kind, and contributions to a company retirement scheme.

The fixed salary is paid in twelve equal monthly installments. These fixed payments function as a base salary to cover Managing Board members' and their families' ongoing cost of living expenses irrespective of the company's performance.

An appropriate company car, which can also be used for private purposes, is provided to Managing Board members as a benefit in kind. In addition, the company has taken out accident insurance policies with appropriate benefits for each of the Managing Board members. These policies also cover non-work-related accidents. Furthermore, there is a directors and officers pecuniary damage liability insurance policy (so-called D&O insurance) for the members of the Management Board at the company's expense.

The company has undertaken to pay pension contributions to members of the Managing Board, Martin Drasch, Manfred Hochleitner and Jürgen Knie, by paying annual contributions to a support fund.

Variable elements of compensation

General

The variable compensation comprises an annual component linked to the company's success in the form of an annual cash bonus (short-term variable compensation) on the one hand, and on the other hand, a share-based component with a multi-year assessment in the form of annual stock options based on the 2019 Manz Performance Share Plan (long-term variable compensation).

The variable components complement the fixed elements of compensation, serving as a specific incentive to achieve sustained corporate growth while contributing to the Managing Board members' accumulation of personal assets and financial independence. In the interest of an alignment of variable compensation with sustainable corporate development, the fair value of the subscription rights granted on the basis of the recognized 2019 Manz Performance Share Plan outweighs the annual cash bonus.

Annual cash bonus

The aim of the annual cash bonus is to allow the members of the Managing Board to participate in the company's success in a given financial year as a result of their own personal management performance.

The cash bonus is granted annually, depending on the EBIT margin of the respective financial year. The EBIT margin is calculated as the ratio of earnings before interest and taxes (EBIT) to total revenues in accordance with the consolidated financial statements in accordance with IFRS. Moreover, the cash bonus is calculated based on the fixed salary of the particular Managing Board member for the given financial year (fixed annual salary).

The cash bonus grant requires that an EBIT margin of at least 0.1 % has been achieved. The Managing Board member receives a cash bonus of 1 % of the annual fixed salary with an EBIT margin of 0.1 %. Accordingly, the percentage applicable for calculating the cash bonus increases by one percentage point for each full 0.1 percentage point by which the achieved EBIT margin exceeds 0.1 %. Therefore, the Managing Board member receives, for example, a cash bonus of 50 % of the annual fixed salary with an EBIT margin of 5.0 %, and, with an EBIT margin of 10 %, a cash bonus of 100 % of the annual fixed salary. The upper limit is set at an EBIT margin of 16.0 %, at which the cash bonus is 160 % of the annual fixed salary.

The Supervisory Board has set an EBIT margin of 6 % as the medium target of short-term variable compensation for the purpose of determining the ratio between the individual compensation elements. At this middle value, the cash bonus is 60 % of the fixed annual salary.

Manz Performance Share Plan 2019

The rights to Manz shares granted and to be granted on the basis of the 2019 Manz Performance Share Plan in the years 2019 to 2022 are intended to stimulate the Managing Board members to sustainably increase their internal and external company value and, therefore, their interests with those of the shareholders, but also with the other stakeholders.

The Supervisory Board may in principle determine the number of subscription rights to be granted to the individual members of the Managing Board at its own discretion – in line with the legal requirements for the appropriateness of the compensation. There is no contractual claim for the granting of performance shares.

However, the Supervisory Board has specified as a guideline that the annual long-term variable compensation in the form of performance shares (allocation value) should, as a rule, amount to 50 % of the annual total cash compensation of the respective Managing Board member. In this case, total cash compensation consists of the member's annual fixed salary, as well as the middle target value of the annual cash bonus equal to 50 % of the annual fixed salary. The performance shares to be granted shall be valued upon issuance through the price of the Manz share in Xetra trading on the Frankfurt Stock Exchange on the basis of an appropriate period of time at the beginning of the particular issuing period.

Further details of the 2019 Manz Performance Share Plan and the subscription rights to shares of the Company issued on the basis thereof are set out in the "Corporate Governance Statement and Corporate Governance Report of Manz AG for the Financial Year 2019" in section VI, which can be downloaded from the Manz AG website at www.manz.com, in the Investor Relations section under the heading "Corporate Governance".

Severance cap in the event of early termination of Managing Board duties

The service contracts of the Managing Board members stipulate that, in the event of early termination of the term of office and service which is not based on cause, severance payments to the Managing Board member, including fringe benefits do not exceed two years' compensation (severance payment cap) and not more than the remainder of the employment relationship. The calculation of the severance payment cap will be based on the total compensation of the past financial year and, if applicable, the expected total compensation for the financial year in progress at the time of early termination.

Provisions in the event of a change of control

In the event of a change of control, the employment contract of CEO Martin Drasch stipulates that the member of the Management Board is entitled to terminate the employment contract with three months' notice to the end of a calendar month and to resign from his office as member of the Managing Board with the same deadline. In principle, a change of control occurs when the company receives a notice from a party that the party, including the voting rights attributable to it, has reached or exceeded 25 % or a higher proportion of the voting rights in the company. In the event of a termination of the employment contract pursuant to the above provisions, the member of the Managing Board shall receive a severance payment.

Further details on the change of control provisions in the service contracts of the named members of the Managing Board are provided in this consolidated situation report in the "Disclosures pursuant to section 315a paragraph (1) HGB and explanatory report pursuant to section 176 (1) sentence 1 of the Stock Corporation Act (AktG) on the disclosures pursuant to section 289a (1) and section 315a (1) HGB" in the subsection "Compensation Agreements of the Company, which have been concluded in the event of a takeover bid with members of the Management Board or with employees".

Compensation in the financial year 2019

Compensation of the Managing Board

Compensation of the Managing Board according to DRS 17

The members of the Managing Board received total compensation of TEUR 996 for carrying out their duties in the financial year 2019 (previous year: TEUR 520).

The following table provides an overview of the compensation paid to individual members of the Managing Board according to DRS 17 for performing their duties in the financial year 2019:

Managing Board compensation in the Financial Year 2019

	Non performance-related components		Performance-based components (short-term incentive)	Components with long-term incentive	
(in TEUR) Previous year's figures in brackets	**Fixed salary**	**Other benefits[1]**	**Cash bonus**	**Subscription rights to shares (fair value)**	**Total**
Martin Drasch Chairman of the Managing Board	307 (247)	37 (35)	0 (0)	110 (102)	**454** **(384)**
Manfred Hochleitner Chief Financial Officer	240 (124)	24 (12)	0 (0)	88 (0)	**352** **(136)**
Jürgen Knie Chief Operations Officer (since July 1, 2019)	124	10	0	56	**190**
Total	**671** (371)	**71** (47)	**0** (0)	**254** (102)	**996** (520)

1 In particular, compensation in kind and contributions to the company pension scheme (support fund).

The subscription rights to shares of Manz AG on the basis of the Manz Performance Share Plan 2019 were measured at fair value using recognized mathematical finance methods.

Compensation of the Managing Board according to the German Corporate Governance Code

The compensation of the Managing Board for the financial year 2019 is also disclosed on the basis of the presentation recommended by the German Corporate Governance Code in the framework of exemplary tables broken down by the benefits granted and the allocation.

The following table shows the benefits, including fringe benefits, granted to the individual members of the Managing Board for the reporting year and the previous year in accordance with the recommendations of the German Corporate Governance Code. The target values (payment at 100 % target achievement) as well as the minimum and maximum compensation achievable for the reporting year are specified for the variable compensation.

	Martin Drasch Chairman of the Managing Board					Manfred Hochleitner Chief Financial Officer					Jürgen Knie Chief Operations Officer (since July 1, 2020)				
Benefits granted (in TEUR)	**2018** Actual value	**2019** Actual value	**2019** Target value	**2019** (Min)	**2019** (Max)	**2018** Actual value	**2019** Actual value	**2019** Target value	**2019** (Min)	**2019** (Max)	**2018** Actual value	**2019** Actual value	**2019** Target value	**2019** (Min)	**2019** (Max)
Fixed compensation	247	307	307	307	307	124	240	240	240	240		124	124	124	124
Fringe benefits	23	19	19	19	19	6	12	12	12	12		4	4	4	4
Total	**270**	**326**	**326**	**326**	**326**	**130**	**252**	**252**	**252**	**252**	**0**	**128**	**128**	**128**	**128**
Single-year variable compensation	0	0	180	0	480	0	0	144	0	384		0	72	0	192
Multi-year variable compensation															
Manz Performance Share Plan 2015 – Tranche 2018 (Term to 2021)	102														
Manz Performance Share Plan 2019 – Tranche 2019 (Term to 2022)		110	240	0	480		88	192	0	384		56	113	0	226
Share Performance Tantieme															
Total	**372**	**436**	**746**	**326**	**1,286**	**130**	**340**	**588**	**252**	**1,020**	**0**	**184**	**313**	**128**	**546**
Pension expense[1]	12	18	18	18	18	6	12	12	12	12		6	6	6	6
Total compensation	**384**	**454**	**764**	**344**	**1,304**	**136**	**352**	**600**	**264**	**1,032**	**0**	**190**	**319**	**134**	**552**

1 Contribution-based payments to the support fund for Martin Drasch, Manfred Hochleitner and Jürgen Knie.

The following table shows the allocation of the compensation granted to the individual members of the Managing Board in or for the reporting year and the previous year in accordance with the recommendations of the German Corporate Governance Code.

	Martin Drasch Chairman of the Managing Board		Manfred Hochleitner Chief Financial Officer		Jürgen Knie Chief Operations Officer (since July 1, 2019)	
Allocation (in TEUR)	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**
Fixed compensation	307	247	240	124	124	0
Fringe benefits	19	23	12	6	4	0
Total	**326**	**270**	**252**	**130**	**128**	**0**
Single-year variable compensation	0	0	0	0	0	0
Multi-year variable compensation	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	**326**	**270**	**252**	**130**	**128**	**0**
Pension expense[1]	18	12	12	6	6	0
Total compensation	**344**	**282**	**264**	**136**	**134**	**0**

1 Contribution-based payments to the support fund for Martin Drasch, Manfred Hochleitner and Jürgen Knie.

Compensation of the Supervisory Board

The Supervisory Board compensation regulated in the Articles of Incorporation was amended by resolution of the annual general meeting on July 3, 2018.

According to the regulation in force until July 3, 2018, each member of the Supervisory Board receives fixed compensation payable after the end of the financial year amounting to EUR 12,000.00, in addition to the reimbursement of expenses. The compensation for the chairperson of the Supervisory Board is EUR 24,000.00, while, for the deputy chairperson, it is EUR 18,000.00. Supervisory Board members who are only members during a portion of a financial year receive proportionately less compensation.

The applicable rules since July 4, 2018 stipulate that each member of the Supervisory Board receives fixed compensation of EUR 16,000.00, payable after the end of the financial year. The members of the Supervisory Board receive additional fixed compensation for each financial year for their work on Supervisory Board committees, which amounts to EUR 8,000.00 for each member of a committee. Committee activities are to be considered for a maximum of two committees. In addition, the members of the Supervisory Board receive an attendance fee of EUR 1,500.00 each time they attend a meeting of the Supervisory Board and its committees. Attendance fees are to be granted only once when several sessions take place in one day. The Chairman of the Supervisory Board receives three times the aforementioned compensation. His deputy receives double the fixed compensation mentioned in the first sentence.

The company also reimburses Supervisory Board members for any VAT to be paid on their compensation. Moreover, the company can insure Supervisory Board members at its own expense against civil and criminal recourse in connection with the execution of their official duties; the company can also take out corresponding liability insurance against legal expenses and property loss (D&O insurance).

The following table provides an overview of the compensation paid to individual members of the Supervisory Board for performing their duties in the financial year 2019 (previous year's values in parentheses):

Supervisory Board Compensation in Financial Year 2019

Fixed salary (in TEUR) Previous year in parentheses	
Prof. Dr. Heiko Aurenz, Chairman	130.5 (74.6)
Dieter Manz	59.5 (33.27)
Dr. Zhiming Xu	23.5 (15.47)
Prof. Dr.-Ing. Michael Powalla	23.5 (18.51)
Total	**237.0** (141.87)

Furthermore, the company also covered the cost of D&O insurance for each member of the Supervisory Board.

As in the previous years, no loans or advances were granted to members of the Supervisory Board and no contingencies were entered into for their benefit.

TODAY RESOURCES TOMORROW

The conscious, responsible use of resources is not an abstract idea for Manz. Neither is it limited to declarations of intent that lie in the future. Conserving and saving resources is a process for us in the here and now. The goals are clear: less waste, fewer emissions, and reduction of energy consumption.

Waste prevention

Less is more

Waste prevention is a challenging goal because of its high dependence on business development. Nonetheless, we succeeded in reducing the total volume of waste in relation to sales of 1.83 t/MEUR in 2018 to 1.67 t/MEUR in 2019 – with the aim of the further continuous reduction.

Emissions

Ensure better air

Following the reduction in energy consumption and the reduction in CO_2 emissions in recent years, we have again been able to reduce Energy consumption by megawatt hours of 17,443 MWh in 2018 to 16,026 MWh in 2019, while at the same time CO_2 emissions that are directly or indirectly credited to Manz AG could be reduced to 3,692 tonnes compared to 4,310 tonnes in the previous year.

1,124,000 kWh

The sun plays a role

We are particularly proud of the photovoltaic plants at our sites in Reutlingen, Germany, and Suzhou, China. The two photovoltaic plants in Reutlingen produce over 360,000 kWh of electricity per year. In addition, the photovoltaic plant on the roof of our location in China last year covered 1,124,000 kWh, a substantial part of our own electricity needs.

REPORT ON OPPORTUNITIES AND RISKS

RISK MANAGEMENT AND INTERNAL CONTROL SYSTEM

The goal of Manz AG's risk management system is to identify possible risks early on and to initiate appropriate measures to avert any threat of damage. The application of a risk management system integrated into corporate management is aimed at identifying and assessing potential risks throughout the Group in good time and countering them with appropriate measures. Within the scope of business activities, i.e. the area of conflict between opportunities and risks, risks cannot be avoided in principle, but are minimized or transferred as far as possible.

The company's risk management activities are managed centrally by the risk management officer, are regularly evaluated with regard to their effectiveness and appropriateness and they are the complete responsibility of the CFO. Responsibility for risk monitoring, on the other hand, is decentralized and, depending on the risk category and scope, is the responsibility of both the divisional managers and managing directors as well as Manz AG's Managing Board members. Regular written and oral inquiries are used to detect potential risks in all business segments and, at the same time, they also provide the opportunity to take immediate countermeasures to prevent any negative developments. The Managing Board and the Supervisory Board are provided with an overall report at regular intervals for a comprehensive assessment of the risk situation.

Risks are analyzed and assessed on the basis of a risk management system that is essentially unchanged from the previous year, consisting of a defined group of risk owners, specified risk categories and a risk classification that reflects the risk potential and the urgency of the need for action. Particular attention is paid to risks whose probability of occurrence is high and whose potential damage in the event of occurrence is high. The identification and handling of risks is anchored in the corporate principles and defined as the task of all Manz AG employees. Integrating the company's entire workforce enables risks to be identified quickly and communicated to the appropriate risk officer, who must then take appropriate steps in accordance with the principles of action defined across the Group.

The risks are attributed to the following categories:

- Operating risks
- Strategic risks
- Market risks
- Environmental risks

In addition to this risk management system, as part of the planning process based on continuous technology and market observation, further activities are taking place both for risk identification and mitigation as well as for identifying opportunities.

The effectiveness and appropriateness of our risk management system have been assessed by the public auditors. He noted that the Managing Board has taken the measures required under section 91 (2) of the Stock Corporation Act (AktG), in particular with regard to the establishment of a monitoring system, in an appropriate manner, and that the monitoring system is capable of identifying developments that endanger the continued existence of the company at an early stage. Manz AG thereby fulfills the requirements of the German Control and Transparency in Business Act (KonTraG).

Risk Management System for the Accounting Process (section 289 (4) and section 315 (4) HGB)

The goal of Manz AG's risk management system as it pertains to the accounting process is to identify and assess risks that might conflict with the compliance of the consolidated financial statements with the rules. Risk management encompasses the entirety of the organizational regulations and measures for detecting risks and for dealing with the risks associated with entrepreneurial activity. With regard to the accounting process, Manz has implemented the following structures and processes:

The CFO has total responsibility for the company's internal monitoring and risk management system as it pertains to the accounting process. All of the companies included in the consolidated financial statements are integrated via a defined management and reporting organizational structure. The separate financial statements of Manz AG and its subsidiaries are prepared in accordance with the corresponding national legislation and reconciled in financial statements in accordance with IFRS.

The purpose of the Group's accounting policies and group accounting, which are regularly adapted to current external and internal developments, is to ensure uniform accounting and valuation on the basis of the regulations applicable to the parent company. Furthermore, companies in the Group are prescribed report packages that they are required to prepare. The SAP SEM-BCS tool is used for the monthly consolidation process. Automatic plausibility checks are already carried out during data collection in order to test the consistency of the data.

Consolidation measures and monitoring of adherence to chronological and process-related requirements are carried out by members of the consolidation department at Group level. Additional monitoring activities at Group level include analyzing, and if necessary, adjusting the separate financial statements submitted by the Group's subsidiaries, in accordance with the reports submitted by the auditors. Key elements of the company's strategy for monitoring risks in the accounting process also include the functional separation between entry, verification, and approval, as well as a clear allocation of responsibilities in the departments in question. The use of SAP as an IT financial system is another important means of systematically preventing errors. Furthermore, the company should use a dual control system at all process levels. If there are special issues of a technical or complex nature, the company also involves external experts. Further monitoring activities include analyzing and conducting plausibility checks on transactions as well as continuously monitoring project calculations.

The illustrated structures, processes and features of the internal control and risk management system ensure that Manz AG's financial reporting is consistent and in accordance with legal requirements, generally accepted accounting principles, international accounting standards and consolidated internal guidelines. The Managing Board considers the established systems, which are reviewed annually for their ability to optimize and develop, to be appropriate. Any potential improvements identified are implemented by the Managing Board in conjunction with Manz AG's employees.

RISK REPORT

Operating risks

Project risks

Project risks relate primarily to non-standardized major contracts. In such contracts, risks arise from potential missing planned costs or schedules, the non-fulfillment of the acceptance criteria and order cancellations and the associated non acceptance of contracts as well as contract risks. By expanding the share of standardized machine components in the product portfolio, which can be modularly customized to modules or entire production equipment according to the customer's requirements, Manz AG intends to reduce the aforementioned project risks overall. In order to keep projects under control, costs, time and quality are coordinated in a gate process between business unit and operations. Design changes to non-standard machines that are necessary and unforeseeable at the beginning of an order could lead to higher costs than expected and thus erode project margins. In order to avoid additional work and associated additional costs for project completion, project and product specifications are to be already clearly and precisely defined in the contract offers through interdepartmental cooperation. Specific project risks also exist, in particular with regard to contracts concluded with Shanghai Electric Group and China Energy Investment Corporation Limited for the supply of a CIGS production line, and a CIGS research line with a total order volume of EUR 263 million and the handling of a major order for a customer in the display industry. The project handling risk is reduced through the use of external project management experts experienced in such major projects, some of whom are also temporarily engaged, as well as through a monthly steering committee, which also includes all members of the Managing Board.

Personnel risks

For the corporate success of a high-tech equipment manufacturer, qualified and motivated managers and employees are of decisive importance. The departure of executives or key employees could have a negative impact on the company's business performance, thereby affecting its net assets, financial position and operational results. At the same time, there is also a risk that the company will not be able to hire a sufficient number of new, suitable executives or additional employees. Manz creates a positive working environment with measures such as flexible working time models or employees' financial participation in the success of the company, and can therefore retain employees and expertise in the company in the long term. As a listed company, Manz AG enjoys greater attention from potential employees than unlisted companies do. This allows Manz AG to better present its offerings to employees, such as flat hierarchies, exciting activities, flexible working hours, and well-equipped workplaces. However, it also brings extra attention in economically challenging times, which can temporarily make it harder to recruit. Another positive aspect of stock market listing is the ability to bind employees more closely to the company through the issue of shares and a corresponding profit share.

Liquidity and financing risks

At present, parent company Manz AG, is financing itself via bank balances and a small cash credit line. The subsidiaries in Slovakia, Hungary, Italy, China and Taiwan are financed primarily through short-term overdraft facilities and, to a lesser extent, long-term loans. As of the December 31, 2019 balance sheet date, the Manz Group had liquid funds in the amount of EUR 44 million as well as revolving credit and guarantee facilities in the amount of EUR 18.0 million (previous year: EUR 14.6 million). The Manz companies are required, where possible, to process orders cash positive in order to reduce liquidity and financing risks. Here, the deposits should exceed the payouts over the entire term of the respective project. As usual in project-based business, a delay on incoming orders or payments has significant effects on liquidity or the relevant company and possibly also on the Group. In order to recognize risks from delayed payments in a timely manner, the Manz Group works with a rolling liquidity forecast, which is updated bi-weekly. Based on current corporate planning and orders on hand amounting to EUR 168.5 million as of the December 31, 2019 balance sheet date (previous year: EUR 215.2 million), the Managing Board believes that Manz AG will be able to satisfy its payment obligations during the 2020 and 2021 financial years.

Currency risks

Manz AG's currency risks arise from operating activities. In the financial year 2019, these were mainly related to transactions of the Asian companies from the sale of machinery. The transaction-related exchange rate risk resulting from the appreciation or depreciation of the US dollar against the New Taiwan Dollar, the euro against the New Taiwan Dollar and the euro against the Hong Kong Dollar is generally hedged by forward exchange transactions wherever necessary and possible. Furthermore, economic currency risk is generally also reduced by distributing the production locations over several countries (natural hedging).

Strategic risks

Risks from the strategic focus on dynamic growth markets

As a high-tech equipment manufacturer, Manz AG focuses on rapidly growing future markets with short product life cycles. With its production solutions, Manz contributes to the development of numerous technologies. For instance, components for smartphones and tablet computers, batteries for electrical vehicles, consumer electronics and stationary energy storage systems as well as solar modules are produced on Manz machines. This market positioning on highly competitive and innovation-driven markets bears the risk of a competitive disadvantage due to insufficient structural flexibility, insufficient expertise or a slow pace of development. In order to avoid this, the respective segments therefore always endeavor to recognize customer requirements and future technological trends in the industries at an early stage. Based on this knowledge, the company derives innovations with unique selling points in order to stay one step ahead of the competition. The innovation approaches are presented and discussed by the business units in a Group-wide strategy meeting every six months and their implementation is approved after a detailed, positive review.

Dependence on major customers and industries

The development of production facilities for industrial companies entails the risk of a concentration in the order volume on individual projects, sectors and customers. For example, in the financial year 2019 Manz AG recorded around 35 % of its revenues with three customers, with electronic components being of particular importance in this regard as a result of the processing of a major order for a customer in the display industry. If the loss of a major client cannot be compensated for, negative effects on the Manz Group's results are to be expected. For this reason, Manz pursues the goal of achieving a balanced order structure within its three strategic segments. In this regard, modularly combinable machines and machine components, as well as "small lines" and major projects (> EUR 10 million order volume) should be balanced. The risk of a decline in major customers is to be reduced in principle by broadening the customer base and diversifying project volumes and the business model. In addition, Manz accepts third-party business in the Contract Manufacturing segment in order to achieve balanced capacity utilization despite the cyclical development of its strategic business divisions.

Market risks

Risks in connection with international business activities

Negative macroeconomic and financial developments in the international sales markets may have negative effects on business development. As a result, refinancing for Manz as a listed company via the capital market could become significantly more difficult. With potential clients of Manz AG in general, there is a risk that the necessary capital for investments in new equipment may not be available based on the markets, some of which are still young. As a result, Manz constantly monitors and analyzes the market and the competition in order to recognize such developments at an early stage and to counteract them. The flexibility of the entire corporate organization, the expansion of the product portfolio, the customer base and global sales capacities, and the focus on growth markets of the three core regions of Asia, Europe and the United States make it possible to react quickly to negative changes in individual markets.

Risks due to increasing competition

Existing and potential competitors, especially Asian manufacturers, could seek to gain market share in Manz AG's target industries, notably through aggressive pricing, imbalances through local tax and subsidy policies by states and governments, or through import restrictions to support national companies. A further risk is that there are too many new competitors, resulting in an oversupply on the market and, as a consequence, consolidation among companies. This could have a direct impact on the development of the company's market share and thus on Manz AG's sales, revenues and earnings. In order to counteract these risks effectively, the "Market Intelligence" division constantly conducts market and competitive surveys, which are discussed in detail in international sales meetings on a regular basis and serve as a basis for possible countermeasures. Furthermore, the CRM system (Customer Relationship Management System) provides leading indicators for assessing future market development. A detailed analysis of lost projects provides clarity about the competitive situation in a timely manner. The process of "product identification, development and market launch" also aims to provide the necessary competitive advantage on growth markets with strategic innovations and to further strengthen Manz AG's position as a high-tech equipment manufacturer. With its local facilities in Taiwan and China, the associated production costs that are standard for the local area, and direct customer contacts, Manz counteracts any churn to domestic competitors. Strategic cooperations, e.g., in the Energy Storage segment with the Chinese company Shenzhen Yinghe Technology Co. Ltd. are also aimed at streamlining the individual service portfolio by focusing, thereby reducing the cost base and increasing the company's competitiveness.

Risks from rapid technological change and from launching new products

Research and development as well as an innovative product portfolio are of crucial importance for the company to maintain its technological high-end positioning in the market. The industries for which Manz AG develops and manufactures its machines and equipment are characterized by rapid technological change. Substitutive or disruptivetechnologies may occupy substantial parts of an existing market. As a result, Manz AG's competitors may be able to react faster or better to changes in customer requirements by developing corresponding technologies or software, thus gaining a competitive advantage over Manz AG. In these cases, the demand for the products of Manz AG could be significantly impaired. Furthermore, the Manz Group could develop machines and equipment for which there is little or no demand on the market. There is also a risk that the completion of new products currently under development may prove to be more complex than expected in the future. Problems with, e.g., technical feasibility, quality assurance, failure to meet deadlines, increased costs, etc., could at worst lead to the loss of customers in conjunction with financial losses. Manz AG endeavors to maintain close contact with its clients and thus to recognize new trends at an early stage. Furthermore, in the Business Development segment, we are also working on new application possibilities for the technologies developed by Manz. The proximity to the customer further enhances Manz AG through the constant expansion of the associated service business, in particular with after-sales service. Based on our risk analysis, Manz also pursues the goal of ensuring that projects and products are implemented in line with contractual agreements. Manz AG also counters the fundamental risk involved in developing and launching new products for individual customers by expanding its product portfolio, to include machine components which can be customized to form modular assemblies or complete production machines at the customer's request.

Environmental risks

Risks related to pandemics

As an internationally active high-tech equipment manufacturer, Manz AG has production facilities in Germany, China, Taiwan, Slovakia, Hungary, and Italy, as well as global service branches. Activities in regions with less developed healthcare systems could have a negative impact on the company's business in the region in the event of pandemics and the resulting production stops, thus impacting the company's net assets, financial position and results of operations. In this connection, the outbreak of the corona virus could have a negative impact in particular on the processing of our customer projects in the Solar and Electronic Components segments in Asia. Although appropriate travel guidelines and precautionary measures are intended to keep the potential health risk for traveling employees as low as possible, they are exposed to a higher risk of infection and may also transmit diseases to employees in other regions.

OPPORTUNITIES REPORT

Industry focus with competitive and customer-oriented, innovative technology portfolio

With many years of proven expertise in automation, laser processing, vision processing, metrology, wet chemistry and roll-to-roll processes, Manz AG is active in the Solar, Electronics and Energy Storage segments. Manz AG offers a broad portfolio of innovative products to producers and their suppliers in a wide variety of industries worldwide. This includes customer-specific production systems right up to machines that can be linked together to form complete, individual system solutions based on a modular system. Manz AG also offers services around its core technological competencies. Diversification in technologies, industries and regions is aimed at adjusting production capacities in line with the investment cycles of individual industries and using them by other segments within the Group. This should create the stability necessary for sustainable corporate development. At the same time, this diversified business model gives the company the opportunity to benefit from the growth potential of several dynamic target markets. The company has, for example, opened up a further significant area in connection with the electric power trains in electric vehicles with a major order from a Tier 1 automotive supplier for machines for the automated assembly of cell contacting systems for battery cells.

Sustainable competitiveness and profitability through profitable growth

Manz AG's diversified business model forms the basis for the sustained stability and long-term growth we are striving for. With the aim of significantly expanding its customer base and thus further stabilizing its business model, Manz AG is constantly expanding the proportion of modular machines in its product portfolio for all segments, in addition to customized solutions. These modular machines should be intelligently linked to complete, individual system solutions based on a modular system. This step should significantly reduce development risks, effort and duration and thus significantly shortens the amortization of development efforts. At the same time, this should create synergy effects for Manz AG which support the productivity of the entire Group. Cost-conscious management is of crucial importance for the profitable development of a company. The diversified business model and ongoing measures to optimize costs are aimed at maintaining long-term competitiveness and profitability.

Cross-segment technology deployment offers possibilities for synergy effects and flexibility

In developing its production systems, Manz AG carries out an active technology transfer between the relevant target industries. By using its extensive technological expertise across industries, the company generates synergies and thus aims to make a contribution to minimizing its customers' production costs, thus contributing to their economic production. At the same time, the synergy effects achieved between the segments should increase the Manz Group's productivity and profitability. By leveraging the synergies between the individual segments, Manz AG's business model is also flexibly positioned for new growth trends and sales markets with additional revenues and earnings potential.

Strategic cooperation with Chinese partners opens up growth potential

By entering into the strategic cooperation agreement between Manz AG, Shanghai Electric Group, and China Energy Investment Corporation Limited (formerly Shenhua Group) at the beginning of 2017, the partners have formed a strategic cooperation in the CIGS thin-film sector, in which they have bundled their individual strengths. China Energy Investment Corporation Limited is one of China's largest energy producers. Shanghai Electric is

China's leading supplier of equipment to generate electricity, with extensive experience in the renewable energies sector. As a high-tech equipment manufacturer, Manz AG has contributed its CIGS technology and its CIGS research team to this cooperation. With the establishment of NICE Solar Energy GmbH in April 2017 and the development resources thus available, the partners have been able to accelerate the further development of CIGS technology. It was only at the end of 2019 that NICE Solar Energy succeeded in increasing the efficiency of CIGS thin-film solar modules to a world record of 17.6%. By combining their complementary expertise in power generation, large-scale equipment and plant manufacturing, and cutting-edge technology, the partners form a strong alliance to further develop and commercialize CIGS technology in China and around the world. Manz also entered into a strategic alliance with a Chinese partner in the Energy Storage segment at the start of 2020. Shenzhen Yinghe Technology Co. Ltd. was formed in 2006 and is engaged in research and development, production and sales of intelligent automation solutions for the manufacture of lithium-ion battery cells. As part of this cooperation, Manz and Yinghe will jointly offer their customers the best equipment technology from their respective product portfolios within the scope of a licensing model. In addition to joint project management, both partners have agreed to provide mutual support for research and development activities in conjunction with production equipment for lithium-ion batteries. With this step, Manz is pursuing the goal of significantly improving its own starting position when placing orders for projects to be implemented in future, and thus being able to benefit from the market potential.

Assessment and Summary of the Risk and Opportunity Situation

Manz AG's risk portfolio consists of risks that can be influenced by the Group as well as risks that cannot be influenced, such as economic activity and sector development. The company regularly monitors and analyses the situation in these areas. Risks that can be influenced are identified at an early stage by appropriate monitoring and control systems and should therefore be avoided. Significant risks, which are likely to have serious negative effects on the ecological or social aspects, cannot be deduced from the business model of Manz AG.

The identification of risks and opportunities has not given rise to any risks that could jeopardize the continued existence of the entire Group or its Group companies for the financial year 2019 or for the forecast period 2020. Risks that endanger the continued existence of the company are defined as risks with a probability of occurrence of more than 60% and a financial impact on EBIT of more than EUR 20 million. The general risk and opportunity situation in the financial year 2019 remains unchanged from the previous year. Risks which do not have any or little relevance according to the risk management system in comparison with the preceding year have not been shown in the current risk report. The risks and their possible effects are known, as are the measures to be introduced. The resulting opportunities are analyzed and, if necessary, implementation is initiated. Risks that arise in the financial year 2020 (forecast period) and could lead to deviations in the development of revenue and/or earnings are evaluated as follows:

Risks	Impact	Probability of occurrence	Net risk in EUR million
Operating risks			
Project risks	■■■	■	5
Personnel risks	■■	■■■	3.75
Liquidity and financing risks	■■■	■	5
Currency risks	■■	■	1.25
Strategic risks			
Risks from the strategic focus on dynamic growth markets	■■	■■■	3.75
Dependence on major customers and industries	■■■	■	5
Market risks			
Risks in connection with international business activities	■■	■	1.25
Risks due to increasing competition	■■	■■■	3.75
Risks arising from rapid technological change and the market launch of new products	■■	■■■	3.75
Environmental risks			
Risks related to pandemics	■■	■■	2.5

Opportunities	Impact	Probability of occurrence
Industry focus with competitive and customer-oriented, innovative technology portfolio	■■■	■■■
Sustainable competitiveness and profitability through profitable growth	■■■	■■■
Cross-segmental use of technology offers synergy effects and flexibility	■■■	■■■
Strategic cooperation with Chinese partners opens up growth potential	■■	■■■

The Managing Board of Manz AG thus fulfills its obligation to inform the Supervisory Board and shareholders about the opportunities and risks of the company. It regards this reporting as an important element of corporate governance in practice.

From today's perspective, there are no existential risks to the future development of Manz AG that could have a material adverse effect on the Group's assets, financial and earnings situation.

FORECAST REPORT

ECONOMIC AND SECTORAL OUTLOOK

According to the Kiel Institute for the World Economy, the slowdown in the major economies will continue in 2020 as well. Overall, however, the major economies remain on a slower growth course. An impending deterioration in the environment for international trade is noted as the key influencing factor. The associated deterioration in the investment climate represents an additional risk for the economy. Against this background, global economic growth of 3.1 % is forecast for 2020, after 3.0 % in 2019. At 1.5 % (2019: 2.3 %), the US is growing significantly more slowly than the global average, as is Europe at 1.2 % (2019: 1.4 %). Germany itself is defying the global trend and is expected to grow 1.1 % in 2020 after a rate of 0.5 % in 2019. Economic growth in China will be weaker again in 2020 than previously, with Kiel's economists expecting only 5.9 % growth (2019: 6.2 %). For 2020, the German Engineering Federation (VDMA) expects revenues to decline by –2 % as had likewise been the case for 2019. The Chinese market, which is critical to Manz, is expected to grow by 2 % (2019: 4 %).

In the critical customer segments of Manz AG, German manufacturers of PV production equipment are significantly more positive than last year, expecting an average increase in revenue of 2.7 % (2019: –15.9 %). IHS Markit once again expects a significant increase in newly installed capacity of 142 GW in 2020 (2019: 125 GW).

According to the German Engineering Federation (VDMA), German electronics manufacturers expect revenue to increase by 5.1 % in 2020 (2019: 6.4 %). IHS Markit expects a slight year-on-year increase of 5.3 % in 2020 in the global market for LCD and AMOLED displays, following a market correction and the associated decline in revenue in the past year. The share of revenue is shifting slightly in favor of the AMOLED displays, for which a revenue share of 28.7 % is expected in 2020 (2019: 23.2 %). The revenue share of LCD displays in the market as a whole is therefore decreasing slightly from 76.8 % in 2019 to 71.3 %. According to Prismark, global printed circuit boards revenue should grow by 2.9 % in 2020 compared to the previous year (2019: 2.9 %).

German manufacturers expect revenue to increase by 9 % compared to 4 % in the previous year in the segment Energy Storage, according to VDMA 2020. Global demand for lithium-ion batteries is also expected to grow strongly after several very dynamic years. For 2020, the Frauenhofer Institute forecasts total requirements of some 270 GWH, whereby the lion's share will once more comprise automotive applications.

EXPECTED DEVELOPMENT OF THE GROUP AND SEGMENTS

Revenue forecast

	2018 actual	2019 forecast	2019 actual	2020 forecast
	Revenue in EUR million	**Revenue trend**	**Revenue in EUR million**	**Revenue trend**
Group	296.9	Between +10 % and +14 %	264.6	Slight to moderate increase compared to previous year
Solar	105.0	Between –30 % and –40 %	47.5	Up to 35 % below previous year
Electronics	93.9	Between +30 % and +40 %	115.7	Slightly below previous year
Energy Storage	35.4	Between +70 % and +90 %	40.7	Between +110 % and +130 %
Contract Manufacturing	43.1	Between +15 % and +20 %	41.5	Between 20 % and 25 % below previous year
Service	19.5	Between +5 % to +10 %	19.1	Slightly above previous year

Earnings forecast

	2018 actual	2019 forecast	2019 actual	2020 forecast
	EBIT in EUR million	**EBIT margin/ development**	**EBIT in EUR million**	**EBIT margin/ development**
Group	–3.4	Slightly positive without special effect	–7.7	EBIT margin in the low single-digit positive percentage range
Solar	14.4	4 % to 6 %	–2.0	EBIT margin in the high single-digit negative percentage range
Electronics	–12.0	Low single-digit negative million euros range	–7.6	Balanced EBIT
Energy Storage	–9.9	High negative single-digit million euros range	–11.3	EBIT margin in the low single-digit percentage range
Contract Manufacturing	1.2		11.5	EBIT margin in the low double-digit percentage range
Service	3.9	15 % to 20 %	1.6	EBIT margin in the high single-digit percentage range

Given the overall positive outlook for the industry in the countries and markets relevant to Manz AG, the Managing Board is confident that Manz AG will grow profitably in 2020. The Managing Board is forecasting a slight to moderate increase in revenues compared to 2019, a positive EBITDA margin in the mid single-digit percentage range and an EBIT margin in the low single-digit positive percentage range. A value slightly above 40 % is expected for the equity ratio; with regard to Gearing, the Managing Board is anticipating a value of 10.5 %, slightly above the preceding year's value.

The forecast considers the currently assessable effects of the corona pandemic on the economic development on our company, yet rests on the assumption that the further spread of the virus will not have any negative effects on the development of business in the 2020 fiscal year in the Solar, Electronics, Energy Storage and Contract Manufacturing segments.

At segment level, the Managing Board anticipates significant revenue growth of between 110 % and 130 % for Energy Storage. The Managing Board also expects slight revenue growth in the Service segment. Revenue in the Solar segment is expected to be 35 %, below the level of the previous year. Due to delays in the overall project on the part of customers, as well as the effects of the corona pandemic, the Managing Board expects that final acceptance of the machinery and receipt of payment for the outstanding amount of EUR 50 million, and the award of a follow-on order for a turn-key production line for CIGS thin-film solar modules, will not occur before the first quarter of the 2021 financial year. For the Electronics and Contract Manufacturing segments, the Managing Board is expecting revenues to be slightly below the previous year. The overall positive expectations for 2020 are underpinned by a positive trend in the intensity of inquiries, order intake and a solid order backlog of EUR 168.5 million as of December 31, 2019 (previous year: EUR 215.2 million).

The goal of the Managing Board is to further develop the comprehensive technology portfolio on the one hand, and to strengthen and expand Manz AG's favorable market position in all segments on the other.

FORWARD-LOOKING STATEMENT

This report contains forward-looking statements, which are based on the current assumptions and forecasts of Manz AG's Managing Board. Such statements are subject to both risks and uncertainties. These and other factors could cause the actual results, financial position, developments or performance of the Company to differ materially from the estimates given here. Our company assumes no obligation to update these forward-looking statements or adapt them to future events or developments.

Reutlingen, March 13, 2020

The Managing Board

Martin Drasch | Manfred Hochleitner | Jürgen Knie

SAFETY HEALTH PREVENTIVE CARE

The health of our employees is our top priority. This is because only healthy employees are productive and feel safe at their workplace. For this reason, we go far beyond legal requirements when it comes to occupational safety - with comprehensive occupational safety measures and numerous offers for individualized preventive care and the promotion of a health-conscious lifestyle.

Prevention means avoidance

The best protection against occupational accidents is prevention. We rely on support from outside experts in this field as well. Above all, however, every single employee is required to comply with applicable regulations and to report any safety-related defects without delay.

3.4 %
accident rate

Health promotion

Country-specific offerings

We promote the health of our employees not only in the workplace, but far outside of it as well. For example, we support our employees by offering a range of discounted fitness and wellness offers, seminars on workplace ergonomics or JobRad lease.

Company doctor

Preventive care

Our preventive care measures range from occupational accident and health insurance for our Chinese employees to company doctors for our employees in Germany. They conduct occupational medical examinations and provide advice about questions concerning workplace-related health problems, maternity protection or occupational reintegration. In addition, company doctors enable us to ensure that operational facilities, workplaces and work processes comply with applicable occupational health and safety regulations.

CONSOLIDATED FINANCIAL STATEMENT

CONSOLIDATED INCOME STATEMENT

(in TEUR)

	Notes	2019	2018
Revenues	1	264,404	296,920
Inventory changes, finished and unfinished goods		–9,737	–2,420
Work performed by the entity and capitalized	2	4,862	4,924
Total operating performance		**259,528**	**299,424**
Other operating income	3	9,690	6,746
Material costs	4	–160,829	–182,520
Personnel expenses	5	–71,584	–70,231
Other operating expenses	6	–36,421	–41,316
Share of profit (loss) of associates		8,829	–2,590
EBITDA		**9,213**	**9,513**
Amortization/depreciation	7	–16,838	–12,897
Result of operating activities (EBIT)		**–7,625**	**–3,385**
Finance income	8	94	96
Finance costs	9	–2,397	–1,615
Earnings before taxes (EBT)		**–9,928**	**–4,904**
Income taxes	11	–1,320	–3,116
Consolidated net profit/loss		**–11,248**	**–8,020**
thereof attributable to non-controlling interests	12	–200	–261
thereof attributable to shareholders of Manz AG		–11,048	–7,760
Weighted average number of shares		7,744,088	7,744,088
Earnings per share (diluted = undiluted) in EUR per share	13	–1.43	–1.00

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

(in TEUR)

	2019	**2018**
Consolidated profit or loss	**–11,248**	**–8,020**
Difference resulting from currency translation	2,544	397
Cash flow hedges	3	16
Tax effect resulting from components not recognized in profit/loss	–1	–4
Share of other comprehensive income from investments in associates using the at equity method	–3	–30
Total of expenditures and income recorded directly in equity capital with future reclassification with tax effect	**2,543**	**379**
Fair value through other comprehensive income (FVOCI)	–8,306	–3,569
Tax effect resulting from fair value through other comprehensive income (FVOCI)	–1,235	1,039
Revaluation of defined benefit pension plans	–351	124
Tax effect resulting from revaluation of defined benefit pension plans	696	–18
Total of expenditures and income recorded directly in equity without future reclassification with tax effect	**–9,196**	**–2,424**
Group comprehensive income	**–17,901**	**–10,065**
thereof non-controlling interests	–196	–267
thereof shareholders Manz AG	–17,705	–9,798

CONSOLIDATED BALANCE SHEET

ASSETS (in TEUR)

	Notes	Dec. 31, 2019	Dec. 31, 2018
Non-current assets			
Intangible assets	14	60,849	62,328
Property, plant and equipment	15	44,006	29,160
Investment in an associate	16	21,382	11,763
Financial assets	17	11,700	20,006
Other non-current assets	18	1,256	523
Deferred tax assets	11	5,651	4,913
		144,844	**128,693**
Current assets			
Inventories	19	35,739	49,368
Trade receivables	20	42,812	30,138
Contract assets	21	59,939	51,029
Current income tax receivables		288	443
Derivative financial instruments	22	10	2
Other current assets	23	13,892	35,038
Cash and cash equivalents	24	44,005	51,006
		196,685	**217,024**
Total assets		**341,528**	**345,717**

SHAREHOLDERS' EQUITY AND LIABILITIES (in TEUR)

	Notes	Dec. 31, 2019	Dec. 31, 2018
Equity	25		
Issued capital		7,744	7,744
Capital reserves		42,545	79,208
Retained earnings		70,390	44,438
Accumulated other comprehensive income		11,457	18,114
Shareholders of Manz AG		**132,136**	**149,503**
Non-controlling interests		275	471
		132,411	**149,974**
Non-current liabilities			
Non-current financial liabilities	26	728	1,138
Non-current financial liabilities from leasing	27	12,268	0
Pension provisions	28	7,202	7,051
Other non-current provisions	29	2,659	3,114
Other non-current liabilities		7	55
Deferred tax liabilities	11	6,462	4,371
		29,325	**15,729**
Current liabilities			
Current financial liabilities	30	57,185	42,173
Current financial liabilities from leasing		3,329	0
Trade payables	31	57,407	69,683
Contract liabilities	32	35,774	42,285
Current income tax liabilities		602	384
Other current provisions	33	10,693	12,034
Derivative financial instruments	22	0	2
Other current liabilities	34	14,803	13,453
		179,793	**180,014**
Total liabilities		**341,528**	**345,717**

CONSOLIDATED CASH FLOW STATEMENT

(in TEUR)

	Dec. 31, 2019	Dec. 31, 2018
Net profit/loss after taxes	–11,248	–8,020
Amortization/depreciation	16,838	12,897
Increase (+)/decrease (–) of pension provisions and other non-current provisions	–304	139
Interest income (–) and expenses (+)	2,303	1,519
Taxes on income and earnings	1,320	3,116
Other non-cash income (–) and expenses (+)	8,644	–3,453
Gains (–)/losses (+) from disposal of assets	19	395
Share of profit/loss of associates	–8,829	2,590
Increase (–)/decrease (+) in inventories, trade receivables, contract assets and other assets	–9,962	–12,947
Increase (+)/decrease (–) in trade payables, contract liabilities and other liabilities	–19,631	24,309
Received (+)/Paid income taxes (–)	–948	–4,129
Interest paid	–2,397	–1,615
Interest received	94	96
Cash flow from operating activities	**–24,101**	**14,898**
Cash receipts from the sale of fixed assets	1,063	706
Cash payments for the investments in intangible assets and property, plant and equipment	–8,893	–11,531
Changes in investments on financial assets	14,173	–4,333
Cash flow from investing activities	**6,343**	**–15,158**
Cash receipts from the assumption of non-current financial liabilities	5	657
Cash payments for the repayment of non-current financial liabilities	–411	–2,855
Cash receipts from the assumption of current financial liabilities	57,185	42,173
Cash payments for the repayment of current financial liabilities	–42,173	–36,130
Purchase of treasury shares	–4	–82
Cash payment for lease liabilities	–4,340	0
Cash flow from financing activities	**10,262**	**3,763**
Cash and cash equivalents at the end of the period		
Net change in cash funds (subtotal 1–3)	–7,496	3,503
Effect of exchange rate movements on cash and cash equivalents	167	64
Credit risk allowance on bank deposit	328	–407
Cash and cash equivalents on January 1, 2019	51,006	47,846
Cash and cash equivalents on December 31, 2019	**44,005**	**51,006**
Cash and cash equivalents	44,005	51,006
Cash and cash equivalents on December 31, 2019	**44,005**	**51,006**

The cash flow statement is discussed in the notes

CONSOLIDATED STATEMENT OF CHANGES TO EQUITY 2018

(in TEUR)

					Other comprehensive income								
					Components which are not transferred to profit or loss		Components which may be transferred to profit or loss						
	Issued capital	**Capital reserves**	**Treasury shares**	**Revenue reserves**	Revaluation of defined benefit pension plans	Fair value through other comprehensive income (FVOCI)	Cash flow hedges	Share of other comprehensive income from investments in associates using the at equity method	Currency translation	**Other comprehensive income**	**Equity to shareholders of Manz AG**	**Non-controlling interest**	**Total equity**
As of Jan. 1, 2018	**7,744**	**98,917**	**0**	**32,330**	**–2,315**	**–475**	**–14**	**–100**	**23,055**	**20,151**	**159,142**	**738**	**159,880**
Effects of changing of accounting rules	0	0	0	–133	0	0	0	0	0	0	–133	0	–133
Consolidated net profit	0	0	0	–7,760	0	0	0	0	0	0	–7,760	–261	–8,020
Other comprehensive income	0	0	0	0	106	–2,529	12	–30	404	–2,037	–2,037	–7	–2,044
Consolidated income statement	0	0	0	–7,760	106	–2,529	12	–30	404	–2,037	–9,797	–267	–10,065
Withdrawal from capital reserves	0	–20,000	0	20,000	0	0	0	0	0	0	0	0	0
Purchase of treasury shares	0	0	–78	0	0	0	0	0	0	0	–78	0	–78
Use of treasury shares	0	0	78	0	0	0	0	0	0	0	78	0	78
Share-based payment	0	291	0	0	0	0	0	0	0	0	291	0	291
Changes to the basis of consolidation	0	0	0	0	0	0	0	0	0	0	0	0	0
As of Dec. 31, 2018	**7,744**	**79,208**	**0**	**44,438**	**–2,209**	**–3,004**	**–2**	**–130**	**23,459**	**18,114**	**149,503**	**471**	**149,974**

Further information of the Statement of Changes in Equity is provided in the Note 25

CONSOLIDATED STATEMENT OF CHANGES TO EQUITY 2019

(in TEUR)

					Other comprehensive income								
					Components which are not transferred to profit or loss		Components which may be transferred to profit or loss						
	Issued capital	**Capital reserves**	**Treasury shares**	**Revenue reserves**	Revaluation of defined benefit pension plans	Fair value through other comprehensive income (FVOCI)	Cash flow hedges	Share of other comprehensive income from investments in associates using the at equity method	Currency translation	**Other comprehensive income**	**Equity to shareholders of Manz AG**	**Non-controlling interest**	**Total equity**
As of Jan. 1, 2019	**7,744**	**79,208**	**0**	**44,438**	**–2,209**	**–3,004**	**–2**	**–130**	**23,459**	**18,114**	**149,503**	**471**	**149,974**
Consolidated net profit	0	0	0	–11,048	0	0	0	0	0	0	–11,048	–200	–11,248
Other comprehensive income	0	0	0	0	345	–9,541	2	–3	2,540	–6,657	–6,657	4	–6,653
Consolidated income statement	0	0	0	–11,048	345	–9,541	2	–3	2,540	–6,657	–17,705	–196	–17,901
Withdrawal from capital reserves	0	–37,000	0	37,000	0	0	0	0	0	0	0	0	0
Purchase of treasury shares	0	0	–4	0	0	0	0	0	0	0	–4	0	–4
Use of treasury shares	0	0	4	0	0	0	0	0	0	0	4	0	4
Share-based payment	0	338	0	0	0	0	0	0	0	0	338	0	338
As of Dec. 31, 2019	**7,744**	**42,545**	**0**	**70,390**	**–1,864**	**–12,545**	**0**	**–133**	**25,999**	**11,457**	**132,136**	**275**	**132,411**

Further information of the Statement of Changes in Equity is provided in the Note 25

CONSOLIDATED NOTES FOR FINANCIAL YEAR 2019

GENERAL DISCLOSURES

Manz AG has its headquarters at Steigaeckerstrasse 5 in 72768 Reutlingen, Germany. Manz AG and its subsidiaries ("Manz Group" or "Manz") have many years of expertise in automation, laser processing, vision and metrology, wet chemistry, and roll-to-roll processes. Manz AG shares are traded on the regulated market (Prime Standard segment) of the Frankfurt Stock Exchange.

Manz AG's consolidated financial statements as of December 31, 2019 were prepared in accordance with International Financial Reporting Standards (IFRS), as applicable in the EU, and the supplementary provisions of German commercial and corporate law applicable in accordance with Section 315e(1) of the German Commercial Code (HGB). All mandatory standards and interpretations were taken into account. IFRS standards that have not yet become mandatory are not applied.

To better clarity, individual items have been summarized in the balance sheet and the income statement and disclosed separately in the notes. The Manz Group's financial year covers the period from January 1 to December 31 of one year. The consolidated financial statements are prepared in EUR. Unless stated otherwise, the disclosures in the notes are made in thousands of euro (TEUR). The income statement is prepared in accordance with the total cost method. The consolidated financial statements for 2019 were released for submission to the Supervisory Board by resolution of the Managing Board on March 13, 2020.

BASES OF ACCOUNTING

CONSOLIDATED GROUP

The consolidated financial statements of Manz AG include all domestic and foreign companies which Manz AG can exercise direct or indirect control. Control influence exists when Manz AG is exposed to, or has rights to, fluctuating returns on its investment and has the ability to influence these returns through its power over the company.

In addition to Manz AG, the group of consolidated companies includes the following domestic and foreign subsidiaries as of December 31, 2019:

		Subsidiaries in %
Manz Batterytech Tübingen GmbH	Tübingen/Germany	**100.0 %**
Manz USA Inc.	North Kingstown/USA	**100.0 %**
Manz Hungary Kft.	Debrecen/Hungary	**100.0 %**
Manz Slovakia s.r.o.	Nove Mesto nad Vahom/Slovakia	**100.0 %**
Manz Italy s.r.l.	Sasso Marconi/Italy	**100.0 %**
Suzhou Manz New Energy Equipment Co., Ltd.	Suzhou/PR China	**56.0 %**
Manz Asia Ltd.	Hong-Kong/PR China	**100.0 %**
Manz China Suzhou Ltd.	Suzhou/PR China	100.0 %
Manz (Shanghai) Trading Company Ltd.	Shanghai/PR China	100.0 %
Manz India Private Ltd.	New Delhi/India	75.0 %
Manz Chungli Ltd.	Chungli/Taiwan	100.0 %
Manz Taiwan Ltd.	Chungli/Taiwan	100.0 %
Manz (B.V.I.) Ltd.	Road Town/British Virgin Islands	100.0 %

The financial statements of the subsidiaries are prepared on the reporting date of the consolidated financial statements, which corresponds to the reporting date of Manz AG.

Manz Batterytech Tübingen GmbH, Tübingen, Germany, in which Manz AG has a participation of 100 % of the shares, was newly formed in October 2019. The object of the company is operation and lease or transfer of use of production equipment, in particular facilities for the manufacture of lithium-ion battery cells.

As of November 30, 2019, Intech Machines (B.V.I.) Co. Ltd., Road Town, British Virgin Islands was liquidated. Its assets, liabilities and equity were transferred to Manz Taiwan Ltd., Chungli, Taiwan.

Manz holds 80.5 % in the associated company Talus Manufacturing Ltd., Chungli, Taiwan, which is included at equity into the consolidated financial statements.

There is an investment over 11.1 % (previous financial year: 15 %) in NICE PV Research Ltd. Beijing, PR China, which is included in the consolidated financial statement according to the IFRS 9 as an equity instrument to fair value through other comprehensive income.

CONSOLIDATION PRINCIPLES

Capital consolidation uses the acquisition method. In this case, the acquired assets and liabilities are measured at their fair market values at the acquisition date. The acquisition costs for the acquired shares are then offset against the proportionate revalued equity of the subsidiary. Any remaining positive difference from offsetting the purchase price against the identified assets and liabilities is presented as goodwill in intangible assets. Costs incurred as part of the corporate merger are expensed and therefore are not part of the acquisition costs.

If a previous subsidiary is deconsolidated, the difference between the consideration received and the outgoing net assets at the time of the loss of control is recognized in profit or loss.

Expenses and income, receivables and payables as well as cash flows from transactions between consolidated companies are fully eliminated. The necessary tax deferrals are carried out on consolidation processes. Furthermore, guarantees assumed by Manz AG or one of its consolidated subsidiaries in favor of other consolidated subsidiaries are eliminated.

NON-CONTROLLING INTERESTS

Non-controlling interests represent that part of the result and the net assets that is not attributable to the Group. Non-controlling interests are presented separately in the consolidated income statement and the consolidated balance sheet. They are recognized within equity in the consolidated balance sheet, separately from the equity attributable to the shareholders of the parent company.

ASSOCIATED COMPANIES

Companies which Manz can exercise significant influence pursuant to IAS 28 Investments in Associates and Joint Ventures are accounted for using the at-equity method and are initially carried at cost. Manz' share in the results of the associated company is shown in the consolidated income statement. Changes in the equity of the associated company which do not affect income are recognized proportionately in the consolidated equity. The carrying amount of the associated company is increased or reduced by the overall changes. The carrying amount of the investment and all long-term shares allocated to the net investment in the associated company are consistent with Manz AG's investment in the company.

CURRENCY TRANSLATION

The financial statements of subsidiaries included in the Group which are prepared in foreign currency are translated into EUR in accordance with IAS 21. With one exception, the functional currency of the consolidated companies corresponds to the respective national currency, as these subsidiaries manage their business activities independently in financial, economic and organizational respects. For one subsidiary, the functional currency differs from the national currency in euro, as significant expenses and income are incurred or generated in EUR. Assets, liabilities, and contingencies are translated using the exchange rate on the reporting date, while equity is translated using historical exchange rates. The income statement is translated at the average annual exchange rate. Translation differences resulting from the translation of the financial statements are directly recognized in accumulated other comprehensive income until the disposal of the subsidiaries.

In the annual financial statements of the companies included in the consolidated financial statements, foreign currency items are initially measured at cost. Exchange rate gains and losses as of the balance sheet date are recognized in profit or loss. Monetary assets and liabilities are valued at the exchange rate on the balance sheet date.

To determine the exchange rate to be applied on initial recognition of the related asset, expense or income (or part thereof) on derecognition of a non-monetary asset or non-monetary liability arising from prepaid consideration, the date of the transaction is the date of initial recognition of the non-monetary asset or non-monetary liability arising from the prepayment. If there are multiple prepayments or payments, the Group determines the transaction date for each prepayment or payment of prepaid consideration.

Exchange rates of the most important currencies

(Corresponds to 1 EUR)		Closing rate		Average rate	
		Dec. 31, 2019	**Dec. 31, 2018**	**2019**	**2018**
USA	USD	1.1217	1.1446	1.1197	1.1811
China	CNY	7.8170	7.8733	7.7359	7.8085
Hong-Kong	HKD	8.7360	8.9653	8.7735	9.2576
Taiwan	TWD	33.6188	35.0286	34.6163	35.6126

ACCOUNTING AND VALUATION PRINCIPLES IN THE FINANCIAL YEAR 2019

Manz AG's assets and its fully consolidated liabilities and are uniformly recognized and measured according to the accounting and valuation methods applicable in the Manz Group as of December 31, 2019.

There is an exception to this principle for Manz AG`s consolidated financial statement of Manz AG as of December 31, 2019 as a result of the initial application of IFRS 16 Leases. In accordance with the transitional provisions of IFRS 16, the modified retrospective method was applied, so that the prior-year-figures were not adjusted. The prior-year-figures can therefore only be compared with financial year 2019 to a limited extent. The nature and effects are described below.

IFRS 16 LEASES

IFRS 16 Leases replaces IAS 17 Leases and is mandatory for all financial years beginning on or after January 1, 2019. IFRS 16 provides that the lessee's current, off-balance-sheet operating leases are to be recorded as right-of-use assets under property, plant and equipment and as financial liabilities from leases. The focus here is on the ability to control the use of an asset over a certain period of time in return for payment.

On the date of initial application, January 1, 2019, Manz was identified as a lessor from the agreements that were classified as operating leases according to IAS 17 Leases and IFRIC 4 determining whether an arrangement contains a lease.

Due to the initial application lease liabilities were recognized as of January 1, 2019 in the amount of the present value of the remaining lease payments. In return, right-of-use assets in the same amount plus lease payments made or deferred in advance were recognized. No impairment test was carried out for existing leases. Instead, it was examined whether these leases were onerous contracts pursuant to IAS 37 Provisions, contingent liabilities and contingent assets and therefore the right-of-use assets had to be reduced by the amount of the provisions for onerous contracts. There were no onerous contracts when IFRS 16 was applied for the first time.

For current leases and leases for low-value assets appropriate accountancy options are chosen. Current leases with a lease term of less than one year as well as low-value assets, with a maximum value of TEUR 5 at the time of initial recognition are recognized as an expense in the period.

The first-time application of IFRS 16 Leases has the following effects:

Reconciliation of financial liabilities arising from leases

(in TEUR)	January 1, 2019
Operating lease obligations at December 31, 2018	21,359
Accountancy options for short-term leases	–524
Accountancy options for low-value assets	–76
Gross lease liabilities at January 1, 2019	**20,759**
Discounting	–2,847
Financial liabilities from leases as of January 1, 2019	**17,912**

This is offset by the capitalization of the corresponding right-of-use assets as of January 1, 2019 in the amount of TEUR 17,537 for buildings, vehicles and information technology. The portfolio of leased assets is in line with Manz's respective business requirements.

The nature of the adjustments as at January 1, 2019 and the reasons for the changes in the balance sheet as of December 31, 2019 are explained below.

Financial liabilities arising from leases

Until the application of IFRS 16, Manz did not report any liabilities from leases, as IAS 17 did not allow for lease liabilities to be accrued as liabilities in the case of operating leases, but instead, the payments incurred for these were recorded as expenses over the term of the lease. With the initial application of IFRS 16, Manz has reported lease liabilities for the first time, which are measured at the present value of the lease payments not yet made on the balance sheet date. The payment obligations under the previous lease agreements were discounted at the incremental borrowing rates determined as of January 1, 2019 and recognized as financial liabilities from leases. The average weighted interest rate was 3.9 %. A uniform interest rate of 1.7 % was used for a portfolio of similarly structured leases on vehicles. Financial liabilities from leases are reported in accordance with their maturities. The maturity analysis is presented in (27) Non-current financial liabilities from leases

Right-of-use assets

Right-of-use assets are the lessee's rights to use an underlying asset during the term of lease. The right-of-use assets as of January 1, 2019 were measured at the amount of the financial liabilities arising from leases, adjusted for lease installments payable in advance. Please refer to (15) Property, plant, and equipment for the development of the right-of-use assets in the financial year.

Presentation of the income statement

The following amounts were recognized in profit or loss in the financial year:

(in TEUR)	2019
Income from subleases	20
Amortization expense for right-of-use assets	–3,414
Interest expenses for lease liabilities	–622
Expenses for current leases	–777
Expenses for low-value lease assets	–110
Variable lease payments	–266
Total amount recognized in profit or loss	**–5,169**

For the presentation of leases in the consolidated cash flow statement, we refer to V. Notes to the Cash Flow Statement. The cash outflows for leases are contained in the cash flow from financing activities and amounted to TEUR 4,340 in the reporting period.

The following tables show the adjustment amount resulting from the application of IFRS 16 as of December 31, 2019 and for the financial year from January 1 to December 31, 2019 compared with the previously applicable IAS 17 and the associated interpretations for each individual financial statement item affected.

Effects on the balance sheet

(in TEUR)	IFRS 16 Dec. 31, 2019	IAS 17 Dec. 31, 2019	Deviation
Non-current assets			
Property, plant and equipment	44,006	29,040	14,966
Equity	132,411	132,694	–283
Non-current liabilities			
Non-current financial liabilities from leases	12,268	0	12,268
Current liabilities			
Current financial liabilities from leases	3,329	0	3,329
Other current liabilities	14,803	15,151	–348

Manz did not recognize any deferred taxes on the temporary differences to the tax value resulting from the initial recognition of right-of-use assets and lease liabilities.

Effects on the income statement

(in TEUR)	IFRS 16 Dec. 31, 2019	IAS 17 Dec. 31, 2019	Deviation
Other operating expenses	36,421	40,761	–4,340
EBITDA	9,213	4,873	4,340
Amortization/depreciation	16,838	13,425	3,413
Operating earnings (EBIT)	–7,625	–8,552	927
Financial expenses	2,397	1,775	622
Earnings before taxes (EBT)	–9,928	–10,232	304
Earnings per share in EUR	**–1.43**	**–1.47**	**0.04**

Effects on the cash flow statement

(in TEUR)	IFRS 16 Dec. 31, 2019	IAS 17 Dec. 31, 2019
Cash flow from operating activities	–24,101	–28,441
Cash flow from investing activities	6,343	6,343
Cash flow from financing activities	10,262	14,602

Effects on the impairment tests of goodwill and trademark rights

The application of IFRS 16 Leases resulted in an increase in the carrying amounts of the cash-generating units by a total of 9 %. This was offset by a total increase in value in use of 1 %. Even after the application of IFRS 16, the value in use still exceeded the carrying amounts, so that there was no need for impairment. The difference is 3 % lower due to the application of the new accounting standard.

FIXED ASSETS

Intangible assets that are not acquired in a business combination are initially recognized at acquisition or manufacturing cost. The cost of intangible assets acquired in a business combination is their fair value on the acquisition date. Following initial recognition, intangible assets are carried at acquisition or manufacturing cost, less any accumulated amortization and impairment losses. Costs for internally generated intangible assets, with the exception of capitalized development costs, are not capitalized, but recognized in profit or loss in the period in which they are incurred.

A distinction was drawn between intangible assets with a finite useful life and those with an indefinite useful life.

Intangible assets with a finite useful life are amortized on a straight-line basis over their economic useful life and tested for possible impairment if there are indications that the intangible asset may be impaired. The period and method of amortization for intangible assets with a finite useful life are reviewed at least at the end of each financial year. Any necessary changes to the method or period of amortization due to changes in the anticipated useful life or to the anticipated use of the future economic benefit of the asset are accounted for as changes in estimates.

The useful lives for the individual classes of intangible assets are listed below:

	Years
Software	3 to 5
Patents	3 to 8
Capitalized development costs	3 to 9
Technologies	6 to 8
Customer relationships	6 to 8
Non-current costs for obtaining a contract	2 to 3

Intangible assets with an indefinite useful life are not amortized. The indefinite nature of the useful life of brands is based on the assessment that the inflow of economic benefits from these assets cannot be attributed to a specific period (further information on subsequent measurement is provided in the section entitled "Impairment test"). Goodwill from business combinations and brands with an indefinite useful life are not amortized, but only tested for impairment.

Development costs for equipment and equipment components are capitalized as long as the conditions of IAS 38 are fulfilled. In this case, acquisition and manufacturing cost covers all the costs directly attributable to the development process, as well as a reasonable share of development-related overheads. Capitalized development costs are amortized on a straight-line method from the start of production over the expected product life cycle, which is usually three to nine years. If capitalized development costs are not yet amortized, each individual asset or cash-generating unit is tested for impairment at least once a year. Research costs and development costs that cannot be capitalized are expensed as incurred.

Property, plant and equipment is measured at cost less scheduled depreciation in accordance with the useful life and any impairment losses. Costs for repairs and maintenance are recognized as current expenses. Straight-line depreciation is carried out according to the anticipated progress of the consumption of the future economic benefit. Systematic depreciation is based predominantly on the following useful lives:

	Years
Buildings	20 to 50
Technical equipment and machinery	2 to 21
Other equipment, operating and office equipment	2 to 23
Right-of-use assets	1 to 9

Residual values, useful lives, and depreciation methods of assets are reviewed at the end of a given financial year and adjusted prospectively if necessary. The parameters from 2019 correspond to the previous year.

If a considerable period of time is required for the acquisition or manufacture of a qualified asset to prepare it for its intended use, the directly attributable borrowing costs are capitalized until the asset is ready for its intended use. No borrowing costs were capitalized in the current and previous financial years.

IMPAIRMENT TEST

Intangible assets with indefinite useful lives and goodwill are not subject to scheduled amortization. However, the recoverable amount of the cash-generating unit is reviewed annually to determine impairment losses. These checks are based on detailed budget and forecast calculations. The underlying planning period for goodwill is three years. Intangible assets with indefinite useful lives and goodwill are tested for impairment once a year unless there are specific indications that a cash-generating unit may be impaired.

The recoverable amount is generally estimated separately for each asset. If this is not possible, it is determined on the basis of a group of assets that represents a cash-generating unit. The individual cash-generating units correspond to the management-relevant segments (Solar, Electronics, Energy Storage, Contract Manufacturing and Service).

Capitalized development costs and other intangible assets with finite useful lives as well as property, plant and equipment are amortized over the duration of their useful lives. In addition, an impairment test is only carried out if there are concrete indications of any impairment.

In an impairment test, the recoverable amount of the cash-generating unit of goodwill is compared with the carrying amount. If the carrying amount of the cash-generating unit to which goodwill has been allocated exceeds the recoverable amount, an impairment loss must be recognized in the income statement for the goodwill.

The recoverable amount of a cash-generating unit is the higher of its fair value less selling costs and its value in use. The value in use is determined using the discounted cash flow method on the basis of the estimated future cash flows expected to arise from the continuing use of an asset and its disposal. An interest rate before taxes corresponding to market conditions is used as the discount rate.

If the reasons for an impairment that have been charged in previous years no longer apply, the impairment is reversed to the recoverable amount (with the exception of goodwill). The amount may not exceed the carrying amount that would have been determined, net of scheduled amortization, had no impairment loss been recognized for the asset in the past.

INVENTORIES

Inventories are measured at the lower of cost or net realizable value in accordance with IAS 2 Inventories. Manufacturing cost includes not only direct costs, but also appropriate parts of the necessary material costs and production overheads, as well as production-related depreciation and proportionate administrative overheads, that can be directly allocated to the manufacturing process. Where required, the average cost method is used as the simplified measurement method. If the acquisition and manufacturing costs exceed the net realizable value, a write-down is made. The net realizable value is the estimated selling price in the ordinary course of business less estimated costs of completion and estimated selling expenses.

REVENUES, TRADE RECEIVABLES, CONTRACT ASSETS, CONTRACT LIABILITIES AND ADDITIONAL COSTS FOR OBTAINING A CONTRACT

Revenue

Manz primarily generates revenues from customer-specific construction contracts in the equipment business. Services are also provided to a lesser extent.

Revenue from the performance obligations to construct the plants is regularly recognized over the performance period using the percentage of completion (POC) method in accordance with the stage of completion of a contract. The performance is rendered over the period in which the system is constructed and, accordingly, the revenues are recognized over the performance period, because the constructed system usually does not have any alternative use for Manz and Manz has a legal claim to payment for the performance already rendered during the period in which the performance is rendered. The percentage of completion is calculated as the ratio of the costs incurred to the overall expected costs of an order (Cost-to-Cost method). Under this method of measuring progress, both the revenue and the associated costs are systematically recorded and thus the results are realized appropriate to the period in which control of the goods and services is transferred. The Cost-to-Cost method provides an accurate picture of the progress of work because Manz uses of IT-supported project controlling system, which allows for a reliable estimation of planning costs and monitors overall costs. This also allows necessary adjustments to be made for costs that do not contribute to the progress of the performance in meeting the performance obligation or that are not in proportion to the progress of the performance in meeting the performance obligation.

Some of the contracts with customers provide for variable components of the consideration in the form of discount scales and penalties. In these cases, Manz determines the amount of the consideration that it is entitled to in exchange for the transfer of the goods and services to the customer. The variable consideration is estimated at the inception of the contract and may only be included in the transaction price if it is highly probable that the cumulative revenue recognized will not be significantly reversed once the uncertainty associated with the variable consideration no longer exists. Please refer to the Management estimates and judgments, determining the method to estimate variable consideration and assess the limit.

Contract assets

A contract asset is the claim to receipt of a return in exchange for goods or services transferred to a customer. If Manz fulfills its contractual obligations by transferring goods or services to a client before the client pays the consideration or before payment is due, a contractual asset is recorded for the contingent claim to consideration. For the application of the impairment model to contractual assets, please refer to the section, Financial instruments in accordance with IFRS 9.

Trade receivables

A receivable, on the other hand, is the Group's unconditional right to receive consideration (i.e. it becomes due automatically as time passes). Implicit and payable claims to prepayments are recorded as receivables. For the application of the impairment model to receivables, please refer to the section, Financial instruments in accordance with IFRS 9.

Contract liabilities

A contract liability is the obligation of the Group to transfer goods or services to a customer for which it receives a consideration (or will receive one). If a customer pays consideration before the Group transfers goods or services to the customer, a contractual liability is recognized when payment is made or due (whichever occurs earlier). Contract liabilities are recognized as revenue when the Group has fulfilled its contractual obligations.

Additional costs for obtaining a contract

Moreover, the additional costs for obtaining a contract are capitalized. This item represents sales commissions. The capitalized costs are amortized according to the stage of completion of the underlying project. Impairment losses on capitalized costs for obtaining a contract are recognized immediately in income statement if the residual book value of the capitalized costs for obtaining a contract is higher than the remaining part of the consideration less the costs directly associated with the delivery of the goods or provisions of services which have not yet been recognized in the income statement.

FINANCIAL INSTRUMENTS IN ACCORDANCE WITH IFRS 9

A company shall recognize a financial asset or financial liability in its balance sheet when it becomes a party to the financial instrument. A financial asset is recognized as such if a contract gives the right to receive cash or another financial asset from the other contract party. Common market purchases and sales of financial assets are recognized at the time the risks and rewards are transferred. A financial liability is recognized as such if the obligation to transfer cash or other financial assets to the other party arises from a contract. A financial instrument is initially measured at fair market value. Transaction costs are included. In the course of subsequent measurement, financial instruments are recognized either at amortized cost or at fair value.

FINANCIAL ASSETS

Other non-current assets, financial assets, trade receivables from third parties and trade receivables from associated companies, derivative financial assets, other current financial assets and cash and cash equivalents are classified as financial assets. With the exception of trade receivables without a significant financing component, they are initially recognized at the fair value plus the transaction costs accrued, if the financial instruments are not classified under the category of Fair Value Through Profit or Loss (FVTPL). Trade receivables without a significant financing component are initially recognized at transaction price.

For financial assets carried at amortized cost, the carrying amounts reported in the balance sheet commonly correspond to the fair value of the financial assets. The classification and, derived from this, the valuation are carried out in accordance with the underlying business model and the contractually agreed cash flow conditions.

Measurement of financial assets and contract assets

In accordance with IFRS 9, an impairment test is to be performed on financial assets as of each balance sheet date. To determine the impairment requirement for trade receivables, restricted cash, cash and cash equivalents and contract assets, the expected losses are considered over the duration of the entire term. For all other financial assets, the expected losses are considered over a period of twelve months if there are no indications of an increase in credit risk.

FINANCIAL LIABILITIES

Financial liabilities include primary and derivative liabilities with a negative fair value. Primary financial liabilities are measured at fair value upon initial recognition. For subsequent measurement, they are measured at amortized cost or, for contingent consideration, at fair value. Derivative financial liabilities are measured at fair value through profit or loss. Manz makes use of derivative financial instruments to hedge future cash flows (cash flow hedges). In this case, at the start of the hedging relationship, the relationship between the hedged item and the hedge was documented, including the risk management objectives. When IFRS 9 was applied for the first time on January 1, 2018, there was an option to continue to use either the hedge accounting regulations of IFRS 9 or those of IAS 39. Manz has opted to continue to use hedge accounting in accordance with IAS 39.

CASH AND CASH EQUIVALENTS

Cash and cash equivalents comprise cash accounts and short-term deposits with banks with a remaining term of up to three months at the time of the addition. As a result of the application of IFRS 9, risk provisions have been recognized since January 1, 2018.

SHARE-BASED COMPENSATION

As an additional incentive-based payment for the services that they have rendered, Manz Group employees (including executives) receive share-based compensation in the form of equity instruments. Equity instruments are measured at fair value at the date granted. This Performance Share Plan was first introduced in the financial year 2008. Currently, the Manz Performance Share Plan 2019 is being applied, which includes the achievement of performance targets. These new targets consist of the EBITDA margin and the company's growth, measured by the change in the share price between the time the subscription rights are issued and the end of the waiting period. The stock awards expire when the employment is terminated or a termination agreement is concluded. The share awards do not earn dividends during the vesting period. Fair value is determined by applying an appropriate measurement model (we refer to (10) Share-based compensation).

The expenses resulting from the granting of equity instruments and the corresponding increase in equity are recognized over the period in which the exercise and performance conditions have to be fulfilled (vesting period). This period ends on the vesting date; i.e., the date when the employee in question becomes irrevocably entitled. The accumulated expenses from the granting of equity instruments disclosed on each reporting date up to the vesting date reflect the part of the vesting period that has already expired and the number of equity instruments that can actually be exercised when the vesting period expires, according to the Group's best estimates. The income or expense recognized in the profit or loss for the period corresponds to the development of the accumulated expenses recognized at the beginning and end of the reporting period.

No expense is recognized for compensation rights that do not become exercisable. Exceptions to this are compensation rights for which certain market conditions have to be fulfilled before they can be exercised. Irrespective of whether the market conditions are fulfilled, these are seen as exercisable, provided that all other performance conditions are fulfilled. If the conditions of a compensation agreement compensated by equity instruments are modified, expenses are recognized in the amount in which they would have been incurred if the conditions of the agreement had not been modified. The company also recognizes the effects of modifications that increase the total fair value of the share-based compensation agreement or are associated with another benefit for the employee, measured at the time of the modification.

If a compensation agreement compensated by equity instruments is canceled, this is treated as if it had been exercised on the cancellation date. The expense not yet recognized is immediately recognized. This is applied to all compensation agreements if non-vesting conditions, over which either the company or the counterparty has an influence, are not fulfilled. If the annulled compensation agreement is replaced by a new compensation agreement, however, and the new compensation agreement is declared as a replacement for the annulled compensation agreement on the day it is granted, the annulled and the new compensation agreement are accounted for as if they were a modification to the original compensation agreement (see section above).

The dilutive effect of outstanding share awards when calculating earnings per share (diluted) is considered as an additional dilution (we refer to (13) Earnings per share).

TREASURY SHARES

Any treasury shares that the Group acquires are recognized at cost and deducted from equity. The purchase, sale, issue or withdrawal of treasury shares is not recognized in profit or loss.

GOVERNMENT GRANTS

Government grants are recognized when there is reasonable assurance that the grants will be received and the company will comply with the conditions attached to them. Expenditure-related grants are recognized as income on a scheduled basis over the period required to offset them against the corresponding expenses for which the grants are intended to compensate. Grants for capitalized development projects reduce the acquisition and manufacturing cost of the associated assets.

ACTUAL INCOME TAXES

The amount of current tax assets and liabilities for the current period is calculated based on the tax rates and tax laws applicable on the reporting date in the countries in which the Group operates and generates taxable income.

DEFERRED TAXES

Deferred taxes are recognized for all temporary differences between the carrying amounts in the IFRS consolidated balance sheet and the tax base, as well as for tax loss carry-forwards and tax credits. Deferred tax assets are recognized if it is probable that they will be utilized to a large extent.

Deferred taxes are measured at the tax rates that apply or are expected to apply at the time of realization based on the current legal situation in the individual countries. Deferred taxes that relate to items directly recognized in equity are presented in equity. Deferred tax assets and deferred tax liabilities are offset against each other if the Group has an enforceable claim for actual tax refunds to be offset against actual tax liabilities and these relate to income tax on the same taxable entity levied by the same tax authority.

PENSION PROVISIONS

Defined contribution plans are shown under pension provisions. Provisions for pensions are determined according to the projected unit credit method pursuant to IAS 19. In addition to the pensions and acquired benefits known on the balance sheet date, this method also takes expected future salary and pension increases into account. If pension obligations have been re-insured using plan assets, these are reported net.

The calculation is based on actuarial expert opinions, taking biometric calculation principles into account. Actuarial gains and losses are recognized in other comprehensive income. The service cost is reported in personnel expense, the interest element of the allocation to reserves in the financial result.

OTHER PROVISIONS AND ACCRUED LIABILITIES

Other provisions are recognized if a past event has led to a current legal or constructive obligation to third parties, which is expected to lead to a future outflow of resources that can be reliably estimated. Provisions are generally measured at the expected settlement amount, taking into account all identifiable risks. The calculation of the settlement amount is based on best estimates. The settlement amount also includes anticipated cost increases. Provisions with a term of more than one year are discounted to their present value at the market interest rate.

Accruals are not presented under provisions, but under trade payables or other liabilities, depending on their nature.

LIABILITIES

Non-current liabilities are recognized at amortized cost. Differences between their historical cost and their repayment amount are accounted for using the effective interest method. Current liabilities are recognized at their settlement amount.

CONTINGENT LIABILITIES

A contingent liability is a possible obligation to third parties that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Manz Group. A contingent liability may also be a present obligation that arises from past events, but is not recognized because the outflow of resources is not probable or the amount of the obligation cannot be estimated with sufficient reliability.

MANAGEMENT ESTIMATES AND JUDGMENTS

The preparation of consolidated financial statements requires assumptions and estimates that have an effect on the recognition, measurement, and presentation of assets, liabilities, income, and expenses, as well as contingent assets and contingent liabilities. The main circumstances affected by such discretionary judgments and estimates relate to the viability of receivables, determination of defining the percentage of completion of long-term manufacturing projects, assumptions about future cash flows from cash-generating units, and development projects, as well as the recognition and measurement of provisions. The values that actually occur may differ from the estimates in individual cases. The carrying amounts of assets and liabilities affected by estimates can be seen in the breakdowns of the individual balance sheet items.

The assumptions and estimates are based on premises that reflect the currently available level of knowledge. Specifically, the expected future business performance is based on the circumstances known at the date of preparation of the consolidated financial statements and a realistic assessment of the future development of the global and sector-specific environment. Developments in this environment that diverge from the assumptions and that are outside the control of management may result in amounts that differ from the original estimates. The key assumptions concerning the future and other sources of estimation uncertainty on the reporting date that entail a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below:

Goodwill: Goodwill and other intangible assets are not amortized; instead, an impairment test is performed at least once a year on the cash-generating units with the aim of adequately determining future cash surpluses. Parameters are defined for the calculation, such as the planning horizon (three years), the choice of interest rate or the weighting of the opportunities and risks to be considered. Please also refer to (14) Intangible Assets

Revenues: Manz made the following discretionary decisions, which have a significant impact on determining the amount and timing of revenues from agreements with customers:

Determination of the method for the estimation of the variable considerations and assessment of the restriction of

Scales of discounts and penalties result in variable fees for Manz. In the estimation of the variable considerations, the Group must use either the expected value method or most probable value method. The method to be selected is the one that allows the consideration due to the Group can be reliably estimated. The Group came to the conclusion that the method of most probable value method is the most suitable method for the estimation of the variable considerations for delivery of goods and services with scales of discount and contractual penalties. This estimation of the variable considerations is included in the transaction price to the extent that there will most probably not be a significant reversal of the realized sales revenues once the uncertainty associated with the variable consideration no longer exists.

Estimation of the overall cost of the project

The use of the POC method based on an estimation of the overall cost of the project. Due to the uncertainties, it is therefore possible that the estimates of the expenses required until completion may have to be subsequently adjusted. Such adjustments to income and expenses are recognized in the period in which the need for adjustment is identified.

Trade account receivables and contract assets: An impairment model in accordance with IFRS 9 is applied to trade receivables and contract assets, in which expected losses must be taken into account. For this, valuation models have been developed which are used to determine default rates for trade receivables and contract assets. An analysis of the historical default rates with different regions is performed. These historical default rates are adjusted by the influence of forward-looking information in the macroeconomic environment. In addition, the default rates are reviewed individually by the responsible management. Factors such as maturity structures of receivables balances, customer creditworthiness or macroeconomic data are included in the review.

Pension provisions: we refer to VI. Notes to the Balance Sheet (28) Pension Provisions

Provisions for warranties are recognized in accordance with past history or the estimated future level of claims. Non-current provisions are recognized at their settlement amount, discounted to the balance sheet date. The interest rate used is a pretax rate that reflects current market expectations with regard to the interest effect and the risks specific to the circumstances. The interest expense resulting from the unwinding of the discount is presented in finance costs. We refer to (29) Other non-current provisions.

Provisions for onerous contracts: The formation of provisions for onerous contracts is highly influenced by estimates, both in terms of reason and amount. Manz creates provisions for anticipated losses for customer orders for which the estimated total costs exceed the agreed consideration on the balance sheet date. Regular checks and assessments of the project progress of customer orders are carried out by project controlling, which is the basis for the creation of a provision for onerous contracts. We refer to (32) Other current provisions.

Income taxes: Estimates must also to be made for the recognition of tax provisions and for the assessment of the recoverability of deferred taxes assets on loss carry-forwards. In any assessment of the recoverability of deferred taxes, uncertainties exist with respect to the interpretation of complex tax regulations and the amount as well as timing of future taxable income. Deferred taxes assets are recognized for all unused tax loss carry-forwards to the extent that it is probable that taxable income will be available to enable the loss carry-forwards can be actually utilized. When calculating the value of deferred tax assets that can be recognized, management judgement is required with regard to the expected time of occurrence and the value of future taxable income, as well as the future tax-planning strategies. If income tax uncertainties exist, they are reviewed for possible effects on the consolidated financial statements and recognized accordingly.

Uncertain tax positions: If it is uncertain whether the responsible authorities will accept an income tax treatment of Manz, this is an uncertain tax position. For the valuation of uncertain tax items, Manz first assesses whether these have to be valued separately or together with other uncertain tax items. The decision is based on whether there is such a connection between the items that a common resolution of the uncertainty for the items can be expected. Then, based on the assumption that the tax authorities will review the uncertain tax position in full factual knowledge, an assessment is made as to whether the tax authorities accept Manz's tax treatment. If it is probable that the authorities will accept Manz's tax treatment, only this assessment of the uncertain tax position is used. Otherwise the uncertain tax positions are measured based on the most probable amount or using the expected value method. If the possible results are binary or concentrated around one value, the uncertain tax position is valuated on the basis of the most probable amount, otherwise using the expected value method.

CHANGES TO ACCOUNTING POLICIES WITH INSIGNIFICANT IMPACT ON THE CURRENT GROUP´S FINANCIAL STATEMENTS

The following is a list of accounting standards that are to be applied for the first time starting in the financial year 2019 but which are of minor importance for Manz's consolidated financial statements and thus do not have a material impact on the current consolidated financial statements:

- Amendments to IAS 19 Employee Benefits: When a defined benefit plan is modified, curtailed or settled, the current service cost and net interest for the remaining financial year must be recalculated using the current actuarial assumptions used to make the necessary revaluation of the net liability (asset). Furthermore, additions were made to clarify how a plan amendment, curtailment or settlement affects the requirements for the asset ceiling.

- Amendments to IAS 28 Investments in Associates and Joint Ventures: It was clarified that an entity applies IFRS 9 including impairment provisions to long-term investments in an associate or joint venture that form part of the net investment in that associate or joint venture but are not accounted for using the equity method.

- Amendments to IFRS 9 Financial Instruments: Prepayment Features with Negative Compensation

- IFRIC 23 Uncertainty over Income Tax Treatments: The Interpretation addresses the accounting for income taxes when tax treatments involve uncertainty that affects the application of IAS 12 Income Taxes.

- Annual improvements (cycle 2015-2017)

PUBLISHED STANDARDS, INTERPRETATIONS AND AMENDMENTS NOT YET APPLIED

The following published but not yet applicable standards, interpretations and amendments probably do not have any material effect on future consolidated financial statements.
Endorsed by the EU

- Changes to the framework: Changes to the references to the new framework to be revised
- Amendments to IAS 1 and IAS 8 regarding the definition of the term "material"
- Amendments to IFRS 9, IAS 39 and IFRS 7 regarding the changes from IBOR reform phase 1: The amendments relate to simplifications with regard to hedge accounting regulations and are mandatory for all hedging relationships affected by the reform of the reference interest rate.

Not yet endorsed by the EU

- IFRS 17 Insurance Contracts: Principles relating to the recognition, measurement, presentation and disclosure of insurance contracts within the scope of the standard.
- Amendment to IFRS 3 Business Combinations: Modification of the definition of a business operation, application guidelines and changes to the explanatory examples.
- Amendment to IAS 1 Presentation of Financial Statements: Classification of liabilities as current or non-current in order to introduce a more general approach to the classification of liabilities under IAS 1, based on the contractual arrangements that exist at the reporting date.

NOTES TO THE INCOME STATEMENT

REVENUES (1)

The breakdown of revenues by business segment and region is shown in the segment reporting. We also refer to our comments on segment reporting in Section IV.

In 2017, Manz received a major order with a total volume of EUR 263 million, which was scheduled for completion in July 2019. Due to major delays in the completion of the building intended for this purpose, the originally planned completion date could not be met. The new completion date is expected to be in the first quarter of 2021.

In addition, another major order with a volume of USD 90 million was placed with Manz, with the project scheduled to be completed at the end of August 2019. However, there has been a change in the customer's delivery schedule, so that the project is expected to be probably completed at the end of 2020.

Revenues are broken down in business units with the addition of the target sales region:

(in TEUR)		Germany	Rest of Europe	China	Taiwan	Rest of Asia	USA	Other Regions	Total
Solar	2019	11,128	0	36,096	0	0	243	0	**47,467**
	2018	10,261	2	94,757	0	0	0	0	**105,020**
Electronics	2019	16,736	61	78,015	5,868	9,094	5,881	0	**115,655**
	2018	5,518	0	67,612	15,838	4,909	0	0	**93,877**
Energy Storage	2019	14,689	12,860	353	0	626	12,147	20	**40,695**
	2018	18,741	10,300	0	0	300	4,442	1,568	**35,351**
Contract Manufacturing	2019	10,582	30,818	0	0	0	79	0	**41,479**
	2018	9,475	29,530	102	0	3,754	286	0	**43,147**
Service	2019	3,088	2,793	4,884	6,410	633	1,300	0	**19,108**
	2018	2,398	2,407	5,994	6,290	917	1,421	98	**19,525**
Total	**2019**	**56,223**	**46,532**	**119,348**	**12,278**	**10,353**	**19,650**	**20**	**264,404**
	2018	**46,393**	**42,239**	**168,465**	**22,128**	**9,880**	**6,149**	**1,666**	**296,920**

WORK PERFORMED BY THE ENTITY AND CAPITALIZED (2)

In the financial year 2019, development costs were capitalized in particular in the segments Solar and Energy Storage at TEUR 1,976 and TEUR 2,033 respectively. In addition, capitalization of TEUR 760 was made in the Electronics business segment and of TEUR 93 in Contract Manufacturing and Service business segment.

OTHER OPERATING INCOME (3)

(in TEUR)	2019	2018
Subsidies	3,273	578
Income from the reversal of provisions	2,254	2,553
Reversal of valuation allowances on receivables	1,769	464
Exchange rate gains	423	1,258
Income from the disposal of fixed assets	19	98
Other operating income	1,952	1,795
	9,690	**6,746**

MATERIAL COSTS (4)

(in TEUR)	2019	2018
Cost of raw materials, consumables, and supplies, and of purchased merchandise	145,329	164,855
Cost of purchased services	15,500	17,665
	160,829	**182,520**

PERSONNEL EXPENSES (5)

(in TEUR)	2019	2018
Wages and salaries	59,077	58,180
Share-based compensation	338	290
Social security, pension and other benefit costs	12,169	11,761
	71,584	**70,231**

OTHER OPERATING EXPENSES (6)

(in TEUR)	2019	2018
Advertising and travel expenses	7,699	7,029
Outgoing freight	3,941	4,741
Other personnel-related expenses	2,997	2,198
Rent and leases	1,153	4,757
Research-related (project-based) other operating expenses	1,050	4,033
Impairment expenses on financial assets and contract assets	548	2,038
Other	19,033	16,520
	36,421	**41,316**

AMORTIZATION/DEPRECIATION (7)

(in TEUR)	2019	2018
Fixed assets	9,034	8,084
Right-of-use assets from leases	3,413	0
Non-current costs for obtaining a contract	1,324	2,743
Current costs for obtaining a contract	3,067	2,070
	16,838	**12,897**

FINANCE INCOME (8)

(in TEUR)	2019	2018
Other interest and similar income	74	96
Interest income from subleases	20	0
	94	**96**

FINANCE COSTS (9)

(in TEUR)	2019	2018
Interest on current liabilities	1,623	1,482
Interest cost from financial liabilities arising from leases	622	0
Interest component of long-term provisions	82	122
Interest on non-current liabilities	67	4
Other interest expenses	3	7
	2,397	**1,615**

SHARE-BASED PAYMENT (10)

Performance Share Plan

The Group has set up a so-called “Performance Share Plan” for members of the Managing Board and other eligible employees. The performance targets relate to the EBITDA margin and the development of the company value, measured by the change in the share price between the issue of the subscription rights and the expiry of the waiting period. The stock awards expire when the employment is terminated or a termination agreement is concluded. The share awards do not earn dividends during the vesting period. Manz AG can fulfill its obligations from share awards with newly issued shares or treasury shares.

The share awards (subscription rights) are issued at the discretion of the Managing Board with the approval of the Supervisory Board – and at the discretion of the Supervisory Board in the case of members of the Managing Board – in annual tranches within a period of three months after the expiry of four weeks following the publication of the consolidated financial statements for the previous financial year.

In the financial year 2019, 17 employees (previous year: 18 employees) and three members of the Managing Board (previous year: 1 member of the Managing Board) received 42,403 (previous year: 21,928) share awards/share options. Of this total, 22,327 (previous year: 6,048) share awards/share options were assigned to the Managing Board.

The following table shows the changes to share awards/share options with the corresponding weighted average fair market values per share on the date they were granted:

	(in shares)	(in EUR)
	Share awards/ share options	**Weighted average fair value on the grant date**
Inventory at the beginning of the year not vested)	85,674	22.68
Lapsed during the reporting period	–14,863	26.73
Granted during the reporting period	42,403	11.24
Inventory at the end of the year (not vested)	**113,214**	**14.09**

Share awards are accounted for pursuant to IFRS 2 at the fair market value of the stock awards on the date they are granted and are recognized in personnel expenses as well as in a corresponding equity increase (capital reserve). Fair market value measurement is carried out using the Black Scholes model.

Fair market value measurement is based on the following parameters:

	2019	2018
Strike price (in EUR)	1.00	1.00
Risk-free annual interest rate (in %)	0	0
Volatility (in %)	93.3	97.3
Expected dividends (in EUR)	0.00	0.00
Fair value of each share award	11.24	17.08

In the reporting year, personnel expenses of TEUR 338 from the Performance Share Plan (previous year: TEUR 290) were recognized for this purpose.

INCOME TAXES (11)

Income taxes include both actual and deferred existing tax loss carry- forwards.

(in TEUR)	2019	2018
Actual tax expense		
Current period	560	809
Previous periods	–151	444
Deferred tax income/expenses (+)	911	1,863
	1,320	**3,116**

The current income tax expense is calculated using the tax rates effective as of the balance sheet date. When calculating deferred taxes for domestic subsidiaries, the domestic tax rate of 29.13 % (previous year: 29.13 %) was applied. For the foreign companies, tax rates of 9–26 % (previous year: 15–25 %) were used.

The income tax expense in the reporting year in the amount of TEUR 1,320 (previous year: TEUR 3,116) is derived as follows from an "expected" income tax expense that would have resulted from the application of the statutory income tax rate of the parent company to earnings.

(in TEUR)	2019	2018
Earnings before income taxes	–9,928	–4,904
Manz AG income tax rate (in %)	29.13	29.13
Expected income tax expense	**–2,892**	**–1,429**
International tax rate differences	–567	–396
Non-deductible expenses	–311	2,564
Prior-period taxes	–151	444
Tax-free income	–1,746	–1,984
Non-recognition of tax loss carryforwards	7,841	6,645
Use of tax loss carryforwards	–138	0
Utilization of non-recognized loss carryforwards	–31	0
Valuation allowance on deferred taxes	–629	–2,483
Other	–56	–245
Reported income tax expense	**1,320**	**3,116**

The following table shows deferred tax assets and liabilities:

(in TEUR)	Deferred tax assets		Deferred tax liabilities	
	Dec. 31, 2019	**Dec. 31, 2018**	**Dec. 31, 2019**	**Dec. 31, 2018**
Intangible assets	577	837	5,578	4,894
Property, plant, and equipment	14	0	52	49
Financial assets	0	1,235	0	0
Contract assets, inventories and contract liabilities	5,488	8,202	13,643	15,982
Receivables	583	544	1,513	502
Cash and cash equivalents	19	111	0	0
Pension provisions	735	673	0	0
Trade payables	2,279	2,638	308	1,654
Provisions	334	210	0	0
Tax loss carry forwards	10,254	9,173	0	0
Gross value	20,283	23,623	21,094	23,081
Offsetting	–14,632	–18,710	–14,632	–18,710
Balance according to consolidated balance sheet	**5,651**	**4,913**	**6,462**	**4,371**
Net amount of deferred tax assets/ deferred tax liabilities	**–811**	**542**		

The net amount of deferred tax assets developed as follows:

(in TEUR)	2019	2018
As of January 1	**542**	**1,444**
Deferred tax expense (-)/income (+) in the income statement	–911	–1,863
Changes in deferred taxes recognized in other comprehensive income in connection with:		
Revaluation of defined benefit pension plans	696	–18
Hedging future cash flows (cash flow hedges)	0	–4
At fair value through other comprehensive income (FVOCI) valued financial asset	–1,235	1,039
Difference from currency translation	97	–56
As of December 31	**–811**	**542**

Deferred taxes are only recognized for tax loss carryforwards if their utilization can be expected with sufficient certainty. For four (previous year: four) companies that incurred tax losses in the current or previous period, a deferred tax asset of TEUR 1,952 (previous year: TEUR 3,309) was disclosed. Based on the short-term and medium-term planning, Manz believes that in the future, these companies will have taxable income against which the unused tax losses can be offset. As a result of a multi-year tax incentive program for research and development projects, Manz Italy s.r.l. has recorded tax losses in the past. The company is profitable in operating terms without taking this tax incentive program into account. The subsidy program ends at the end of fiscal year 2020.

The tax loss carry forwards totaled TEUR 253,132 (previous year TEUR 220,736) as of the balance sheet date. Of these, TEUR 1,085 (previous year: TEUR 1,222) over five years and TEUR 9,754 (previous year: 10,181) is limited to ten years and the rest can be carried forward indefinitely. For loss carry forwards amounting to TEUR 212,720 (previous year: TEUR 182,650), no deferred tax assets were recognized since IAS 12 stipulates in the case of losses in the recent past, high recognization requirements are not met on the balance sheet date. As a result of a multi-year tax subsidy program for R&D projects, Manz Italy s.r.l. has recorded tax losses in the past. Without considering this subsidy program, the company is operationally profitable. The subsidy program ends at the end of fiscal year 2020.

In accordance to IAS 12, deferred taxes for temporary differences in connection with shares in Group companies must be recognized (outside basis differences). No deferred tax liabilities were recognized for outside basis differences of EUR 8.1 million (previous year: EUR 11.5 million), as these profits are to be reinvested indefinitely.

SHARE OF PROFITS NON-CONTROLLING INTERESTS (12)

The share of profits attributable to non-controlling interests consists of allocated earnings in the amount of TEUR –200 (previous year: TEUR –261).

EARNINGS PER SHARE (13)

The undiluted earnings per share are calculated by dividing Manz AG shareholders' share of earnings by the weighted average number of shares in circulation during the financial year. The earnings per share are diluted as a result of so-called "potential shares". These include option and subscription rights if such rights result in the issue of shares at a value below the share's average stock exchange price. There was a dilution effect from the share awards in the context of the Performance Share Plan (see (10) Share-based payment).

Earnings per share was calculated in accordance with IAS 33.

	2019	2018
Consolidated net profit allocable to Manz AG's shareholders (in TEUR)	–11,048	–7,760
Weighted average number of outstanding shares	7,744,088	7,744,088
Effect from share-based compensation shares	216,040	160,960
Weighted average number of outstanding shares (diluted)	**7,905,128**	**7,905,048**
Earnings per share in EUR (diluted = undiluted)	–1.43	–1.00

NOTES TO SEGMENT REPORTING

Manz discloses the results of operations grouped by business segment and region in accordance with IFRS 8 (Operating Segments) within the framework of segment reporting. This grouping is based on internal management and takes the segments' different risk and earnings structures into account.

The “Solar“ business segment includes system solutions for the manufacturing costs of thin-film solar modules and CIGS thin film technology. Business in equipment for the production of lithium-ion batteries is reported in the “Energy Storage“ business segment. The “Electronics“ business segment focuses on the manufacture of production systems for the manufacture of consumer electronics.

In addition to the three strategic segments, there are two reporting segments, “Contract Manufacturing“ (equipment and parts production as well as assembly work for customers in various industries) and “Service“ which offers services relating to Manz AG‘s core technological expertise.

The primary factor used to evaluate and control a business segment‘s cash flow is the operating profit (EBIT).

Segment reporting shows revenues and profits in the Group‘s individual business segments. Delivery and service relationships exist only to a limited extent between the individual segments. The exchange of services between the segments takes place at market prices.

In the Electronics business segment, sales of TEUR 47,707 were generated with one customer in the reporting period. In addition, sales revenue in the amount of TEUR 29,767 with another customer were included in the Contract Manufacturing business segment.

SEGMENT REPORTING BUSINESS UNITS

As of Dec. 31, 2019

(in TEUR)	Solar	Electronics	Energy Storage	Contract Manu-facturing	Service	Consoli-dation	Group
Revenues with third parties							
2019	47,467	115,655	40,694	41,480	19,108	0	264,404
2018	105,020	93,877	35,351	43,147	19,525	0	296,920
Revenues with other segments							
2019	0	–109	0	0	0	109	0
2018	0	3,556	0	0	0	–3,556	0
Total revenues							
2019	**47,467**	**115,546**	**40,694**	**41,480**	**19,108**	**109**	**264,404**
2018	**105,020**	**97,433**	**35,351**	**43,147**	**19,525**	**–3,556**	**296,920**
Share of profit (loss) of an associate							
2019	0	0	0	8,829	0	0	8,829
2018	0	0	0	–2,590	0	0	–2,590
EBITDA							
2019	1,416	387	–7,332	12,335	2,223	184	9,213
2018	18,109	–6,636	–6,861	1,755	4,080	–935	9,513
Depreciation							
2019	3,407	7,976	3,970	825	661	–1	16,838
2018	3,731	5,381	3,038	535	215	–3	12,897
EBIT							
2019	**–1,991**	**–7,589**	**–11,302**	**11,510**	**1,562**	**185**	**–7,625**
2018	**14,378**	**–12,017**	**–9,899**	**1,220**	**3,866**	**–932**	**–3,385**
Finance costs							
2019	–265	–908	–494	–256	–380	0	–2,303
2018	–294	–375	–359	–522	31	0	–1,519
Earnings before taxes (EBT)							
2019	–2,256	–8,496	–11,796	11,254	1,182	185	–9,928
2018	14,084	–12,392	–10,258	698	3,896	–932	–4,904
Income taxes							
2019	–347	195	–492	–283	–392	0	–1,320
2018	–1,541	–1,144	175	–492	–114	0	–3,116
Consolidated profit or loss							
2019	**–2,604**	**–8,302**	**–12,288**	**10,971**	**789**	**185**	**–11,248**
2018	**12,543**	**–13,535**	**–10,083**	**205**	**3,782**	**–932**	**–8,020**

SEGMENT REPORTING REGIONS

As of Dec. 31, 2019

(in TEUR)	Revenues	Non-current assets (exclude deferred taxes)
Germany		
2019	56,223	50,334
2018	46,393	47,715
Rest of Europe		
2019	46,532	23,474
2018	42,239	21,788
China		
2019	119,348	13,952
2018	168,465	13,986
Taiwan		
2019	12,278	49,434
2018	22,128	39,043
Rest of Asia		
2019	10,353	712
2018	9,880	709
USA		
2019	19,650	30
2018	6,149	17
Other Regions		
2019	20	0
2018	1,666	0
Group		
2019	264,404	137,937
2018	296,920	123,258

NOTES TO THE CASH FLOW STATEMENT

The cash flow statement shows how cash has changed in the Manz Group over the course of the reporting year due to cash inflows and outflows. In accordance with IAS 7 Cash Flow Statements, cash flows are distinguished between operating activities, investing activities and financing activities. Effects from changes to the basis of consolidation and exchange rates are eliminated in the respective items. The change in liquid assets due to changes in exchange rates is presented separately.

The cash and cash equivalents reported in the cash flow statement comprise all cash and cash equivalents reported on the balance sheet, which consist of cash in hand and bank balances with a term of up to three months. Any fluctuations in the value of cash and cash equivalents were taken into account by means of a risk provision.

The cash inflows and outflows from investing and financing activities are presented in accordance with the direct method. The cash inflows and outflows from investing activities from current operations include additions and disposals of property, plant and equipment as well as additions and disposals of intangible assets. In financing activities, besides cash inflows from equity increases and the issuance of other financial liabilities, cash outflows from the repayment of loans are also included.

On the other hand, cash inflows and outflows from operating activities are derived indirectly from the consolidated net profit. For this purpose, the consolidated net profit is adjusted by non-cash expenses and income, mainly depreciation and changes in non-current provisions and deferred taxes, and supplemented by changes in operating assets and liabilities.

With the application of IFRS 16, the payment of the redemption portion of leases is shown under financing activities for the first time. The payment for the interest portion of the lease liability and payments for current leases and leases involving an asset of minor value are shown under operating activities.

Investing and financing processes which have not led to a change in cash are not part of the cash flow statement.

DEVELOPMENT OF LIABILITIES FROM FINANCING ACTIVITIES

			Non-cash changes				
(in TEUR)	**Carrying amount as of Jan. 1, 2019**	**Cash flow**	**Foreign exchange movement**	**Addition**	**Disposal**	**Changes in fair values**	**Carrying amount as of Dec. 31, 2019**
Non-current financial liabilities							
from financial institutions	1,138	–410	0	0	0	0	728
from lease	14,636	0	46	1,000	–3,414	0	12,268
Further	3	4	0	0	0	0	7
Current financial liabilities							
from financial institutions	42,173	15,735	–723	0	0	0	57,185
from lease	3,276	–4,340	7	4,386	0		3,329
Derivative financial instruments	2	0	0	0	0	–2	0
	61,228	**10,989**	**–670**	**5,386**	**–3,414**	**–2**	**73,517**

			Non-cash changes				
(in TEUR)	**Carrying amount as of Jan. 1, 2018**	**Cash flow**	**Foreign exchange movement**	**Addition**	**Disposal**	**Changes in fair values**	**Carrying amount as of Dec. 31, 2018**
Non-current financial liabilities							
from financial institutions	3,332	–2,194	0	0	0	0	1,138
Further	0	3	0	0	0	0	3
Current financial liabilities							
from financial institutions	36,130	5,764	279	0	0	0	42,173
Derivative financial instruments	7	0	0	0	0	–5	2
	39,469	**3,573**	**279**	**0**	**0**	**–5**	**43,316**

NOTES TO THE BALANCE SHEET

INTANGIBLE ASSETS (14)

(in TEUR)	Licenses, software, and similar rights	Capitalized development costs	Goodwill	Plants under construction/ Advance payments	Non-current costs of obtaining a contract	Total
Acquisition/manufacturing costs						
As of January 1, 2018	**32,212**	**69,945**	**33,331**	**0**	**5,143**	**140,631**
Currency adjustment	24	42	1,164	0	0	1,230
Additions	4,371	4,517	0	61	0	8,949
Disposals	–3,548	–418	0	0	0	–3,966
Reclassifications	21	0	0	0	0	21
As of December 31, 2018	**33,080**	**74,086**	**34,495**	**61**	**5,143**	**146,865**
Depreciation						
As of January 1, 2018	**25,558**	**51,264**	**0**	**0**	**0**	**76,822**
Currency adjustment	11	26	0	0	0	37
Additional amortization (scheduled)	2,020	3,032	0	0	2,743	7,795
Disposals	–117	0	0	0	0	–117
As of December 31, 2018	**27,472**	**54,322**	**0**	**0**	**2,743**	**84,537**
Acquisition/manufacturing costs						
As of January 1, 2019	**33,080**	**74,086**	**34,495**	**61**	**5,143**	**146,865**
Currency adjustment	28	125	988	0	0	1,141
Additions	860	3,518	0	209	0	4,587
Disposals	–422	0	0	0	0	–422
Reclassifications	61	0	0	–61	0	0
As of December 31, 2019	**33,607**	**77,729**	**35,483**	**209**	**5,143**	**152,171**
Depreciation						
As of January 1, 2019	**27,472**	**54,322**	**0**	**0**	**2,743**	**84,537**
Currency adjustment	31	85	0	0	0	116
Additional amortization (scheduled)	1,051	4,699	0	0	1,324	7,074
Disposals	–405	0	0	0	0	–405
As of December 31, 2019	**28,149**	**59,106**	**0**	**0**	**4,067**	**91,322**
Residual carrying amount Dec. 31, 2018	5,608	19,764	34,495	61	2,400	62,328
Residual carrying amount Dec. 31, 2019	**5,458**	**18,623**	**35,483**	**209**	**1,076**	**60,849**

CAPITALIZED DEVELOPMENT COSTS

Development costs are capitalized in accordance with the requirements of IAS 38 Intangible Assets in the accounting and valuation methods presented. For the purpose of determining the amounts to be capitalized, management must make assumptions about the amount of anticipated future cash flows from assets, the discount rates to be applied and the period of the inflow of expected future cash flows that generate assets.

As part of the annual review of capitalized development costs that have not yet been amortized, no impairment losses (previous year: none) were recognized in the year under review.

The following amounts were recognized in profit or loss:

(in TEUR)	2019	2018
Total research and development costs	–18,904	–14,893
Scheduled depreciation on development costs	–4,602	–3,300
Capitalized development costs	4,862	4,924
Research and development costs charged to income	**–18,644**	**–13,269**

GOODWILL AND TRADEMARK RIGHTS

Goodwill and intangible assets with indefinite useful lives (brand rights) are allocated to the individual business units as follows:

(in TEUR)	Goodwill		Trademark rights	
	Dec. 31, 2019	**Dec. 31, 2018**	**Dec. 31, 2019**	**Dec. 31, 2018**
Solar	17,556	16,845	1,881	1,806
Electronics	11,245	10,968	2,822	2,708
Energy Storage	6,682	6,682	0	0
Contract Manufacturing	0	0	0	0
Service	0	0	0	0
	35,483	**34,495**	**4,703**	**4,514**

The changes to the value of goodwill and trademark rights in the current reporting period are due to currency translations.

Goodwill and trademarks rights are tested for impairment at least once a year by comparing the carrying amounts of the units underlying the respective goodwill and brand rights with the value in use and the fair value less cost of disposal. The Goodwill is impaired if the carrying amount of a cash-generating unit exceeds its value in use respectively the fair value less cost of disposal. The segments Solar, Electronics, Energy Storage, Contract Manufacturing and Service are used as cash-generating unit.

The value in use is determined by using the discounted cash flow method. The starting point is the current three-year plan for the respective business segment.

As part of this test, estimates must be made in relation to future cash surpluses. To determine the recoverable amount, an appropriate discount rate needs to be selected.

The calculation of discount rates takes into account the circumstances of the Group and its segments and is based on its weighted average cost of capital (WACC). The average cost of capital takes debt and equity into account. The cost of equity is determined on the basis of a peer group. They include the basic interest rate including country risk and a market risk premium. The segment-specific risk is included by applying individual beta factors. Borrowing costs are based on the interest-bearing debt for which the Group is required to service its debt. They include the debt spread, base interest rate and country risk. The debt spread was calculated on the basis of the interest difference between the yield of a basket of industrial companies rated BBB+ to BBB– and the yield on German government bonds.

The key planning assumptions include, above all, the anticipated market development in relation to the Manz Group's development, the development of key production and other costs, as well as the discount factor and growth rates. General market forecasts, current developments and past experience are taken into account in establishing the assumptions. In the Energy Storage segment, a major order from a well-known battery manufacturer in the consumer electronics sector was placed in the second half of the financial year 2019, which will largely be processed in the coming financial years. In addition, the demand for electric cars is rising continuously, which is accompanied by an increase in the demand for battery drives. A significant improvement in earnings and an increase in sales in the Energy Storage business segment is therefore expected. Despite the time delay of the major CIGS orders, the project progress so far can be rated as positive. The project is expected to be completed by the first quarter of 2021. A further major order in the solar sector was planned for the following years. The large market for display technology offers great potential for Manz AG, and significant order intakes in both the display and laser segments is anticipated. Further expansion of sales and improvements in results in the electronics segment are thus expected in the future. Manz AG's competitiveness and profitability will continue to increase over the long term, and the associated turnaround strategy of previous years will be continued.

Cash flows are predicted individually for each business segment to which goodwill and trademark rights are allocated to it on the basis of revenue and cost planning. Growth rates were recorded at 1.0 % (previous year: 1.0 to 1.5 %). The discount rate after tax used for discounting (weighted average cost of capital (WACC)) is 6.8 %–9.9 % (previous year: 7.5 % to 10.4 %). In this context, the cost of equity is calculated on the basis of a comparable group (peer group). The discount rates and growth rates are listed in the following table:

(in %)	Discount rate before taxes		Growth rate	
	Dec. 31, 2019	**Dec. 31, 2018**	**Dec. 31, 2019**	**Dec. 31, 2018**
Solar	14.0	14.7	1.0	1.5
Electronics	11.2	9.3	1.0	1.5
Energy Storage	12.0	12.5	1.0	1.0
Contract Manufacturing	8.6	11.6	1.0	1.0
Service	14.0	14.7	1.0	1.0

Equity and borrowing cost rates calculated in this way were weighted on the basis of the peer group's average capital structure.

For the financial years 2019 and 2018, no impairment requirement was determined for goodwill and intangible assets without a definite useful life.

A WACC that is 1 % higher and a calculation without assumed growth in perpetuity does not influence the intrinsic value of goodwill. Even an additional 10 % reduction in EBIT over the entire planning period would not have resulted in any impairment of goodwill or trademark rights in the financial years 2019 or 2018.

COSTS FOR OBTAINING A CONTRACT

Intangible contract assets include non-current costs for obtaining a contract if they are covered by income from the contract and can be clearly allocated to a project. The capitalized costs for obtaining a contract are amortized according to the stage of completion of the underlying project. The balance as of December 31, 2019 was TEUR 1,076 (previous year: TEUR 2,400). In the reporting period, an amortization of TEUR 1,324 (previous year: TEUR 2,743) was recognized for this purpose.

PROPERTY, PLANT, AND EQUIPMENT (15)

(in TEUR)	Land and buildings	Technical equipment and machinery	Other equipment, operating and business facilities	Right-of-use assets	Equipment under construction/ Advance payments	Total
Acquisition/manufacturing costs						
As of January 1, 2018	**24,937**	**23,595**	**11,044**	**0**	**1,881**	**61,457**
Currency adjustment	–127	10	6	0	0	–111
Additions	548	1,684	2,351	0	743	5,326
Disposals	–754	–435	–2,698	0	–58	–3,945
Reclassifications	391	0	2,045	0	–2,458	–22
As of December 31, 2018	**24,995**	**24,854**	**12,748**	**0**	**108**	**62,705**
Depreciation						
As of January 1, 2018	**6,248**	**19,107**	**8,507**	**0**	**0**	**33,862**
Currency adjustment	–28	6	10	0	0	–12
Changes to the basis of consolidation	0	0	0	0		0
Additional depreciation (scheduled)	1,124	1,041	866	0	0	3,031
Disposals	–420	–405	–2,512	0	0	–3,337
As of December 31, 2018	**6,924**	**19,749**	**6,871**	**0**	**0**	**33,544**
Acquisition/manufacturing costs before IFRS 16						
As of January 1, 2019	**24,995**	**24,854**	**12,748**	**0**	**108**	**62,705**
Initial measurement of IFRS 16						
As of January 1, 2019	**0**	**0**	**0**	**17,537**	**0**	**17,537**
Acquisition/manufacturing costs after IFRS 16						
As of January 1, 2019	**24,995**	**24,854**	**12,748**	**17,537**	**108**	**80,242**
Currency adjustment	175	66	49	0	1	291
Additions	281	967	653	997	2,402	5,300
Disposals	–244	–2,320	–444	–225	–100	–3,333
Reclassifications	9	50	0	0	–59	0
As of December 31, 2019	**25,216**	**23,617**	**13,006**	**18,309**	**2,352**	**82,500**
Depreciation						
As of January 1, 2019	**6,924**	**19,749**	**6,871**	**0**	**0**	**33,544**
Currency adjustment	44	45	27	21	0	137
Additional depreciation (scheduled)	939	1,124	1,213	3,413	7	6,696
Disposals	0	–1,449	–343	–91	0	–1,883
Reclassifications	1	3	3	0	–7	0
As of December 31, 2019	**7,908**	**19,472**	**7,771**	**3,343**	**0**	**38,494**
Residual carrying amount Dec. 31, 2018	18,071	5,105	5,877	0	108	29,160
Residual carrying amount Dec. 31, 2019	**17,308**	**4,145**	**5,235**	**14,966**	**2,352**	**44,006**

The right-of-use assets are subdivided as follows:

(in TEUR)	Dec. 31, 2019	Dec. 31, 2018
Right of use-assets – building	14,001	0
Right of use-assets – vehicles	952	0
Right of use assets – IT	13	0
	14,966	**0**

Depreciation of right of use assets have been recorded in accordance with the above breakdown.

(in TEUR)	2019	2018
Depreciation of right of use-assets – building	2,819	0
Depreciation of right of use-assets – vehicles	581	0
Depreciation of right of use assets – IT	13	0
	3,413	**0**

Land and buildings of Manz Slovakia s.r.o. with a carrying amount of TEUR 3,656 (previous year: TEUR 3,866), are used as collateral for bank loans.

INVESTMENT IN AN ASSOCIATE (16)

Manz AG holds 80.5 % of voting rights and shares in Talus Manufacturing Ltd. with headquarters in Chungli, Taiwan. This unlisted company is active in the areas of production, sales and service.

Talus is included at equity in the consolidated financial statements due to the existence of a significant influence. Manz AG does not control this company. As a result of the regulations of the articles of incorporation, all significant decisions regarding business activities must be made unanimously. There is also a purchase option available for the partner who holds the remaining 19.5 % of the voting rights and shares in Talus.

The following tables contain the summarized financial information for Talus Manufacturing Ltd.:

(in TEUR)	2019	2018
Current assets	66,199	45,157
Non-current assets	21,252	19,734
Short-term debts	53,022	42,344
Non-current liabilities	546	821
Shareholders' equity	**33,882**	**21,726**
Stake of Group in equity capital (in %)	80.50	80.50
Goodwill	–	–
Book value of the Group share	**21,382**	**11,763**

(in TEUR)	2019	2018
Revenues	146,623	70,509
Operating earnings (EBIT)	13,747	–4,082
Earnings before taxes (EBT)	13,757	–4,029
Income tax expense	2,838	779
Earnings after tax	10,919	–3,250
Other comprehensive income	3	–161
Overall result for the financial year	**10,922**	**–3,411**

FINANCIAL ASSETS (17)

Manz AG holds an investment of 11.1 % in NICE PV Research Ltd. Beijing, PRC. The acquisition costs amounted to TEUR 24,245. The carrying amount of TEUR 11,700 is determined with a business valuation method.

OTHER NON-CURRENT ASSETS (18)

The other non-current assets contains of non-current receivables of leases of TEUR 809. The receivables of leases are corresponding to their fair value and not impaired.

INVENTORIES (19)

(in TEUR)	Dec. 31, 2019	Dec. 31, 2018
Materials and supplies	14,684	18,813
Unfinished goods and products	6,759	7,658
Finished goods and merchandise	3,183	11,990
Advance payments	11,113	10,907
	35,739	**49,368**

The total valuation allowances on inventories increased to TEUR 12,433 (previous year: TEUR 10,475) after taking into account exchange rate differences and consumption. In the current period an expenses of TEUR 1,958 (previous year: TEUR 718) were recognized. The carrying amount of inventories pledged as collateral amounts to TEUR 5,927.

TRADE RECEIVABLES (20)

Trade receivables do not bear interest and are usually due within one year.

(in TEUR)	Dec. 31, 2019	Dec. 31, 2018
Trade receivables from third parties	42,737	30,041
Trade receivables from associated companies	75	97
	42,812	**30,138**

Impairments on trade receivables have developed as follows:

(in TEUR)	Dec. 31, 2019	Dec. 31, 2018
As of January 1	3,978	4,100
Currency translation	–55	–32
Utilization	56	517
Reversal	1,769	463
Addition	147	890
As of December 31	**2,245**	**3,978**

CONTRACT ASSETS (21)

Contract assets consisted of the following amounts:

(in TEUR)	Dec. 31, 2019	Jan. 1, 2019
Manufacturing costs, including profit or loss on the construction contracts	360,699	298,624
Minus advance payments received	–300,760	–247,595
	59,939	**51,029**

Impairments on contract assets developed as follows:

(in TEUR)	Dec. 31, 2019	Dec. 31, 2018
As of January 1	371	0
Currency translation	0	0
Utilization	371	0
Reversal	0	0
Addition	489	371
As of December 31	**489**	**371**

DERIVATIVE FINANCIAL INSTRUMENTS (22)

On the balance sheet date, the following forward exchange transactions were used within hedge accounting to hedge the exchange rate of USD/TWD transactions and interest rate derivatives anticipated in the course of the following financial year:

(in TEUR)	Dec. 31, 2019		Dec. 31, 2018	
	Currency hedging	Interest rate derivatives	Currency hedging	Interest rate derivatives
Change in fair value	8	2	–27	–5
Nominal value	892	0	5,242	600
Positive fair value	10	0	2	0
Negative fair value	0	0	0	–2
Remaining term	max. 10/2020	max. 12/2019	max. 05/2019	max. 12/2019

There is an economic relationship between the hedged item and the hedging instrument. Manz AG has defined a hedging ratio of 1:1 for the hedging relationship, as the risk of the hedging instrument is identical to the hedged risk component. The average forward rate for currency hedging is 30.92 (USD/TWD). Currency hedging involves a currency risk, as the amount of forward exchange contracts varies according to purchases and sales in foreign currencies. There are also fluctuations in exchange rates. The interest rate derivatives contain an interest rate risk as it can lead to a negative fair value due to changes in market interest rates. If planned transactions do not occur as planned, this can lead to ineffectiveness.

OTHER CURRENT ASSETS (23)

(in TEUR)	Dec. 31, 2019	Dec. 31, 2018
Restricted cash	6,794	20,967
Tax receivables (not income and income taxes)	1,912	4,396
Other deferrals (primarily insurance policies)	1,825	1,119
Receivables for employees	334	420
Current costs for obtaining a contract	183	2,677
Current receivables of leases	165	0
Other	2,679	5,459
	13,892	**35,038**

The other current assets are not overdue and no impairment was recorded.

CASH AND CASH EQUIVALENTS (24)

Cash and cash equivalents include cash on hand, cash accounts, and short-term bank deposits. On bank deposits and current cash investments a risk provision in the amount of TEUR 78 was recorded.

(in TEUR)	Dec. 31, 2019	Dec. 31, 2018
Cash and cash equivalents	44,005	51,006

EQUITY (25)

Changes in the equity and comprehensive income are presented separately in the "Consolidated Statement of Changes in Equity" (Appendix 5). The components of comprehensive income are presented in aggregate form in the income statement.

The Managing Board and Supervisory Board have defined a minimum equity ratio of 40 % and gearing of less than 50 % as targets.

ISSUED CAPITAL

The subscribed capital of the parent company, Manz AG, is reported as issued capital.

The issued capital of 7,744,088.00 is divided into 7,744,088 no-par-value registered shares.

AUTHORIZED CAPITAL

Based on the resolution passed by the Annual General Meeting of July 12, 2016, the Managing Board is authorized with the approval of Supervisory Board, pursuant to Article 3, Sentence 3 of the Articles of Incorporation, to increase the company's capital stock, to increase the share capital of the company in the period until July 11, 2021, on a one-time basis or in partial contributions, up to a total of EUR 3,872,044.00 through the issuance of a total of 3,872,044.00 new registered shares (no-par value shares) by means of cash contributions or contributions in kind (authorized Capital 2016).

In principle, the new shares must be offered to shareholders for subscription. The new shares may also be assumed by banks designated by the Managing Board with the obligation to offer them to the shareholders for subscription (indirect subscription right). However, the Managing Board was authorized, with the approval of Supervisory Board, to exclude shareholders' subscription rights

- in the case of a capital increase in return for cash contributions, if the issue price of the new shares does not significantly lower, within the meaning of Section 203 (1) and 2, Section 186 (3),Sentence 4 Stock Corporation Act (AktG), than the stock exchange price of the Company's shares with the same terms at the time the issue price is determined, which should be as close as possible to the placement of the new shares. This authorization to exclude the subscription right only applies to the extent that the shares to be issued in the capital increase do not account for more than EUR 774,408.00 and more than 10 % of the share capital at the time the authorization is exercised. The proportionate amount of the share capital issued or sold during the term of this authorization on the basis of other authorizations in direct or analogous application of section 186 (3), sentence 4 Stock Corporation Act (AktG) under exclusion of subscription rights shall be offset against this maximum amount for an exclusion of subscription rights;

- in the case of capital increases against contribution in kind for the acquisition of companies, parts of companies or participations in companies or other assets or for the purpose of business combinations;

- to the extent that it is necessary to give holders of bonds with warrants or convertible bonds, profit-sharing rights, or profit-sharing bonds (or combinations of these instruments) issued by the company or direct or indirect affiliated companies of the company a subscription right to new shares to the same extent as they would be entitled upon exercising their option or conversion right or after fulfilling their conversion obligation;

- to exclude fractional amounts from the subscription right.

The Managing Board is authorized, with the approval of Supervisory Board, to determine the further details of the implementation of the capital increases based on the authorized capital.

Authorization to issue partial debentures with options or conversion rights or conversion obligations, profit-sharing rights, and profit-sharing bonds (or combinations of these instruments), as well as Conditional Capital I

At the annual general meeting on July 2, 2019, a resolution was passed to authorize the Managing Board, with the approval of Supervisory Board, to issue registered bond with warrant or convertible bonds, profit-sharing rights and/or profit-sharing bonds, or a combination of these instruments (collectively referred to as "bonds"), up to a total nominal value of EUR 150 million on one or more occasions until July 1, 2024. In addition, the Managing Board was also authorized to grant holders of warrants option rights and holders of convertible bonds conversion rights for registered shares of the company with a proportionate amount of share capital totaling up to EUR 3,100,000.00, in accordance with the detailed terms and conditions of the warrants/convertible bonds.

The statutory subscription right is granted to the shareholders in the way that the bonds are underwritten by a bank or a syndicate of banks with the obligation to offer them to the shareholders for subscription. If bonds are issued by a Manz AG group company within the meaning of Section 18 Stock Corporation Act (AktG), the Company must ensure the statutory subscription rights is granted to the shareholders of Manz AG accordingly.

However, the Managing Board is authorized, with the approval of Supervisory Board, to exclude fractional amounts from shareholders' subscription rights and also to exclude the shareholders' subscription rights to the extent necessary to grant the holders of previously issued bonds with options or conversion rights and/or conversion obligations a subscription right to the extent to which they would be entitled as shareholders after exercising their options or conversion rights or upon fulfilling their conversion obligation.

Furthermore, the Managing Board is authorized, with the approval of Supervisory Board, to completely exclude shareholders' subscription rights to bonds issued with an option and/or conversion right or conversion obligation, provided the Managing Board, after dutiful examination, comes to the conclusion that the issue price of the bonds is not significantly below their hypothetical market value as calculated according to accepted and, in particular, actuarial methods. This authorization to exclude the subscription right applies to bonds issued with an option and/or conversion right or a conversion obligation, with an option and/or conversion right or a conversion obligation for shares with a total proportionate amount of the share capital that may not exceed 10 % of the share capital, either at the time the authorization becomes effective or – in the event that this value is lower – at the time the present authorization is exercised. The following are offset against the aforementioned ten percent limit:

- new shares that are issued from authorized capital under exclusion of the subscription right pursuant to section 186(3) sentence 4 of the Stock Corporation Act during the term of this authorization up to the issue of bonds with option and/or conversion right or conversion obligations without subscription rights in accordance with Section 186(3) sentence 4 of the German Stock Corporation Act, and

- such shares which are acquired on the basis of an authorization granted at the annual general meeting and are disposed in accordance with Section 71(1) 8, Sentence 5 in conjunction with Section 186(3), Sentence 4 of the German Stock Corporation Act (AktG) during the term of this authorization until the issue of bonds with option and/or conversion rights or conversion obligations subject to the exclusion of subscription rights in accordance with Section 186(3), Sentence 4 of the German Stock Corporation Act (AktG).

Where profit-sharing rights or profit-sharing bonds without an option right or conversion right/obligation are issued, the Managing Board is authorized, with the approval of Supervisory Board, to completely exclude shareholders' subscription rights if these profit-sharing rights or profit-sharing bonds have the characteristics of a debenture; i.e., do not establish any membership rights in the company, do not grant a participation in the liquidation proceeds, and the interest payable is not calculated on the basis of the annual net income, net retained profit, or the dividend. Furthermore, in such a case, the interest payment and the issue price of the profit-sharing rights or profit-sharing bonds must reflect current market conditions at the time of issue.

Pursuant to Article 3(4) of the Articles of Incorporation, the share capital of the company has been conditionally increased by up to EUR 3,100,000.00 through the issue of up to 3,100,000 no-par-value registered shares (Conditional Capital I). The conditional capital increase shall only be carried out to the extent that the holders of option or conversion rights or those obliged to convert from option or convertible bonds, profit sharing rights or profit sharing bonds issued by the Company or a Group company within the meaning of Section 18 Stock Corporation Act (AktG) on the basis of the authorization resolved by the annual general meeting on July 2, 2019 under agenda item 5, exercise their option or conversion rights or, if they are obligate to convert, fulfill their obligation to convert, unless a cash settlement is granted or treasury shares or shares of another listed company are used to service the conversion. The new shares shall be issued at the option or conversion price to be determined in each case in accordance with the authorization resolution described above. The new shares shall participate in profit from the beginning of the financial year in which they are created on the basis of the exercise of options or conversion rights or of the fulfillment of conversion obligations. The Managing Board is authorized, with the approval of Supervisory Board, to establish the further details of the execution of the conditional capital increase.

Authorization to issue share subscription rights within the scope of the Manz Performance Share Plan 2019 as well as Conditional Capital III

At the annual general meeting held on July 2, 2019, a resolution was passed to authorize the Managing Board, with the approval of Supervisory Board, to grant a total of up to 95,000 subscription rights for subscription of a total of up to 190,000 shares in the company to members of the management of affiliated companies and to executives below the management board level and executives of affiliated companies, both domestic and abroad, on one or more occasions through June 30, 2024. The Supervisory Board was authorized to grant one or more occasions a total of up to 85,000 subscription rights for subscription of up to 170,000 shares in the company to members of the company's Managing Board until June 30, 2024.

Subscription rights are to be granted, structured and exercised in accordance with the provisions in the resolution of the annual general meeting on July 2, 2019.

The authorization of July 7, 2015 was revoked by resolution passed at the annual general meeting of July 2, 2019, insofar as no subscription rights had yet been issued on the basis of the authorization.

Pursuant to Article 3(6) of the Articles of Incorporation, the company's share capital has been conditionally increased by up to EUR 360,000.00 through the issue of up to 360,000 no-par-value registered shares (Conditional Capital III). The conditional capital increase serves to secure the rights of the holders of subscription rights granted on the basis of the authorization of the annual general meeting on July 2, 2019. The shares will be issued at the issue price specified in the authorization adopted at the annual general meeting on July 2, 2019. The conditional capital increase will be carried out only to the extent that subscription rights are exercised and the company does not issue either treasury shares or a cash settlement for the purpose of fulfillment of the subscription rights. The new registered shares will be equivalent to already issued shares of the same class with respect to their dividend entitlement. The Managing Board and, to the extent members of the Managing Board are concerned, the Supervisory Board are authorized to establish the further details of the conditional capital increase and its implementation.

Authorization to issue share subscription rights within the scope of the 2015 Manz Performance Share Plan as well as Conditional Capital II

At the annual general meeting held on July 7, 2015, a resolution was passed to authorize the Managing Board, with the approval of Supervisory Board, to grant a total of up to 59,000 subscription rights ("Performance Shares") for a total of up to 118,000 shares in the company to management of affiliated companies as well as to executives below the management board level and managers of affiliated companies, both domestic and abroad, on one or more occasions through June 30, 2020. The Supervisory Board was given authorization to grant a total of up to 56,000 subscription rights ("Performance Shares") for a total of up to 112,000 shares in the company to members of Manz's Managing Board on one or more occasions through June 30, 2020.

Subscription rights are to be granted, structured and exercised in accordance with the provisions in the resolution of the annual general meeting on July 7, 2015.

Pursuant to Article 3(5) of the Articles of Incorporation, the company's share capital has been conditionally increased by up to EUR 230,000.00 through the issue of up to 230,000 no-par-value registered shares (Conditional Capital II). The conditional capital increase serves to secure the rights of the holders of subscription rights ("Performance Shares") granted on the basis of the authorization granted by the annual general meeting on July 7, 2015. The shares will be issued at the issue price specified in the authorization adopted at the annual general meeting on Tuesday, July 7, 2015. The conditional capital increase will be carried out only to the extent that subscription rights are exercised and the company does not issue either treasury shares or a cash settlement for the purpose of fulfillment of the subscription rights. The new shares will be equivalent to already issued shares of the same class with respect to their dividend entitlement. The Managing Board and, to the extent members of the Managing Board are concerned, the Supervisory Board are authorized to establish the further details of the conditional capital increase and its implementation.

CAPITAL RESERVES

Capital reserves are comprised primarily of contributions from shareholders pursuant to Section 272(2), No. 1 of the Commercial Code, minus financing costs after taxes. Furthermore, this also includes the value of share-based compensation granted to management (including the Managing Board) as a salary component in the form of equity instruments.

TREASURY SHARES

The annual general meeting held on July 2, 2019, authorized the Managing Board of the company to acquire treasury shares until July 1, 2024, pursuant to section 71 (1) number 8 of the German Stock Corporation Act (AktG) with a proportional value of up to 10% of the capital stock at the time this authorization becomes effective or of the existing capital stock of the company at the time of exercise of the authorization, if such amount is lower, whereby at no point in time more than 10% of the capital stock of the company may be represented by the shares acquired on the basis of this authorization together with other shares of the company, which the company has already acquired and still possesses or which are attributable to it pursuant to sections 71d and 71e AktG. The provisions in section 71 (2), sentences 2 and 3 German Stock Corporation Act (AktG) must be observed.

The acquisition may take place only through the securities exchange or by means of a public purchase order and must satisfy the principle of equal treatment of shareholders (section 53a Stock Corporation Act (AktG)).

The Managing Board was authorized to sell the treasury shares acquired on the basis of the above authorization also in manners other than through the stock exchange or through an offer to other shareholders, under the condition that the sale is for cash and is at a price that is not significantly below the stock-exchange price, at the time of the sale, of company shares with the same features. This authorization of use is restricted to shares with a proportionate amount of capital stock that in total does not exceed 10% of the capital stock of the company, neither at the time of coming into effect of this authorization, nor – if such amount is lower – at the time of exercise of the above authorization. The maximum limit of 10% of the capital stock is to be reduced by the proportionate amount of the capital stock that is attributable to those shares that are issued or sold during the term of this authorization with exclusion of the subscription rights pursuant to or in accordance with section 186 (3), sentence 4 AktG. The maximum limit of 10% of the capital stock is to be further reduced by the proportionate amount of the capital stock represented by those shares that were to be issued in order to service bonds with option or conversion rights and/or option or conversion obligations to the extent such bonds are issued during the term of this authorization with exclusion of subscription rights in analogous application of section 186 (3), sentence 4 AktG.

The Managing Board was further authorized to transfer treasury shares acquired on the basis of the above authorization to third parties insofar as this is for the purpose of acquiring companies, parts of companies or interests in companies or other assets, or to carry out business combinations.

The Managing Board and – to the extent there is an obligation with respect to members of the Managing Board – the Supervisory Board were further authorized to use the treasury shares acquired on the basis of the above authorization for the purpose of fulfilling the subscription rights that were or are issued in the framework of the Manz Performance Share Plan 2015 resolved at the annual general meeting of July 7, 2015, under item 6 of the agenda or in the framework of the Performance Share Plan 2019 adopted at the annual general meeting of July 2, 2019, under item 6 of the agenda.

The Managing Board was also authorized to use the treasury shares acquired on the basis of the above authorization for the purpose of fulfillment of the subscription and conversion rights that result from exercising option or conversion rights or fulfilling option or conversion obligations that have been granted or imposed within the framework of issuing convertible or warrant bonds, profit-sharing rights, or profit-sharing bonds (or combinations of these instruments) of the company or its subsidiaries.

The Managing Board was further authorized to transfer treasury shares acquired on the basis of the above authorization to employees of the company or employees or members of governing bodies of subordinate affiliated companies of the company within the meaning of sections 15 et seqq. AktG.

In the financial year 2019, the company purchased 203 of its own shares (previous year: 2,522) at an average price of EUR 19.48 (previous year: EUR 32.41) per share with a market value of TEUR 4 (previous year: TEUR 82). The company purchased its own shares in the reporting period for employee anniversaries. As of the balance sheet date of December 31, 2019, no treasury shares were held in portfolio (previous year: none).

REVENUE RESERVES

Revenue reserves include the earnings generated in the past by the companies included in the consolidated financial statements, insofar as they have not been distributed.

OTHER COMPREHENSIVE INCOME

Other comprehensive income includes reserves for the revaluation of pensions, cash flow hedges and currency translation from the translation of the financial statements of foreign subsidiaries.

NON-CONTROLLING INTERESTS

The non-controlling interests relate to Manz India Private Limited, in which Manz Asia Ltd. holds a 75 % interest, and Suzhou Manz New Energy Equipment Co, Ltd. in which Manz AG holds a 56 % interest. The share of equity and annual profit/loss attributed to the minority shareholders is disclosed separately in the balance sheet and/or income statement.

PROPOSED APPROPRIATION OF PROFITS

In accordance with article 58, paragraph 2 of the Corporation Act, Manz AG's dividend payout is based on the retained profits disclosed in Manz AG's annual financial statements (individual financial statements) as of December 31, 2019. Manz AG's annual financial statements as of December 31, 2019 closed with a net loss of TEUR 6,484 (previous year: net loss of TEUR 5,848).

INFORMATION REGARDING CAPITAL MANAGEMENT

(in TEUR)	**Dec. 31, 2019**	**Dec. 31, 2018**
Cash and cash equivalents	44,005	51,006
Financial liabilities	57,913	43,311
Net financial liabilities	13,908	–7,695
Total Manz AG shareholders equity capital	**132,136**	**149,503**
Equity ratio (in %)	38.77	43.38
Gearing (in %)	10.5	–5.1

In the financial year 2019, net financial liabilities increased. Cash and cash equivalents fell below the level of financial liabilities. This temporary shortfall is due to a delay in the project schedule for major orders. Furthermore, the equity ratio is declining and is marginally below the specified minimum equity ratio of 40 %. As a result of the decline in equity and net financial liabilities, gearing, the ratio of net financial liabilities to equity before non-controlling interests, has fallen to 10.5 % (previous year: –5.1 %). The Managing and

Supervisory Boards have defined gearing of less than 50 % as a target. The specified target figure was achieved in the year under review.

NON-CURRENT FINANCIAL LIABILITIES (26)

Non-current financial liabilities totaling TEUR 728 consist of long-term loans from Manz Italy s.r.l. and have a remaining term of up to three years.

NON-CURRENT FINANCIAL LIABILITIES FROM LEASES (27)

Of the non-current financial liabilities from leases, TEUR 2,279 have a remaining term of more than one year and TEUR 9,989 of more than three years.

PENSION PROVISIONS (28)

In the calculation of pension provisions, the selection of the discount rate or trend assumptions plus the formation of biometric probabilities, leads to differences in comparison to the actual obligations emerging over the course of time.

The components of expenses for pension benefits recognized in the Group's income statement and the amounts carried in the balance sheet are presented in the following tables.

The present value of performance-based obligations at the end of the year is balanced against the plan assets at fair market value (financing status).

Pension provisions

(in TEUR)	2019	2018
Changes in the present value of benefits		
Present value of performance-based obligations as of Jan. 1	**7,446**	**7,650**
Service cost	9	12
Interest cost	77	115
Benefits paid	–471	–234
Actuarial losses (+)/gains (–)		
due to changes in demographic assumptions	–9	49
due to changes in financial assumptions	700	81
due to adjustments based on past experience	–17	–261
Currency differences from international plans	86	34
Present value of performance-based obligations as of Dec. 31	**7,821**	**7,446**
Change in plan assets		
Value of plan assets as of Jan. 1	**394**	**340**
Income from plan assets	5	5
Company contributions	262	63
Benefits paid	–67	–27
Actuarial losses (+)/gains (–)	10	8
Currency differences from international plans	15	4
Value of plan assets as of Dec. 31	**619**	**394**
Financing status (= pension reserves)	**7,202**	**7,051**
which apply to:		
Manz AG, Reutlingen	3,958	3,701
Manz Italy s.r.l., Sasso Marconi/Italy	1,488	1,626
Manz Taiwan Ltd., Chungli/Taiwan	1,756	1,725

The pension obligations of Manz AG consist of a single commitment with a constant amount as well as an occupational pension scheme of the former Manz Tübingen GmbH, which was closed for new acquisitions from July 15, 1997.

The obligations at Manz Italy s.r.l. include the statutory compensation for the separation of employees in each employment relationship.

Manz Taiwan Ltd. has both a defined benefit and a defined contribution pension plan for its employees. Employees who joined the company on or after July 1, 2005 can only join the defined contribution pension plan. Those employed before July 1, 2005, can choose between the two pension plans.

The following amounts have been included in the income statement:

(in TEUR)	2019	2018
Service cost	–9	–12
Net interest cost	–72	–110

The service cost is reported in personnel expenses, while the interest cost is reported under financial expenses.

In the next financial year, the employer contributions to plan assets are expected to increase to TEUR 21 (previous year: TEUR 29) and the pension payments to an estimated TEUR 1.128 (previous year: TEUR 790).

The plan assets for German pension obligations consist exclusively of reinsurance policies. The plan assets for Manz Taiwan Ltd. are legally required by law that must be paid into an external central trust (Taiwan's Labor Pension Fund). The fund's assets comprise reinsurance policies (Germany) and trust assets (Taiwan), which make up 20 % and 80 % of the fund's total assets, respectively. The plan assets are measured at fair value.

For defined contribution plans, payments were made in the financial year under review in the amount of TEUR 403 (previous year: TEUR 21). In addition, the domestic companies also paid contributions to the state pension insurance fund in the amount of TEUR 2,430 (previous year: TEUR 2,379).

The calculation of pension reserves was carried out based on the following underlying assumptions:

(in %)	Germany		Italy		Taiwan	
	2019	2018	2019	2018	2019	2018
Discount rate	0.80	1.72	0.37	1.13	0.83	1.31
Salary and wage increases	2.50	2.50	1.20	2.63	3.00	3.00
Pension increases	1.70	1.70	2.40	1.50	0.83	1.31

An increase or decline in key actuarial assumptions would have the following effect on the present value of financing status:

(in TEUR)		2019	2018
Discount rate sensitivity	+0.50%	1,278	–283
Discount rate sensitivity	–0.50%	1,726	310
Sensitivity for pension dynamics	+0.50%	2,586	211
Sensitivity for pension dynamics	–0.50%	491	–194

In case of a one year higher life expectancy, the pension obligation would be increased of TEUR 4,071.

The weighted average term of the defined benefit obligations at the end of the reporting year is 12.9 years (previous year: 13.1 years).

OTHER NON-CURRENT PROVISIONS (29)

Other non-current provisions developed as follows (in TEUR):

(in TEUR)	Jan. 1, 2019	Currency adjustment	Utilization	Reversal	Discount rate	Addition	Dec. 31, 2019
Warranties	2,868	34	599	1,197	4	1,257	2,359
Personnel	246	0	7	0	1	62	300
	3,114	**34**	**606**	**1,197**	**5**	**1,319**	**2,659**

Long-term personnel obligations include obligations arising from partial retirement and anniversary bonuses. The provision for partial retirement has the amount of TEUR 22 and was supplemented by the plan assets.

Provisions for warranty obligations are recognized on the basis of past experience. It is expected that the costs will be incurred within the next two financial years.

CURRENT FINANCIAL LIABILITIES (30)

Basically current liablities are due within one year. However, based on past experience and the existing backlog, it is to be expected that the respective credit lines will be prolonged.

TRADE PAYABLES (31)

Trade payables are accounted for at amortized cost. Their balance sheet values generally correspond to their market values and they are due within one year.

(in TEUR)	Dec. 31, 2019	Dec. 31, 2018
Trade payables to third parties	57,403	69,660
Trade payables to associated companies	4	23
	57,407	**69,683**

CONTRACT LIABILITIES (32)

Contract liabilities, which represent the surplus of advance payments from customer orders, consisted of the following amounts as of December 31, 2019:

(in TEUR)	Dec. 31, 2019	Dec. 31, 2018
Contract liabilities	35,774	42,285

The decrease in contract liabilities is due to the further progress in the processing of a major order. Of the contract liabilities of TEUR 42,285 as of January 1, 2019, revenues of TEUR 42,140 were recognized in the period up to December 31, 2019.

OTHER CURRENT PROVISIONS (33)

Other current provisions developed as follows:

(in TEUR)	Jan 1, 2019	Currency adjustment	Utilization	Liquidation	Addition	Dec. 31, 2019
Personnel	2,430	9	2,214	225	1,895	1,895
Sales commissions	4,823	183	4,691	315	4,999	4,999
Reworking	195	0	195	0	386	386
Other	4,586	40	4,109	517	3,413	3,413
	12,034	**232**	**11,209**	**1,057**	**10,693**	**10,693**

Provisions for warranties, contingent losses and costs of the annual financial statements in particular are recognized in the area "Other".

The provisions lead to payments being made in the following year.

OTHER CURRENT LIABILITIES (34)

(in TEUR)	Dec. 31, 2019	Dec. 31, 2018
Tax liabilities	3,014	1,673
Personnel-related liabilities	6,030	5,865
Earn-out liabilities	3,000	3,106
Other	2,759	2,809
	14,803	**13,453**

The tax liabilities are primarily made up of value added tax liabilities. TEUR 3,000 of the earn-out obligations relate to the earn-out component from the acquisition of CIGS Technology GmbH in 2012, which is unlimited in time and dependent on the sale of CIGS equipment. All liabilities are due within one year.

LEASES

In financial year 2019 subleases were concluded for parts of the building of the Tübingen location. It is identified as a finance lease contract as the terms of the sub-leases cover the major part of the economic life of the right of use asset. Hence, the right of use was reduced and at the same time receivables from subleases were recognized at the present value of TEUR 974.

In the reporting period finance income of lease receivables of TEUR 20 were recorded.

Below the maturity analysis shows the lease receivables consisting of the non-discounted annual lease payments expected after the balance sheet date:

(in TEUR)	2019
less than one year	165
one to two years	165
two to three years	165
three to four years	165
four to five years	165
more than five years	219
Total of non-discounted annual lease payments	**1,044**

REPORT ON FINANCIAL INSTRUMENTS

Trade receivables, contract assets, other current assets, cash and cash equivalents, trade payables and the majority of other liabilities within the scope of IFRS 7 have short remaining terms. The carrying amounts of these financial instruments are therefore assumed to equate approximately to their fair market values.

The following table shows the reconciliation of balance sheet items to the categories of financial instruments, broken down according to the carrying amounts and fair values of the financial instruments.

Assets as of Dec. 31, 2019

IFRS 9 – Financial Assets	Carrying amounts by measurement category					
(in TEUR)	Fair value	At continued acquisition cost	Profit-neutral for fair value in other comprehensive income (equity instruments)	Designated hedge fund instruments	Not in the application area IFRS 7, IAS 9	Carrying amount Dec. 31, 2019
Investments	11,700	0	11,700	0	0	11,700
Other non-current assets	1,256	447	0	0	809	1,256
Trade receivables from third parties	42,737	42,737	0	0	0	42,737
Trade receivables from associated companies	75	75	0	0	0	75
Derivative financial instruments	10	0	0	10	0	10
Other current assets	13,892	11,631	0	0	2,261	13,892
Cash and cash equivalents	44,005	44,005	0	0	0	44,005
	113,675	**98,895**	**11,700**	**10**	**3,070**	**113,675**

Liabilities as of Dec. 31, 2019

IFRS 9 – Financial Liabilities	Carrying amounts by measurement category					
(in TEUR)	Fair value	Fair Value Through Profit or Loss	At continued acquisition cost	Designated hedging instruments (cash flow hedges)	Not in the application area IFRS 7, IAS 9	Carrying amount Dec. 31, 2019
Financial liabilities	57,913	0	57,913	0	0	57,913
Trade payables to third parties	57,403	0	57,403	0	0	57,403
Trade payables to associated companies	4	0	4	0	0	4
Derivative financial instruments	0	0	0	0	0	0
Other liabilities	14,810	3,000	2,766	0	9,044	14,810
	130,130	**3,000**	**118,086**	**0**	**9,044**	**130,130**

Assets as of Dec. 31, 2018

IFRS 9 – Financial Assets	Carrying amounts by measurement category					
(in TEUR)	**Fair value**	**At continued acquisition cost**	**Profit-neutral for fair value in other comprehensive income (equity instruments)**	**Designated hedge fund instruments**	**Not in the application area IFRS 7, IAS 9**	**Carrying amount Dec. 31, 2018**
Investments	20,006	0	20,006	0	0	20,006
Other non-current assets	523	523	0	0	0	523
Trade receivables from third parties	30,041	30,041	0	0	0	30,041
Trade receivables from associated companies	97	97	0	0	0	97
Derivative financial instruments	2	0	0	2	0	2
Other current assets	35,038	27,965	0	0	7,073	35,038
Cash and cash equivalents	51,006	51,006	0	0	0	51,006
	136,713	**109,632**	**20,006**	**2**	**7,073**	**136,713**

Liabilities as of Dec. 31, 2018

IFRS 9 – Financial Liabilities	Carrying amounts by measurement category					
(in TEUR)	**Fair value**	**Fair Value Through Profit or Loss**	**At continued acquisition cost**	**Designated hedging instruments (cash flow hedges)**	**Not in the application area IFRS 7, IAS 9**	**Carrying amount Dec. 31, 2018**
Financial liabilities	43,311	0	43,311	0	0	43,311
Financial liabilities from leases	0	0	0	0	0	0
Trade payables to third parties	69,660	0	69,660	0	0	69,660
Trade payables to associated companies	23	0	23	0	0	23
Derivative financial instruments	2	0	0	2	0	2
Other liabilities	13,508	3,106	2,863	0	7,539	13,508
	126,504	**3,106**	**115,857**	**2**	**7,539**	**126,504**

MEASUREMENT CLASSES

The Group uses the following hierarchy to determine fair values of financial instruments for each valuation method:

Level 1: (unadjusted) prices for identical assets or liabilities quoted on active markets.

Level 2: input data that is observable either directly (i.e., as prices) or indirectly (i.e., derived from prices) for the asset or liability and that does not represent any quoted price as described in Level 1.

Level 3: input data that is not based on observable market data for the measurement of the asset or liability (unobservable input data).

The financial assets and liabilities recognized by Manz at fair market value are broken down by the fair market value hierarchy levels as follows:

ASSIGNED TO FAIR MARKET VALUE HIERARCHY LEVELS

		Fair value hierarchy		
(in TEUR)	**Dec. 31, 2019**	**Level 1**	**Level 2**	**Level 3**
Assets at fair value – affecting net income				
Derivatives with on-balance-sheet hedging relationship	10	0	10	0
Assets at fair value – not affecting net income				
Investments	11,700	0	0	11,700
Liabilities at fair value – affecting net income				
Contingent purchase price liabilities	3,000	0	0	3,000
Liabilities at fair value – not affecting net income				
Derivatives with on-balance-sheet hedging relationship	0	0	0	0

		Fair value hierarchy		
(in TEUR)	**Dec. 31, 2018**	**Level 1**	**Level 2**	**Level 3**
Assets at fair value – affecting net income				
Derivatives with on-balance-sheet hedging relationship	2	0	2	0
Assets at fair value – not affecting net income				
Investments	20,006	0	0	20,006
Liabilities at fair value – affecting net income				
Contingent purchase price liabilities	3,106	0	0	3,106
Liabilities at fair value – not affecting net income				
Derivatives with on-balance-sheet hedging relationship	2	0	2	0

The measurement of the fair market value of the financial instruments in levels 1, 2, and 3 held as of December 31, 2019, resulted in the following total income and expenses:

(in TEUR)	2019	2018
Assets		
included in the income statement	8	2
recorded in equity	–8,306	–3,569
At amortized cost		
included in the income statement	106	318
recorded in equity	2	12

Financial assets of the fair market value hierarchy Level 3

Development	2019	2018
As of January 1	20,006	23,575
Additions	0	0
Disposals	0	0
Change in fair value	–8,306	–3,569
As of December 31	**11,700**	**20,006**

Financial obligations of the fair market value hierarchy Level 3

Development	2019	2018
As of January 1	3,106	3,422
Additions	0	0
Disposals	0	0
Change in fair value	–106	–316
As of December 31	**3,000**	**3,106**

The calculation of the fair value of the conditional purchase price installment from the acquisition of Kleo Halbleitertechnik GmbH, which is classified in level 3 of the measurement hierarchy, is based on contractual agreements and internal company planning data.

The Group holds a non-controlling 11.5 % stake in NICE PV Research Ltd. Beijing, PR China. This company is not listed on the stock exchange. The Group holds these shares as a strategic investment and has therefore measured them at fair value in other comprehensive income.

The fair value of the investment in the amount of TEUR 11,700 (2008: TEUR 20,006) was determined on the basis of a company valuation.

NET RESULTS ACCORDING TO IFRS 9 VALUATION CATEGORIES

(in TEUR)	Net profits/ losses	Total interest income/ expenses	Total interest income	Total interest ex-penses
Financial year 2019				
Amortized cost (AC)	4,302	–1,701	74	–1,775
Thereof:				
Financial liabilities	1,586	–1,775	0	–1,775
Financial assets	2,716	74	74	0
Fair value through profit or loss (FVTPL)	106	0	0	0
Designated hedging instruments	2	0	0	0
	4,410	**–1,701**	**74**	**–1,775**

(in TEUR)	Net profits/ losses	Total interest income/ expenses	Total interest income	Total interest ex-penses
Financial year 2018				
Amortized cost (AC)	2,432	–1,519	96	–1,615
Thereof:				
Financial liabilities	1,155	–1,615	0	–1,615
Financial assets	1,277	96	96	0
Fair value through profit or loss (FVTPL)	316	0	0	0
Designated hedging instruments	12	0	0	0
	2,760	**–1,519**	**96**	**–1,615**

The net gains and losses from the category “amortized costs (AC)” primarily include gains and losses from currency translation and changes in valuation allowances on receivables as well as losses on receivable from construction contracts.

Interest income for financial instruments in the “amortized costs (AC)” category is the result of investing liquid funds. The interest expenses within the category “amortized cost (AC)” relate to financial liabilities to banks.

FINANCIAL RISK MANAGEMENT AND FINANCIAL DERIVATIVES

As a company which operates internationally, the Manz Group is exposed to credit, liquidity, and market risks during the course of its ordinary business activities. Market risks particularly result from changes to exchange rates and interest rates. Financial risk management measures are designed to manage and limit these market risks within the scope of operating and financial activities. Depending on the risk assessment, derivative hedging instruments are used. To reduce the default risk, hedging transactions are entered into only with leading financial institutions which have excellent credit ratings.

The basic principles of Manz financial policy are regularly determined by the Managing Board and monitored by the Supervisory Board.

The sensitivity analyses in the following sections refer to the situation as of December 31, 2019 and 2018 respectively. The sensitivity analyses were carried out based on the hedging relationships existing as of December 31, 2019, and on the premise that net debt, the relationship between the fixed and variable interest rates of liabilities and derivatives, and the proportion of financial instruments held in foreign currencies will remain constant.

The sensitivity analyses were prepared under the assumption that the relevant items of the income statement reflect the effect of assumed changes in the corresponding market risks.

CREDIT RISKS

Credit risk is the risk that business partners will not be able to meet their contractual obligations, resulting in a financial loss for the Manz Group. Within the scope of its operating activities, the Group is particularly exposed to default risks when it comes to trade receivables, as well as risks associated with its financing activities, including cash investments with banks and derivative financial instruments.

The credit risk from receivables from customers is managed (locally) at the company level and monitored continuously. In project business, the risk of default is minimized by advance payments. If default risks are noticeable in the case of financial assets, these risks are recognized by means of valuation allowances. The risk of default with regard to cash investments and derivative financial instruments is reduced by distributing the investments across various banks.

The maximum credit risk of financial assets (including derivatives with a positive market value) corresponds to the carrying amount recognized in the balance sheet. As of the balance sheet date December 31, 2019, the maximum credit risk was TEUR 112,701 (previous year: TEUR 136,713).

	Trade receivables	
(in TEUR)	Dec. 31, 2019	Dec. 31, 2018
Not overdue and not impaired	34,275	25,552
Overdue and value adjusted gross	9,994	7,309
Overdue and not impaired (1–30 days)	516	857
Overdue and not impaired (31–60 days)	106	76
Overdue and not impaired (61–90 days)	9	36
Overdue and not impaired (91–180 days)	34	32
Overdue and not impaired (>180 days)	123	253
Value adjustment	–2,245	–3,978
	42,812	**30,138**

In certain cases, Manz may assume that a financial asset will default if there are internal or external indications that the outstanding amounts will not be paid in full. Such information is available, e.g., if the debtor's financial difficulties become known or if the borrower becomes insolvent or goes bankrupt. A financial asset is impaired if there is certainty that the contractual cash flows will not be realized.

There were no indications of an impairment requirement for the trade receivables that were not impaired. In order to determine the recoverability of trade receivables, valuation models are used to determine possible default rates. Both the use of default rates under consideration of different regions and an examination of individual default rates by the responsible management were carried out. The recoverability of receivables that are neither overdue nor impaired is considered very high. This assessment based primarily on the long-standing business relationship with most of the customers and the creditworthiness of the customers.

The other assets are not overdue.

LIQUIDITY RISKS

Liquidity risks, i.e., the risk that Manz will not be able to fulfill its financial obligations, were limited by setting up financial reserves and using appropriate financial instruments to manage our future liquidity situation.

The parent company Manz AG has sufficiently high bank balances and a low cash credit line. The subsidiaries in Slovakia, Hungary, Italy, China and Taiwan are financed primarily through short-term overdraft facilities and, to a lesser extent, through long-term loans. As of December 31, 2019, the Manz Group had free cash and guarantee credit lines with banks totaling EUR 18.0 million (previous year: EUR 14.6 million).

In general, in order to reduce liquidity and financing risks, the companies in the Manz Group are required to process orders "cash positive" as far as possible. Here, the deposits should exceed the payouts over the entire term of the respective project.

As usual in project-based business, delays in incoming orders or payments have significant effects on liquidity of the respective company and possibly also on the Group. In order to recognize these risks from delayed payments in a timely manner, the Manz Group works with a rolling liquidity forecast, which is updated bi-weekly. The Group thus achieves a balance between covering its financial requirements and ensuring flexibility through the use of bank overdrafts, bank loans and leases. Manz has sufficient sources of finance at its disposal. Liabilities to existing lenders with a term of up to twelve months are generally extended.

The following lists show the contractually agreed, non-discounted interest and principal payments for the primary financial liabilities covered by IFRS 7. If the maturity date is not fixed, the liability is applied to the earliest maturity date. We mainly assume that the cash outflows will not occur earlier than shown.

(in TEUR)	Total	2020	2021	>2022
Dec. 31, 2019				
Financial liabilities	59,710	58,960	643	107
Trade payables	57,407	57,407	0	0
Financial liabilities arising from leases	17,638	3,329	2,621	12,130
Derivative financial instruments	0	0	0	0
Other liabilities	14,810	14,803	7	0
	149,565	**134,499**	**3,271**	**12,237**

(in TEUR)	Total	2019	2020	>2020
Dec. 31, 2018				
Financial liabilities	49,771	43,788	2,753	3,230
Trade payables	69,683	69,683	0	0
Financial liabilities arising from leases	0	0	0	0
Derivative financial instruments	2	2	0	0
Other liabilities	13,508	13,453	55	0
	132,964	**126,926**	**2,808**	**3,230**

Some of the Manz Group's cash and guarantee credits with banks that were utilized on the balance sheet date are secured in the form of pledges on bank balances, land charges on buildings, inventories, and receivables.

CURRENCY RISKS

Currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate due to changes in exchange rates. The Manz Group is primarily exposed to this risk from its business activities (if revenues and/or expenses are denominated in a currency other than the functional currency of the respective Manz company). In order to reduce the effects of exchange rate fluctuations, Manz AG continually quantifies exchange rate risks and hedges all major risks with forward exchange contracts and foreign exchange swaps whenever this is possible and economically meaningful. The hedging of value fluctuations of future cash flows from expected transactions involves planned sales in foreign currency. Differences resulting from the translation of financial statements into the Group currency are disregarded.

To present market risks, IFRS 7 requires sensitivity analyses which show possible effects of changes in relevant risk variables (e.g. exchange rates, interest rates) might have on earnings and equity. To determine the periodic effects, a possible change in the risk variables on the financial instruments held by the company on the reporting date is undertaken. It is assumed that the instruments held at the end of the year are representative for the financial year. Foreign currency derivatives are always assigned to hedged items so that no currency risks arise from these instruments.

With regard to foreign currency risks, in financial year 2019 Manz was particularly exposed to fluctuations in the exchange rate of the Taiwanese dollar to the US dollar or euro, and the Hong Kong dollar to the euro, as a significant portion of our trade in goods and services during the reporting year took place in these currency pairs. In the previous year, on the other hand, the relationship of the Chinese renminbi to the US dollar was identified as the third significant exchange rate risk, in addition to the aforementioned risks of the Taiwanese dollar.

If the USD had appreciated by 5 % against the TWD as of December 31, 2019 (2018), consolidated net profit would have been TEUR 2,007 higher (previous year: TEUR 2,063 higher). Equity before taxes would have increased accordingly by TEUR 2,007 (previous year: TEUR 2,063). If the USD had depreciated by 5 % against the TWD as of December 31, 2019 (2018), consolidated net profit would have been TEUR 2,007 lower (previous year: TEUR 2,063 lower). Equity before taxes would have reduced accordingly by TEUR 2,007 (previous year: TEUR 2,063 reduced).

If the EUR had appreciated by 5 % against the TWD as of December 31, 2019 (2018), consolidated net profit would have been TEUR 679 higher (previous year: TEUR 542 higher). Equity before taxes would have increased accordingly by TEUR 679 (previous year: TEUR 542 higher). If the EUR had depreciated by 5 % against the TWD as of December 31, 2019 (2018), consolidated net profit would have been TEUR 679 lower (previous year: TEUR 542 lower). Equity before taxes would have reduced accordingly by TEUR 679 (previous year: TEUR 542 reduced).

If the EUR had appreciated by 10 % against the HKD as of December 31, 2019 (2018), consolidated net profit would have been TEUR 334 lower (previous year: TEUR 306 lower). Equity before taxes would have reduced accordingly by TEUR 334 (previous year: TEUR 306 lower). If the EUR had depreciated by 10 % against the HKD as of December 31, 2019 (2018), consolidated net profit would have been TEUR 334 higher (previous year: TEUR 306 higher). Equity before taxes would have increased accordingly by TEUR 334 (previous year: TEUR 306 higher).

INTEREST RATE RISKS

Interest rate risk is the risk that the fair value or future cash flow of a financial instrument will fluctuate due to changes in market interest rates. The risk of fluctuations in market interest rates to which the Group is exposed results primarily from loans with variable interest rates.

Manz has loans with variable interest rates that were subject to interest rate changes as of December 31, 2019. A hypothetical increase in these interest rates by 25 basis points per year would have led to an increase in interest expenses of TEUR 1,109 (previous year: TEUR 115). A hypothetical reduction of 25 basis points per year would have led to a reduction in interest expenses of TEUR 1,109 (previous year: TEUR 115).

Manz holds a balanced portfolio of fixed-rate and variable-rate loans to manage interest rate risk. To ensure this balance, Manz enters into interest rate swaps in which variable and fixed interest amounts are exchanged with the contractual partner.

CONTINGENCIES AND OTHER FINANCIAL OBLIGATIONS

As of the balance sheet date, there are assumptions of legal liability for future license payments by NICE Solar Energy GmbH, Schwäbisch Hall, in the amount of TEUR 3,500. The maximum risk of recourse to the financial obligations is in the amount stated.

Manz Group has entered into various lease agreements for buildings as well as lease agreements for operating and office equipment and cars, which were considered operating leases within the meaning of IAS 17 until financial year 2018. The maturities of the minimum lease payments were as follows:

(in TEUR)	2019	2018
Minimum lease payments according to IAS 17		
Remaining term up to 1 year	0	5,264
Residual term 1–5 years	0	10,356
Residual term of more than 5 years	0	13,039

In the financial year 2018, rental and lease payments of TEUR 5,549 were recognized under other operating expenses. Information on the presentation of operating leases in accordance with IFRS 16 from the financial year 2019 onwards is described in the section Accounting policies IFRS 16 Leases.

EVENTS AFTER REPORTING PERIOD

The forecast of the Group Management Report contains the current assessment of the effects of the corona pandemic on the economic development of our company. However, it is based on the assumption that the further spread of the virus will not have any additional negative impact on the development of our business, particularly in the Solar, Electronics and Contract Manufacturing segments, in fiscal year 2020.

RELATED PARTY DISCLOSURES

IAS 24 requires disclosures of relationships, transactions and outstanding balances (including obligations) with related parties.

Natural related persons include the Supervisory Board and the Managing Board of Manz AG including their family members as related persons. In addition, the Manz family together holds 28.09 % of the shares in Manz AG:

It also includes companies that are controlled by a related party or are under the joint control of a related company or are involved with a related party, to the related company. Accordingly, the associated company Talus Manufacturing Ltd, Chungli, Taiwan, was identified as a related party. Moreover, Manz GmbH Management Consulting and Investment, Schlaitdorf is a related party. In financial year 2019 consulting services amounting to TEUR 9 (previous year TEUR 0) were purchased from this company. In the previous financial year, this group also included 2H.IM Executive Interim Management GmbH, Langweid. Consulting services amounting to TEUR 103 were purchased from 2H.IM Executive Interim Management GmbH, Langweid, during the financial year 2018. No services were purchased from 2H.IM Executive Interim Management GmbH, Langweid in the current financial year. All commercial activities were conducted at arm’s length.

MANAGING BOARD

The following persons were appointed as members of the Managing Board in the financial year 2019.

- Martin Drasch, Chief Executive Officer
- Manfred Hochleitner, Chief Financial Officer
- Jürgen Knie, Chief Operations Officer (from July 1, 2019)

Compensation of the Managing Board

The fundamentals of the compensation system and the amount of compensation paid to the Managing Board and Supervisory Board and former members of Managing Board are presented in the compensation report, which forms part of the group management report.

The total compensation of the Managing Board in accordance with Section 314 Subsection 1 No. 6a) of the German Commercial Code amounted to TEUR 996 for the financial year 2019 (previous year: TEUR 520). The non-performance-related benefits amount to TEUR 742 (previous year: TEUR 418). In the financial year 2019, this figure does not include any severance payments (previous year: TEUR 523). In the year under review, a total of 22,327 (previous year: 6,048) subscription rights to shares were granted to members of the Managing Board as part of the Performance Share Plan with a total fair value of TEUR 254 (previous year: TEUR 102).

The subscription rights to shares of Manz AG based on the 2019 Manz Performance Share Plan and the 2015 Manz Performance Share Plan (tranches 2016, 2017 and 2018) were measured at fair value using recognized financial mathematical methods.

Managing Board member Martin Drasch has a defined contribution plan. For this purpose, TEUR 12 (previous year: TEUR 12) p.a. are paid into an externally funded pension fund.

Managing Board member Manfred Hochleitner has a defined contribution plan. For this purpose, TEUR 12 (previous year: TEUR 6) p.a. are paid into an externally funded pension fund.

There is a defined contribution plan for Managing Board member Jürgen Knie. For this purpose, TEUR 6 (previous year: TEUR 0) p.a. are paid into an externally funded pension fund.

A defined contribution plan existed for former Managing Board member Gunnar Voss von Dahlen in financial year 2018. For this purpose, TEUR 0 was paid in the 2019 reporting year (previous year: TEUR 3) into an external reinsured provident fund.

Former Managing Board member Otto Angerhofer received a pension payment of TEUR 10 during financial year 2019 (previous year: TEUR 10). There is a pension obligation to the former Managing Board member amounting to TEUR 176 (previous year: TEUR 143).

The following table provides an overview of the compensation paid to the members of the Managing Board for performing their duties in the financial year 2019 according to IAS 24.17:

(in TEUR)	Total 2019	Total 2018
Short-term employee benefits	**742**	824
Post-employment benefits	**0**	29
Benefits on termination of employment	**0**	523
Share-based compensation	**540**	199

SUPERVISORY BOARD

Prof. Dr. Heiko Aurenz, Dipl. oec., Managing Director of Ebner Stolz Management Consultants GmbH, Stuttgart, Chairman of the Supervisory Board.

Dieter Manz, Dipl. Eng. (FH), Managing Director of Manz GmbH Management Consulting and Investment, Schlaitdorf, Deputy Chair of the Supervisory Board.

Prof. Dr.-Ing. Michael Powalla, Director of the Photovoltaics Division and a member of the board of directors of the Center for Solar Energy and Hydrogen Research in Baden-Württemberg (ZSW) and professor of thin-film photovoltaics at the Karlsruhe Institute of Technology (KIT), Institute of Light Technology, Faculty of Electrical Engineering and Information Technology.

Dr. Zhiming Xu, Chief Technical Officer of the Shanghai Electric Automation Group of Shanghai Electric Group Company Ltd., Shanghai, PR China and Managing Director of Shanghai Electric Group Automation Engineering Co, LTD, Shanghai, PR China.

The Chairman of the Supervisory Board Heiko Aurenz is also Chairman of the Supervisory Board of Know How! Company for continuing education, Leinfelden-Echterdingen, Germany; Dep. Chairman of the Supervisory Board of MQ Result AG, Tübingen; Member of the Supervisory Board of Anna-Haag-Mehrgenerationenhaus e.V., Stuttgart; Member of the Supervisory Board of Anna Haag Stiftung GmbH, Stuttgart; Member of the Supervisory Board of TanDiEM gGmbH, Stuttgart; Chairman of the Advisory Board of Monument Vermögensverwaltung GmbH, Stuttgart; member of the Foundation Board of the Foundation Aufbruch und Chance, Stuttgart; and Advisory Board Chairman of Bumüller GmbH & Co Backbetriebe KG, Hechingen.

The Deputy Chairman of the Supervisory Board Dieter Manz is a member of the Supervisory Board of TecInvest Holding AG, Puchheim.

Supervisory Board member Prof. Dr.-Eng. Michael Powalla does not hold any mandates in other statutory Supervisory Boards or comparable domestic and foreign supervisory bodies of commercial companies.

Supervisory Board member Dr. Zhiming Xu is a member of the Supervisory Board of Suzhou Manz New Energy Equipment Co., Ltd., Suzhou, People's Republic of China, Deputy Chairman of the Supervisory Board of NICE PV Research Ltd., Peking, People's Republic of China and member of the Supervisory Board of ANWHA (Shanghai) Automation Engineering Co., Ltd, Shanghai, People's Republic of China.

Compensation of the Supervisory Board

The compensation system for the Supervisory Board is also presented in the compensation report, which is part of the group management report.

For the financial year 2019, the members of the Supervisory Board were paid a basic compensation and additional compensation for committee activities and this was a total, including attendance fees, of TEUR 237 (previous year: TEUR 142).

AUDITOR FEES

The auditor fees assessed for services is split up in the following table:

(in TEUR)	2019	2018
Audit services	180	180
Other attestation services	0	0
Tax services	0	0
Other services	0	13

Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, Stuttgart audited the consolidated financial statements of the financial years 2018 and 2019.

CORPORATE GOVERNANCE CODE

Manz AG's Managing Board and Supervisory Board have issued the declaration required by Section 161 of the German Stock Corporation Act (AktG) and made it permanently available to shareholders on Manz AG's website at www.manz.com.

Reutlingen, March 13, 2020

The Managing Board of Manz AG

Martin Drasch   Manfred Hochleitner   Jürgen Knie

RESPONSIBILITY STATEMENT

To the best of our knowledge, and in accordance with the applicable accounting principles, the consolidated financial statements give a true and fair view of the financial position, cash flows and profit or loss of the Group, and the Group management report, which is combined with the management report of Manz AG, includes a true and fair view of the development and performance of the business position of the Group together with a description of the principal opportunities and risks associated with the expected development of the Group.

Reutlingen, March 13, 2020

The Managing Board of Manz AG

Martin Drasch Manfred Hochleitner Jürgen Knie

INDEPENDENT AUDITOR'S REPORT

TO MANZ AG

Report on the audit of the consolidated financial statements and of the group management report

Audit opinions

We conducted an audit on the group financial statement of Manz AG, Reutlingen, and its subsidiaries (the group), comprising the group's profit and loss statement and the group's overall earnings statement for the fiscal year between January 1 and December 31, 2019, the group balance sheet as of December 31, 2019, the group's cash flow statement, and the group's statement of changes in equity for the fiscal year between January 1 and December 31, 2019 as well as the group explanatory notes including a summary of the key accounting methods. Furthermore, we also audited the group management report of Manz AG, Reutlingen for the fiscal year between January 1, to December 31, 2019. In line with the German statutory provisions, we did not audit the content of the consolidated corporate governance statement pursuant to section 315d of the German Commercial Code (HGB) which comprises part of the Group management report and is published on the website indicated in the Group management report.

According to our assessment based on the findings acquired through the audit,

- the attached group financial statement is, in all material respects, in accordance with the IFRS, as it is to be applied in the EU, and the supplementary German statutory provisions pursuant to Section 315e, Para. 1 of the German Commercial Code (HGB) and it conveys a depiction of the group's asset and financial situation as of December 31, 2019 that corresponds to reality in consideration of these provisions as well as its earnings situation for the fiscal year between January 1 and December 31, 2019.

- The attached group management report conveys an accurate depiction of the group's situation. In all material respects, this group management report is consistent with the group financial statement, it accords to German statutory provisions and it accurately presents the opportunities and risks of the group's future development. Our audit opinion of the group management report does not include the content of the consolidated corporate governance statement referred to above.

Pursuant to Sec. 322, Para 3, Sentence 1 of the (HGB), we declare that our audit did not result in any objections to the orderliness of the group financial report nor to the group management report.

Basis for the audit opinions

We conducted our audit of the group financial statement and the group management report in accordance with Section 317 of the HGB and EU regulation No. 537/2014 on specific requirements regarding statutory audits (hereinafter referred to as “EU-APrVO”) in consideration of the German guidelines for proper auditing of financial statements by the German Institute of Public Auditors (IDW). Our responsibilities in accordance with these provisions and guidelines are described in further detail in the section titled “Responsibility of the financial statement auditor for auditing the group financial report and the group management report” of these audit notes. We operate independently of the group companies in accordance with European and German commercial law as well as the relevant professional requirements and we have satisfied all of our other German professional obligations in line with these requirements. Furthermore, pursuant to Article 10, Para. 2, Letter f) of the EU-APrVO, we declare that we have not provided any prohibited non-auditing services pursuant to Article 5, Para. 1 of the EU-APrVO. We are of the opinion that the audit evidence requested from us is sufficient and appropriate for serving as the basis of our audit opinions of the group financial statement and of the group management report.

Especially important auditing circumstances in the audit of the group financial statement

Especially important auditing circumstances are such circumstances that we deemed to be the most significant during our audit of the group financial statements for the fiscal year between January 1 and December 31, 2019 according to our professional judgment. These circumstances were considered in whole and in the creation of our audit opinion in connection with our audit of the group financial statement; we do not provide any separate audit opinion as to these circumstances.

In the following, we describe auditing circumstances that we believe to be of particular importance:

Revenue recognition for contracts in the equipment business

Grounds for designation as an especially important auditing circumstance

A significant share of the Group’s business operations was conducted by way contracts in the equipment business. Since financial year 2018, revenue for contracts in the equipment business has been recognized in accordance with IFRS 15, Revenue from Contracts with Customers, generally based on the percentage of completion.

From our point of view, the accounting for contracts in the equipment business is one area with a relevant risk of material misstatements (including the potential risk that management may circumvent controls) and, as such, constitutes a significant auditing circumstance as the estimates of the legal representatives have a significant effect when determining the stage of completion. This primarily applies in regard to estimated total costs, costs incurred until order completion, estimated revenue and contract risks including technical risks. Revenues, estimated total costs and profit realization may differ, in some cases significantly, from the original estimates due to new information on cost overruns and changes in project scope during the term of a contract in the equipment business.

Auditing approach

IAs part of our audit procedures, we examined the methods and procedures for project management as defined within the company during the offer and processing phase of contracts in the equipment business.

Working on the basis of select risk-oriented samples, we assessed the estimates and assumptions made by the legal representatives using case-by-case examinations. Our auditing activities included a review of the contractual bases and contractual conditions including contractually agreed provisions regarding termination rights and compensation for damages. For the selected projects, we conducted interviews with project management about the development of projects, the reasons for deviations between the planned and the actual costs, the current assessment of the anticipated remaining costs until project completion, and the estimates made by the legal representatives in regard to the probability of the occurrence of order risks. We also used data analysis methods to identify any anomalies in margin trends during the course of the project.

Furthermore, for purposes assessing the calculation of earnings for the relevant period, we also examined sales revenue chargeable on the balance sheet date as well as associated costs of sales to be recognized in income subject to application of the stage of completion method and also investigated the financial accounting of the associated balance sheet items.

Within the framework of the contract analysis of major customer projects carried out by the legal representatives, we evaluated whether the requirements for the period-appropriate recognition of revenue for contracts in the equipment business were satisfied. Without limitation, we conducted this analysis on a random sampling basis.

Based on our auditing activities, we did not arrive at any objections in view of the realization of revenue from the contracts in the equipment business.

Reference to associated information

Further information provided by the company on revenue recognition for contracts in the equipment business and concerning related accounting policies and discretionary decisions are contained in the notes to the consolidated financial statements in the sections "Accounting principles" and "Notes to the balance sheet," Note 19 "Contract assets."

Impairments to goodwill

Grounds for designation as an especially important auditing circumstance

Manz AG’s consolidated financial statements include goodwill totaling EUR 35.5 million which is subject to annual impairment testing according to IAS 36.

The result of the impairment test depends in particular on the assessment of future cash inflows by the legal representatives and the discount rate to be applied. The impairment test is therefore particularly subject to discretionary decisions and uncertainties, which is why we have determined this to be a particularly important subject matter.

Auditing approach

We discussed the procedure used to carry out the impairment test with the company’s legal representatives and assessed it for compliance with the requirements of IAS 36. We reconciled the planning assumptions used in detailed planning calculations prepared by the respective cash-generating unit against the company’s corporate planning prepared by the Managing Board and approved by the Supervisory Board on a random sample basis. Furthermore, we reconciled the growth rates for income and expenses used for updating the budget based on internal data, particularly with regard to expected future orders. In addition, we analyzed the planning reports with regard to how they compared to actual results and obtained supporting evidence for individual assumptions made in the planning reports.

We analyzed the computation of the discount rate and its individual components with the assistance of our in-house valuation experts, in particular by evaluating the peer group, comparing market data against external evidence and reconstructing the calculation. We checked the mathematical accuracy of the valuation model on a random sample basis.

We assessed the sensitivity calculations prepared by the company with regard to the consideration of key assumptions in order to be able to estimate any potential impairment risk in the event of a change in one of the key valuation assumptions.

Based on our auditing activities, we did not arrive at any objections in view of impairments to goodwill.

Reference to associated information

Further information provided by the company on impairments to goodwill and concerning related accounting policies and discretionary decisions are contained in the notes to the consolidated financial statements in the sections “Accounting principles” and “Notes to the balance sheet,” Note 14 “Intangible assets.”

Miscellaneous information

The Supervisory Board is responsible for the report of the Supervisory Board. The legal representatives are responsible for the miscellaneous information in all other cases. Miscellaneous information includes the following elements intended for the annual report of which we have obtained a version prior to issuing this audit opinion: the information provided in the "To our shareholders" section of the annual report, the non-financial consolidated report, the consolidated corporate governance statement and the affirmations made by the legal representatives.

Our audit opinions on the consolidated annual financial statements and the Group management report do not extend to such other information, and accordingly, we provide neither an opinion nor any other form of audit conclusion.

In connection with our audit, we bear responsibility for reading the miscellaneous information and acknowledging whether the miscellaneous information

- contains material inconsistencies with the consolidated annual financial statements, the Group management report, or knowledge we obtained during our audit; or

- if it seems to be erroneously represented in any other way.

Responsibility of the legal representatives and the supervisory board in relation to the group financial statement and group management report

The legal representatives are responsible for creating the group financial statement, which corresponds to the IFRS, as it is to be applied in the EU, and the supplementary German statutory provisions to be applied pursuant to Section 315e, Para. 1 of the HGB in all material respects, and they are responsible for ensuring that the group financial statement conveys a depiction of the group's asset, financial and earnings situation that corresponds to reality in consideration of these provisions. Furthermore, the legal representatives are responsible for the internal controls that they have deemed necessary in order to allow for the creation of a group financial statement that is free of significant, intended or unintended, misstatements.

Upon creating the group financial statement, the legal representatives are responsible for assessing the group's capacity to carry on its business activities. Additionally, they bear responsibility for providing information as to the circumstances connected with the continuation of business activities, where relevant. Moreover, they are responsible for accounting on the basis of the accounting principles for the continuation of business activities, unless there exists an intention of liquidating the group or ceasing business operations or if there is no realistic alternative for doing so.

The legal representatives are also responsible for compiling the group management report, which is to convey an overall accurate depiction of the group’s situation and be in accord with the group financial statement in regard to all material respects and which must correspond to all German legal provisions and accurately portray the opportunities and risks of future developments. Furthermore, the legal representatives are responsible for all precautions and measures (systems) that they deem necessary in order to facilitate the creation of a group management report in line with the applicable German legal provisions and in order to be able to provide sufficient suitable evidence to support the statements made in the group management report.

The supervisory board is responsible for monitoring the group’s accounting process in regard to the creation the group financial statement and the group management report.

Responsibility of the auditor for auditing the group financial statement and the group management report

Our objective is to obtain a reasonable degree of assurance as to whether the group financial statement as a whole is free of any significant, intended or unintended, misstatements and whether the group management report generally provides an accurate depiction of the group’s situation, is consistent with the group financial statement as well as with the findings from our audit in regard to all material respects, and whether they are in line with the German legal provisions and accurately portray the opportunities and risks of future developments. Our aim is also to issue audit notes that contain our audit opinions on the group financial statement and the group management report.

Reasonable assurance entails a high degree of assurance but does not constitute a guarantee that a performed audit will unfailingly uncover a misstatement in line with Section 317 of the HGB and the EU-APrVO and in consideration of the German guidelines for proper auditing of financial statements set by the German Institute of Public Auditors (IDW). Misstatements can result from violations or inaccuracies and are deemed to be significant when it can reasonably be expected that they individually or generally have an influence on the economic decisions made by addressees on the basis of this group financial statement and group management report.

During this audit, we practice professional judgment and maintain a critical basic approach. Additionally,

- we identify and assess the risks related to significant, intended or unintended, misstatements in the group financial statement and the group management report, we plan and carry out auditing activities in response to these risks and we acquire auditing evidence that is sufficient and suitable for supporting our audit opinions. The risk that material misstatements are not uncovered is greater in the case of violations than in the case of inaccuracies since violations may entail fraudulent collaboration, falsifications, intended omissions, misleading statements or the derogation of internal controls;

- we acquire an understanding of the control system that is relevant for the audit of the group financial statement as well as the precautions and measures relevant for auditing the group management report in order to plan auditing activities that prove necessary under the given circumstances, not, however, with the aim of providing an audit opinion on the effectiveness of this system of the company;

- we assess the appropriateness of the accounting methods employed by the legal representatives as well as the viability of the estimated values and, as such, the associated information depicted by the legal representatives;

- we draw conclusions as to the viability of the accounting principles for continuing the business activities employed by the legal representatives and, on the basis of the acquired audit evidence, whether any significant uncertainty exists in connection with the events or circumstances, which could cast significant doubt relating to the company's ability to carry on its business activities. In the event that we arrive at the conclusion that significant uncertainty exists, we are obligated to draw attention to the associated information found in the group financial statement and in the group management report on the audit notes or, in case this information is deemed unreasonable, to modify our respective audit opinion. We draw our conclusions on the basis of the audit evidence obtained up to the date of our audit notes. Future occurrences or circumstances could, however, result in the group no longer being able to continue its business activities;

- we assess the overall depiction, the design and the content of the group financial statement, along with the information, as well as whether the group financial statement depicts the underlying business transactions and occurrences in such a way that it conveys an accurate portrayal of the group's asset , financial and profit situation that reflects the real conditions in consideration of the IFRS, as it is to be applied in the EU, and the supplementary German provisions pursuant to Section 315e, Para. 1 of the HGB;

- we collect sufficient, suitable audit evidence for the accounting information of the company or the business activities within the group in order to provide audit opinions on the group financial statement and on the group management report. We are responsible for guiding, monitoring and conducting the audit of the group financial statement. We bear sole responsibility for our audit opinions;

- we assess the extent to which the group management report is consistent with group financial statement, its legal equivalent and the depiction it provides of the group's situation;

- we conduct audit activities that address the future-oriented information in the group management report as depicted by the legal representatives. On the basis of sufficiently reasonable audit evidence, we retrace the central assumptions based on the future-oriented information furnished by the legal representatives, in particular, and assess the proper deduction of the future-oriented information from these assumptions. We do not provide an independent audit opinion on the future-oriented information as well as on the assumptions. A significant and unavoidable risk exists that future occurrences will notably differ from the future-oriented information.

Working with the individuals responsible for monitoring, we identify, among other things, the planned scope and the audit schedule as well as the core findings from the audit, including any deficiencies in the internal control system that we determine during our audit.

We provide the individuals responsible for monitoring with a declaration that we have complied with all relevant independence requirements and we work with them to identify all relationships and miscellaneous circumstances for which we can reasonably assume that they have impacted our independent work, along with the preventive measures that were agreed to.

Based on the circumstances that we identify in cooperation with the individuals responsible for monitoring, we determine which of them prove to be most significant in the audit of the group financial statement for the current reporting period and, as such, which audit circumstances were of particular importance. We outline these circumstances in the audit notes, unless laws or other legal requirements prohibit public disclosure of the circumstance.

Miscellaneous legal and other statutory requirements

Other information pursuant to Article 10 of EU-APrVO

We were selected as group financial statement auditors at the Annual General Meeting of shareholders on July 2, 2019. We were commissioned by the supervisory board on August 8, 2019. We have served as the group financial statement auditors for Manz AG since financial year 2018.

We declare that the audit opinions contained in these audit notes are consistent with the additional report for the audit committee pursuant to Article 11 of EU-APrVO (audit report).

Responsible financial statement auditor

Martin Matischiok and Steffen Maurer are the responsible financial statement auditors.

Stuttgart, March 13, 2020

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Matischiok	Maurer
Auditor	Auditor

RESPECT TRUST AGILITY

Our employees are our most valuable asset and at the center of all our endeavors. Our corporate culture is shaped by principles of mutual trust and mutual respect. As a modern employer, we provide good working conditions and take personal needs into consideration as well. In addition, we actively involve our employees in the further development of our company, for example via employee representation or regular surveys on current topics. This enables us to ensure that complex ideas and interests may all find their place.

Employee council

Employee representatives elected by the workforce perform important functions. They serve as points of contact for employees, for example when it comes to formulating and asserting employee concerns in relation to company management. At the same time, they are sparring partners for the Managing Board and company management on issues such as new forms of work organization, working hours models or performance-related pay.

Job security

Job security is an important component of our risk management and corporate strategy. The aim is to identify potential risks at an early stage and to take appropriate countermeasures at the right time. In addition, we are making staffing assignment more flexible based on the sharing of technology and expertise on a Group-wide basis. This allows us to ensure that staffing capacity is used on a stable basis.

Modern work organization
Our "Agile Working Hours" concept, introduced in 2019, allows work to be tailored according to personal needs and output. Employees decide for themselves when they want to work during the standard workday in order to achieve their specific goals and those of their department. This permits us to support employee-focused autonomous action. At the same time, we are creating an attractive working environment for both experienced employees and new talent.

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For the sake of better readability, we consistently avoid gender-differentiating formulations (e.g. “his/her” or “he/she”). The corresponding terms apply to all genders for the purposes of equal rights. This is done solely for editorial purposes and does not imply a judgment of any kind.

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