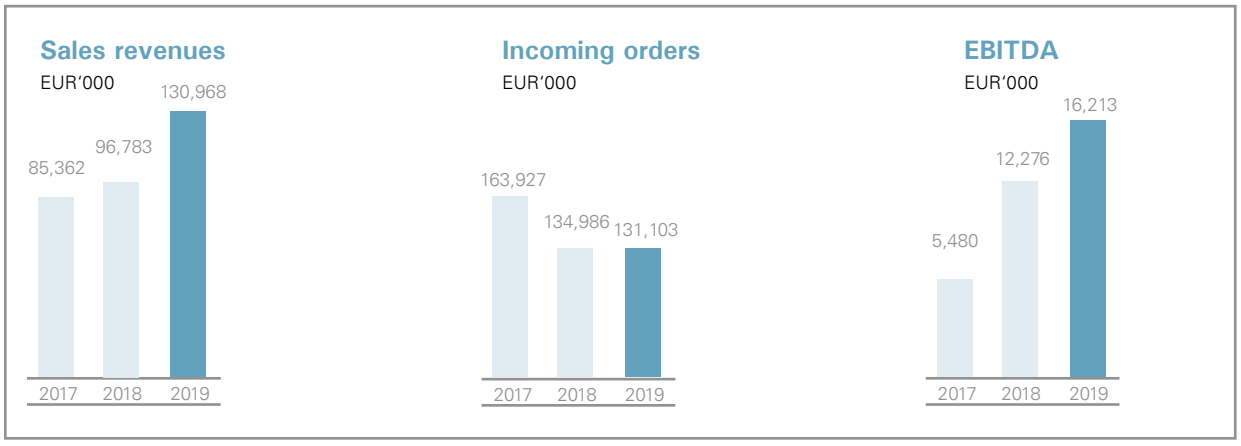
PVA TePla

Be equipped for tomorrow‘s materials

Annual report 2019

IMPORTANT CONSOLIDATED FIGURES AT A GLANCE

EUR´000	2019	2018	2017
Sales revenues	**130,968**	**96,783**	**85,362**
Industrial Systems	45,170	37,323	33,257
Semiconductor Systems	85,798	59,460	52,105
Gross profit	**37,697**	**31,054**	**19,092**
in % sales revenues	28,8	32,1	22,4
R&D expenses	4,753	3,438	2,632
EBITDA	**16,213**	**12,276**	**5,480**
in % sales revenues	12,4	12,7	6,4
Operating result (EBIT)	**12,305**	**9,468**	**3,027**
in % sales revenues	9,4	9,8	3,5
Consolidated net result	**7,713**	**5,968**	**5,593**
in % sales revenues	5,9	6,2	6,6
Total assets	**180,933**	**162,155**	**119,096**
Shareholders' equity	**57,315**	**50,797**	**45,129**
Equity ratio in %	31,7	31,3	37,9
Employees as of 31,12,	**528**	**470**	**385**
Incoming orders	**131,103**	**134,986**	**163,927**
Order backlog	**170,576**	**171,513**	**129,079**
Book-to-bill-ratio	1,00	1,39	1,92
Cash Flow from operating activities	**-591**	**11,652**	**38,969**
Net financial position	**21,031**	**37,010**	**29,133**



PVA TePla AG

AS A VACUUM SPECIALIST FOR HIGH-TEMPERATURE AND PLASMA TREATMENT PROCESSES, PVA TEPLA AG IS ONE OF THE WORLD'S LEADING SYSTEM ENGINEERING COMPANIES IN THE FIELDS OF HARD METAL SINTERING, CRYSTAL GROWING, THE USE OF PLASMA SYSTEMS FOR SURFACE ACTIVATION AND ULTRA-FINE CLEANING AS WELL AS SYSTEMS FOR QUALITY INSPECTION.

INNOVATIVE DEVELOPMENTS

With its systems and services, PVA TePla enables and supports the innovative manufacturing processes and developments of its customers, primarily in the semiconductor, hard metal, electrical/electronic and optical industries – as well as in the energy, photovoltaic and environmental technologies.

INDIVIDUAL SOLUTIONS

The company provides its customers with customized solutions from a single source. These range from technology development through tailor-made design and construction of production facilities right up to an after-sales service that covers all four corners of the globe.

DEVELOPMENT OF NEW APPLICATION FIELDS

Together with its customers, the PVA Group uses tailor-made systems to open up the latest fields of application - be it the next generation of wafers for the semiconductor or photovoltaic industry, metal powder technology, new crystals for the optoelectronic industry or further developments of materials.

FOR OUR SHAREHOLDERS

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Foreword by the Management Board

DEAR SHAREHOLDERS AND BUSINESS PARTNERS,

Fiscal 2019 was marked by further growth for the PVA TePla Group, with consolidated sales revenues up 35% year on year at EUR 131 million (previous year: EUR 96.8 million). In addition, we significantly increased earnings with EBITDA rising to EUR 16 million – a substantial improvement on the prior-year figure (EUR 12.3 million). The same was seen in EBIT, which moved up from EUR 9.5 million to EUR 12.3 million.

Our largest division Semiconductor Systems, which accounts for 65% of total sales revenues, generated its highest segment sales revenues in nine years in fiscal 2019, totaling EUR 85.8 million (previous year: EUR 59.5 million). Key growth drivers were crystal-growing systems for the semiconductor industry and metrology systems. The Industrial Systems division also increased its segment sales revenues. Our strong market position in hard metal sintering for the machine tool industry, generated sales revenues of EUR 45.2 million (previous year: EUR 37.3 million). It accounted for 35% of total consolidated sales revenue.
Last year, we expanded our manufacturing capacity by making a key strategic acquisition, ac-quiring the operations of a globally highly regarded pressure vessel manufacturer in Italy. This allows us to optimize our supply chains and avoid bottlenecks in the procurement of compo-nents. The double-walled stainless steel vessels produced at this new location, which meet the highest quality and safety standards, are the central component for vacuum and high-temperature systems as well as for many crystal-growing systems.

The PVA TePla Group is supplementing its existing pool of suppliers with its own production in order to take account of customer demand for these kind of systems, which has been increasing for a number of quarters.

In strategic terms, we are clearly focused on growth on the basis of our strong technology. The excellent results in the past fiscal year impressively show that our solutions are in ever-increasing demand both in the semiconductor sector and for process and metrology systems for high-tech materialsThis also continues to be reflected in the sustained high order backlog, which came to EUR 170.6 million (previous year: EUR 171.5 million). New orders from current operating business amounted to EUR 131.1 million (previous year: EUR 135 million) and came mostly from regular operating operations, as well as an additional order for the delivery of crystal growing systems for the Asian semiconductor market.

Unfortunately, PVA TePla AG's sharp upturn is currently being hindered by the COVID-19 crisis. Both the economic climate and the personal lives of each and every one of us are shaped by substantial uncertainty based on the outbreak of the virus.

In order to protect the health of our employees while also providing our customers with the best possible service during this historically unparalleled crisis, the PVA TePla AG Management Board, in close collaboration with the Supervisory Board, has responded promptly and taken appropriate action. The move to working over two shifts or from home are just two examples of our crisis plan that we activated several weeks ago and with which we have prepared ourselves to tackle these special challenges.

There are currently no restrictions on our manufacturing capacities, although travel restrictions experienced by our fitters are causing some delays for our customers. Due to the current dynamic and the unknown duration of the situation, we cannot at present – despite our well-filled order book – reliably forecast the specific financial impact of the COVID-19 pandemic for the PVA TePla Group in fiscal 2020.

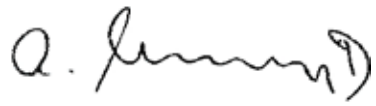
But of course we will keep you, our shareholders, informed on the situation throughout the fiscal year.

The PVA TePla Group has not yet recorded any order cancellations, nor have there been any discussions with customers or other indications of such cancellations.

We are more than convinced that our medium and long-term growth prospects, based on our strong technologies for process and metrology systems for high-tech materials, will remain intact and robust after the successfull overcome the exceptional situation presented by COVID-19.

On behalf of our managing directors and all our employees, we would like to thank you, our shareholders, for your trust and are looking forward to enjoying your continuing support in this phase of temporary uncertainty.

Alfred Schopf
Chief Executive Officer



Oliver Höfer
Chief Operating Officer

Report by the Supervisory Board of PVA TePla AG on fiscal year 2019

The PVA TePla Group expanded manufacturing capacity in fiscal year 2019 by making a major strategic acquisition. To optimize its supply chains, the Company acquired the operations of a globally highly regarded pressure vessel manufacturer in Italy. The focus of the fiscal year was on filling large orders and on major incoming orders that will fill up production capacity until well into fiscal year 2021. PVA Crystal Growing Systems GmbH entered into a long-term framework agreement with an Asian customer to deliver crystal growing systems for 300 mm wafers. Order intake of the first batch was made in the first quarter of 2019. The Company also has supply agreements with other Asian customers in the semiconductor industry. The first quarter of 2019 also saw PVA Industrial Vacuum Systems GmbH receive a large order to supply brazing furnaces.

The Supervisory Board closely monitored the preparations and negotiations for the new business and approved the contract.

Profitability was increased by focusing more on operating costs and seizing major growth opportunities in attractive, forward-looking growth markets such as the semiconductor industry, particularly in the wafer and metrology segments.

The PVA TePla Group has acquired an excellent position in all these growth markets thanks to its cutting-edge technology. The Company will aggressively pursue the resulting opportunities in the future, too.

Trends such as the growth of digitalization, e-mobility and charging stations, renewable energy and miniaturization will support the growth of the PVA TePla Group. Efficient, reliable power semiconductors are needed for electric vehicles, compact power supply units for smartphones, data centers and other applications, including renewable power production.

Throughout fiscal year 2019, the Supervisory Board, under my chairmanship, fully performed all the duties required of it by law, the Company's Charter and its Rules of Procedure.

COOPERATION BETWEEN THE SUPERVISORY BOARD AND THE MANAGEMENT BOARD

In fiscal 2019, the Supervisory Board continuously monitored the Management Board as it man-aged the Company and advised it on all matters of importance to the Company. Through this process, the Supervisory Board was able to satisfy itself as to the legality, propriety, effectiveness and efficiency of the Company's management at all times.

The Supervisory Board was directly involved in all decisions of fundamental importance for the Company at an early stage. The Management Board regularly and promptly gave the Supervisory Board extensive information about the development of business, corporate planning and the strategic evolution of the PVA TePla Group.

The Supervisory Board also regularly discussed the Company's risk exposure, risk management and compliance with the Management Board. The development of business and events of particular importance to the Company were discussed in detail based on Management Board reports. The Supervisory Board approved resolutions proposed by the Management Board after careful review and deliberation.

Interactions with the Management Board were responsible and productive in every respect. The Management Board fully satisfied its duty to report to the Supervisory Board verbally and in writing.

As the Chairman of the Supervisory Board, I and my Supervisory Board colleagues were in regular contact with the Management Board in and outside of Supervisory Board meetings, discussing not only the current business situation and key transactions but, more importantly, potential acquisitions.

CONFLICTS OF INTEREST

There were no potential conflicts of interest of Management Board and Supervisory Board members requiring immediate disclosure to the Supervisory Board and notification to the Annual General Meeting.

KEY AREAS COVERED IN THE DELIBERATIONS OF THE FULL SUPERVISORY BOARD

In 2019, the Supervisory Board held four ordinary meetings on March 26, June 25/26, September 18 and November 20 and conducted one phone meeting on February 22. All members of the Supervisory Board attended these meetings.

In preparation for these meetings, all Supervisory Board members received detailed quarterly reports on PVA TePla companies along with other information such as internal control reports and meeting minutes. The Supervisory Board was able to gain a sufficient understanding of the business situation from current financial figures, updated forecast reports and development plans (orders, sales revenues, competition, market share) before and during the meetings. Departures from established budgets were explained and justified in detail.

The Supervisory Board also thoroughly discussed optimizing the technology portfolio and taking related measures to ensure profitable long-term growth in the core markets targeted by the PVA TePla Group's subsidiaries.

Other topics discussed were the development of personnel of the subsidiaries at management level and the composition of the Management Board.

MEETINGS OF THE SUPERVISORY BOARD IN 2019

At the phone meeting held on February 22, 2019, the Supervisory Board passed a resolution to change Management Board employment contracts and obtained information about the draft Shareholder Rights Directive.

The meeting held on March 26, 2019 focused on the annual and consolidated financial statements for fiscal year 2018 and the related deliberations and resolutions. The Supervisory Board also addressed and approved the draft agenda for the 2019 Annual General Meeting. One key issue involved the Management Board's remarks on digitalization and the construction of an independent pressure vessel manufacturing facility.

At the meeting on June 25/26, 2019, the Supervisory Board dealt in depth with the business situation and projects underway at the individual subsidiaries. Other issues included M&A projects, especially the acquisition of the pressure vessel manufacturer in Italy. The meeting also focused on risk reporting by subsidiaries and succession planning for executives.

At its meeting on September 19, 2019, the Supervisory Board spoke at length about business development, and particularly about developments in sales revenues, incoming orders and the earnings situation of each of the subsidiaries in the current year. The PVA TePla Group's strategic alignment was discussed at great length in connection with M&A projects. The Supervisory Board discussed the German Corporate Governance Code and the progress made in complying with the Shareholder Rights Directive.

The Supervisory Board meeting on November 20, 2019 focused on corporate planning for 2020 to 2022 for the holding company and for the individual subsidiaries. The Supervisory Board also received extensive progress reports on major projects. The individual budgets were adopted. Questions concerning risk management and personnel planning were discussed in detail. We adopted the declaration of compliance with the German Corporate Governance Code.

CORPORATE GOVERNANCE AND DECLARATION OF COMPLIANCE

At the meeting on November 20, 2019, the Management Board and Supervisory Board resolved the declaration of compliance with the German Corporate Governance Code pursuant to Section 161 of the German Stock Corporation Act (AktG). In December 2019, the updated joint declaration of compliance was made permanently available to the public on the company's website at *https://www.pvatepla.com/en/investor-relations/corporate-governance*. Deviations from the Code were discussed intensively between the Management Board and Supervisory Board and justified.

The Management Board reports on corporate governance, including for the Supervisory Board, in accordance with Item 3.10 of the Code on the company's website at: *https://www.pvatepla.com/en/investor-relations/corporate-governance*.

The election of the auditors Ebner Stolz GmbH & Co. KG, Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft to audit the annual financial statements and consolidated financial statements for fiscal year 2019 was proposed to the Annual General Meeting. The Supervisory Board satisfied itself of the independence of the auditor in accordance with Section 107(3) Sentence 2 AktG and obtained and assessed a corresponding declaration of independence. Pursuant to a resolution of the Supervisory Board, the auditor may also provide certain due diligence services including any additional services, training services as well as other advisory services that may arise in this context. Following approval by the Annual General Meeting, the Supervisory Board issued the mandate to the auditor and set the audit fee. The main focal points of the audits of the annual and consolidated financial statements for 2019 were also coordinated between the Supervisory Board and the auditor.

The self-evaluation was performed on the basis of a detailed questionnaire and interviews, and the review of the efficiency of the Supervisory Board provided for in the German Corporate Governance Code was thus carried out.

DEPENDENT COMPANY REPORT

The Management Board prepared a dependent company report for the reporting year in accordance with Section 312(3) AktG. This report was audited by Ebner Stolz GmbH & Co. KG, Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft and issued with an unqualified audit opinion with the following wording: "In accordance with our duly performed audit and assessment, we confirm that 1) the factual statements in the report are correct and that 2) the amounts paid by the companies with respect to the legal transactions listed in the report were not unduly high." The dependent company report was submitted to the Supervisory Board, which subjected it and the legal transactions and measures listed therein to an independent review pursuant to Section 314(2) AktG. This did not give rise to any objections. At the meeting on March 20, 2020, the auditor reported on the main findings of the audit.

AUDIT OF THE ANNUAL AND CONSOLIDATED FINANCIAL STATEMENTS

Ebner Stolz GmbH & Co. KG, Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft audited the annual financial statements and consolidated financial statements for the year ended December 31, 2019 and the management report and Group management report for fiscal year 2019 of PVA TePla AG.

The auditor found that the present annual and consolidated financial statements were prepared in compliance with the German Commercial Code (HGB) and the International Financial Reporting Standards (IFRS) and provided a true and fair view of the net assets, financial position, and results of operations.

The annual and consolidated financial statements along with the management report and Group management report were issued with an unqualified audit opinion. The financial statements together with the management reports and the respective audit reports of the auditor were sent to each member of the Supervisory Board. The Supervisory Board assessed them and discussed them in detail at the meeting on March 20, 2020. At this meeting, the auditor reported on the main findings of the audit. We examined the annual financial statements, the management report and the auditor's statement on the assessment of the situation by the Management Board as well as the recommendation for the appropriation of retained earnings, the consolidated financial statements and the Group management report. There were no objections. We therefore approve the results of the audit of the financial statements. We approve the annual financial statements and consolidated financial statements prepared by the Management Board. The annual financial statements are thus adopted in accordance with Section 172 Sentence 1 AktG.

We are in agreement with the management reports and, in particular, the assessment of the future development of the company. The Supervisory Board endorses the Management Board's proposal to carry over the reported unappropriated surplus to new account.

CHANGES IN THE COMPOSITION OF THE SUPERVISORY BOARD AND THE MANAGEMENT BOARD

There were no changes in the composition of the Supervisory Board and the Management Board in the reporting period.

OUTLOOK FOR THE 2020 FINANCIAL YEAR

There are very considerable economic uncertainties for fiscal 2020, especially due to the corona pandemic. Depending on the intensity and further development of this pandemic, it could have a considerable impact on production, sales and procurement markets and thus lead to considerable delays in demand and production, at least in the first half of the year. A serious estimate of the overall financial and non-financial impact of the Corona pandemic on the PVA TePla Group is currently not possible due to the current dynamics and the unforeseeable duration of this situation. The Supervisory Board will remain in close contact with the Management Board and support it in all matters in order to keep the impact on the Company as low as possible.

THANKS FROM THE SUPERVISORY BOARD

On behalf of the Supervisory Board, I want to thank the members of the Management Board and all employees all over the world for their tireless service in the past fiscal year, as well as the employee representatives for their constructive collaboration with the Company's directors and officers.

Wettenberg, March 2020

On behalf of the Supervisory Board

Alexander von Witzleben
Chairman of the Supervisory Board of PVA TePla AG

PVA TEPLA ON CAPITAL MARKETS
In fiscal 2019

EQUITY MARKET - STOCK EXCHANGE

After experiencing a major setback towards the end of 2018, stock exchanges started 2019 with a dramatic upswing. The prospect of reaching a comprise in the US-China trade dispute and the significant change in rhetoric from the US Federal Reserve regarding further interest rate hikes spurred on share prices. With weak economic indicators, the Fed initially ordered a break in interest rate hikes before ultimately deciding to cut rates.

The upward trend on the stock markets came to a halt at the end of April after hopes of reaching an agreement in the trade conflict between the US and China, which had seemed within grasp, appeared once again to have become a distant prospect. This triggered the beginning of several months of volatile sidewards movement, which continued until mid-October. This phase was accompanied by various influential factors such as weaker sentiment and leading indicators, renewed fears of recession, chaotic Brexit debates in the UK parliament, the escalating trade conflict and nascent conflicts in the Middle East and Hong Kong.

Meanwhile, however, occasional positive tweets regarding the status of negotiations between China and the US, as well as central banks' about-turn towards more expansive monetary policy, had an impact on share prices. The central banks' change in direction was headed by the President of the European Central Bank Mario Draghi. In the weeks that followed, key central banks (US, China, Russia, India, etc.) reduced their rates.

Propelled by central banks, stock markets picked up again in the fourth quarter of 2019 and launched into a rally at the end of the year.

The UK market also contributed to this from mid-December. After a long slump, the Conservative party's clear electoral victory and the clarity this provided in the Brexit process significantly shored up the market at the end of the year. Relatively solid corporate earnings also provided further support over the year. On balance, 2019 ended with an impressive increase of over 27% for Eu-rope (STOXX 600) and 31% for the US (S & P 500) (both in EUR)..

PERFORMANCE OF PVA TEPLA'S SHARES

PVA TePla AG's shares gave shareholders cause for cheer in 2019. The share price opened the year at EUR 12.20, climbing by 25% to EUR 15.30 by the end of 2019. Relevant indices such as the "Technology All Share" rose by 32%, with "DAXSubs. Advanced Industrial Equipment" soaring by 65%. Overall sen-timent in the semiconductor market grew significantly bleaker in the first half of the year. Several reports from global semiconductor companies had hinted at overcapacity on the market. Market sentiment improved again at the end of the second half of the year. Not only were price losses recouped, the share price also saw a substantial upswing to EUR 15.30 (December 21, 2019).

RESEARCH-COVERAGE

In fiscal 2019, a total of seven international banks and brokers (2018: four) published regular equity re-search reports on PVA TePla. All seven of the seven financial analysts observing our shares as of December 31, 2019 issued a Buy recommendation.

The PVA TePla share is currently observed by the following financial analysts:

Bankhaus	Analyst	Ort
Bankhaus Lampe	Veysel Taze	Düsseldorf
Berenberg	Gustav Froberg	London
SMC Research	Adam Jakubowski	Münster
Matelan	Hartmut Moers	Bonn
Hauck & Aufhäuser	Tim Wunderlich	Hamburg
NIBC	Edwin de Jong	Amsterdam
Deutsche Bank	Uwe Schupp	Frankfurt

Interest in PVA TePla on the capital markets remains stable at a high level, with Uwe Schupp from Deutsche Bank, Edwin de Jong from Dutch bank NIBC and Veysel Taze from Bankhaus Lampe initiating analyst coverage during 2019.

OUR INVESTOR RELATIONS ACTIVITIES

We strive for transparency and openness as part of an ongoing dialog with our shareholders and capital market participants. Our investor relations work aims to cement trust in our company and thus in our shares and to ensure a fair valuation on the capital market.

To guarantee this, we provide our shareholders and the capital market with precise, up-to-date and relevant information on the PVA TePla Group's business operations and on the market environment for the product areas in which we operate.
We conducted individual and group discussions at investor roadshows in key financial locations across Europe and North America, where our management and investor relations team answered questions from investors and financial analysts on the PVA TePla Group's business strategy and performance and on sector and market trends. Discussions with institutional and private investors focused mainly on the long-term prospects for the semiconductor market – in particular silicon and silicon carbide crystallization – and the operational profitability of PVA TePla's subsidiaries.

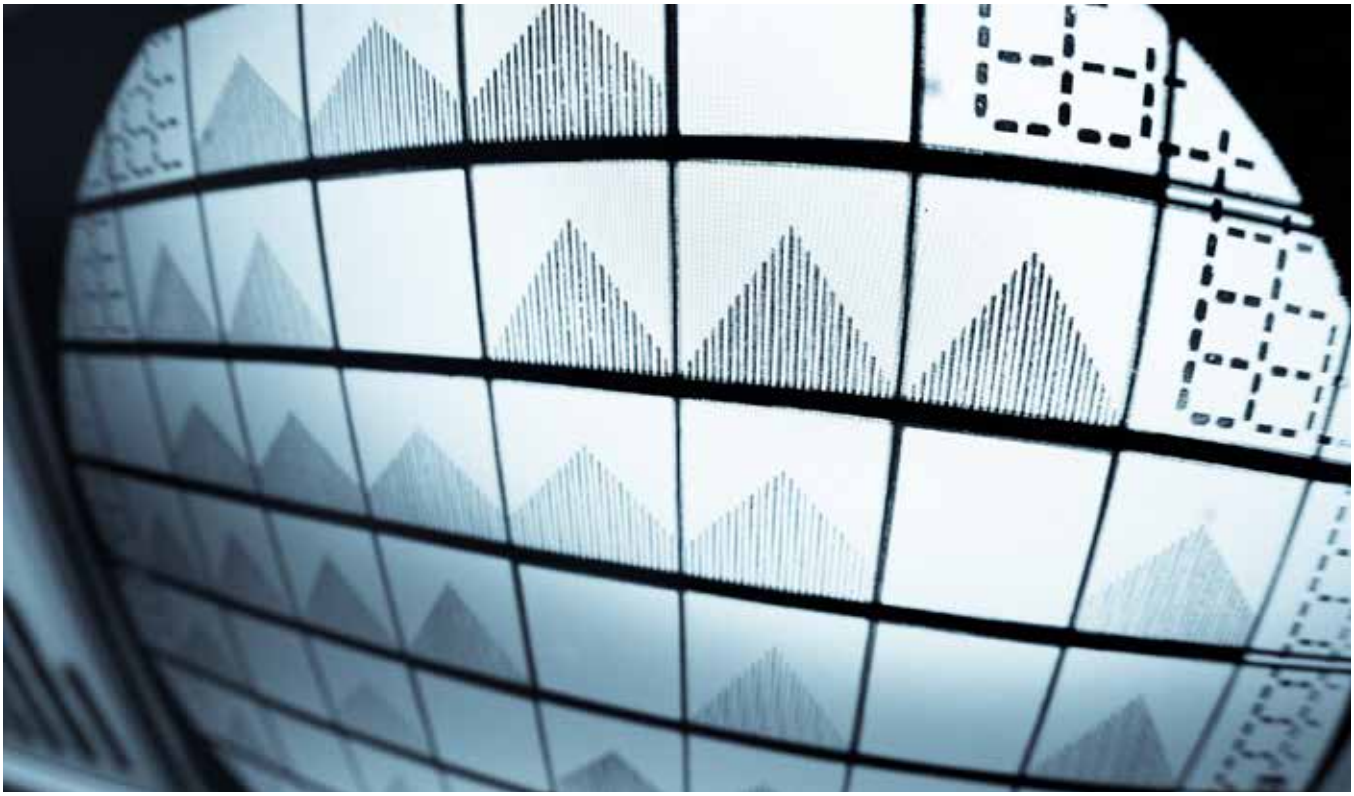
Multiple investor discussions were also held in 2019 at our offices, at the Wettenberg site near Giessen and in Westhausen. Domestic and foreign investors learned about the process technology behind the high-tech systems on site.

In addition, PVA TePla was represented at many national and international capital market conferences in Europe (Frankfurt, Brussels, Berlin, London, Munich) and in the US (Las Vegas, New York) in fiscal 2019.

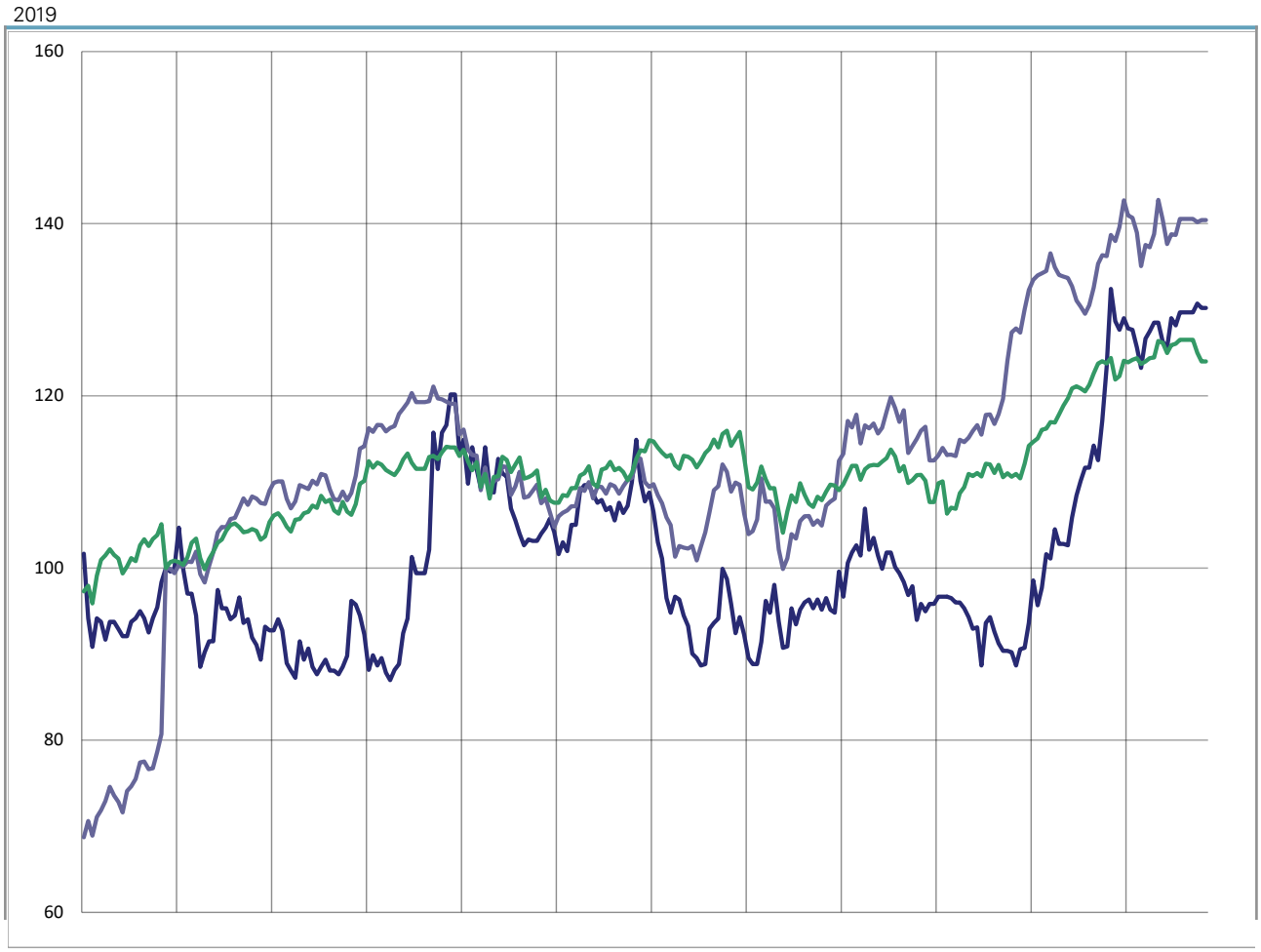
Around 100 shareholders attended PVA TePla's Annual General Meeting on June 26, 2019 in Giessen. The Management Board submitted a comprehensive report on the company's position and prospects.

PVA TePla shares key figures		2019	2018
Earnings per share (EPS)	EUR	0.27	0.27
Annual high	EUR	15.56	18.40
Annual low	EUR	10.22	9.70
Closing rate as of Dec. 31	EUR	15.30	12.20
Performance of PVA TePla shares	%	+25	+1.7
Performance of Technology All Share	%	+32	-2.7
Performance of DAXSubs. Advanced Industrial Equipment	%	+65	-31
Number of shares at year-end	Mio.	21.75	21.75
Market capitalization at year-end	Mio. EUR	332	265

Shareholding structure		
Free float	71,0%	71.0 %
PA Beteiligungsgesellschaft	29,0%	29.0 %



Performance of PVA TePla shares January 2019 – January 2020
in % 1-day-interval



PVA TePla AG
DAXSubs. Advanced Industrial Equipment
Tec All Share

PVA TePla

MANAGEMENT AND GROUP MANAGEMENT REPORT

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This financial report comprises the combined Management Report, the consolidated financial statements and the Group Notes. Moreover, the Company Management Declaration available at *https://www.pvaTePla.com/en/pva-TePla-service/investor-relations/corporate-governance* forms an integral part of this combined Management Report.

Management and Group Management Report

1. GENERAL INFORMATION

Reporting Company

PVA TePla AG, Wettenberg (hereinafter "PVA TePla AG") is a stock corporation in accordance with German law. The company is entered in the commercial register of the Giessen Local Court under HRB 6845 and is domiciled at 35435 Wettenberg, Germany. PVA TePla AG's shares have been listed in the Prime Standard of the Frankfurt Stock Exchange since June 21, 1999 (ISIN: DE0007461006).

PVA TePla AG and its subsidiaries (hereinafter "PVA TePla Group") are technology companies that produce and process materials, some of which are used in the semiconductor industry. The focus of operating activities in the PVA TePla Group is the development, manufacture and sales of processes, products, systems and services in materials technology, plasma and ion beam technology, metrology and inspection technology for finely structured objects and vacuum technology. With locations in Germany, Italy, the USA, China, Taiwan and Singapore, the PVA TePla Group maintains business relationships around the world.

Basis of Presentation

Accounting and Auditing

PVA TePla AG prepares its consolidated financial statements and interim reports in accordance with the International Financial Reporting Standards (IFRS), as adopted by the EU. The annual financial statements are prepared in accordance with the provisions of the German Commercial Code (Handelsgesetzbuch - HGB). The Annual General Meeting on June 26, 2019 appointed Ebner Stolz GmbH & Co. KG Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft, Frankfurt am Main, as the auditor for the annual financial statements and the consolidated financial statements for fiscal 2019. There are no business, personal, financial or other relationships between the audit firm, its bodies and audit staff and the PVA TePla Group that could establish doubt as to the auditor's independence. Ebner Stolz GmbH & Co. KG Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft was not involved in auditing or preparing PVA TePla AG's annual financial statements or consolidated financial statements.

A combined management report (hereinafter also referred to as the "management report") was prepared for fiscal 2019. This management report thus combines the management report of PVA TePla AG and the Group management report of the PVA TePla Group and was prepared in accordance with Sections 289, 289a, 289f, 315, 315a and 315d HGB and with the German Accounting Standards (DRS) no. 17 and 20.

Difference between Parent Company and Group

To make it clear which disclosures refer to the parent company and which to the Group, we always refer to the parent company as "PVA TePla AG". We use the term "PVA TePla Group" or "Group" for disclosures relating to the Group. Where this distinction is not made and no other indication is given, the disclosures refer both to the Group and to the parent company.

Fiscal Year

PVA TePla AG's 2019 fiscal year began on January 1, 2019 and ended on December 31, 2019. The corresponding previous year thus covers the period from January 1, 2018 to December 31, 2018.

Rounding Differences

Unless indicated otherwise, all amounts are shown in thousands of Euro (EUR thousand). The figures in these financial statements may contain rounding differences of +/- one unit (EUR thousand, % etc.) for reasons related to the calculations.

Forward-Looking Statements

This management report contains forward-looking statements. These statements represent own estimates and assumptions, including from third parties (e.g. statistics relating to the industry and the global economy), at the time they were made or the date of this report. Forward-looking statements are always subject to uncertainty. If these estimates or assumptions prove to be inaccurate or only partly accurate, actual results may deviate from expectations, in some cases substantially.

2. BASIC PRINCIPLES OF THE GROUP

2.1. Group Structure and Organization

Legal Structure of the Group

PVA TePla AG operates as a management and functional holding company of the PVA TePla Group and is responsible for managing the PVA TePla Group. It also organizes the PVA TePla Group's technology and associated intellectual property. PVA TePla AG's responsibilities also include tasks relating to strategic orientation, such as expanding the product portfolio, acquisitions and financial issues for the Group as a whole. The holding company is also responsible for corporate identity, investor relations and marketing. In addition, PVA TePla AG is in charge of financing strategically important development projects at operating subsidiaries.

PVA TePla AG is generally the sole shareholder of the companies included in the consolidated financial statements. As of December 31, 2019, PVA TePla AG directly (or indirectly) held a controlling interest in eight German (previous year: eight) and six foreign (previous year: six) subsidiaries (China, Italy, Singapore, Taiwan and USA). The holding company extended loans only to subsidiaries and the subsidiaries' subsidiaries.

The holding company is essentially funded by allocating apportionable costs to the operating companies, leasing buildings and intellectual property (including to third parties) and from interest income from lending to subsidiaries and existing profit and loss transfer agreements. Subsidiaries are charged for key services such as quality management, accounting and controlling.

PVA Italy S.r.l., Bolzano in Italy, was established in the reporting year and included in the consolidated financial statements of PVA TePla AG on a fully consolidated basis in the first half of 2019. PVA TePla AG continued to sell all shares in Xi'an HuaDe CGS Ltd. Xi'an, China, (previously a 51% subsidiary) in fiscal 2019. There was no material impact on the net assets, financial position or profit or loss of the PVA TePla Group. For further details, please see the notes on the consolidated group in section "C. Companies Included in Consolidation, Principles of Consolidation and Currency Translation" of the Group Notes.

Business Activities

The PVA TePla Group, headquartered in Wettenberg, Germany, is an independent technological leader supplying systems for the production and refinement of high-tech materials which are processed under high temperatures, vacuum, high pressure and in plasma, for example.

Offering **semiconductor systems** for front and back-end production, the PVA TePla Group is a major technology partner and system supplier for the global semiconductor industry. This also means that it holds a key position in the value chains of rapidly growing industries such as microelectronics, high performance electronics and e-mobility. With systems for industrial crystal growing, quality inspection, plasma cleaning systems and related software and process technologies, it provides a wide range of processes and products for the semiconductor industry.

The PVA TePla Group also produces **industrial systems**, in particular vacuum sintering systems for manufacturing structural materials and hard metal tools, graphite cleaning and coating furnaces and brazing and diffusion bonding systems.

The PVA TePla Group acts as a system supplier for its customers. It purchases the majority of the components needed and uses only quality-assured subcontractors. Thanks to its low level of vertical integration in production, the PVA TePla Group can manage its capacities flexibly and subject to the order situation. This allows it to drive forward its growth while limiting investment and with a comparatively low capital commitment. A small number of parts are manufactured in-house. Systems are produced and installed and services (contract processing) provided mostly in Germany at the Wettenberg, Westhausen and Jena sites. Outside Germany, products are produced at the Corona (USA) and Schio (Italy) sites, which was added in 2019 when the new subsidiary PVA Italy S.r.l. was established.

A significant portion of orders are covered by advance payment agreements, which have a positive effect on the Group's liquidity management. This, as well as Group-wide cash clearing, allows the PVA TePla Group to keep short-term debt financing from banks to a minimum.

Business Segments

The PVA TePla Group divides its business activities into two divisions: Semiconductor Systems and Industrial Systems. The PVA TePla Group is managed and planned on the basis of these two divisions. These comprise the two business segments for the purposes of segment reporting.

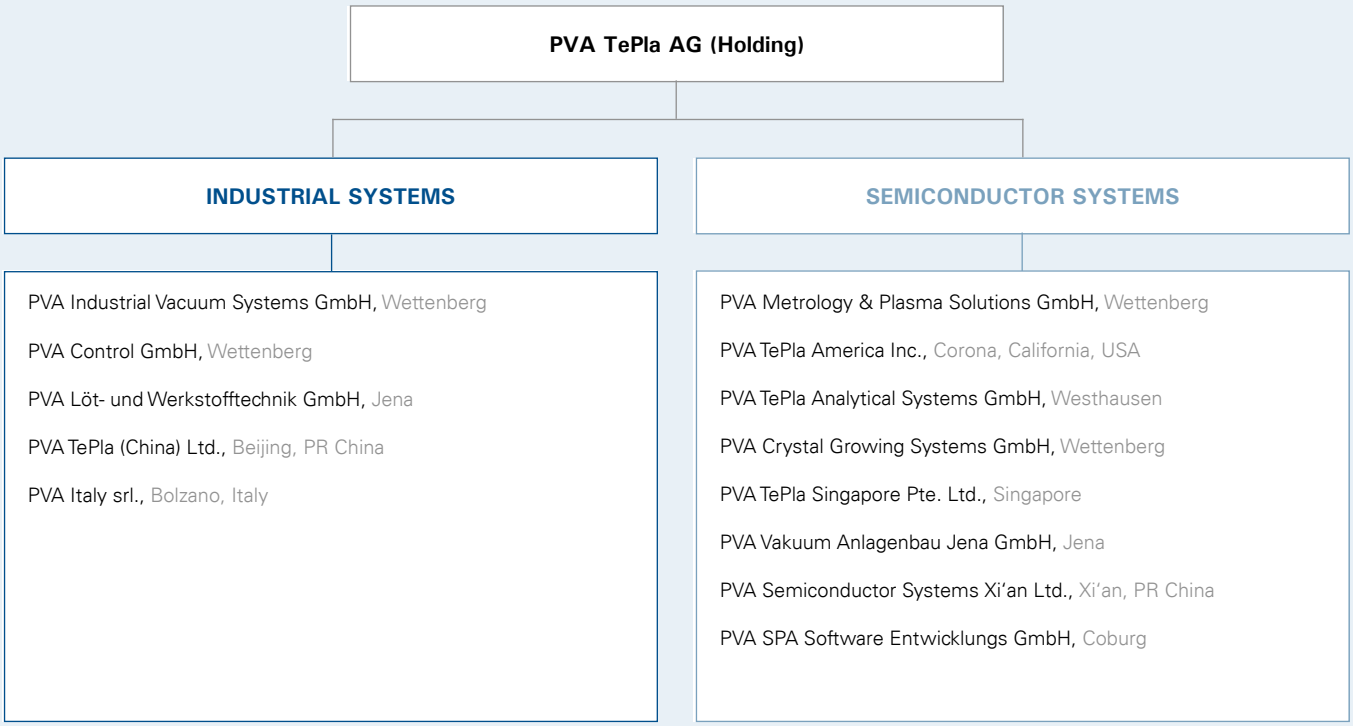
The Semiconductor Systems division covers the following fields:

- **Crystal growing systems:** Structural material technologies for aviation and aerospace, energy technology and hard metal tools, Silicon wafer technologies for microelectronics, silicon carbide wafer technologies for high-performance electronics and additional crystal growing technologies for an array of uses
- **Metrology systems:** Technologies for non-destructive quality control of wafers and complex semiconductor parts
- **Plasma systems:** Structural material technologies for aviation and aerospace, energy technology and hard metal tools, Production technologies for micro-electronic-mechanical systems (MEMS) and high-brightness light-emitting diodes (HB LED) as well as technology for the fabrication of ultrathin wafers

The Industrial Systems division covers the following fields:

- **Industrial systems:** Structural material technologies for aviation and aerospace, energy technology and hard metal
- **Service center of excellence** for vacuum process technology – especially in vacuum brazing, vacuum heat treatment and diffusion bonding

The organizational units and how the subsidiaries are allocated to the divisions is shown below.



Employees

Developments in Human Resources

The ongoing economic success of the PVA TePla Group is possible only thanks to its team of highly qualified and motivated employees. Systematically developing human resources with an eye to the future is thus a key pillar of our growth strategy. Our aim is to maintain and promote the high motivation demonstrated by our employees with regard to outstanding service quality and customer satisfaction. In addition, it is important for us that we manage our personnel resources in accordance with our growth plans. The shortage of skilled workers continued to increase in fiscal 2019 and the recruitment market proved to be extremely tight. Given this, we broadened our personnel recruiting and also significantly stepped up our training programs.

As one way of filling our training spots for IT specialists in system integration, industrial salespersons, mechanics and mechatronics engineers, we are entering into sponsorships with schools and universities and offering pupils and students orientation days and internships. We also developed specific apprenticeship programs for trainees in order to meet our high demand for new employees with practical, hands-on training. We also collaborate with universities to train students (Bachelor of Science) and supervise term papers, bachelor theses and master theses.

Equally, our aim is to continue boosting our position as an attractive employer for current and future employees. Employees and applicants value the exciting job opportunities offered by the PVA TePla Group as well as flexible working hours, a culture of working from home, part-time working opportunities and many other benefits such as company bikes (standard bicycles and e-bikes – tax incentives: the employer leases the company bike. The employee has free access to the bike).

These are complemented with an attractive payment of more than twelve salaries, which is adjusted to take account of the cost of living on a regular basis. Thanks to our personnel development measures, we further increased the quality and quantity of applications for our many vacancies.

Company Diversity

Diversity in terms of the people who work at the PVA TePla Group forms the basis of the company's performance and success. By encouraging diversity at our company, we can bring together the right people and create a work culture that promotes motivation, performance and satisfaction among our line employees and our managers.

Staff

The PVA TePla Group had 528 employees as of the reporting date December 31, 2019 (previous year: 470). In the Semiconductor Systems division, the staff headcount rose from 250 as of the end of the reporting period December 31, 2018 to 268 at the end of 2019. This reflects the staffing increase required to process the high order backlog. The number of employees in the Industrial Systems division increased to 221 as of the end of fiscal 2019 (previous year: 185). This upturn is essentially due to including the Italian subsidiary PVA Italy S.r.l. for the first time and hiring additional qualified personnel.

At 479, (previous year: 422) most employees were working in Europe. There were 25 employees in North America at the end of fiscal year 2019 (previous year: 24) and 24 in Asia (previous year: 24).

At the end of 2019, 24 members of staff were enrolled in business or commercial training programs (previous year: 20).

As of the end of 2019, PVA TePla AG employed a total of 39 people (previous year: 35).

2.2. Strategy

Key Market Influences

The PVA TePla Group operates in highly appealing expanding markets.

Processes in vacuums, at high temperatures, at high pressure and in plasma, are essential for producing high-tech materials. Our leading position in these areas of technology is supported in the long term by demand for our range of services.

Expanding capacities in wafer production, vital for the growing microelectronics and high performance electrics industry, are a key driver of growth and established wafer manufacturers and new market players alike are all striving to significantly step up wafer production. Thanks to the PVA TePla Group's leading market position, it expects to benefit [significantly] from this development and considerably bolster sales of silicon crystal growing systems.

The high demand for electric vehicles represents another key opportunity to accelerate growth. According to market projections, silicon carbide (SiC) will increasingly be used for on-board and static charging facilities as the material boasts superior properties to those of silicon. As the only independent supplier of crystal growing systems for SiC, the PVA TePla Group also expects to experience a considerable surge in demand resulting from the expansion of SiC wafer capacities.

Non-destructive measuring and inspection of materials and components is – especially in the semiconductor industry – one of the most important stages of production. Increasingly strict design rules in the semiconductor industry will also increase demand for metrology systems in the future. With its expansive range of different technologies, the PVA TePla Group is also excellently positioned in this area.

Strategy

The PVA TePla Group's value-based and growth-driven strategy is designed to reap maximum benefits from positive, long-term trends in customer markets with the objective of achieving well above-average growth compared to the sector as a whole while taking on only limited risk. The main way we can achieve this is by refining our range of technologies on an ongoing basis, bolstering sales efforts in growth markets and consolidating strategic partnerships with suppliers and customers.

It also aims to boost profitability in project and service business, maintain capital commitment at an appropriate level using the business model of a low level of vertical integration in production and to steer the company's net assets, financial position and liquidity situation with a view to the future.

In order to refine the range of technologies in line with customer requirements, research and development focuses on increasing productivity and volumes in the process of manufacturing high-performance materials – including using alternative production technology, refining and automating metrology systems so as to ensure materials can be inspected and production lines monitored even more closely, and seamlessly integrating systems technology and software control into customers' infrastructure as set out in the Industry 4.0 requirements (see section "2.4 Research and Development").

The PVA TePla Group's objective is to generate above-average growth in the area of future technologies, in particular in the Semiconductor Systems division. This will allow us to steadily increase profitability going forwards.

2.3. Management System – Financial Targets

The PVA TePla Group is headed by the Management Board of PVA TePla AG. It manages the company on its own responsibility, defines targets and the strategic orientation and manages how to implement the growth strategy. The Management Board is appointed, monitored and advised by the Supervisory Board of PVA TePla AG. The primary objective of corporate development is to increase shareholder value for all stakeholders and to generate profitable growth. The planning required to manage the operational units and the resulting measures are based on long-term corporate planning, taking into account developments in the competitive and market environment.

The PVA TePla Group uses exclusively financial indicators to manage the Group on a value and growth oriented basis. Planning and management are based chiefly on how sales revenues and earnings perform.

The following two key financial performance indicators are calculated on a monthly basis (including for individual segments) and are the most important indicators for economic targets in fiscal 2019:

- **Sales revenues**
- **The operating result before interest, taxes, depreciation and amortization (EBITDA, EBITDA margin)**

These two key performance indicators are calculated, analyzed and planned on a Group-wide basis using a standardized system and are monitored with regard to meeting the financial targets. You can find detailed information on the development of the key financial performance indicators in the Economic Report and in the Forecast Report. Additional key financial performance indicators are also used for individual subsidiaries for micromanagement purposes (including incoming orders and the order backlog).

2.4. Research and Development

The Group-wide costs of research and development (F&D) increased to EUR 4.8 million (previous year: EUR 3.4 million) in fiscal year 2019. It should be taken into account that products and processes in both PVA TePla Group divisions are further developed and refined almost exclusively as part of customer orders. The expenses incurred for such work are therefore only marginally reported under research and development. The PVA TePla Group does not capitalize any development costs and so research and development expenses are expensed in the period in which they are incurred. For more details, see the relevant explanations in the Group notes under Note 3 "Research and Development Expenses".

In addition to development work on new products, the PVA TePla Group's R&D activities in fiscal 2019 included ongoing improvement programs for existing product lines. The aim of this development work is generally to reduce the costs of owner-ship for customers. Research work is often conducted as part of publicly funded projects, including in collaboration with customers.

Examples of our R&D work in fiscal 2019 include the following projects:

In the area of **silicon crystallization**, a new, cost-optimized growing system was developed for the wafer industry as part of a project funded by the German Federal Ministry for Economic Affairs and Energy (BMWi).

In collaboration with research partners, on optimizing a 6" demonstration process (SiC crystal diameter of 150mm) to crystallize **silicon carbide** is being worked on. At the same time, the system configuration was further refined with a view to cost-effective mass production for customers. The team also worked on alternative heating and control processes for the system's process zone.

In 2019, in its vacuum systems business unit the PVA TePla Group carried out development work on the optimization of diffusion bonding systems.

The focal point was a new system variant for the diffusion bonding of light alloys specifically for thermal management applications in high-performance electronics. The product optimization is aimed at dramatically reducing the process times for the diffusion bonding through significantly improved heat transfer, thereby increasing the competitiveness of the process. In another system optimization project, at the fatigue strength properties of various extrusion punches for the systems were looked.

Also a concept study for a new high vacuum brazing furnace was developed. In terms of technology, this study is based on high-temperature brazing of components for high-performance electronics, which will be used in future generations of e-mobility. Technical details on the design of the new system concept are to be provided in the next three years as part of a publicly funded research project submitted to BMWi at the end of 2019.

3. ECONOMIC REPORT

3.1. Overview of Business Development

Macroeconomic and Sector Environment

The macroeconomic and industry conditions relate primarily to the subsidiaries of PVA TePla AG.

However, as PVA TePla AG generates most of its income from profit transfer agreements with the subsidiaries, these general conditions are relevant not only to the PVA TePla Group as a whole but also for the holding company.

Macroeconomic Environment

Global growth prospects are unstable and so GDP growth was weak in 2019. Almost all economies experienced a slowdown, with global trade stagnating. Trade policy tensions, which have been worsening since mid-2019, are increasingly eroding confidence and investment. Private household income and consumer spending are still being propped up by good labor market conditions.

According to the OECD, global GDP growth in 2019 was 2.9%, down on 3.5% in 2018. Overall, growth slowed in both advanced economies and in emerging markets. Industrial production picked up by an estimated 0.8% in 2019 (2018: 3.1%). Global trade was exceptionally weak, grinding to a halt at the end of 2018 and remaining cautious in the first half of 2019. All told, the OECD estimates that growth in global trade (goods and services) fell to 1.2% in 2019, the lowest it has been since 2009.

- GDP growth in the Eurozone declined to 1.1% in 2019 in comparison to 1.9% in the previous year. Ongoing tensions in global trade, the still unclear future relationship between the European Union and the United Kingdom and the overall weak performance in industry caused the economy to dip across the entire Eurozone.

- The German economy only very narrowly avoided recession in 2019, with GDP growth of just 0.5% (previous year: 1.5%). This significant slowdown in growth can be attributed to net exports. Sustained trade disputes and uncertainty surrounding Brexit seriously hurt prospects for the German economy, which is dependent on exports. Export orders decreased by around 9% against the high recorded in the fourth quarter of 2018.

- Economic growth also slumped in the US, although not as much as in Germany. Growth of 2.3% is expected for 2019 in comparison to 2.9% in 2018. Easing by the Federal Reserve had a positive impact on the economy, with consumers securing additional funds by taking out more mortgages on their homes.

- The Chinese economy experienced its slowest pace of growth in almost three decades in the third quarter of 2019. Official figures show that China's gross domestic product (GDP) rose by 6.0% in the period from July to September, the lowest level of growth in 27 years. The trade conflict with the US is particularly straining China's economy, as is a slowdown in domestic demand. China's GDP grew by 6.2% in 2019 as a whole, down on 6.6% in 2018.

- In Japan, economic growth stagnated at a low 0.8% in 2019, unchanged on the previous year. Persistently weak exports, as well as sluggish domestic demand, also squeezed growth. These can be attributed to the slowdown in the Chinese economy and the trade dispute with China instigated by the US.

Sector Development

While the PVA TePla Group saw extremely positive development in the markets of particular relevance to the Group in fiscal 2019, larger markets were restrained. There were further capacity increases in the vacuum systems market, in particular in Europe. By contrast, investments in the semiconductor market declined substantially.

- According to the German Mechanical Engineering and Plant Manufacturing Association (VDMA), global machine sales revenues (adjusted for inflation) are likely to have stagnated in 2019, remaining at the same level as in the previous year. Of the top five locations (China, US, Germany, Japan, Italy), which represent a good 70% of global machine sales revenues, the annual financial statements gave a positive outlook only for China.

- According to market research institutes Gartner and VLSI, expenses for wafer production equipment fell by 17% in 2019. This decline can be attributed primarily to the area of memory, which suffered surplus supply and a drop in prices.

Key Developments in Fiscal 2019

The PVA TePla Group expanded manufacturing capacity in fiscal year 2019 by making a major strategic acquisition. To optimize its supply chains and avoid bottlenecks in the procurement of components, it acquired the operations of a worldwide highly regarded pressure vessel manufacturer in Italy.

The double-walled vessels produced at this new location, particularly stainless steel vessels, are the central component for vacuum and high-temperature systems as well as for many crystal-growing systems. In terms of production technology, vessels must meet the highest quality and safety standards. The PVA TePla Group is supplementing its existing pool of suppliers with its own production in order to take account of customer demand for vacuum and crystal-growing systems, which has been increasing for some time.

In October 2018, the subsidiary PVA Crystal Growing Systems GmbH entered into a long-term framework agreement with an Asian customer to deliver crystal growing systems for 300 mm wafers in four batches. Order intake of the first batch – worth around EUR 28 million – was made in the first quarter of 2019. Delivery of the crystal growing systems will start in May 2020.

The first quarter of 2019 PVA Industrial Vacuum Systems GmbH received an order totaling around EUR 14 million to supply brazing furnaces. The systems will be delivered to customers in the current fiscal year 2020.

The PVA TePla Group applied IFRS 16 "Leases" for the first time in fiscal 2019. The impact on the net assets, financial position and results of operations of the consolidated financial statements of the PVA TePla Group are due to lessee accounting and in particular those leases, which were previously to be classified in line with IAS 17 as operating leases and are to be recognized (for the first time) from fiscal year 2019. This is because IFRS 16 introduces a uniform accounting model under which lessees must recognize a right-of-use asset and a corresponding lease liability for all outstanding lease payments (known as the right-of-use model).

This means that the previous finance and operating lease classification is no longer relevant for lessees. Overall, the initial application had an insignificant impact on the net assets, financial position and results of operations of the PVA TePla Group; the greatest impact was an increase in depreciation and amortization, and thus EBITDA, of EUR 0.7 million.

General Statement on Business Development and the Group's Financial Position

The PVA TePla Group has enjoyed an excellent fiscal year 2019. Both, sales revenues (EUR 131.0 million) and the operating result before interest, taxes, depreciation and amortization (EBITDA) (EUR 16.2 million) were well higher than in the previous year and also exceeded expectations for 2019. This confirms the PVA TePla Group sound financial position and opens up further growth potential.

Incoming orders in the past fiscal year remained on par with the very high levels seen in the previous year in all business units. The EUR 170.6 million order backlog at the Group at the end of 2019 will play a key role in the sales revenues targets for fiscal 2020 and covers the period through to fiscal year 2021.

The PVA TePla AG Management Board believes that the considerable economic uncertainty, lack of demand and production losses caused by the outbreak of the corona virus may take a substantial toll on global growth in fiscal 2020. An serious estimate of the total financial impact is not possible at present because of the current dynamics and the unforeseeable duration of this situation. Particularly in view of the comprehensive stabilizing measures already initiated to mitigate the negative financial effects, the Management Board does not consider the economic situation of the PVA TePla Group to be at risk beyond the end of fiscal year 2019 at the time of preparation of the management report.

Forecast and Actual Development of the PVA TePla Group

For fiscal year 2019, the PVA TePla Group expected consolidated sales revenues on the scale of EUR 125 million and an operating result before interest, taxes, depreciation and amortization (EBITDA) of EUR 15.0 million. In the business figures for the third quarter of 2019 published on November 8, 2019, the PVA TePla AG Management Board raised its forecast for 2019 as a whole on the basis of ongoing positive business performance.

It anticipated consolidated sales revenues in the region of EUR 130 million and EBITDA of around EUR 16.0 million.

The PVA Group thus well outperformed the original forecast with consolidated sales revenues of EUR 131.0 million and EBITDA of EUR 16.2 million, equivalent to an EBITDA margin of 12.4%.

Forecast and Actual Development of PVA TePla AG

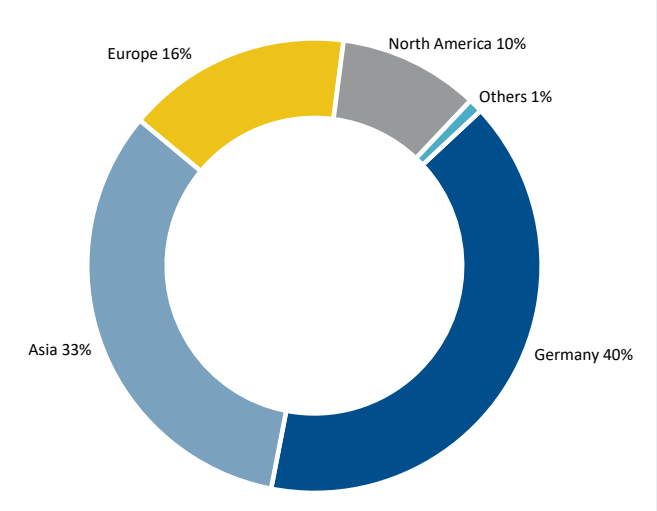
The management forecast a significant decline in sales revenues and the operating result (EBITDA) for fiscal 2019. This significant decline was seen both in terms of sales revenues and in EBITDA. Sales revenues at PVA TePla AG fell to EUR 10.8 million in fiscal 2019 (previous year: EUR 17.3 million), down 37.6% year on year. Accordingly, the operating result before interest, taxes, depreciation and amortization (EBITDA) also fell by 88.9% from EUR 8.1 million in 2018 to EUR 0.9 million in fiscal 2019.

3.2. Group's Results of Operations

Sales Revenues

Regional Revenues

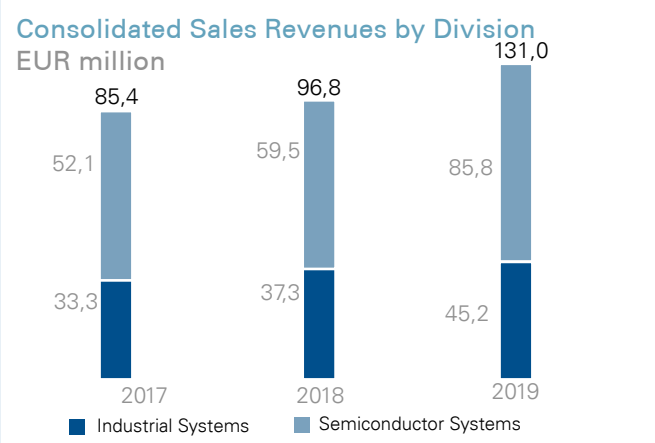
The PVA TePla Group generated consolidated sales revenues of EUR 131.0 million in fiscal 2019 (previous year: EUR 96.8 million), putting the figure up 35% on the previous year. The share of revenues generated in Germany rose to 40% due to successfully processing a major order in the semiconductor segment (previous year: 21%). The Asian market accounted for 33% (previous year: 55%) of total sales revenues. A total of 16% (previous year: 18%) of consolidated sales revenues were generated in other European countries. The North America region was expanded to 10% in the current fiscal year (previous year: 5%). Other regions again contributed 1% to consolidated sales revenues.



Changes in Segment Revenue

Sales revenues in the **Semiconductor Systems division** rose to EUR 85.8 million in 2019 (previous year: EUR 59.5 million), an upturn of 44%. Key growth drivers were sales revenues with crystal-growing systems for the semiconductor wafer industry and metrology systems. All told, the Semiconductor Systems division accounted for 65% of the PVA TePla Group's total sales revenues.

The **Industrial Systems division** also boosted its segment sales revenues, generating an increase of 21% to EUR 45.2 million in fiscal 2019 (previous year: EUR 37.3 million). 35% of total consolidated sales revenue was achieved in the Industrial Systems division (previous year: 39%). Sintering systems for the machine tool industry accounted for the lion's share of system sales revenues. The remaining sales revenues were distributed across the remaining product portfolio, e.g. systems for the vacuum brazing of metals and ceramics, systems for cleaning graphite, and plasma nitriding systems used to harden steel surfaces.



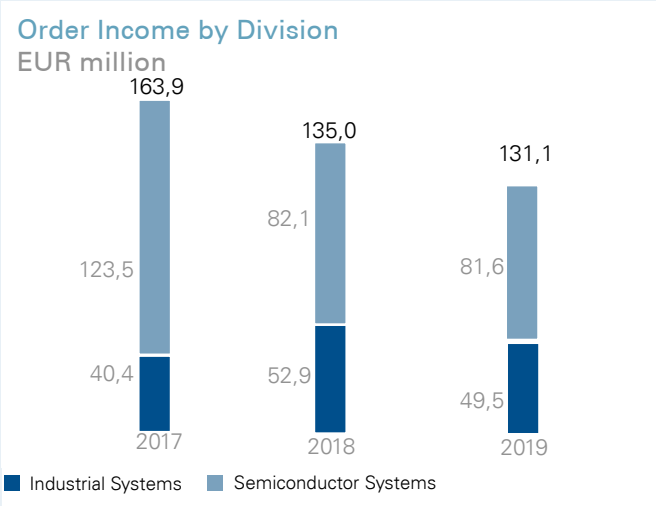
Orders

New orders in the 2019 fiscal year were booked at EUR 131.1 million (previous year: EUR 135.0 million). The book-to-bill ratio was 1.0 (previous year: 1.4). The book-to-bill ratio shows the ratio of incoming orders to sales revenues in a given period. A book-to-bill ratio above 1 indicates that incoming orders are higher than sales revenues, meaning a future increase in sales revenues can be expected. If the book-to-bill ratio is below 1, it means a decline in sales revenues is to be expected in the future.

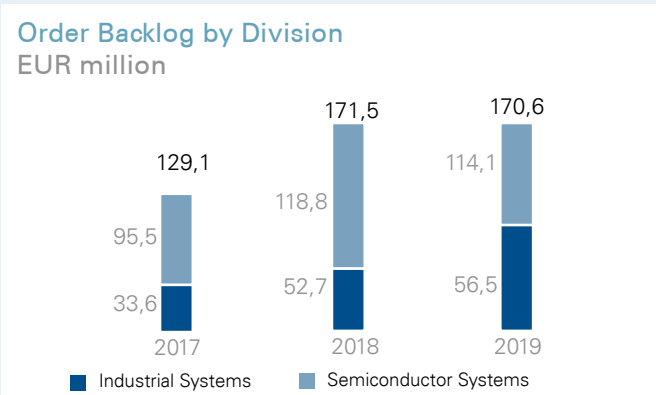
At EUR 81.6 million, the **Semiconductor Systems division's** incoming orders were on par with the previous year (EUR 82.1 million) and accounted for around 62% of the Group's incoming orders. Crystal-growing systems recorded the strongest growth. There was also high demand for metrology systems, which were the second largest product group in the Semiconductor Systems division.

The **Industrial Systems division** also kept pace with the previous year in fiscal 2019, generating incoming orders of EUR 49.5 million (previous year: EUR 52.9 million) and thus accounting for 38% of the Group's incoming orders. Around 75% of orders for vacuum systems came from outside Germany. The largest contribution to incoming orders in fiscal 2019 was made by brazing furnaces.

Sintering systems for the machine tool industry and high-temperature systems also accounted for a high proportion of the orders.



The PVA TePla Group's order backlog remained stable year on year at the high level of EUR 170.6 million in fiscal 2019 (previous year: EUR 171.5 million). In fiscal year 2019, a new major order to supply crystal-growing systems and a larger order to manufacture brazing furnaces were secured. The remaining order volume was acquired in normal operating operations. As of December 31, 2019, the Semiconductor Systems division had an order backlog of EUR 114.1 million (previous year: EUR 118.8 million), with the figure for the Industrial Systems division rising to EUR 56.5 million (previous year: EUR 52.7 million).



Earnings Performance

Earnings before interest, taxes, depreciation, and amortization (EBITDA) climbed substantially year on year to EUR 16.2 million (previous year: EUR 12.3 million). This exceeded the EBITDA target set out in the 2018 Forecast Report of EUR 15 million. The EBITDA margin was on par with the previous year at 12.4% (previous year: 12.7%). In accordance with IFRS 16, right-of-use assets from rental agreements and leases were capitalized for the first time in fiscal 2019, resulting in higher write-downs and thus higher EBITDA of EUR 0.7 million. The company also generated high growth in earnings before interest and taxes (EBIT), which climbed to EUR 12.3 million (previous year: EUR 9.5 billion), representing an EBIT margin of 9.4% (previous year: 9.8%). At EUR 7.7 million consolidated profit after tax was also higher than the previous year (EUR 6.0 million). At 5.9% the return on sales after tax was marginally down on the previous year (previous year: 6.2%).

The rise in consolidated sales revenues also had a positive effect on gross profit, which climbed considerably to EUR 37.7 million (previous year: EUR 31.1 million). The gross margin for operating systems business also improved further, but at 28.8% it was lower than the margin in the previous year (32.1%), which was shaped by significant license payments.

Selling and distributing expenses came to EUR 12.1 million in fiscal 2019, up on the previous year's figure of EUR 10.2 million. However, these grew at a slightly lower rate than sales revenues. The administrative cost ratio was stable at 7%, with selling and distributing expenses coming to EUR 8.8 million in absolute terms in 2019 (previous year: EUR 6.7 million). As planned, research and development activities were increased in fiscal year 2019 and came to EUR 4.8 million (previous year: EUR 3.4 million). The areas of crystal growing and metrology particularly benefited from investments in research and development. Looking at fiscal year 2019, the net balance of other operating expenses and income was EUR +0.2 million (previous year: EUR -1.3 million).

Other operating income of EUR 3.1 million (previous year: EUR 2.1 million) predominantly included income from grants in the context of R&D projects (EUR 1.0 million, previous year: EUR 0.7 million), income from exchange rate differences (EUR 0.7 million, previous year: EUR 0.4 million) and income from the release of provisions (EUR 0.3 million, previous year: EUR 0.3 million). Other operating expenses in 2019 of EUR 2.8 million (previous year: EUR 3.4 million) were significantly lower than in the previous year and resulted primarily from expenses from exchange rate differences (EUR 0.9 million; previous year: EUR 0.7 million) and the write-down on current and non-current trade receivables (EUR 0.8 million; previous year: EUR 2.1 million). In accordance with IFRS 16, as opposed to lease expenses for operating leases totaling EUR 741 thousand, write-downs of EUR 700 thousand and interest expenses of EUR 36 thousand were recognized in the PVA TePla Group's consolidated income statement for fiscal 2019.

In the Semiconductor Systems division, EBIT increased to EUR 12.7 million (previous year: EUR 10.6 million). We also saw growth in the Industrial Systems division to EUR 3.5 million (previous year: EUR 2.1 million). "Holding costs" amounted to EUR 3.9 million (previous year: EUR 3.2 million).

For fiscal year 2019, the net balance of interest income and interest expenses was EUR -0.5 million (previous year: EUR -0.5 million), including EUR -0.2 million (previous year: EUR -0.2 million) due to discounting pension provisions and EUR -0.2 million (previous year: EUR 0.2 million) for interest payments in connection with short and long-term credit financing. Earnings before taxes (EBT) amounted to EUR 11.8 million (previous year: EUR 9.0 million) and consolidated net income to EUR 7.7 million (previous year: EUR 6.0 million). Income tax expense, which totaled EUR 4.1 million (previous year: EUR 3.0 million), comprised current tax expenses/tax refunds of EUR -1.9 million (previous year: EUR -1.0 million) and deferred tax expense of EUR -2.2 million (previous year: EUR -2.0 million).

3.3. Net Assets and Financial Position of the PVA TePla Group

Principles and Objectives of Financial Management at the PVA TePla Group

Financial management at the PVA TePla Group refers primarily to liquidity and capital structure management and the management of interest rates and currencies. The objective of the PVA TePla Group's financial management is to maintain the company's financial independence by ensuring sufficient liquidity. This aims to ensure the Group's financial strength remains high at all times. Risks are to be avoided as far as possible or effectively hedged. Financial and liquidity risks are described in section "4. Report on opportunities and risks". The PVA TePla Group does not engage in any speculative forward transactions and uses derivative financial instruments only where necessary.

Financing and Significant Financing Measures

In order to secure solid financing for future growth, the PVA TePla Group signed a syndicated loan agreement in March 2018 for a mixed line of EUR 12.0 million (cash and guarantee line), EUR 68.0 million in guarantee lines, as well as an option for further guarantee lines by up to EUR 35 million and cash lines by up to EUR 10 million with a term of 36 months, renewable for another 24 months ("Asset position" and "Financial position" sections). Both options to extend by another 12 months were taken in the first quarter of 2019 and 2020. Another financing facility of EUR 2.0 million is available as working capital financing and EUR 2.3 million as building financing.

Asset Position

The PVA TePla Group's total assets increased to EUR 180.9 million as of December 31, 2019 (previous year: EUR 162.2 million).

As of December 31, 2019, non-current assets were up slightly on the previous year at EUR 52.0 million (previous year: EUR 47.3 million).

Intangible assets increased slightly to EUR 11.5 million as of December 31, 2019 (previous year: EUR 11.1 million). Goodwill included in intangible assets is tested for impairment at least once per year. In fiscal 2019, right-of-use assets from rental agreements and leases in the amount of EUR 2.2 million were capitalized for the first time in accordance with IFRS 16. Property, plant and equipment were similar to the previous year at EUR 30.2 million (previous year: EUR 29.6 million). Non-current financial assets (EUR 3.0 million; previous year: EUR 0.1 million) essentially include cash investments with a term of more than one year. Deferred tax assets came to EUR 5.1 million (previous year: EUR 6.5 million).

Investments in fiscal 2019 were offset by EUR 3.9 million in write-downs (previous year: EUR 2.8 million), EUR 0.7 million of which relate to the first-time capitalization of right-of-use assets.

Current assets totaled EUR 129.0 million as of December 31, 2019 (previous year: EUR 114.9 million), significantly higher than in the previous year. Inventories rose to EUR 65.2 million (previous year: EUR 41.0 million) in connection with continuing to process major orders, most of which are not billed until the time of final acceptance. Receivables and other assets rose from EUR 25.8 million (previous year) to EUR 27.4 million as of December 31, 2019. Contract assets (EUR 10.5 million; previous year: EUR 7.4 million) were recognized separately for the first time in fiscal year 2019 and the previous year figures restated in order to more clearly present the construction contracts carried out over a period of time using the POC method. Cash and cash equivalents amounted to EUR 25.6 million as of December 31, 2019 (previous year: EUR 40.0 million).

Financial Position

As of December 31, 2019, non-current liabilities were up slightly year-on-year at EUR 23.4 million (previous year: EUR 20.9 million). Pension provisions increased marginally to EUR 17.2 million (previous year: EUR 15.2 million).

Non-current financial liabilities totaled EUR 3.2 million (previous year: EUR 2.3 million). EUR 1.6 million (previous year: EUR 0.0 million) of the rise in non-current financial liabilities is a result of recognizing commitments from leases for the first time in accordance with IFRS 16. Deferred tax liabilities were almost unchanged year-on-year at EUR 2.8 million (previous year: EUR 2.6 million).

Current liabilities increased to EUR 100.2 million as of December 31, 2019 (previous year: EUR 90.5 million). At the end of fiscal year 2019, other current provisions came to EUR 3.6 million (previous year: EUR 2.4 million). In particular, these include provisions for warranties. Current financial liabilities rose to EUR 1.3 million as of December 31, 2019 (previous year: EUR 0.7 million). EUR 0.6 million of this (previous year: EUR 0.0 million) is also due to recognizing commitments from leases for the first time in accordance with IFRS 16. Obligations to employees increased to EUR 4.1 million, chiefly in connection with higher earnings-related bonuses (previous year: EUR 3.0 million). Trade payables rose to EUR 10.8 million (previous year: EUR 8.9 million). As of December 31, 2019, at EUR 78.6 million contract liabilities were up on the previous year figure of EUR 72.5 million.

EUR 49.7 million (previous year: EUR 61.1 million) of the guaranteed lines had been utilized as of the reporting date December 31, 2019. A credit line secured by land charges was drawn in the amount of EUR 2.3 million as of this reporting date (previous year: EUR 3.0 million). According to plan, this will be reduced by EUR 333 thousand every six months until December 2022.

Based on the comprehensive consolidated result of EUR 6.6 million (previous year: EUR 6.2 million), equity increased significantly to EUR 57.3 million (previous year: EUR 50.8 million). The equity ratio increased to 31.7% at the end of the 2019 fiscal year (previous year: 31.3%).

Liquidity

In fiscal year 2019, cash flow from operating activities declined to EUR -0.6 million as a result of further processing the high order backlog (previous year: EUR 11.7 million). Cash flow from operating activities fluctuates strongly from one reporting date to the next in the Vacuum Systems and Crystal Growing Systems business units due to the project structure of orders and methods of payment. We receive considerable advance payments at the beginning of a project, which positively influence the net cash flow in case of large orders. Cash flow is negative during order processing, whereas close to the delivery date, the remaining amount due is paid, except for a small residual installment.

As a result of cash investments with a remaining term of more than three months (EUR 9.0 million) to reduce negative interest rates, investments in intangible assets and property, plant and equipment (EUR 2.6 million) and the business acquisition of a well-known pressure vessel manufacturer (EUR 0.9 million), cash flow from investing activities totaled EUR -12.5 million (previous year: -EUR 3.8 million). Cash flow from financing activities amounts to EUR -1.4 million (previous year: EUR -0.9 million) and includes scheduled repayments of non-current and current loans of EUR -0.7 million (previous year: EUR -0.8 million) and reductions of leasing liabilities totaling EUR -0.7 million (previous year: EUR 0 million). Interest payments totaled EUR -0.1 million (previous year: EUR -0.1 million).

The EUR 14.4 million decline in cash to EUR 25.6 million (including exchange rate changes), as well as unutilized credit lines of EUR 14.0 million, mean that the PVA TePla Group had available liquid funds of EUR 39.6 million at its disposal as of the 2019 reporting date.
As of December 31, 2019, the PVA TePla Group reported a positive net financial position (balance of cash and cash equivalents and current and non-current financial liabilities) of EUR 21.0 million (previous year: EUR 37.0 million).

3.4. Net Assets, Financial Position and Results of Operations of the PVA TePla Group

In contrast to the consolidated financial statements, which are based on the IASB's IFRS standards as adopted by the EU, the annual financial statements of PVA TePla AG are prepared in line with the principles of the German Generally Accepted Accounting Principles in accordance with the provisions of Sections 242 to 256a and Sections 264 to 288 HGB and the special provisions of the German Stock Corporation Act (AktG). As PVA TePla AG generates most of its income from profit transfer agreements with the subsidiaries, the business performance described in the annual financial statements of PVA TePla AG is very similar to that shown in the PVA TePla Group's consolidated financial statements.

Results of Operations

PVA TePla AG generated sales revenues of EUR 10.8 million in fiscal 2019 (previous year: EUR 17.3 million), chiefly from allocating charges to subsidiaries in Germany and abroad. The cost of materials came to EUR 0.5 million in fiscal 2019, similar to the previous year's figure of EUR 0.6 million. Personnel expenses picked up to EUR 4.6 million in connection with higher earnings-related bonuses (previous year: EUR 4.4 million). Write-downs of EUR 1.0 million in 2019 were on par with the previous year (previous year: EUR 1.1 million). Other operating income of EUR 0.6 million picked up slightly year on year (previous year: EUR 0.5 million). At EUR 5.7 million, other operating expenses were slightly lower than in the previous year in fiscal 2019 (previous year: EUR 5.3 million).

Other operating income in 2019 can essentially be attributed to exchange rate gains (EUR 0.3 million), income in connection with statute-barred liabilities and income from the release of provisions. Other operating expenses chiefly comprise management costs for real estate, costs of IT infrastructure and consulting expenses. This expenses item also includes exchange rate losses of EUR 0.3 million.

Income from profit transfer agreements with subsidiaries totaled EUR 12.3 million in fiscal 2019 (previous year: EUR 6.0 million). Expenses from profit and loss transfer agreements with subsidiaries amounted to EUR 0.0 million (previous year: EUR 6.1 million). Interest expenses amounted to EUR 0.6 million (previous year: EUR 1.0 million). Interest income reached EUR 0.2 million (previous year: EUR 0.3 million). Income taxes were EUR -1.8 million (previous year: EUR -0.9 million). Overall, PVA TePla AG generated earnings after taxes of EUR 10.1 million (previous year: EUR 5.3 million) and an annual result of EUR 9.9 million (previous year: EUR 5.2 million).

PVA TePla AG's order backlog came to EUR 7.3 million at the end of fiscal year 2019 (previous year: EUR 9.0 million).

Asset Position

PVA TePla AG's total assets increased to EUR 93.2 million as of December 31, 2019, up on the previous year's figure of EUR 97.9 million.

Fixed assets totaled EUR 35.9 million at the end of fiscal year 2019 (previous year: EUR 36.7 million). Property, plant and equipment declined slightly from EUR 18.7 million to EUR 17.9 million as of December 31, 2019, essentially due to depreciation. Financial assets remained broadly stable year on year (EUR 17.6 million; previous year: EUR 17.7 million). The partial repayment of loans to dependent companies and the establishment of PVA Italy S.r.l. with capital of EUR 0.1 million largely offset each other.

Total inventories, before being offset against advance payments, increased to EUR 2.3 million as of December 31, 2019 (previous year: EUR 1.9 million). Trade receivables fell from EUR 3.9 million (previous year) to EUR 2.4 million, due entirely to a customer contract.

Receivables from dependent companies increased from EUR 11.7 million (previous year) to EUR 30.0 million as of December 31, 2019. Other assets declined from EUR 3.7 million to EUR 2.2 million. Cash and cash equivalents saw a slight decrease to EUR 26.3 million in connection with existing cash pool contracts (previous year: EUR 32.9 million).

Financial Position

On the equity and liabilities side of PVA TePla AG's statement of financial position, liabilities declined to EUR 35.9 million as of December 31, 2019 (previous year: EUR 40.8 million). This change is attributable mainly to the EUR 3.6 million decrease in liabilities to dependent companies, especially owing to profit and loss transfer agreements. As planned, financial liabilities were decreased by a further EUR 0.7 million. Pension obligations rose by EUR 0.3 million year on year. The only pension obligations recognized are those to former employees who reached the retirement age by December 31, 2014. New pension commitments are generally no longer granted. As of December 31, 2019, other provisions increased to EUR 3.1 million (previous year: EUR 2.7 million). This essentially reflects higher provisions for variable remuneration components. Tax provisions totaled EUR 0.6 million (previous year: EUR 1.5 million).

The PVA TePla Group's equity rose to EUR 50.5 million as of December 31, 2019 (previous year: EUR 40.5 million). This puts the equity ratio at 51.5% (previous year: 43,5%). At EUR 26.5 million, retained earnings are well higher than in the previous year (EUR 16.6 million).

The PVA TePla Group's investments totaled EUR 0.4 million in fiscal year 2019 (previous year: EUR 3.1 million).

Profit Appropriation

The separate financial statements of PVA TePla AG (according to commercial law regulations) as of December 31, 2019 report a net profit of EUR 9.9 million (previous year: EUR 5.2 million) and retained earnings of EUR 26.5 million (previous year: EUR 16.6 million). The Management Board and Supervisory Board propose that the retained earnings reported in the 2019 annual financial statements be carried forward to a new account at the same amount. No dividends are to be distributed for fiscal 2019.
There were no withdrawals from the share premium or retained earnings.

Overall Assessment of Net Assets, Financial Position and Results of Operations

The PVA TePla AG Management Board believes that the considerable economic uncertainty, lack of demand and production losses caused by the outbreak of the corona virus may take a substantial toll on global growth in fiscal 2020. A serious estimate of the total financial impact is not possible at present because of the current dynamics and the unforeseeable duration of this situation. Particularly in view of the comprehensive stabilizing measures already initiated to mitigate the negative financial effects, the Management Board does not consider the economic situation of PVA TePla AG to be at risk beyond the end of fiscal year 2019 at the time of preparation of the management report.

4. REPORT ON OPPORTUNITIES AND RISKS

The divisions of the PVA TePla Group are exposed to an array of risks that are inextricably linked to corporate activities. Risk is understood to be the possibility of events or activities jeopardizing the ability of the Group or one of its divisions to reach its targets. At the same time, it is also important for the PVA TePla Group to identify opportunities for the company, take advantage of these opportunities and reinforce the Group's competitive position. Risks and opportunities are not offset against one another. Risks and opportunities are presented as follows.

Risk and Opportunity Strategy

The risk and opportunity strategy is embedded in the corporate strategy and is designed to secure the continuation of the company as a going concern and guarantee its further development. The resulting strategy assesses the risks and opportunities of business activities. In the core activities of the company/the Group, we make a conscious decision to enter into limited and containable risks, if they make appropriate compensation likely or are inevitable. In some cases, we allocate the risks to other parties. This mainly includes concluding suitable insurance policies. This process is conducted in close cooperation with an experienced and specialized insurance broker. It is regularly reviewed for efficiency and optimized where necessary.

Risk and Opportunity Management

The risk strategy includes the same companies as those included in the PVA TePla Group. Due to the organizational structure, risk management is carried out locally in the PVA TePla AG, in the subsidiaries and business processes. The Management Board members and Managing Directors are therefore responsible for central processes of the risk management system. The main objective of the risk management system is the early recognition of risks, in order to regularly provide the Management Board with up to date information on the current risk situation within the PVA TePla Group. The duties of those in charge include developing and, where necessary, installing measures to prevent, mitigate and hedge against risks. The main risks as well as the implemented measures are regularly monitored.

The risk reports are regularly compiled and analyzed by central risk management and checked and discussed by the Management Board and Supervisory Board. In addition to regular reporting, a reporting system has been installed within the Group to immediately report the occurrence of unexpected risks. The system also includes an annual risk inventory, in which all of the risks relevant to the Group are reported and their relevance and possible effects are assessed. Measures to reduce identified risks are defined and their implementation is monitored.
The risk management system which also includes the compliance management system enables the Management Board to identify material risks at an early stage and to implement countermeasures. The key features of the risk management system described above are applied throughout the Group. As far as processes in financial disclosure are concerned, this means that identified risks are reviewed and assessed, particularly for their potential impact on disclosures in the respective financial reports. The idea is to provide important information at an early stage about potential changes in the fair value of assets and liabilities, possible impairments and important information to assess the necessity of forming and reversing provisions.

The adequacy and efficiency of the risk management system is reviewed on a regular basis at Management Board level and adjusted where necessary. The Management Board and the Supervisory Board regularly determine the areas where the PVA TePla Group is to be subject to an internal audit. Where necessary, external companies are engaged for these audits.

Opportunity management is also an integral part of Group management. The strategy process identifies and assesses the individual areas for opportunity. Just like risks, opportunities are reported and managed locally. Frequent reporting is carried out in order to identify at an early stage whether the market or the competition has developed in such a way or whether there have been occurrences within the Group that make reassessment necessary.

Accounting-Related Internal Control and Risk Management System

The objective of the methods and measures we have put in place is to secure the assets of the company and enhance operating efficiency. The internal control system that has been implemented is intended to ensure the reliability of accounting and reporting and to ensure compliance with internal rules as well as legal regulations and the Articles of Association. We assure the adequate separation of functions and have also implemented appropriate spans of control. Furthermore, we make sure that responsibilities do not overlap and that tasks, expertise and responsibilities are pooled. We have also integrated controls into the workflows. Key components of these structures and controls include strict compliance with the system of checks and balances for all essential accounting processes, effective and precisely defined access rights for our IT systems, spot checks of employees at all levels by the respective superior, and control over the structural and process organization including the key operational company processes within the scope of our certified quality management system. The essential features of the internal control system described above apply to all functional areas.

In the accounting process, the implementation of the structural and process organization controls within the internal control system assures data integrity for the information that flows into financial reporting.

In addition to these controls implemented in the organization, the individual functional areas are also monitored by superiors and, if applicable, the internal audit department. In this case, the internal audit department is responsible for reviewing the functioning and effectiveness of the internal control system. In order to conduct the audit, the internal audit department has comprehensive information and review rights.

Consolidation and the Group accounting process are based on the decentralized preparation of financial statements by each of the Group companies. These financial statements are prepared and submitted according to uniform Groupwide standards and data formats. The central accounting system is connected with the ERP system through numerous interfaces.

The entire process is controlled and verified by the central Group Accounting and Controlling department. Here, the data is also verified with regard to form and content. All of the employees involved in the process receive training at regular intervals. The parts of the internal control system relevant to financial reporting are reviewed in terms of effectiveness by the auditor as part of a risk-oriented approach.

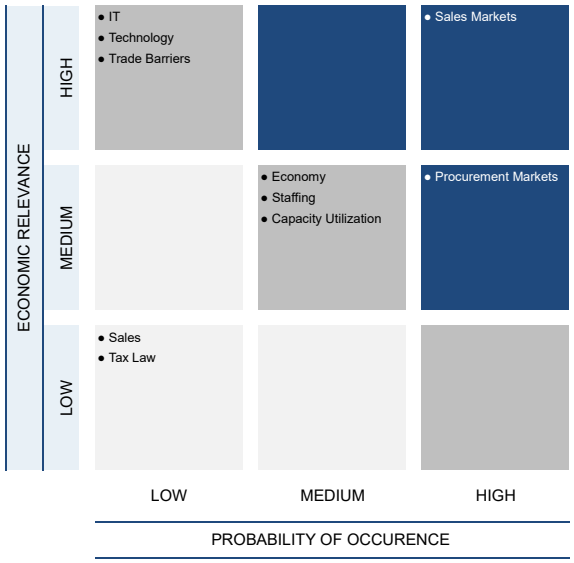
In conclusion, we would like to point out that neither an ICS nor a risk management system can ensure with absolute certainty that the related objectives will be achieved. Like all discretionary decisions, resolutions to implement suitable systems can also be incorrect in principle. Controls may not be adequate on a case by case basis due to simple errors or mistakes, or changes to environment variables may be recognized too late in spite of corresponding monitoring.

Risk Reporting on the Use of Financial Instruments

Risks from financial instruments are described in detail in the Group notes under Note 20 "Additional Disclosures on Financial Instruments".

Risk Assessment

Risks are assessed on the basis of probability of occurrence and the potential scale of the risk (economic relevance), in each case as either "low", "medium" or "high".



Opportunities and Risks of Future Operating Activities

The PVA TePla Group differentiates between business opportunities and risks, operational opportunities and risks, and financial opportunities and risks. These constitute the pivotal areas for the Group. Opportunities and risks do not exist to the same extent in all sub-segments. The following generally provides a net presentation of risks (by measures).

BUSINESS OPPORTUNITIES AND RISKS

Sales Markets

The key risk in the markets in which the PVA TePla Group operates is the fluctuation in customers' investment activity depending on global or regional economic developments. In a more general sense, political developments such as trade conflicts also play a role. Statements regarding future developments of individual markets or decisions relating to economic policy in emerging markets cannot be made with sufficient accuracy. There are also global competitive and price pressures.

International politics presents an array of risks that can be described only briefly here. These include further developments in relations between the EU and Turkey, Brexit – which remains unresolved at the time of preparing these consolidated financial statements – and the deal to be negotiated covering relations between the UK and the EU, potential escalation of trade conflicts motivated by protectionism in the US and elsewhere, tensions between Iran and a number of states, and the North Korea conflict.

If the corona virus results in sustained disruption to public life and the economy, this could significantly strain the PVA TePla Group's sales revenues and the incoming orders. Our current estimates indicate that the outbreak of the corona virus could induce a considerable slump in economic growth (especially with a view to Asia, Europe and North America). The effects of the pandemic on the PVA TePla Group, which began at the time the management report was prepared, cannot be seriously assessed at this time due to the associated uncertainties. This poses risks to the PVA TePla Group not only in terms of sales performance but also in terms of substantial disruption to production, the procurement market and supply chains.

The semiconductor business, a key sector for the Semiconductor Systems division, is traditionally highly cyclical in nature. Although the semiconductor industry has enjoyed average annual growth rates well above those of most established industries in recent decades, this average includes periods of both, robust growth and recession.

Investments in new silicon wafer capacity, an essential market for the PVA TePla Group, were, in particular, subject to increasing fluctuation.

Investments are being made in process technologies. These include systems for growing high-purity silicon crystals or silicon carbide crystals for high performance electronics – particularly in e-mobility – or metrology systems for non-destructive quality control in LED or MEMS production. Continuing advances in the digitalization of the company mean that increasing capacity is required to produce semiconductor material. The ongoing reduction of structure widths in chip production will also boost demand for metrology systems for examining chip quality. Major wafer and chip manufacturers have stepped up investments considerably since 2017.

The expansion of our own wafer production for the semiconductor industry in China represents a major growth opportunity for the PVA Group. This potential has already been underscored by initial orders in 2018 and 2019. Silicon carbide for high-performance electronics is vital for a multitude of industries, including the automotive industry and renewable energies. The PVA TePla Group's systems technologies will bring about major sales opportunities in numerous regions in the years ahead.

Demand for plasma and metrology systems is correlated with trends in sales markets in the semiconductor industry (e.g. MEMS, LED, OLED/PLED, IGBT). Further growth for these products of the PVA TePla Group is expected due to the anticipated growth in the semiconductor market in the medium term and new applications for plasma systems in the semiconductor/life science/industrial sectors. The semiconductor market will see stronger growth in the medium term, driven by the acceleration in connectivity of devices in industry and the private sector (i.e. "Internet of Things, Industry 4.0").

In the Industrial Systems division, the focus of business is on hard metal sintering systems. Considerably higher volatility has been registered in this business unit for some years. The introduction of new technologies leading to the substitution of existing materials could have a lasting effect on markets.

In markets such as the tool industry, the electronics industry and the semiconductor industry, the PVA TePla Group provides process technologies that will remain a firm part of each respective value chain in the future. In the area of heat treatment systems, new user markets are being developed in the "diffusion bonding" application. Examples of areas in which these types of processes could be used include the aviation industry, the semiconductor industry and molding construction.

Economy

The International Monetary fund (IMF) is expecting global GDP growth of 3.3% in 2020, 0.4 percentage points higher than in 2019. Emerging markets and developing countries are overall expected to see a faster pace of growth at 4.4%. In China, economic growth is anticipated to slow. Nonetheless, it remains higher than average at 6.0%. According to the IMF, the Phase 1 trade deal agreed between the US and China is likely to alleviate the effects of the short-term economic downturn. The economic outlook was made at a time when the pandemic and its effects on the world economy were not yet apparent. It remains to be seen to what extent the corona virus will hurt global economic growth. The economic repercussions for Germany and the PVA TePla Group itself and for global supply chains cannot be seriously quantified at this time.

In industrialized countries, expansion is expected to continue in 2020 at 1.6%, almost the same pace as seen in the previous year. An increase of 2.0% is forecast for the US, once again higher than average. By contrast, the figure is estimated at 1.4% for the United Kingdom, 1.3% for the Eurozone (with Germany again to experience lower than average growth at 1.1%) and 0.7% for Japan.

The Chinese market is extremely important to the PVA TePla Group, especially in the area of vacuum systems and crystal growing systems. The slowdown of economic development in China over the past few years and of the correlation between products manufactured using the Industrial Systems division's systems and the expansion of infrastructures means that there is a chance of investment restraint. Grown is expected to drop off considerably in emerging markets in Asia.

At present, the PVA TePla AG Management Board expects demand and production in China to be substantially weaker than in the previous year on account of the outbreak of the corona virus. This would result in lower import requirements in China, also hurting the economies of neighboring Asian countries. Even merely the substantial decline already expected in China's GDP growth in the first quarter of 2020 will delay projects with Chinese companies. These projects will be continued in subsequent quarters once the situation eases.

Maintaining or expanding measures to contain the corona virus over a longer period of time, causing a further slowdown in Chinese and global economic growth, represents a significant macroeconomic risk. The PVA TePla AG Management Board thus expects to see far slower global economic growth in fiscal 2020 than in the previous year. Global economic uncertainty will likely be very high in fiscal year 2020 and the lack of demand and production losses caused by the outbreak of the corona virus could weigh heavily on global growth.

These market and economic risks are reduced by diversifying the range of products and services across different sectors including semiconductors, photovoltaic, tool making and hard metal technology, the production of high-quality metals and ceramics, the automotive and aerospace industries, and the electrical and electronic engineering sectors. The effects of cyclical, foreseeable fluctuations in market volume are primarily offset by increasing or decreasing out-sourcing levels, although unexpectedly high demand could give rise to production bottlenecks. The strategy of maintaining a relatively low level of vertical integration allows rapid response in this regard. The PVA TePla Group also provides high-quality contract processing work such as plasma treatment, high-vacuum brazing and heat treatment of components in which greater customer demand has historically been seen in times of generally restrained capital expenditure.

Economic opportunities constitute developments that could cause the growth set out in the forecast report to be exceeded, for example the deescalation of political conflicts, an unexpectedly quick resolution to trade disputes or a favorable Brexit scenario that results in lower market turbulence than that expected and described above.

Technology

The risk of losing orders due to a new, unexpected technology appearing on the market (horizontal entry) or due to new competitors is monitored and assessed worldwide. To do this, we continuously observe the latest research and technology trends and published studies and maintain close contact with key customers and research institutes. In addition to ongoing development activities, we also support technological product optimization with in-house development centers and by operating in-house service centers in which materials are processed for customers.

Here, the company's development departments stay abreast of the latest material quality requirements of customers. The technical complexity of our products and rapid technological advances pose research and development-related risks. Medium and long-term success is dependent on developing marketable products and generating sufficient revenues within appropriate time frames in order to provide adequate cash flow for the group's internal financing. The technical complexity of our products and the high standards demanded by our customers may also give rise to risks that can generate increased warranty-related expenditures.

Projects with particular and unusual technological challenges could entail handling risks. These risks are countered by the introduction of continuous project controlling. If, after thorough consideration of the risks and opportunities, a project does not meet the required risk profile, it may also be canceled.

As a supplier of technologies for the production and processing of materials, parts and components for high-tech industries, where vacuum and high temperature play a key role for production, new areas of application for materials produced using our systems may result in additional demand. New materials requirements may also be introduced that require a new type of system in the PVA TePla Group's specialist fields. In view of climate change, energy savings to slow down the pace of global warming are a priority. New materials which lead to a considerably longer service life of devices and structures especially contribute to energy savings.

New materials for lightweight construction also improve energy efficiency. This could significantly improve the opportunities for the Group's process and systems technologies to develop and produce these materials around the world.

Trade Barriers

As an international Group with a high share of export business, the PVA TePla Group is essentially susceptible to trade barriers or sanctions. Geopolitical developments mean that there is a trend towards intensification in both of these areas. This relates to Russia, but may also affect other regions, such as the US, depending on political developments. The PVA TePla Group continually reviews the need for export licenses and, in the case of high-risk orders, hedges the political risk through capital goods credit insurance policies as required. A susceptibility to trade barriers will always remain, as contracts with insurance companies are only a limited option when political risks escalate. The PVA TePla Group counters this potential development by operating regional subsidiaries in key markets, meaning that corresponding supply chains can alternatively be set up in the relevant countries and any trade barriers that may arise can be bypassed.

OPERATING OPPORTUNITIES AND RISKS

Sales

In some regions, PVA TePla AG's subsidiaries work with commercial companies and depend on their agency activity to a certain extent. Our subsidiaries, who play an active part in key sales markets for the PVA TePla Group, actively support our sales activities and reduce dependency. The sales strategy is also regularly reviewed.

Delays in delivering systems may result in penalty risks or extra costs. Stronger project management is intended to reduce delivery delays and further improve lead times. Sales could be significantly affected by travel restrictions imposed by individual countries or groups of countries as part of government measures to combat the corona virus, which could considerably affect sales of our products.

Procurement Markets

The risk of delivery delays and non-delivery is countered by carefully identifying and closely monitoring suppliers. Dependence on individual suppliers cannot be ruled out, but is largely limited by having multiple qualified suppliers for key components wherever possible, and diversifying deliveries among them. The risk of supplier failure (e.g. as a result of insolvency) is substantially reduced by considering the supplier's economic situation and the systematic selection and evaluation of alternative suppliers. Care is taken to ensure that all major suppliers have adequate quality management systems and third-party liability insurance coverage in place.

Very high market demand has repeatedly resulted in production bottlenecks for suppliers, in particular in vessel production. Thanks to acquiring the operations of a globally highly regarded pressure vessel manufacturer in Italy in fiscal 2019, the PVA TePla Group now has its own vessel production. Attempts are also being made to further strengthen the supplier base by using additional suppliers.

The corona virus could result in delays in procuring individual components at least in the first half of fiscal 2020. PVA Italy S.r.l., one of the PVA TePla Group's vessel manufacturers, is based in northern Italy, which has been particularly affected by the virus at the date of this report.

Capacity Utilization

The high order backlog in the Crystal Growing Systems business unit at the end of fiscal year 2019 caused largely full utilization of the employees responsible for production there, meaning that production bottlenecks are possible.

Through increased collaboration with temporary workers and, possibly, third-party companies as well as staff pooling within the Group, capacity can be used without causing future overcapacity by increasing headcount.

Staffing

The success of the PVA TePla Group primarily depends on its employees and their expertise. However, competition for skilled employees and managers in the industries and regions in which the PVA TePla Group operates is intense and there is a risk of fluctuation. The Group's future success therefore largely depends on its ability to hire, integrate and retain qualified personnel. Strategic personnel planning, for qualified personnel and management level, as well as cooperations with German universities and research institutes are intended to prevent this from happening.
Demographic developments are forcing the company to deal with an aging workforce and secure a young generation of qualified specialists and managers. As before, this risk is to be prevented by documenting expertise, extending redundancy and holding performance reviews. Should the personnel risk materialize, it is expected to impact the business activities and also the results of the PVA TePla Group depending on the extent of the bottlenecks in personnel.

IT

At PVA TePla Group, a global, growth-oriented business, the information technology (IT) in place in all divisions plays a major and steadily increasing role. There are risks with regard to the three safety objectives:

- Confidentiality
- Integrity
- Availability

In particular, these cover unauthorized access, modifying or copying sensitive, electronic company or customer data and system availability issues due to faults or disasters. Properly handling data ensures data accuracy and integrity and guarantees that systems function smoothly. High quality standards for our products also apply to handling our customers' and employees' data. Data security, transparency and data privacy are our top priorities. We use IT security technology such as firewalls and intrusion prevention systems, as well as multiple access protection, to mitigate the risk of unauthorized access and modifying or copying sensitive, electronic company or customer data. Security is also heightened by restricting the number of authorizations issued for access to systems and information and by keeping back-ups of key data files.

We have back-up IT infrastructure in place to protect ourselves against risks that could occur in the case of faults or disasters. As part of our company-wide standards, we use commercial technologies to protect our IT systems which are standardized and updated on an ongoing basis to ensure they remain fit for the future. Ongoing efforts to boost automation improve process security and the quality of processing.

The development and Group-wide use of IT governance processes, in particular the ongoing standardization of the IT risk management process, also help identify risks at an early stage and effectively reduce these risks.

Our IT security program focuses on ongoing development of Group-wide security measures, including establishing an IT security control center. This is designed to recognize cyber attacks at an early stage, helping us deal with attacks using the latest defense methods. To complement the technical measures, PVA TePla AG and its subsidiaries consistently educate and train their employees.
Despite all precautions, IT problems and the related negative impact on business processes and unauthorized data access cannot be completely ruled out.

Legal Disputes

At present, there are no legal disputes involving PVA TePla AG or its subsidiaries.
The international business activities of PVA TePla AG and its subsidiaries mean that the companies are exposed to various legal risks. National and international contract drafting and taxation are particularly important areas here.

Direct impacts on the result of operations and the net asset situation are possible in these areas. The risk arising from sales and service contracts is essentially minimized through the use of standardized terms and conditions. In the case of special contracts, the wording and content are initially examined in-house, if applicable with the involvement of an external legal advisor. The specialist knowledge required to assess day-to-day business is provided by qualified employees. Product liability risks are covered by corresponding insurance policies.

FINANCIAL OPPORTUNITIES AND RISKS

Tax Law

Because of the volume of business from abroad, the complexity of the related tax issues has increased. These particularly include the topics transfer pricing and business between the companies of the PVA TePla Group and VAT, especially on services and tax arrangements for employees who are sent abroad.
These topics are handled in close collaboration with tax advisors so that there are no discernible notable risks. However, there are increasing expenses with respect to these consultations, the internal administration and the implementation of regulations with the associated registrations.

General Statement by the Management Board

The Management Board of PVA TePla AG is responsible for the risk management of the Group and assesses the Group's risks and opportunities. Their conclusions are summarized as follows:

The Group's fundamental risk profile in fiscal year 2019 did not change compared to 2018. The main risks stem from the market developments mentioned above, the related reticence of our customers to invest, technological developments, the supplier risk and risks from trade barriers. We are countering this development by continuing to work on increasing sales activities in markets which will become more attractive in future. Personnel risks, IT security risks, risks from legal disputes and the risks from credit covenant breaches remained unchanged in the last fiscal year. There is no information on risks to the Group as a going concern.

We consider all other risks to only have low residual risks on account of their low likelihood, their low potential damage or countermeasures that have been taken. The opportunities presented in this report constitute both untapped potential for the PVA TePla Group but also significant challenges. The fundamentally flexible production structure means that PVA TePla Group companies are well equipped to fully capitalize on any opportunities that may arise.

5. FORECAST REPORT

The forecast report describes the expected business development of both PVA TePla AG and the PVA TePla Group in fiscal year 2020. The statements in this chapter were made on the basis of the current Group portfolio and customers' portfolios and assumptions on future macroeconomic and industry developments. The actual results may, as usual in the project business, deviate substantially from the forecast development, if the underlying assumptions later prove to be incorrect.

PVA TePla AG is under no obligation to update forward-looking statements or to adjust these to future developments. It assumes no guarantee or liability for ensuring that the business position, net assets, financial position or results of operations actually achieved match the assumptions and estimates.

5.1. Macroeconomic Environment Forecast

In its Economic Outlook Forecast published at the start of March 2020, the OECD warned that, even in the best-case scenario where the virus spreads beyond China only in a smaller number of cases, this will likely lead to a considerable decline in economic growth in the first half of the year as a result of disrupted supply chains, a decline in tourism and a deterioration in the business climate. Given this, global economic growth will likely shrink from an already weak 2.9% in 2019 to 2.4 % in 2020.

The PVA TePla AG Management Board thus expects to see far slower global economic growth in fiscal year 2020 in comparison to the previous year. There is reason to fear that very high global economic uncertainty and the lack of demand and production losses caused by the outbreak of the corona virus could weigh heavily on global growth. The effects of the pandemic, which was beginning at the time the management report was prepared, on individual countries or groups of countries and their economic development could not yet be determined. The effects on the economy cannot be assessed at this time.

Eurozone

The IMF expects the pace of growth to pick up slightly in 2020 to 1.3% compared to 1.1% in 2019. A slight rise in external demand is assumed, which should help stabilize growth. Wage growth is also shoring up private household spending.

Germany

In Germany, the IMF is anticipating a growth rate of 1.1% in 2020. Trade disputes with China that began in the US and the UK's upcoming exit from the European Union (Brexit) are particularly hurting sentiment. In particular, the automotive sector and automotive suppliers are facing structural challenges.

In addition, the widening gap between climate policy demands / government promises and the measures taken, which have so far been modest and had only a limited effect, is creating uncertainty and prompting fears that the economy could be hit by more stringent measures. Renewed escalation in the US-China trade conflict, higher US tariffs on European automotive imports or problems in negotiating a post-Brexit trade deal could still be enough to push the German economy into recession. In light of this, the economy still seems very vulnerable.

United States
Expanding by 2%, the US economy is expected to grow at a weaker pace than in the previous year while still continuing its 11-year growth streak. The stimulus provided by fiscal easing measures will, in all likelihood, gradually fade. Growth is driven by private consumption on the basis of rising real wages. On the whole, however, higher tariffs and mounting uncertainty are curbing growth in company investment.

China
After seeing growth of 6.6% in 2019, China's growth prospects have been lowered to well under 5% for 2020. As well as the corona virus, the US-China trade conflict and related repercussions pose significant risks to Chinese exports

Emerging Markets
Emerging markets and developing countries are expected to see growth of 4.4% in 2020. The possibility of failed trade talks between the US and China also poses a major economic risk here. Additional political risks are restricting growth opportunities even further.

5.2. Sector Development Forecast

Economists at the German Mechanical Engineering and Plant Manufacturing Association (VDMA) expect production to fall by 2% in real terms in 2020. Production growth may enjoy a slight upturn during the year, especially in the second half of 2020. However, this relies in particular on there being no further escalation of the trade dispute between the US and China. Global economic development remains shaped by a high degree of uncertainty.

The industry association ZVEI expects the global semiconductor market to be restrained in 2020, albeit with moderate sales revenue growth of 4%. Prospects on the semiconductor market look relatively good for the years ahead, as semiconductors penetrate all aspects of technology.

As with the overall economic development, the effects of the pandemic on industries worldwide cannot be assessed and could not be taken into account in the drawing up of the management report.

5.3. Expected Business Development

There are very considerable economic uncertainties for the 2020 financial year, primarily due to the onset of the corona pandemic. According to the current assessment of the Management Board of PVA TePla AG, this will lead to significant delays in project implementation at least in the first half of fiscal 2020. Deviating from the original forecast made in November 2019, sales and earnings are expected to be at the previous year's level or lower, depending on the further course of the COVID 19 crisis. Due to the current dynamics and the unforeseeable duration of this situation, it is currently not possible to seriously estimate the total financial impact of the Corona pandemic on the PVA TePla Group.

6. REMUNERATION REPORT

The remuneration report forms part of the combined management report and includes the basics of the remuneration system for the Management Board and Supervisory Board as well as the amount and structure of the remuneration. The remuneration report is based on the recommendations of the German Corporate Governance Code (the "Code") and meets the requirements in accordance with the provisions under Sections 289a (2), 314 (1) no. 6a and b, 315a (2) HGB. In this remuneration report, PVA TePla AG discloses both the remuneration of the Management Board and that of the Supervisory Board separately.

6.1. Management Board

Members of the Management Board

- **Alfred Schopf** (Chief Executive Officer), member of the Management Board since 2017, appointed until 2021
- **Oliver Höfer** (Chief Operating Officer), member of the Management Board since 2013, appointed until 2021

Basics of the Remuneration System for the Management Board

The Management Board remuneration system at PVA TePla AG aims to incentivize long-term and sustainable company management. The remuneration of the Management Board members consists of a basic salary not based on performance, other benefits (mainly non-cash benefits from the use of a company car, subsidized contributions to health insurance and contributions to a pension fund) and performance-based, variable remuneration components in the form of bonus payments. The performance-based, variable remuneration component is different for each Management Board member and the amounts are subject to limits.

The Supervisory Board is responsible for determining Management Board remuneration. The entire Supervisory Board determines and reviews the Management Board remuneration system on a regular basis and decides on all contracts for the members of the Management Board.

The following bonus regulations apply to the Chief Executive Officer, Alfred Schopf, and the Chief Operating Officer, Oliver Höfer:

1. A short-term bonus payment which is calculated as a percentage of consolidated EBIT and which is limited in terms of amount.
2. A long-term bonus component calculated in line with PVA TePla AG's market capitalization and limited in terms of amount.

For Alfred Schopf, in addition to the fixed salary, a variable salary component based on the consolidated operating result (EBIT) is agreed for fiscal year 2019 et seq., which amounts to a maximum of 1.58 times the annual fixed salary.

In addition, there is a variable salary component based on a multi-year assessment basis based on the share price of the PVA TePla AG, which amounts to a maximum of EUR 500 thousand. For Oliver Höfer, a variable salary component based on the consolidated operating result (EBIT) for fiscal year 2019 et seq. has been agreed, which amounts to a maximum of the annual fixed salary. In addition, there is a variable salary component based on a multi-year assessment basis based on the share price of the PVA TePla AG, which amounts to a maximum of EUR 250 thousand.

The contracts for the members of the Management Board foresees settlement payments in the event of the premature termination of activities as member of the Management Board, the amount of which depending on contract of employment is limited up to two years' salary (settlement cap). In the event of change of control and a subsequent premature termination of Management Board activities, the members receive remuneration which should not exceed 150% of the settlement cap.

Remuneration of the Management Board

The total remuneration of members of the Management Board in the current fiscal year amounted to EUR 1,323 thousand (previous year: EUR 1,243 thousand).

On this basis, members of the Management Board received the following remuneration in fiscal year 2019

	Performance related components					
[EUR'000]	Fixed compensation	Variable compensation	Long-term compensation*	Other benefits	Total 2019	Total 2018
Schopf	250	372	167	36	825	703
Höfer	200	200	83	15	498	540
Summe	**450**	**572**	**250**	**51**	**1.323**	**1.243**

*) Die Auszahlung der langfristigen Vergütung erfolgt nach einer an die Vertragslaufzeit gekoppelten Bindungsfrist unter Berücksichtigung der Marktkapitalisierung

*Payment of long-term compensation is made after a period of commitment linked to the contract period, taking into account market capitalization.

The values presented above for the performance-based component include amounts granted in 2019 for fiscal year 2018 less the amounts recognized and reported as provisions in fiscal year 2018. Provisions established in 2019 for fiscal year 2019 are also included.

The long-term performance-based remuneration components and all other remuneration listed above are payable over the short term. Employer contributions to pension insurance are not paid. There are no pension commitments for any other current Management Board members.

No real share options were granted to members of the Management Board in fiscal year 2018 or in fiscal year 2019.

In fiscal year 2019, EUR 119 thousand was paid to former members of the Management Board as pensions (previous year: EUR 74 thousand). As of the balance sheet date December 31, 2019, there was a provision of EUR 2,403 thousand in the consolidated financial statements for these pension obligations (previous year: EUR 2,064 thousand).

As shown in PVA TePla AG's annual financial statements, in fiscal year 2019, EUR 119 thousand was paid to former members of the Management Board as pensions (previous year: EUR 74 thousand). As of the balance sheet date December 31, 2019, there was a provision of EUR 1,953 thousand in the financial statements for these pension obligations (previous year: EUR 1,778 thousand).

6.2. Supervisory Board

Members of the Supervisory Board

- **Alexander von Witzleben**, Weimar, Chairman, member of the Supervisory Board since 2004, appointed until 2023
  Feintool International Holding AG, Lyss
  (President of the Administration Board)
  Member of the following other supervisory bodies:
  VERBIO Vereinigte BioEnergie AG, Leipzig
  (Chairman of the Supervisory Board)
  KAEFER Isoliertechnik GmbH & Co. KG, Bremen
  (member of the Advisory Board)
  Siegwerk Druckfarben AG & Co. KGaA, Siegburg
  (member of the Supervisory Board)
  Arbonia AG, Arbon/Switzerland
  (President of the Advisory Board and CEO)
  Artemis Holding AG, Aarburg/Schweiz
  (member of the Advisory Board

- **Prof. Dr. Gernot Hebestreit**, Leverkusen, Deputy Chairman, member of the Supervisory Board since 2008, appointed until 2023
  Warth & Klein Grant Thornton AG Wirtschaftsprüfungsgesellschaft, Düsseldorf (partner, member of the Management Board)
  Member of the following other supervisory bodies:
  Comvis AG, Essen (Deputy Chairman of the Supervisory Board)

- **Prof. Dr. Markus H. Thoma**, Schöffengrund, member of the Supervisory Board since 2014, appointed until 2023
  Professor of Plasma and Astronautics at the University of Giessen

Member of the following other supervisory bodies:
Nationales Zentrum für Plasmamedizin e.V.
(member of the Board of Trustees)

Basics of the Remuneration System for the Supervisory Board

The remuneration of the members of the Supervisory Board is regulated in Section 14 of PVA TePla AG's Articles of Association. Members of the Supervisory Board receive total fixed annual remuneration of EUR 25 thousand (plus any VAT owed), which is payable after the end of the respective fiscal year. The Chairman of the Supervisory Board receives twice the existing fixed remuneration and the Deputy Chairman of the Supervisory Board receives 1 times the existing fixed remuneration. Members of the Supervisory Board who did not sit on the Board for the entire fiscal year receive remuneration on a pro rata basis. Supervisory Board remuneration does not include any performance-based components.

Remuneration of the Supervisory Board

Totaled remuneration for the Supervisory Board totaled EUR 100 thousand in fiscal 2019 (previous year: EUR 100 thousand). The total, non-performance based remuneration of the Supervisory Board is paid in the following fiscal year. As of December 31, 2019, remuneration for fiscal 2019 is recognized in the statement of financial position under "Other current liabilities".

[EUR'000]	Fixed compensation	Variable compensation	Total 2019	Total 2018
von Witzleben	50	0	50	50
Hebestreit	25	0	25	25
Thoma	25	0	25	25
Summe	**100**	**0**	**100**	**100**

7. TAKEOVER RELEVANT INFORMATION

Disclosures in accordance with Sections 289a, 315a of the German Commercial Code (Handelsgesetzbuch - HGB).

COMPOSITION OF SUBSCRIBED CAPITAL (NO. 1)

As of December 31, 2019, the issued share capital of PVA TePla AG came to EUR 21,749,988 and consisted of 21,749,988 no-par value bearer shares with a nominal value of EUR 1.00 each.

RESTRICTIONS WHICH AFFECT VOTING RIGHTS OR THE SALE/TRANSFERABILITY OF SHARES (NO. 2)

The Management Board is not aware of any restrictions which affect voting rights or the sale/transferability of shares. In particular, it is not aware of any restrictions that may result from agreements between shareholders.

DIRECT OR INDIRECT SHAREHOLDINGS THAT EXCEED 10% OF VOTING RIGHTS (NO. 3)

According to disclosures filed with the company, PA Beteiligungsgesellschaft mbH, Wettenberg, Germany and AIM International Mutual Funds (Invesco International Mutual Funds), Wilmington, Delaware, USA, held a share of voting rights in PVA TePla AG as of December 31, 2019, above the 10% threshold.

HOLDERS OF SHARES WITH SPECIAL RIGHTS (NO. 4)

There were and are no shares in PVA TePla AG with special rights that impart the right of control.

TYPE OF VOTING RIGHTS CONTROL IN THE CASE OF EMPLOYEE SHAREHOLDINGS (NO. 5)

There are no employees with a share in PVA TePla AG's share capital who cannot directly exercise their control rights.

STATUTORY PROVISIONS AND CONDITIONS OF THE ARTICLES OF ASSOCIATION ON APPOINTING AND RECALLING MEMBERS OF THE MANAGEMENT BOARD AND ON AMENDING THE ARTICLES OF ASSOCIATION (NO. 6)

a) Appointing Management Board Members

The appointment of PVA TePla AG Management Board members is done in accordance with Section 84 of the German Stock Corporation Act (AktG), and Section 6 (2) of the PVA TePla AG Articles of Incorporation. The following is established therein:

"Article 2: The appointment of members of the Management Board, the revocation of their appointment as well as the concluding, the amendment and the termination of contracts of employment with members of the Management Board are effected by the Supervisory Board. The same applies to the appointment of a member of the Management Board as chairman or as spokesman of the Management Board."

b) Recalling Management Board Members

In accordance with Section 84 (3) sentence 1 of the German Stock Corporation Act (AktG), the Supervisory Board may revoke the appointment of Management Board members and the appointment as Chief Executive Officer for good cause. Section 84 (3) sentence 2 AktG defines good cause as gross dereliction of duties, inability to properly manage the company's affairs, or a vote of no confidence by the Annual General Meeting, unless this vote of confidence took place for reasons that are evidently unsubstantiated. Under Section 84 (3) sentence 4 AktG, the recalling of Management Board members is valid until it has been finally and conclusively deemed invalid by a court of law.

c) Amending the Company's Articles of Association

In accordance with Section 179 (1) sentence 1 AktG, any amendment to the Articles of Association requires a resolution by the Annual General Meeting. However, Section 179 (1) sentence 2 AktG authorizes the Supervisory Board to resolve amendments to the Articles of Association that relate only to the wording. Section 179 (2) sentence 1 AktG states that an Annual General Meeting resolution to amend the Articles of Association requires a majority of at least three quarters of the share capital represented at the time of the resolution. Under Section 179 (2) sentence 2 AktG, however, the Articles of Association may stipulate a different majority when the matter involves modifying the company's purpose and may also impose further requirements. On the basis of this statutory authorization, Section 14 (3) sentence 3 of the Articles of Association stipulates that resolutions designed to modify the company's Articles of Association are resolved by simple majority of votes cast, provided this is permitted by law.

AUTHORITY OF THE MANAGEMENT BOARD TO ISSUE OR REPURCHASE SHARES (NO. 7)

As of December 31, 2019, the Management Board is authorized via Annual General Meeting resolution to issue new shares from authorized capital in the amount of EUR 10,874,994.00 by June 20, 2022. Furthermore, the Management Board is authorized via Annual General Meeting resolution to buy back shares amounting to 10% of authorized capital by June 18, 2023.

KEY AGREEMENTS CONTINGENT UPON A CHANGE OF CONTROL RESULTING FROM A TAKEOVER BID (NO. 8)

The current master agreements with the banks are based on a largely unchanged shareholder structure and, in case of a change in control, calls for renegotiation or, in one case, specifies that the bank has a right to cancellation. The provisions for a publicly funded research and development project also include a special right to cancellation in case of a change in control. There are no other agreements that are contingent upon a change of control as the result of a takeover bid.

COMPENSATION AGREEMENTS IN THE EVENT OF A TAKEOVER BID (NO. 9)

In the event of a change of control, Management Board members receive benefits that should not exceed 150% of the severance payment cap (value of two years' remuneration including benefits).

8. DEPENDENCY REPORT

In the past, PA Beteiligungsgesellschaft mbH held the majority of votes at the Annual General Meeting. The Management Board of PVA TePla AG therefore prepared a dependency report for fiscal year 2019 pursuant to Section 312 of the AktG: "We declare that according to the information known to us at this time, our company engaged in legal transactions with dependent companies pursuant to Section 312 of the AktG and received appropriate compensation in all cases. The company did not take or fail to take any reportable measures."

9. COMPANY MANAGEMENT DECLARATION

The PVA TePla Group is committed to the recognized standards of good and responsible company management and aligns its management and monitoring in accordance with the requirements of the German Corporate Governance Code (the "Code"). The standards applied are set out in the Company Management Declaration in accordance with Section 289f in connection with Section 315d of the German Commercial Code (Handelsgesetzbuch - HGB).

PVA TePla AG publishes the Company Management Declaration (Section 289f HGB) and the Group's Company Management Declaration (Section 315d HGB) on its website at *https://www.pvaTePla.com/investor-relations/corporate-governance*. This declaration contains the Declaration of Compliance relating to the German Corporate Governance Code in accordance with Section 161 AktG, which can be accessed at *https://www.pvaTePla.com/investor-relations/corporate-governance*.

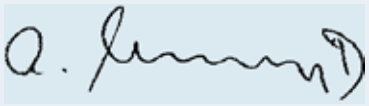
10. RESPONSIBILITY STATEMENT

"To the best of our knowledge we assure that in accordance with the applicable reporting principles, the Consolidated Financial Statements and the separate financial statements give a true and fair view of the net assets, financial position and profit or loss of the Group and the AG, and the Group Management Report and the Management Report give a true and fair view of the development and performance of the business and the position of the Group and of the company, together with a description of the principle opportunities and risks associated with the expected development of the Group and the company."

Wettenberg, March 20, 2020

PVA TePla AG
Management Board

Alfred Schopf
Chief Executive Officer



Oliver Höfer
Chief Operating Officer

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Group Notes

CONSOLIDATED BALANCE SHEET

ASSETS EUR´000	Notes	Dec, 31, 2019	Dec, 31, 2018
Non-current assets			
Intangible assets	8	11,471	11,072
Right-of-use assets	9	2,175	0
Property, plant and equipment	10	30,185	29,581
Non-current investments	11	3,014	110
Deferred tax assets	14	5,124	6,527
Total non-current assets		**51,969**	**47,290**
Current assets			
Inventories	12	65,217	41,002
Trade and other receivables	13	27,378	25,780
Contract assets	13	10,458	7,350
Tax repayments		341	719
Cash and cash equivalents	G	25,570	40,014
Total current assets		**128,964**	**114,865**
Total		**180,933**	**162,155**

LIABILITIES AND SHAREHOLDERS' EQUITY EUR'000	Notes	Dec, 31, 2019	Dec, 31, 2018
Shareholders' equity			
Share capital	H	21,750	21,750
Reserves	H	35,565	29,131
Equity of which attributable to shareholders of PVA TePla AG		**57,315**	**50,881**
Minority interest	H	0	-84
Total		**57,315**	**50,797**
Non-current liabilities			
Retirement pension provisions	16	17,223	15,195
Other provisions	17	62	520
Financial liabilities	15	3,231	2,333
Other financial liabilities		114	259
Deferred tax liabilities	14	2,761	2,583
Total		**23,961**	**20,890**
Current liabilities			
Other provisions	17	3,552	2,385
Financial liabilities	15	1,308	670
Liabilities to employees	18	4,050	3,001
Trade payables		10,792	8,918
Contract liabilities	19	78,605	72,492
Provisions for taxes		620	1,588
Other liabilities		1,300	1,414
Total		**100,227**	**90,468**
Total		**180,933**	**162,155**

CONSOLIDATED INCOME STATEMENT

EUR´000	Notes	Jan, 1 - Dec, 31, 2019	Jan, 1 - Dec, 31, 2018
Sales revenues	1	**130,968**	**96,783**
Cost of sales		-93,271	-65,729
Gross profit		**37,697**	**31,054**
Selling and distributing expenses		-12,120	-10,195
General administrative expenses		-8,760	-6,662
Research and development expenses	2	-4,753	-3,438
Other operating income	3	3,085	2,114
Other operating expenses	3	-2,844	-3,405
* thereof impairment losses on financial assets		-820	-2,131
Operating result (EBIT)		**12,305**	**9,468**
Finance revenues	4	127	179
Finance costs	4	-612	-658
Financial result and share of profits from associates		**-485**	**-479**
Net result before tax		**11,820**	**8,989**
Income taxes	5	-4,107	-3,021
Consolidated net result for the year		**7,713**	**5,968**
of which attributable to			
Shareholders of PVA TePla AG		7,629	5,968
Minority interest		84	0
Earnings per share			
Earnings per share (basic) in EUR	6	0,35	0,27
Earnings per share (diluted) in EUR	6	0,35	0,27

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

EUR´000	Jan, 1 - Dec, 31, 2019	Jan, 1 - Dec, 31, 2018
Consolidated net result for the year	**7,713**	**5,968**
of which attributable to shareholders of PVA TePla AG	7,629	5,968
of which attributable to minority interest	84	0
Other comprehensive income		
Items that may be reclassified to profit or loss		
Currency changes	337	170
Income taxes	0	0
Changes recognized outside profit or loss (currency changes)	**337**	**170**
Total of items that may be reclassified to profit or loss	**337**	**170**
Items that will never reclassified to profit or loss		
Changes in pension provisions	-2,117	34
Income taxes	614	-10
Changes recognized outside profit or loss (pension provisions)	**-1,503**	**24**
Total of items that will never reclassified to profit or loss	**-1,503**	**24**
Total comprehensive income	**6,547**	**6,162**
of which attributable to shareholders of PVA TePla AG	6,463	6,162
of which attributable to minority interest	84	0

CONSOLIDATED CASH FLOW STATEMENT

	EUR´000	Jan, 1 - Dec, 31, 2019	Jan, 1 - Dec, 31, 2018
	Consolidated net result for the year	7,713	5,968
	Adjustments to the consolidated net result for the year for reconciliation to the cash-flow operating activities:		
+	Income taxes	4,107	3,021
-	Finance revenues	-127	-179
+	Finance costs	612	658
=	**Operating result (EBIT)**	**12,305**	**9,468**
+/-	Income tax payments	-2,507	664
+	Amortization and depreciation	3,907	2,809
-/+	Gains/losses on disposals of non-current assets	13	2
+/-	Other non-cash expenses/income	99	1,892
-/+	Increase/decrease in inventories, trade receivables and other assets	-23,768	-37,273
+/-	Increase/decrease in provisions	628	-319
+/-	Increase/decrease in trade payables and other liabilities	8,732	34,411
=	**Cash-flow from operating activities**	**-591**	**11,654**
-	Cash flow from obtaining control of subsidiaries or other business less aquired cash	-850	-1,633
-	Payment of intangible assets and property, plant and equipment	-2,648	-2,250
-	Payments for investments in financial assets	-9,000	0
+	Interest receipts	11	44
=	**Cash-flow from investing activities**	**-12,487**	**-3,839**
-	Payments for the repayment of leasing liabilities	-663	0
-	Payments from redumption of financial liabilities	-668	-771
-	Payment of interest	-92	-90
=	**Cash-flow from financing activities**	**-1,423**	**-861**
	Net change in cash and cash equivalents	-14,501	6,954
+/-	Effect of exchange rate fluctuations on cash and cash equivalents	57	43
+	Cash and cash equivalents at the beginning of the period	40,014	33,017
=	**Cash and cash equivlanets at the end of the period**	**25,570**	**40,014**

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

EUR´000	Shared issues		Revenue reserves	Other reserves: Currency exchange	Other reserves: Pension provisions	Of which attributable to shareholders of PVA TePla AG	Minority interest	Total shareholders´ interest
	Number							
As at January 1, 2018	21,749,988	21,750	22,875	-49	-4,363	45,213	-84	45,129
Adjustment effect IFRS 15*			-494	0	0	-494	0	-494
As at January 1, 2018 (adjusted)	21,749,988	21,750	27,381	-49	-4,363	44,719	-84	44,635
Total income			5,968	170	24	6,162	0	6,162
As at December 31, 2018	21,749,988	21,750	33,349	121	-4,339	50,881	-84	50,797
As at January 1, 2019	21,749,988	21,750	33,349	121	-4,339	50,881	-84	50,797
Adjustment effect IFRS 16*			-29	0	0	-29	0	-29
As at January 1, 2019 (adjusted)	21,749,988	21,750	33,320	121	-4,339	50,852	-84	50,768
Total income			7,629	337	-1,503	6,463	84	6,547
As at December 31, 2019	21,749,988	21,750	40,949	458	-5,842	57,315	0	57,315

* For further explanation see note H of the Notes

Group Notes

A. BASIS OF PRESENTATION

Domicile and Legal Form of the Company
PVA TePla AG, Wettenberg (hereinafter "PVA TePla AG") is a stock corporation in accordance with German law. The company is entered in the commercial register of the Giessen Local Court under HRB 6845 and is domiciled in 35435 Wettenberg. The shares of PVA TePla AG are listed in the Prime Standard of the Frankfurt Stock Exchange (ISIN: DE0007461006).

Business Activities and Business Segments
As a technology company, PVA TePla AG and its subsidiaries (hereinafter „PVA TePla Group") refine and produce materials, which are used for example in the semiconductor industry. The focus of operating activities in the PVA TePla Group is the development, manufacture and sales of processes, products, systems and services in materials technology, plasma and ion beam technology, metrology and inspection technology for finely structured objects and vacuum technology. With locations in Germany, Italy the USA, China, Taiwan and Singapore, the PVA TePla Group maintains business relationships around the world.

The Group divides its business activities into two divisions: Industrial Systems and Semiconductor Systems. Management, planning and controlling of the PVA TePla Group is based on these two divisions. For the purposes of segment reporting they form the two segments. The Semiconductor Systems division focuses on the production of crystal growing systems for manufacturing silicon crystals, while the Industrial Systems division produces sintering systems for manufacturing hard metal tools. The machines operate with vacuum, temperature, plasma and pressure.

Accounting Statements and General Principles of Presentation
The consolidated financial statements of the PVA TePla Group for the fiscal year 2019 ending December 31 2019 have been prepared pursuant to Section 315e HGB in accordance with the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB) as they are to be applied in the European Union (EU).

All International Financial Reporting Standards (IFRS), International Accounting Standards (IAS) and Interpretations issued by the IC Interpretations Committee (IFRS IC) that had to be applied in fiscal year 2019 were taken into consideration. Furthermore, all statutory disclosure and explanation obligations set out in the German Commercial Code (Handelsgesetzbuch - HGB) that go beyond the IASB's provisions were met, in particular regarding the preparation of a Group management report.

The fiscal year for PVA TePla AG and its subsidiaries is the calendar year. The consolidated financial statements were prepared in accordance with the historical cost principle. This excludes derivative financial instruments measured at fair value.

The income statement has been prepared in accordance with the cost of sales method of presentation. To improve clarity of presentation or for reasons of materiality, items in the consolidated balance sheet and/or the consolidated income statement and the consolidated statement of comprehensive income have been combined and are explained in the Group notes. An explanation of the accounting policies used in relation to individual items of the consolidated balance sheet, consolidated income statement and consolidated statement of comprehensive income is given with the individual notes in the Group notes together with the relevant specific note information.

The presentation in the consolidated statement of financial position distinguishes between current and non-current assets and liabilities. Assets and liabilities are classified as current if they are due within one year or within a longer normal operating cycle. Deferred tax assets and liabilities are recognized as non-current in the consolidated balance sheet.

The reporting currency and the functional currency of the PVA TePla Group consolidated financial statements is the euro (EUR). Unless otherwise indicated, all amounts have been stated in thousands of euro (EUR´000). The figures in these financial statements may contain rounding differences of +/- one unit (EUR´000, % etc.) for reasons related to the calculations.

The PVA TePla Group's consolidated financial statements for the fiscal year from January 1, 2019 to December 31, 2019 were approved by the Management Board of PVA TePla AG and submitted to the Supervisory Board for review and approval on March 20, 2020.

B. CHANGES TO ACCOUNTING AND POLICIES

New and Updated Standards and Interpretations Adopted for the First Time in Fiscal Year 2019
The accounting policies applied in the PVA TePla Group's consolidated financial statements for the fiscal year 2019 match those used in the previous year (fiscal year 2018). However, the PVA TePla Group also applied the following new and updated Standards and Interpretations adopted in European law by the European Union for the first time in fiscal year 2019.

Standard/ interpretation	Title	Initial Application PVA TePla Group	Adoption by the EU Commission	Effect on the PVA TePla Group
IFRS 16	Leases	January 1, 2019	took place on October 31, 2017	The explanation is presented below the table
Amendments to IFRS 9	Prepayment Features with Negative Compensation	January 1, 2019	took place on March 22, 2018	No impact
Amendments to IAS 19	Plan Amendment, Curtailment or Settlement	January 1, 2019	took place on March 13, 2019	No impact
Amendments to IAS 28	Long-term Interests in Associates and Joint Ventures	January 1, 2019	took place on February 8, 2019	No impact
Annual improvements	Annual Improvements to the IFRSs 2015-2017 Cycle: Amendments to IFRS 3, IFRS 11, IAS 12 and IAS23	January 1, 2019	took place on March 14, 2019	No impact
IFRIC 23	Uncertainty over Income Tax Treatments	January 1, 2019	took place on October 23, 2018	No material impact

The initial application of **IFRS 16 "Leases"** in fiscal year 2019 leads to not inconsiderable effects on the net assets, financial position, and results of operations of the PVA TePla Group. As of January 1, 2019, the PVA TePla Group implemented IFRS 16 using the modified retrospective method. In compliance with the transitional provisions, comparative information was not restated. Comparability with the previous years´ figures is therefore only slightly affected.

As part of its business transactions, to a limited extent the PVA TePla Group is the lessee of property, plant and equipment and lessor in connection with the leasing of its own systems and buildings. The impact of the initial application of IFRS 16 on the consolidated financial statements of the PVA TePla Group is restricted largely to lease accounting.

IFRS 16 replaces the existing provisions on recognizing leases (including IAS 17 and IFRIC 4) and introduces a uniform accounting model which stipulates that all lessees must capitalize a right of use for all leases and a corresponding lease liability for all outstanding leasing payments (the right-of-use model). This means that the previous finance and operating lease classification is no longer relevant for lessees.
The impact on the net assets, financial position and results of operations of the consolidated financial statements of the PVA TePla Group are due to lessee accounting and in particular those leases, which were previously to be classified in line with IAS 17 as operating leases and are to be recognized (for the first time) from fiscal year 2019. On the other hand, classification in accordance with IAS 17 to finance and operating leases will remain in place under IFRS 16. In respect to lessor accounting, the initial application of IFRS 16 therefore leads to not inconsiderable effects. The following comments relate exclusively to lessee accounting.

In the context of the initial recognition, the cost of a right of use is determined from the present value of all future lease payment plus any lease payments at or before inception of the lease as well as the costs for the contract performance and the estimated costs for dismantling or restoration of the leased asset. Subsequent measurement takes place at cost less any accumulated (scheduled) amortization and accumulated impairment losses.
The leasing rights of use are reported separately in the balance sheet under the "rights of use" item and are shown in detail in the explanations in Note 9. Depreciation, amortization and impairments of capitalized rights of use are recognized in function costs. Rights of use are generally amortized on a scheduled basis over the term of the lease. As an exception, on the basis of specific situations, deviating rights of use are amortized over the underlying asset's economic life, where the relevant leasing payments and also the transfer of title to the underlying asset at the end of the lease term or the exercise of a purchase option is highly certain.

Lease liabilities recognized in financial liabilities are initially recognized at the present value of the outstanding lease payments. In the context of subsequent measurement, the carrying amount of the lease liability is increased by the annual lease expense and reduced by the lease payments made.
The resulting interest expenses are recognized within "finance costs". In contrast, according to the previous legal situation in line with IAS 17, lease expenses from operating leases were recognized in full in function costs.
This will lead to a not inconsiderable rise in EBITDA in the fiscal years from 2019. In the consolidated income statement of the PVA TePla Group for the fiscal year 2019, instead of the lease expenses for the previous operating leases of EUR 741 thousand, amortization of EUR 700 thousand and interest expenses of EUR 36 thousand are recognized. In the consolidated cash flow statement, the repayment portion of lease payments from previous operating leases will reduce cash flow from financing activities from fiscal year 2019 and not as previously cash flow from operating activities.
From fiscal year 2019, the interest portion of lease payments will also be reported in cash flow from financing activities. As a result, cash flow from operating activities improved by EUR 699 thousand in fiscal year 2019.

In the context of the transition to IFRS 16, as of January 1, 2019 assets from recognizing rights of use and lease liabilities of approximately EUR 1.9 million were recognized. The resulting difference of EUR 29 thousand was taken directly to retained earnings at the transition date January 1, 2019. At the transition date there were no finance leases in line with IAS 17. In connection with the first-time application of IFRS 16, the PVA TePla Group utilized the following practical expedients:

- At the time of the initial application, no reassessment was made whether a contract is, or contains, a lease. The definition of a lease in line with IFRS 16 is thus applied only to contracts entered into (or changed) on or after the date of initial application.

- For leases previously classified as operating leases in line with IAS 17, the lease liability was recognized at the present value of the outstanding lease payments, discounted at the incremental borrowing rate as of January 1, 2019. The weighted average incremental borrowing rate was 2.2%.

- Irrespective of the original contractual term, leases which end by December 31, 2019 are treated as short-term leases, i.e. no rights of use are recognized, and the agreed lease installments (possibly on an accrual basis) were recognized directly as an expense.

- No rights of use and lease liabilities for leases for low-value assets are recognized but agreed lease installments were recognized directly as an expense (possibly on an accrual basis).

- In measuring the rights of use at the date of initial application of IFRS 16, initial direct costs are excluded.

- When determining the term for leases with extension and termination options, the current statue of knowledge at the time of transition was used.

Please see Notes 9, 15 and 21 for further information.

The table below summarizes the effects of the initial application of IFRS 16 on the consolidated balance sheet items in question as of January 1, 2019 as described above.

IFRS 16 Effects Consolidated balance sheet [EUR'000]	Notes	Dec. 31, 2018 (as previously reported)	Adjustment effect IFRS 16	Jan. 1, 2019
ASSETS				
Right-of-use assets	9,	0	1,870	1,870
Total assets		**0**	**1,870**	**1,870**
LIABILITIES AND SHAREHOLDER'S EQUITY				
Revenue reserves		33,349	-29	33,320
Financial liabilities (non-current)	15,	2,333	782	3,115
Financial liabilities (current)	15,	670	1,117	1,787
Total liabilities		**36,352**	**1,870**	**38,222**

The tables below summarize the effects of the initial application of IFRS 16 on the consolidated balance sheet items in question as of December 31, 2019 and the Group income statement/statement of comprehensive income for fiscal year 2019.

IFRS 16 Effects Consolidated balance sheet [EUR'000]	Notes	Dec. 31, 2019 (as previously reported)	Adjustment effect - IFRS 16	Dec. 31, 2019 (without application of IFRS 16)
ASSETS				
Right-of-use assets	9.	2,175	2,175	0
Total assets		**2,175**	**2,175**	**0**
LIABILITIES AND SHAREHOLDER'S EQUITY				
Revenue reserves		35,565	-29	35,536
Financial liabilities (non-current)	15.	3,231	1,565	1,667
Financial liabilities (current)	15.	1,308	639	669
Total liabilities		**40,104**	**2,175**	**37,872**

IFRS 16 Effects Consolidated income statement [EUR'000]	Notes	Jan. 1, to Dec. 31, 2019 (as previously reported)	Adjustment effect IFRS 16	Jan. 1, to Dec. 31, 2019 (without application of IFRS 16)
Cost of sales		-93,271	-41	-93,312
Finance costs	4.	-612	+36	-576
Income taxes	5.	-4,107	0	-4,107
Consolidated net result		7,713	-5	7,708
Earnings per share	6.	0.35		0.35

For the PVA TePla Group there were no other material changes for the initial application of standards or interpretations in fiscal year 2019.

As part of the initial application of IFRS 16, to achieve improvement clarity and structure PVA TePla AG changed the structure and break-down of its consolidated balance sheet ("change of presentation"). In this context, new items were added, item names changed and individual items reclassified. In this way, the PVA TePla Group is aligning its consolidated balance sheet to the presentation generally found in business practice, thus improving comparability with other companies in the same industry. As a result there were relevant reclassifications which resulted in a restatement of previous year figures. However, the structural changes have no material impact on the information shown in the IFRS consolidated financial statements. Noteworthy in this connection are only the two reclassifications stated below:

- The deferred current items previously recognized in "accruals" were re-classified in fiscal year 2019 to trade payables, liabilities to employees and other current liabilities. The previous year figures were restated accordingly.

- The current "contract assets" previously included in "trade and other receivables" are recognized in a separate current balance sheet item from fiscal year 2019. The figures for the 2018 year have been restated accordingly.

New and Updated Standards and Interpretations Adopted for the First Time in Fiscal Year 2018
In the 2018 fiscal year the two standards **IFRS 9 "Financial Instruments"** and **IFRS 15 "Revenues from Contracts with Customers"** were applied for the first time.

The initial application of **IFRS 9 "Financial Instruments "**in fiscal year 2018 had no material impact on the net assets, financial position, and results of operations of the PVA TePla Group.

The new provisions for classifying financial assets did not result in any changes to measurement or recognition. The financial assets are allocated to the measurement category "at amortized cost" in accordance with IFRS 9. Only derivative financial instruments continue to be measured at fair value through profit or loss. The initial application of IFRS 9 had no impact on the measurement or recognition of financial liabilities. As of January 1, 2018, the new guidance on classifying and measuring financial instruments had the following effect on financial assets of the PVA TePla Group:

[EUR'000]	Classification according to IFRS 9	Valuation categories according IAS 39	Book value according to IFRS 9	Book value according to IAS 39
Financial assets				
Cash / Cash equivalents	Amortized cost	Loans and receivables	33,017	33,017
Trade receivables	Amortized cost	Loans and receivables	11,280*	11,280
Non-current financial assets	Amortized cost	Loans and receivables	1,739	1,739
positive fair values of derivatives (without hedging relationships)	fair value through profit or loss	fair value through profit or loss	23	23

* without adjustment effects IFRS 15

The use of the new impairment model resulted in a slight increase in impairment of financial assets from January 1, 2018 onwards and, accordingly, a slight decline in the carrying amount of trade receivables. In the future, expected losses are to be recognized when the financial asset is booked (expected credit loss model). Previously, IAS 39 stipulated that impairment was to be reported if there were objective indications, for example in the event of a receivable that was already past due (incurred loss model). This means that impairments were recognized at a later period under IAS 39 than under the new Standard. The PVA TePla Group applies the simplified approach for trade receivables and measures the impairment in question on an ongoing basis over the entire term. In view of the insignificant adjustment amount resulting from the application of the new impairment model, PVA TePla AG has not restated retained earnings as of January 1, 2018 in its consolidated financial statements for fiscal year 2018.

As the PVA TePla Group does not currently apply the hedge accounting provisions in accordance with IAS 39, the changes to hedge accounting do not result in any changes in the transition from IAS 39 to IFRS 9. However, the new accounting standard creates new opportunities for the recognition of hedges as hedging relationships in the balance sheet in future.

The initial application of IFRS 9 "Financial Instruments" in fiscal year 2018 has therefore not resulted in any material impact on the net assets, financial position, and results of operations of the PVA TePla Group. Nonetheless, depending on future agreements and transactions, IFRS 9 could have a material impact on the presentation of the net assets, financial position, and results of operations. As a result of the adoption of IFRS 9, the PVA TePla Group implemented consequential amendments to IAS 1 "Presentation of Financial Statements", according to which impairment from financial assets is recognized in a separate item of the Group income statement. It should also be noted that the initial application of IFRS 9 increased disclosure obligations in the Group Notes.

For some contracts with customers, the initial application of **IFRS 15 "Revenue from Contracts with Customers"** in the 2018 fiscal year led to not insignificant shifts between periods for revenue to be recognized in the Group income statement in comparison to previous revenue recognition. As of January 1, 2018, the PVA TePla Group implemented IFRS 15 using the modified retrospective method. The Standard was applied to both new and existing contracts that had not yet been met at the time of initial application.

IFRS 15 replaces the existing provisions on recognizing revenue (including IAS 11 and IAS 18) and sets out a comprehensive framework stating the amount in which revenue is recognized and when it is recognized. IFRS 15 is based on a single, five-step model for recognizing revenue to be applied to all contracts with customers. After identifying separate performance obligations in individual customer contracts, the subsequent steps set out determining the transaction price for each customer contract and allocating this transaction price to the performance obligations that had previously been separated. After meeting the individual performance obligations in the amount of the transaction price, revenue is recognized either over a period of time or at a point in time.

Using longer-term production processes, the PVA TePla Group manufactures for its customers systems for the production and refinement of high-quality materials, which are for example processed under high temperature, vacuum and under high pressure conditions and in plasma. The initial application of IFRS 15 from the fiscal year 2018 onwards had the following specific implications at the PVA TePla Group:

- In accordance with the previous IAS 11/IAS 18 provisions, the PVA TePla Group realized almost all system sales in the Industrial segment over a period of time on the basis of the production time as a percentage of work completed (the POC method). From the fiscal year 2018 onwards, the POC method may be used only in accordance with IFRS 15.35c if an asset is created that has no alternative possible use and, in addition, (in the event of an assumed termination of the contract by the customer) where a right to payment for the service already provided exists, including an appropriate profit mark-up, that is enforceable in a court of law. As of the transition date (January 1, 2018), not all customer contracts for which revenue so far had been recognized using the POC method, met the criteria for revenue recognition over a period of time in accordance with IFRS 15.Thus, some customer contracts had instead to be recognized at the point in time when significant risks and rewards are transferred (generally at the time of acceptance). Generally speaking, this led to not insignificant shifts between periods for revenue to be recognized in the Group income statement in comparison to previous revenue recognition.

- On the other hand, the adjustment amounts at the transition date (January 1, 2018) were immaterial due to the accrual of further performance obligations (e.g. due to warranties exceeding the statutory provisions and installation services to be separated as necessary) ("multi-component contracts"). The regulations for recognizing contract costs (costs of contract attainment/fulfilling a contract) did not result in any changes to accounting. There were no significant financing components as of the transition date (January 1, 2018).

- The initial application of IFRS 15 resulted in changes to the presentation of balance sheet items. Under IFRS 15, receivables are recognized if goods or services have been provided or advance payments from customers are due. Rights to consideration from customers may only be recognized as trade receivables if this claim is unconditional. Given this, the gross amounts due from POC contracts ("future receivables from construction contracts"; EUR 6,137 thousand as of January 1, 2018), which were previously presented as separate balance sheet items, will be recognized under contact assets in future, provided the revenue recognition over a period of time criteria in accordance with IFRS 15.35c have been met (and so the POC method is used). Advance payments from customers not yet paid will also be reported under contract assets, provided the PVA TePla Group considers that there is a right to payment enforceable in a court of law as of the reporting date (EUR 1,780 thousand as of January 1, 2018). In the future, the gross amounts due from POC contracts (EUR 979 thousand as of January 1, 2018) will also be recognized in the new balance sheet item "contract liabilities", as will pre-payments from contracts with customers (EUR 37,050 thousand as of January 1, 2018), which were previously reported separately under "advance payments received on orders"
- Finally it should be noted that the initial application of IFRS 15 increased disclosure obligations in the Group Notes.

The table below summarizes the effects of the initial application of IFRS 15 on the consolidated balance sheet items in question as of January 1, 2018 as described above.

IFRS 15 Effects Consolidated balance sheet [EUR'000]	Dec. 31, 2017 (as previously reported)	Adjustment effect IFRS 15	Jan. 1, 2018
ASSETS			
Work in progress	8,459	+2,889	11,348
Future receivables on construction contracts	6,137	-6,137	0
Trade and other receivables and contract assets	11,280	+5,787	17,067
Total assets	**25,876**	**+2,539**	**28,415**
LIABILITIES AND SHAREHOLDER'S EQUITY			
Revenue reserves	27,876	-494	27,382
Deferred tax liabilities	1,376	-203	1,173
Obligations on construction contracts	979	-979	0
Advance payments received on orders	37,050	-37,050	0
Contract liabilities	0	+41,265	41,265
Total liabilities	**67,281**	**+2,539**	**69,820**

The tables below summarize the effects of the initial application of IFRS 15 on the consolidated balance sheet items in question as of December 31, 2018 and the Group income statement/statement of comprehensive income for fiscal year 2018.

IFRS 15 Effects Consolidated balance sheet [EUR'000]	Dec. 31, 2018 (as reported)	Adjustment effect IFRS 15	Dec. 31, 2018 (without application of IFRS 15)
ASSETS			
Work in progress	27,355	-15,823	11,532
Future receivables on construction contracts	0	+6,216	6,216
Trade and other receivables and contract assets	22,119	-7,350	14,769
Total assets	**49,474**	**-16,957**	**32,517**
LIABILITIES AND SHAREHOLDER'S EQUITY			
Revenue reserves	33,349	+4,197	37,546
Deferred tax liabilities	2,583	+1,714	4,297
Obligations on construction contracts	0	+36,438	36,438
Advance payments received on orders	0	+13,187	13,187
Contract liabilities	72,493	-72,493	0
Total liabilities	**108,425**	**-16,957**	**91,468**

IFRS 15 Effects Consolidated income statement [EUR'000]	Jan. 1, to Dec. 31, 2018 (as reported)	Adjustment effect IFRS 15	Jan. 1, to Dec. 31, 2018 (without application of IFRS 15)
Sales revenues	96,783	+18,124	114,907
Cost of sales	-65,729	-12,909	-78,638
Income taxes	-3,021	-1,512	-4,533
Consolidated net result	5,968	+3,703	9,671
Earnings per share	0.27		0.44

Standards and Interpretations Mandatorily Applied in Future
The IASB/IFRS IC has issued the following statements that were still not mandatory to apply in fiscal year 2019. The PVA TePla Group does not intend to apply these new/updated Standards and Interpretations early.

Standard/ Interpretation	Title	Initial Application PVA TePla Group	Adoption by the EU Commission	Effects on the PVA TePla Group
IFRS 17	Insurance Contracts	January 1, 2021	No	No relevance
Amendments to IFRS 9, IAS 39 and IFRS 7	Interest Rate Benchmark Reform	January 1, 2020	took place on January 15, 2020	No material impact
Amendments to IFRS 3	Definition of a Business	January 1, 2020	No	No material impact
Amend. to IAS 1 and IAS 8	Definition of Material	January 1, 2020	took place on December 10, 2019	No impact
Conceptual Framework for Financial Reporting	Amendments to References to the Conceptual Framework in IFRS Standards	January 1, 2020	took place on December 6, 2019	No impact

C. COMPANIES INCLUDED IN CONSOLIDATION, PRINCIPLES OF CONSOLIDATION AND CURRENCY TRANSLATION

Companies Included in Consolidation
These consolidated financial statements include PVA TePla AG and its German and international subsidiaries over which it exercises control (PVA TePla Group). The Group exercises control when the PVA TePla AG has exposure or rights to variable returns from its involvement with an investee and can also use its power over the investee to influence these returns. It is generally assumed that having a majority of the (direct or indirect) voting rights constitutes control. The subsidiaries to be included in the consolidated financial statements are consolidated in the consolidated financial statements from the time it is possible to exercise control until the time it is no longer possible to exercise control.

In the consolidated financial statements of the PVA TePla Group as of December 31, 2019, in addition to PVA TePla AG eight German (previous year: eight) and six foreign (previous year: six) subsidiaries were fully consolidated:

Equity share [in %)] Company	Corporate domicile	Direct share-holding Dec. 31, 2019	Indirect shareholding Dec. 31, 2019
PVA Industrial Vacuum Systems GmbH	Wettenberg, Germany	100	
PVA Crystal Growing Systems GmbH	Wettenberg, Germany	100	
PVA Metrology & Plasma Solutions GmbH	Wettenberg, Germany	100	
PVA Metrology & Plasma Solutions Taiwan Ltd.	Hsinchu, Taiwan		100
PVA TePla Analytical Systems GmbH	Westhausen, Germany	100	
PVA Löt- und Werkstofftechnik GmbH	Jena, Germany	100	
PVA Control GmbH	Wettenberg, Germany	100	
PVA SPA Software Entwicklungs GmbH	Coburg, Germany	100	
PVA Vakuum Anlagenbau Jena GmbH	Jena, Germany	100	
PVA TePla America Inc.	Corona / CA, USA	100	
PVA TePla Singapore Pte. Ltd.	Singapore	100	
PVA TePla (China) Ltd.	Beijing, PR China	100	
PVA Semiconductor Systems Xi'an Ltd.	Xi'an, PR China	100	
PVA Italy S.R.L.	Bolzano, Italy	100	

Exemption in accordance with Section 264 (3) HGB
The following German subsidiaries of PVA TePla AG made use of disclosure exemptions in line with Section 264 (3) HGB and for the fiscal year 2019 are exempted from their obligation to prepare, audit and publish annual financial statements and a management report under German commercial law applying to corporations:

- PVA Industrial Vacuum Systems GmbH, Wettenberg
- PVA Crystal Growing Systems GmbH, Wettenberg
- PVA Metrology & Plasma Solutions GmbH, Wettenberg
- PVA TePla Analytical Systems GmbH, Westhausen
- PVA Löt- und Werkstofftechnik GmbH, Jena
- PVA Control GmbH, Wettenberg
- PVA SPA Software Entwicklungs GmbH, Coburg
- PVA Vakuum Anlagenbau Jena GmbH, Jena

Changes to the Companies Included in Consolidation in Fiscal Year 2019
PVA Italy S.r.l., Bolzano, Italy, in which PVA TePla AG holds a 100% stake, was formed in May 2019. In November 2019, PVA Italy S.r.l. acquired the two "vessel production" units of LAINOX S.r.l. and SAP S.r.l. With this acquisition the Italian subsidiaries will be responsible for the manufacture of vessels for the two divisions of the PVA TePla Group.

The fair values of the identifiable assets and liabilities of the two units at the date of acquisition break down as follows:

[EUR'000]	November 1, 2019
Assets	
Intangible assets	727
Property, plant and equipment	391
Total assets	**1,118**
Liabilities	
Other provisions	268
Total liabilities	**268**
Identifiable net assets (fair value)	**850**
Goodwill from company acquisition	0
Entire consideration (acquisition price)	**850**

Significant differences of fair values to carrying amounts relate to the recognition of not yet capitalized intangible assets (EUR 427 thousand), mainly due to expertise which has not yet been capitalized. The total purchase price to be settled with cash and cash equivalents was EUR 850 thousand which corresponds to the net cash outflow from the corporate acquisition.

The sales contribution from the acquisition of the sub-units for the period from initial consolidation to December 31, 2019 is EUR 0 thousand and the profit contribution is EUR -30 thousand. As the two sub-units only have intra-Group transactions, the sales contribution would also have been EUR 0 thousand if the acquisitions of the two sub-units had been recognized from January 1, 2019.

In fiscal year 2019, PVA TePla AG also sold its entire interest in what had previously been the 51% subsidiary Xi'an HuaDe CGS Ltd. Xi'an, PR China for a price of CNY 100. This Chinese company was no longer operational, either in fiscal year 2019 or in the previous year and was being wound up. The deconsolidation loss of EUR 315 thousand is largely due to recognizing the foreign exchange losses of EUR 231 thousand in profit and loss which had previously been recognized in equity in the "currency translation" item.

Changes to the Companies Included in Consolidation in Fiscal Year 2018
In July 2018, PVA TePla AG acquired 100% of shares in SPA Software Entwicklungs GmbH. The company creates and sells software for computer systems and designs and sells analysis systems. The acquisition is a good addition to the PVA TePla Group's software and application development portfolio.

As of June 30, 2018, the fair values of the identifiable assets and liabilities of SPA Software Entwicklungs GmbH, Coburg break down as follows:

[EUR'000]	June 30, 2019
Assets	
Intangible assets	2,453
Property, plant and equipment	312
Inventories	98
Trade receivables	870
Cash and cash equivalents	367
Deferred tax assets	80
Other non-current assets	37
Total assets	**4,217**
Liabilities	
Pension provisions	303
Other provisions	358
Trade payables	359
Financial liabilities	6
Current income tax liabilities	71
Deferred tax liabilities	710
Other liabilities	100
Total liabilities	**1,907**
Identifiable net assets (Fair value)	**2,310**
Goodwill from company acquisition	90
Entire consideration (acquisition price)	**2,400**

Significant differences of fair values to carrying amounts relate to the recognition of not yet capitalized intangible assets (EUR 2,448 thousand), mainly due to software expertise which has not yet been capitalized. The purchase price of EUR 2,400 thousand had to be settled with cash and cash equivalents. EUR 2,000 thousand were paid in fiscal year 2018, the remaining EUR 400 thousand are to be settled in fiscal year 2019. Under consideration of the cash and cash equivalents of EUR 367 thousand acquired, the net cash outflow from the corporate acquisition was EUR 1,633 thousand.

The goodwill (EUR 90 thousand) is a result of anticipated synergies related to the integration of systems sold in our customers' production processes and the acquisition of intangible assets that do not meet the conditions for separate recognition.

The sales contribution from the acquisition of the company for the period from initial consolidation to December 31, 2018 is EUR 1,205 thousand and the profit contribution is EUR 81 thousand. If SPA Software Entwicklungs GmbH had been fully consolidated since January 1, 2018, in reference to fiscal year 2018 the sales contribution would have been EUR 3,360 thousand and the profit contribution EUR 41 thousand.

SPA Software Entwicklungs GmbH was renamed PVA SPA Software Entwicklungs GmbH, Coburg with effect from September 3, 2018.

Beyond that, no further changes have occurred since the 2018 consolidated financial statements.

Principles of Consolidation

The financial statements of PVA TePla AG and its subsidiaries included in the consolidated financial statements were prepared in accordance with standardized recognition and measurement principles as of the reporting date of the consolidated financial statements (December 31, 2019).
Recognition, measurement consolidation and classification principles were consistently applied in all companies to be consolidated in the consolidated financial statements. All intragroup assets and liabilities, equity, income, expenses and cash flows relating to transactions between companies included in the consolidated financial statements are eliminated in full as part of consolidation.
In consolidation processes affecting profit or loss, income tax effects were taken into account and the deferred taxes are recognized.

Capital is consolidated in accordance with the purchase method. The cost of a business combination is then allocated to the identifiable assets acquired and liabilities and contingent liabilities assumed in accordance with their fair values at the acquisition date.
Deferred taxes are recognized on hidden asset and liabilities recognized in the context of the initial consolidation, to the extent that this recognition was not implemented on a tax basis. In subsequent periods, recognized hidden assets and liabilities are adjusted in line with the treatment of the corresponding assets and liabilities.
The cost of a company acquisition is measured as the total of consideration transferred, measured by the fair value at the time of acquisition, and the non-controlling interest in the acquired company. Costs incurred as part of a company acquisition are recognized as an expense.

If the cost of the investment exceeds the pro rata net fair value of identifiable assets, liabilities and contingent liabilities, this is recognized as goodwill.
If the fair value of the net assets acquired exceeds the total consideration assumed, the PVA TePla Group reassesses whether all assets acquired and all liabilities assumed were identified correctly.
Furthermore, the PVA TePla Group reviews the procedure used to calculate the amounts. If, after remeasurement, the fair value of the net assets acquired still exceeds the total consideration assumed, the difference is recognized through profit or loss in the Group income statement.

Non-controlling interests in the acquired company are measured by the acquired company's corresponding share of identifiable net assets and reported under the separate „non-controlling interests" item in the PVA TePla Group's consolidated balance sheet.
In subsequent periods, non-controlling interests are updated, taking account of ongoing profits and losses, distributions and currency differences. Transactions with non-controlling interests that do not result in a loss of control are recognized through other comprehensive income as equity transactions.

Currency Translation
The items recognized in the financial statements of the individual PVA TePla AG subsidiaries are measured on the basis of the respective functional currency. The reporting currency of the consolidated financial statements of the PVA TePla Group is the euro (EUR).

Transactions in foreign currency are converted into the corresponding functional currency at the rate on the date of the transaction. Monetary assets and liabilities in foreign currency are translated at the exchange rate on the reporting date.

Exchange differences are taken into consideration in profit or loss and recognized in the consolidated income statement under other operating expenses or other operating income. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction.

The financial statements of the companies included in the scope of consolidation, whose functional currency is different from the Group's reporting currency (euro), are translated as follows - assets and liabilities are translated at the prevailing rate on the reporting date (middle rate), equity at historical rates and expenses at the average rate for the year. Exchange differences resulting from changes to exchange rates across fiscal years are recognized in equity under the "other reserves" item.

D. MANAGEMENT JUDGMENTS AND ESTIMATE UNCERTAINTIES

Most important exchange rates against the euro

EUR = 1	Average exchange rate		Exchange rate on the balance sheet date	
	2019	2018	Dec. 31. 2019	Dec. 31. 2018
USA (USD)	1.11960	1.18149	1.12340	1.1450
China (CNY)	7.73388	7.80735	7.82050	7.8751
Denmarkt (DKK)	7.46607	7.45318	7.47150	7.4673
Singapore (SGD)	1.52721	1.59285	1.51110	1.5591
Taiwan (TWD)	34.59500	35.55000	33.54000	35.0750

For the PVA TePla Group's consolidated financial statements, it is necessary to make a limited number of estimates and assumptions which have an impact on the amount and the presentation of recognized assets and liabilities, income and expenses and contingent liabilities.

In particular, material management judgments and estimate uncertainties relate to the measurement of goodwill (see Note 8), impairment losses on receivables (see Note 13 and Note 20), the recognition of deferred tax assets on loss carry-forwards (see Note 14), the amount and probability of pension provisions (see Note 16) and other provisions (see Note 17). Management bases its assessment of these judgments and estimate uncertainties on past experience, estimates from experts (e.g. lawyers, rating agencies and associations) and the results of carefully weighing up different scenarios. Actual events and developments that lie beyond the control of management may deviate considerably from the expressed developments and assumptions. For this reason the PVA TePla Group examines the estimates and assumptions made on an ongoing basis. Changes in estimates are recognized in profit or loss as soon as better information is available.

When recognizing revenue, material judgments are made when determining the date on which the performance obligations are met, when determining the transaction price and when allocating the transaction price to separate performance obligations. Depending on the specific facts and circumstances in the individual case, performance obligations resulting from contracts with the PVA TePla Group's customers in connection with producing systems and providing services are recognized either over a period of time as a percentage of work completed (the POC method) or are recognized for a particular point in time as soon as the goods are delivered or the services are performed.

When producing systems for specific customers, a judgment must be made as to whether, in this specific case, an asset is created that has no alternative possible use and, in addition, (in the event of an assumed termination of the contract by the customer) whether there exists a right to payment for the service already provided, including an appropriate profit mark-up, that is enforceable in a court of law. Under the POC method, the method that most reliably measures the percentage of work completed must be determined. The PVA TePla Group uses primarily input-based methods to determine revenue generated from producing systems for specific customers, first and foremost the cost-to-cost method. The degree of completion is determined as the ratio of the costs incurred as of the reporting date to the estimated total costs. In the event of multiple performance obligations, the estimated contract consideration is to be allocated to the identified performance obligations on the basis of the respective relative stand-alone selling prices. The PVA Group estimates the stand-alone selling prices using other adequate methods only if the prices of individual goods and services cannot be directly observed on the market. Only in the cases that the prices of individual goods and services cannot be directly observed on the market the PVA TePla Group estimates the stand-alone selling prices using other adequate methods.
Depending on the specific facts and circumstances in the individual case, the PVA TePla Group uses the following methods: adjusted-market-assessment approach, expected-cost-plus-a-margin approach or (in the case of certain restrictive requirements) the residual method. Significant financing components must be taken into account when determining the transaction price, provided there is not more than one year's difference between the time the service is provided and the time of payment. All relevant facts and circumstances relating to the case in question must be assessed when determining whether or not there are any significant financing components in the individual case.

E. NOTES TO THE CONSOLIDATED INCOME STATEMENT

1. SALES REVENUES

The PVA TePla Group principally generates its revenues through the sale of systems. Additional revenue is generated from services and by supplying spare parts (referred to collectively as after-sales service/IP) and services for customers in the Company's own facilities (contract processing). The normal contract durations and payment conditions of customer contracts of these PVA TePla Group activity areas are shown below, although individual contracts may have different payment conditions.

Activity areas	Contract durations	Payment conditions
Systems	3– 18 months	30-40% when order is received; 50-65% upon delivery; 5-10% upon acceptance
After-sales service/IP	1– 6 weeks	100% upon delivery (e.g. spare parts) or 100% when service is provided (e.g. contract processing; repairs)
Contract processing	1– 4 weeks	

See segment reporting under Note 19 for more information on sales revenues breakdowns.

Revenues by activity area [EUR'000]	2019	in %	2018	in %
Systems	107,099	80	62,914	65
After-sales / IP	18,783	16	29,093	30
Contract processing	4,325	3	4,105	4
Others	761	1	670	1
Total	**130,968**	**100**	**96,783**	**100**

Customer-specific system production (POC method) [EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Revenue from customer-specific system production	19,710	16,219
contract costs	-16,070	-13,422
Gains from customer-specific system production	**3,640**	**2,797**

Revenues by time service is rendered [EUR'000]	2019	in %	2018	in %
Realization at a point in time	111,258	85	80,564	83
Realization over a period of time	19,710	15	16,219	17
Total	**130,968**	**100**	**96,783**	**100**

There were no significant financing components resulting from contracts with customers in fiscal year 2019 or in the previous period.

	Performance obligations not yet fulfilled as of the balance sheet date	
[EUR'000]	**expected to be fulfilled in ≤ 12 months**	**expected to be fulfilled in > 12 months**
Overall scope of contractual obligations contracted at December 31, 2019, but not yet (fully) fulfilled	119,844	50,732
Overall scope of contractual obligations contracted at December 31, 2018 but not yet (fully) fulfilled	84,129	87,383

Presentation of Significant Accounting Policies

Sales revenues are measured on the basis of the consideration specified in a contract with a customer that the PVA TePla Group expects to receive and realize when the customer obtains control over the agreed goods and services. Control can be transferred at a particular point in time or over a period of time. Revenues are recognized without sales tax, taking account of sales deductions such as credit notes, trade discounts and similar. Significant financing components must be taken into account when determining the transaction price, provided there is not more than one year's difference between the time the service is provided and the time of payment.

The contracts with customers regularly include various performance commitments (products and services), which may be classified as a separate performance obligation and which may subsequently be allocated part of the contract price. Determining whether a product or service is considered as a separate performance obligation may, however, be associated with not inconsiderable discretionary judgments. If a customer is provided several products or services, either these are specified on a contractual basis in separate individual contracts or combined in a standard contract consisting of several performance obligations. If products or services in separate individual contracts are contracts in close time correlation with a customer, the economic interdependencies are to be combined in a multi-component agreement.

Performance obligations resulting from contracts with the PVA TePla Group's customers and relating to producing systems are recognized over the production time as a percentage of work completed (POC method) only if an asset is created that has no alternative possible use and, in addition (in the event of an assumed termination of the contract by the customer) where there exists a right to payment for the service already provided, including an appropriate profit mark-up, that is enforceable in a court of law. Sales revenues are otherwise recognized for a particular point in time as soon as the goods are delivered or the services are performed, the transfer of risk has taken place and no technical risks or specific opposing contractual regulations exist. Income from services is recognized either at a point in time or over a period of time, depending on the specific facts and circumstances for the case in question.

When using the POC method, the revenue is recognized over a period of time according to the progress of the service. The work performed, including the share in the result, is reported in sales revenues over the production time. The percentage of work completed for a specific project is determined using the method that most accurately measures the services performed, whereby both input and output methods can be consistently applied to similar performance obligations and in similar circumstances. The PVA TePla Group uses primarily input-based methods to determine revenue generated from longer-term production of systems for specific customers, first and foremost the cost-to-cost method.

The degree of completion is determined as the ratio of the costs incurred as of the reporting date to the estimated total costs. Sales revenues recognized using the POC method are reported either under the balance sheet items ""contract assets" or "contract receivables". If the cumulative work (contract costs including share of profits) exceeds the advance payments in an individual case, the construction contracts are recognized as assets under "Contract assets". If the net amount remains negative after deducting the advance payments, this is recognized in the balance sheet item "Contract liabilities POC method)". Advance payment invoices that have already been issued (but still not paid) are recognized under "contract assets" and "contract liabilities". Anticipated losses from contracts are taken into account on the basis of identifiable risks and are immediately included in the order result in full. Contract revenue includes revenue from contracts and, in accordance with IFRS 15, contract modifications, i.e. contract amendments and additions. Contract assets and contract liabilities are reported under current assets or current liabilities, as the PVA TePla Group generally realizes these within one year.

2. RESEARCH AND DEVELOPMENT EXPENSES

The PVA TePla Group is engaged in high-tech mechanical engineering in single unit and small series production. The continued development of products is closely linked to research into new procedures and processes and the development of new product features.

The activities of the two divisions are closely interconnected on an iterative basis, so that the research and development activities generally cannot be reliably separated from each other. In addition, in light of the uncertainties in future market trends an estimate of probable benefits is too unreliable.
In this context, the PVA TePla Group does not capitalize any development costs, so that the research and development expenses are recognized in the periods in which they are incurred.

Renowned research and development institutions work with the PVA TePla Group to a minor extent under cooperation agreements (service contracts). Provided adequate indication as to the usability of the development results is available and the other IAS 38 conditions are met, intangible assets are capitalized.

Research and development expenses reported on the income statement amounted to EUR 4,753 thousand in the fiscal year (previous year: EUR 3,438 thousand). The related income from research and development grants were recognized in other operating income at a level of EUR 1,025 thousand (previous year: EUR 574 thousand).

3. OTHER OPERATING INCOME/ OTHER OPERATING EXPENSES

[EUR'000]	2019	2018
Subsidies for research and development projects	1,025	574
Currency exchange gains	715	425
Income from the reversal of provisions	276	344
Remuneration in kind (including company cars)	262	183
Insurance compensation	20	18
Income of the disposal of non-current assets	19	14
Miscellaneous operating income	768	556
Other operating income	**3,086**	**2,114**

[EUR'000]	2019	2018
Expenses arising from the creation of impairments	-820	-2,131
Currency exchange losses	-895	-642
Losses of the disposal of non-current assets	-8	-16
Loss from deconsolidation	-231	0
Remaining other operating expenses	-890	-616
Other operating expenses	**-2,844**	**-3,405**

[EUR'000]	2019	2018
Expenses from derivative financial instruments	-138	-171
Net interest expenses for pension provisions	-295	-238
Interest expenses for loans from credit institutes	-133	-183
Interest expenses for lease liabilities	-36	-
Other interest and similar expenses	-10	-66
Finance costs	**-612**	**-658**

Presentation of Significant Accounting Policies
All income generated as part of operating activities but without relation to the PVA TePla Group's core business is recognized under other operating income. Other operating income is measured at the fair value of the consideration received/to be received less any rebates and other similar deductions.

All expenses that cannot be clearly allocated to either production, administration or sales are recognized by the PVA TePla Group under other operating expenses. This also includes expenses that are associated only indirectly with ordinary business, provided there is no requirement to allocate these to financing.

Presentation of Significant Accounting Policies
The PVA TePla Group recognizes all income and expenses that result from financing activities and are not part of operating activities under finance income/finance costs. Finance income and finance costs are generally recognized through profit or loss on an accrual basis using the effective interest method.

4. FINANCIAL RESULT

[EUR'000]	2019	2018
Income from derivative financial instruments	115	135
Other interest and income	11	44
Finance revenues	**126**	**179**

5. INCOME TAXES

[EUR'000]	2019	2018
Current tax expenses	-1,917	-960
Deferred tax expenses	-1,487	-1,015
Previous period tax charges (-)/ income	-430	55
Deferred tax expense (-)/income (+)	-2,190	-2,061
Credit from tax loss carry-forwards	-2,818	-1,802
Impairment on capitalized tax assets	0	0
Other deferred taxes	628	-259
Income taxes	**-4,107**	**-3,021**

Deferred taxes of EUR 614 thousand (previous year: EUR -10 thousand) were recognized directly in equity without affecting the income statement. These are fully attributable to effects recognized in equity for pension provisions.

The difference between the expected income tax expense anticipated and the figure actually recognized is shown in the reconciliation below. Anticipated tax expenses were calculated by multiplying the tax rate for fiscal year 2019 of 29% (previous year: 29%) by earnings before tax. This tax rate is a combined income tax rate comprising the standard corporation tax of 15% (previous year: 15%) plus a solidarity surcharge of 5.5% (previous year: 5.5%) and an effective trade tax rate of 13.4% (previous year: 13.4%). In fiscal year 2019, the country-specific income tax rates used for foreign companies vary 17.0% to 26.1%, unchanged from the previous year.

[EUR'000]	2019	%	2018	%
Net result before tax	**11,820**		**8,989**	
Expected tax expenses	**-3,428**	**-29**	**-2,607**	**-29**
Changes in tax rates for foreign companies	7	0	12	0
Tax payable abroad	-38	0	0	0
Changes in tax rate differences from different trade tax rates	-4	0	-1	0
Tax rate changes	-2	0	32	0
Increase in taxes due to non-deductible expenses	-463	-4	-707	-8
Tax reductions due to tax-free income	86	1	230	3
Effects concerning deferred tax assets from tax loss carry-forwards	434	5	165	2
Value adjustments on deferred tax assets	-435	-4	0	0
Tax back payments (-) / tax refunds (+) for previous years	-430	-4	55	1
Other tax effects	166	1	-200	-2
Current tax expenses	**-4,107**	**-35**	**-3,021**	**-34**

Deferred taxes were measured after they had been incurred using the tax rate stated above or country-specific tax rates for companies outside Germany. Deferred taxes from differences in tax rates for foreign companies are due to the fact that PVA TePla Group subsidiaries outside Germany are subject to different tax rates than companies in Germany.

Presentation of Significant Accounting Policies
Current tax assets and tax liabilities are measured as the amount expected to be recovered from or paid to the fiscal authorities. The amount is calculated based on the tax rates and tax laws applicable at the end of the reporting period or soon to apply in the countries where the PVA TePla Group operates and generates taxable income. Current taxes relating to items reported directly in equity are not recognized on the consolidated income statement but in equity. The management regularly assesses individual tax issues in order to determine whether, in view of prevailing tax regulations, there is any scope for interpretation. If it is likely that the amounts reported in the tax declarations will be not realized (uncertain tax items), tax provisions are established. The amount is determined from the best possible estimate of the expected tax payment (expected value or most likely value of the tax uncertainty).

For more information on recognizing deferred taxes, see the explanations on significant accounting policies in Note 14. Other taxes, e.g. transport taxes or taxes on assets and capital, are recognized as operating expenses.

6. EARNINGS PER SHARE

	2019	2018
Numerator [in EUR ']: Consolidated net result for the year before minority interests	7,713	5,968
Denominator [in shares]: Weighted average number of no-par shares outstanding	21,749,988	21,749,988
Earnings per share [EUR]: (Basic / diluted)	**0.35**	**0.27**

As in the previous year, in fiscal year 2019 no options were granted which would entitle employees, Management or Supervisory Board members to purchase shares in PVA TePla AG. As a result, there were no dilution effects in regards to earnings per share as of December 31, 2019 in comparison to December 31, 2018.

Presentation of Significant Accounting Policies
Basic earnings per share are calculating by dividing the profit or loss attributable to holders of ordinary shares in PVA TePla AG by the weighted average number of ordinary shares in circulation during the fiscal year.
In the calculation of the diluted earnings per share, the earnings attributable to the bearers of ordinary shares in PVA TePla AG are divided by the weighted, average number of ordinary shares outstanding during the fiscal year and by the weighted average number of ordinary shares which would result from the conversion of all potential ordinary shares with a dilutive effect for ordinary shares.

7. SUPPLEMENTARY INFORMATION ABOUT THE TYPE OF EXPENSES

Cost of materials

[EUR'000]	2019	2018
Cost of raw materials, consumables and supplies and of goods purchased and held for resales	-74,601	-48,663
Cost of purchased services	-6,240	-3,903
Total cost of materials	**-80,841**	**-52,566**

Cost of materials are included in the cost of sales. The materials ratio (cost of materials to total sales revenues) amounted to 61.7% in fiscal year 2019, compared to 54.3% in the previous year.

Total personnel expenses

[EUR'000]	2019	2018
Wages and salaries	-34,004	-28,584
Social charges	-6,054	-5,175
Total personnel expenses	**-40,058**	**-33,759**

As a proportion of sales, personnel expenses decreased in fiscal year 2019 to 30.6% after 34.9% in the previous year. The absolute increase is largely due to new staff as well as increased remuneration of members of the Management Board. Social security contributions in fiscal year 2019 include pension expenses of EUR 291 thousand (previous year: EUR 368 thousand).

Number of employees by function (average for the year)	2019	2018
Production and service	269	229
Engineering, research and development	87	81
Administration	63	56
Sales	82	73
Total	**501**	**439**

The staff headcount in fiscal year 2019 includes 14 temporary employees (previous year: 10 temporary employees).

The average number of employees was determined without consideration of members of corporate bodies, trainees, marginal part-time employees, employees on parental leave and those with long-term illnesses.

[EUR'000]	2019	2018
Amortization of intangible assets	-655	-463
Impairment on other intangible assets	-	-
of which: goodwill impairment	-	-
Depreciation on rights	-700	-
Depreciation of property, plant and equipment	-2.552	-2.346
Impairment of property, plant and equipment	-	-
Depreciation, amortization and impairment	**-3,907**	**-2,809**

F. NOTES TO THE CONSOLIDATED BALANCE SHEET

8. INTANGIBLE ASSETS

[EUR'000]	Goodwill	Other intangible assets	Total
Acquisition and manufacturing costs			
Jan. 1, 2018	**12,658**	**5,596**	**18,254**
Exchange differences	0	3	3
Changes to the companies included in consolidation	90	2,453	2,543
Additions	0	424	424
Disposals	0	-19	-19
Transfers	0	2	2
Dec. 31, 2018	**12,748**	**8,459**	**21,207**
Jan. 1, 2019	**12,748**	**8,459**	**21,207**
Exchange differences	0	2	2
Changes to the companies included in consolidation	0	727	727
Additions	0	326	326
Disposals	0	-208	-208
Transfers	0	0	0
Dec. 31, 2019	**12,748**	**9,306**	**22,054**
Accumulated amortization, depreciation and write-downs			
Jan. 1, 2018	**4,850**	**4,819**	**9,669**
Exchange differences	0	3	3
Additions	0	463	463
Disposals	0	0	0
Transfers	0	0	0
Dec. 31, 2018	**4,850**	**5,285**	**10,135**
Jan. 1, 2019	**4,850**	**5,285**	**10,135**
Exchange differences	0	1	-1
Additions	0	655	655
Disposals	0	-208	-208
Transfers	0	0	0
Dec. 31, 2019	**4,850**	**5,733**	**10,583**
Net carrying amounts			
Dec. 31, 2018	**7,898**	**3,174**	**11,072**
Dec. 31, 2019	**7,898**	**3,573**	**11,471**

Intangible assets of the PVA TePla Group primarily consist of the proportion of goodwill arising in connection with company acquisitions, which represents the excess of the purchase price over the fair value of the net assets acquired, and of other intangible assets, which primarily comprise software.

To the extent they are finite, the useful life of any other recognized intangible assets, is roughly 51 months.

Goodwill is tested at the level of the following listed smallest cash-generating units (CGU) within the PVA TePla Group and thus at the lowest level at which goodwill is monitored for internal management purposes.

Cash Generating Unit (CGU) [EUR'000]	Dec. 31, 2019	**Dec. 31, 2018**
PVA TePla Analytical Systems GmbH, Westhausen	4,831	4,831
PVA Crystal Growing Systems GmbH, Wettenberg	2,734	2,734
PVA Metrology & Plasma Solutions GmbH, Wettenberg	193	193
PVA SPA Software Entwicklungs GmbH, Coburg	90	90
PVA Industrial Vacuum Systems GmbH, Wettenberg	50	50
PVA America Ltd., Corona, USA	0	0
Gesamt	**7,898**	**7,898**

In the GB Semiconductor Systems goodwill is tested separately for four cash-generating units. In addition to PVA TePla Analytical Systems GmbH based in Westhausen, PVA Crystal Growing Systems GmbH based in Wettenberg has also been treated as an independent cash-generating unit since 2015.
The goodwill of PVA TePla AG was transferred to this company after leasing the business operations.

PVA Metrology & Plasma Solutions GmbH, Wettenberg, has also been treated as an independent cash-generating unit since 2015. The goodwill of Munich Metrology GmbH was transferred to this company after the merger in the 2015 fiscal year.
In fiscal year 2018, the goodwill of PVA SPA Software Entwicklungs GmbH based in Coburg was added and has since been treated as an independent cash-generating unit.

In the Industrial Systems division, there is only one separate cash-generating unit, PVA Industrial Vacuum Systems GmbH based in Wettenberg. The goodwill of PlaTeG GmbH was transferred to this company after its merger in the 2015 fiscal year.

The recoverable amount of each cash generating unit is calculated as its value in use using the discounted cash flow method. Key assumptions include assumptions regarding the development of incoming orders, sales revenues, margins, investments and personnel.
The values of these parameters are based on past experience as well as foreseeable future developments. The underlying assumptions of key planning indicators (such as sales revenue growth, cash flows, discount rates) reflect past experience and are set according to external information sources.
Planning is based on a financial planning horizon of three years. For an impairment test, growth of 1% has been set for cash flow for the following period (previous year: 1%). The underlying USD/EUR exchange rate is 1.1549 (previous year: 1.1450).
Cash flows are discounted using the weighted cost of capital approach (WACC approach) while taking into account specific tax effects of the companies. The parameters market risk and beta have the largest effect on the calculation of impairment. The cost of capital for the units under review was roughly 12.0% (previous year: approx. 17%).

The following assumptions were made for cash generating units with significant goodwill:

For the Analytical Systems business unit, we expect average geometric sales revenue growth (CAGR determination) of 9% (previous year: 6%) (1% in perpetual annuity) in the next three years due to the continued high-level of investments in the semiconductor industry and the further effects of sales activities.
In the Crystal Growing Systems business unit, we are anticipating a considerably increased level of sales revenues for 2020 and 2021.This brings the perpetual annuity back down to the current level.

The goodwill test shown no requirement for recognizing impairment losses, either in fiscal year 2019 or in the previous year. Group management is of the opinion that in line with sound judgment no possible change in general assumptions relating to the determination of the value in use of the cash generating units to which goodwill is allocated could result in the carrying amounts exceeding their recoverable amounts.

Presentation of Significant Accounting Policies
Individually acquired intangible assets are measured at cost on initial recognition. The costs of intangible assets acquired as part of a business combination correspond to the fair value at the time of acquisition.

In order for internally generated intangible assets to be capitalized, the asset must be expected to provide a future benefit to the PVA TePla Group and it must be possible to reliably calculate the costs. Development projects are therefore capitalized only if the requirements set out in IAS 38.57 are cumulatively met. Research and development costs that cannot be capitalized are recognized through profit or loss in the period in which they are incurred. If an internally generated intangible asset meets the requirements for recognition, it is measured at production cost at initial recognition. Production costs include all costs directly attributable to the production process and an appropriate share of general production-related overhead costs.

Internally generated intangible assets that are not yet complete are subject to an annual impairment test. For the purposes of subsequent measurement of intangible assets, in IFRS a distinction is drawn between intangible assets with finite and indefinite useful lives. The consolidated financial statements of the PVA TePla Group include only intangible assets with finite useful lives – with the exception of goodwill. There are recognized at cost less any accumulated depreciation and any accumulated impairment losses. Intangible assets with determinable useful lives are amortized on a straight-line basis over the contractual or estimated useful life. Amortization of intangible assets is allocated to the functional areas utilizing the assets concerned. The useful lives are reviewed annually and, if necessary, adjusted to meet future expectations. The useful lives of intangible assets recognized by the PVA TePla Group range from three to eight years. Purchased (derivative) goodwill resulting from the capital consolidation of subsidiaries is recognized as a separate asset item in the PVA TePla Group's consolidated balance sheet. Internally generated (original) goodwill, on the other hand, may not be capitalized.

Impairment of goodwill
Goodwill in the PVA TePla Group is tested for impairment once a year (in the fourth quarter). Impairment testing is also performed if there are any circumstances indicating that the goodwill might be impaired. The value of goodwill is reviewed using a single-stage process in the cash-generating unit (CGU) to which the goodwill was allocated. This impairment test compares the carrying amount of a cash-generating unit with the recoverable amount. If the carrying amount is higher than the recoverable amount, the recoverable amount is written down through profit or loss. The impairment loss is allocated to goodwill and higher amounts will, in accordance with specific restrictions, be distributed proportionately between the assets of the cash-generating unit. Impairment losses for goodwill cannot be reversed at a later date if the reasons for impairment in previous years cease to apply.

The recoverable amount of each cash generating unit is calculated as its value in use using the discounted cash flow method. For its impairment assessments the PVA TePla Group uses detailed budget and forecast calculations for its cash generating units based on the financial budgets approved by management and also used for internal purposes. Generally such budget and forecast calculations cover a detailed planning period of three years. From the fourth year, a long-term growth rate is determined and used to forecast future cash flows. The discount rate is based on the segment-specific weighted average cost of capital of the companies (WACC approach) and contains a reasonable risk premium.

Impairment of other intangible assets, property, plant and equipment and rights of use
For rights of use, property, plant and equipment and intangible assets with a finite useful life, the PVA TePla Group makes a review at each reporting date to assess whether there are indications of impairment. If facts or changed circumstances indicate that the carrying amount of an asset may not be recoverable, the asset is subjected to an impairment test. In addition, an impairment test is conducted at the end of each fiscal year for intangible assets with useful lives that cannot be determined or that are not yet used for operational purposes.

This impairment test compares the carrying amount of the asset to be tested with the recoverable amount. The recoverable amount is the higher of fair value less the costs to sell and the value in use of an asset.
Fair value less costs to sell is the amount obtainable from the sale of an asset in an arm's length transaction between knowledgeable, willing parties, less the costs of disposal. Value in use is the present value of estimated future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life.

The recoverable amount is calculated for each asset on an individual basis or, if this is not possible, for the cash-generating unit (CGU) to which the asset is allocated.
If the carrying amount is higher than the recoverable amount, the recoverable amount is written down through profit or loss. Impairment losses are recognized in the consolidated income statement under "other operating expenses". If the conditions for an impairment loss on property, plant and equipment or intangible assets with a finite useful life recognized in previous years no longer apply, the impairment is reversed through profit or loss up to a maximum of amortized cost. Reversals are recognized in the consolidated income statement under "other operating income".

9. RIGHT-OF-USE ASSETS

The capitalized rights of use relate to buildings and individual objects of operating and office equipment leased by the PVA TePla Group in the context of leases as lessee.
The PVA TePla Group has rented premises for production and administration at normal market conditions from third parties at its sites in Munich, Jena, Westhausen, Coburg, Corona/California (USA), Beijing (China) and well as in Singapore. In addition, the PVA TePla Group is leasing a limited number of company vehicles, including pool vehicles as well as company cars for Management Board members, Managing Directors and in individual case for employees with a high share of external activities.

[EUR'000]	Land and buildings	Other fixtures, fittings and equipment	Total
Acquisition and manufacturing costs			
Jan. 1, 2019			
Adoption of IFRS 16	1,334	536	1,870
Exchange differences	8	0	8
Changes to the companies included in consolidation	-	-	-
Additions	544	453	997
Disposals	-	-	-
Transfers	-	-	-
Dec. 31, 2019	**1,886**	**989**	**2,875**
Accumulated amortization, depreciation and write-downs			
Jan. 1, 2019			
Adoption of IFRS 16	-	-	-
Exchange differences	-	-	-
Additions	368	332	700
Disposals	-	-	-
Transfers	-	-	-
Dec. 31, 2019	**368**	**332**	**700**
Net carrying amounts			
Dec. 31, 2019	**1,518**	**657**	**2,175**

Up to the fiscal year 2018, the lease payments relating to the operating leases concluded as lessee are recognized in the consolidated income statement on a straight line basis over the term of the respective lease as operating expense of the relevant functional unit. For more information, refer to the relevant explanations in Section B "Changes to Accounting and Policies" and in Note 15 and Note 21.

Presentation of Significant Accounting Policies
Pursuant to IFRS 16, a lease is an agreement, where the lessor against a payment or a series of payments transfers to the lessee the right to use an asset for a stipulated period of time. This also applies to agreements where the transfer of such a right is not expressly stated. As part of its business transactions, the PVA TePla Group is the lessee of property, plant and equipment. Only to a limited extent does the PVA TePla Group operate as lessor in connection with leasing its own systems and buildings.

With a view to the leases concluded as lessee, the PVA TePla Group recognizes a right of use with a corresponding lease liability for all lease payments to be made over the term of the contract. For leased assets of lower value and for short-term leases (less than twelve months) the practical expedients are utilized and the payments recognized as expenses on a straight-line basis in the consolidated income statement. The cost of a right of use is determined from the present value of all future lease payments plus any lease payment at or before inception of the lease as well as the costs for the contract performance and the estimated costs for the dismantling or the restoration of the leased asset. Subsequent measurement takes place at cost less any accumulated (scheduled) amortization and accumulated impairment losses. The leasing rights of use are reported separately in the consolidated balance sheet under the "capitalized rights of use" item.
Depreciation, amortization and impairments of capitalized rights of use are recognized in function costs. The rights of use are amortized over the underlying asset's economic life, where the relevant leasing payments and also the transfer of title to the underlying asset at the end of the lease term or the exercise of a purchase option is highly certain. In all other cases the rights of use are amortized over the term of the lease.

Lease liabilities recognized in financial liabilities are initially recognized at the present value of the outstanding lease payments. In the context of subsequent measurement, the carrying amount of the lease liability is increased by the annual lease expense and reduced by the lease payments made. The resulting interest expenses are recognized within "finance costs".

For more information on the amortization of leasing rights of use, see the explanations on significant accounting policies in Note 8.

For more information on leases concluded as lessor, refer to the explanations on significant accounting policies in Note 10.

10. PROPERTY, PLANT AND EQUIPMENT

[EUR'000]	Land	Plant and machinery	Equipment, fixtures and fittings	Assets under construction	Total
Acquisition and manufacturing costs					
Jan. 1, 2018	**33,387**	**8,907**	**6,380**	**271**	**48,945**
Exchange differences	**4**	70	6	0	80
Changes to the companies included in consolidation	0	0	0	0	0
Additions	72	959	1,922	169	3,122
Disposals	0	-1,147	-406	-23	-1,576
Transfers	0	0	15	-17	-2
Dec. 31, 2018	**33,463**	**8,789**	**7,917**	**400**	**50,569**
Jan. 1, 2019	**33,463**	**8,789**	**7,917**	**400**	**50,569**
Exchange differences	2	31	0	0	33
Changes to the companies included in consolidation	0	342	92	0	434
Additions	0	1,434	1,609	92	3,136
Disposals	0	-14	-908	0	-922
Transfers	0	403	0	-403	0
Dec. 31, 2019	**33,465**	**10,985**	**8,710**	**89**	**53,249**
Accumulated amortization, depreciation and write-downs					
Jan. 1, 2018	**10,485**	**5,597**	**3,436**	**0**	**19,518**
Exchange differences	4	64	4	0	72
Additions	958	671	717	0	2,346
Disposals	0	-831	-117	0	-948
Transfers	0	-2	2	0	0
Dec. 31, 2018	**11,447**	**5,499**	**4,042**	**0**	**20,988**
Jan. 1, 2019	**11,447**	**5,499**	**4,042**	**0**	**20,988**
Exchange differences	2	28	2	0	32
Additions	941	738	873	0	2,552
Disposals	0	-6	-502	0	-508
Transfers	0	0	0	0	0
Dec. 31, 2019	**12,390**	**6,259**	**4,415**	**0**	**23,064**
Net carrying amounts					
Dec. 31, 2018	**22,016**	**3,290**	**3,875**	**400**	**29,581**
Dec. 31, 2019	**21,075**	**4,726**	**4,295**	**89**	**30,185**

The PVA TePla Group has received financial incentives from various public authorities under government business development programs, including funding for the construction of production facilities. Investment subsidies and tax-free investment contributions received are deducted from the carrying amount of the relevant assets.

Land has been encumbered with a charge in the amount of EUR 18,000 thousand in order to secure the PVA TePla AG loans for financing new facilities in Wettenberg. As of the December 31, 2019 reporting date, one of these loans is valued at EUR 2,333 thousand (previous year: EUR 3,000 thousand) and has a remaining term until January 2023. As in the previous year, the second loan was not drawn as of the reporting date (EUR 2,000 thousand).

There are no other material restrictions on ownership or title in respect of the property, plant and equipment reported.

No write-down losses on property, plant and equipment were recognized in fiscal year 2019 or in the previous year.

Presentation of Significant Accounting Policies
Property, plant and equipment are carried at historical cost less any accumulated straight-line depreciation and any accumulated write-down losses. Cost in this context includes expenses directly attributable to the acquisition. Investment subsidies and tax-free investment contributions received are deducted from the carrying amount of the relevant assets. If the costs of property, plant and equipment assets cover a longer period of time, interest incurred on loans before completion is capitalized as elements of cost in accordance with the requirements of IAS 23. The costs of property, plant and equipment acquired as part of business combinations correspond to the fair value at the time of acquisition. Subsequent costs are capitalized only if it is probable that this will provide a future benefit to the PVA TePla Group and the costs can be reliably calculated.

Depreciation is recognized on a straight-line basis over the expected useful life of the asset; in the case of tenants' fixtures or leasehold improvements, if appropriate, in accordance with the shorter term of the lease. Depreciation of property, plant and equipment is allocated to the functional areas utilizing the respective assets.

Depreciation is conducted according to the following economic useful lives:

	Years
Buildings	25 - 33
Plant and machinery	3 - 20
Other plant and equipment, furniture and fittings	2 - 14

Expenditure for maintenance and repairs is expensed in the period in which it is incurred. The cost and the related cumulative depreciation are derecognized when property, plant and equipment are scrapped or disposed of, with any book gains or losses recognized in the income statement under "Other operating income" or "Other operating expenses".

Write-downs of property, plant and equipment
For more information on the write-downs of property, plant and equipment, see the explanations on significant accounting policies in Note 8.

Leases as lessor
Leases concluded as lessor are classified as operating or finance leases. Lease agreements are classified as finance leases if all risks and rewards incidental to ownership are transferred to the lessee. In fiscal year 2019 as in the previous year, all leases concluded by the PVA TePla Group as lessor were to be classified as operating leases.

As a result, lease assets were to be recognized in the PVA TePla Group consolidated balance sheet under property, plant and equipment and the lease installments in other operating income pro rata when incurred.

11. NON-CURRENT FINANCIAL ASSETS

[EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Financial assets, current (gross value)	5,021	2,017
less write-downs	-2,007	-1,907
Non-current financial assets	**3,014**	**110**

Non-current financial assets essentially comprise non-current trade receivables from system sales as part of the ordinary course of business.
Likewise, non-current financial assets also include trade receivables that are either already due or to be due shortly if, as expected, their realization is not expected within twelve months of the balance sheet and time deposits with a remaining term over twelve months.

[EUR'000]	2019	2018
Write-downs on January 1	**1,907**	**0**
Currency exchange differences	0	0
Addition	100	1,907
Utilization	0	0
Release	0	0
Write-downs on December 31	**2,007**	**1,907**

Write-downs of EUR 100 thousand (previous year: EUR 1,907 thousand) were recognized in fiscal year 2019 as part of a special review of default risks.

Presentation of Significant Accounting Policies
In addition to derivative financial instruments, financial assets of the PVA TePla Group comprise primarily cash and cash equivalents as well as current and non-current trade receivables which result directly for its operating activities. Financial assets are recognized in the consolidated balance sheet if the PVA TePla Group has a contractual right to receive cash or other financial assets from a third party.

At initial recognition, a financial asset is allocated to one of the following categories and measured:

- Amortized cost measurement;
- Investments in debt instruments measured at fair value with changes in other comprehensive income;
- Equity investments measured at fair value with changes in other comprehensive income; or
- Fair value measurement through profit or loss.

Classification is based on the company' business model for managing the financial assets and the contractual cash flow characteristics. If the financial asset is held within a business model whose objective is to collect contractual cash flows and the contractual terms result in cash flows on specific dates that are solely repayments and interest on the principal amount outstanding, it is measured at amortized cost.

The financial assets held by the PVA TePla Group are mainly non-derivative financial assets with contractual payments representing solely interest and repayments on the outstanding nominal amount and which are held with the objective of collecting the contractually agreed cash flows. Accordingly these financial assets, which relate primarily to trade receivables and cash and cash equivalents, are allocated to the "amortized cost measurement" category.
Write-downs for debt instruments measured at amortized cost are recognized at the amount equal to the expected credit loss. They are adjusted at each reporting date to take into consideration changes in the financial instrument's credit risk since initial recognition and are generally measured at an amount equal to the lifetime expected credit loss. If there are objective substantial indications for impairment of a financial asset, it is tested individual for impairment. Such indications for the existence of impairment include worsened creditworthiness of a debtor and the resulting payment interruptions or a threat of insolvency.

For finance receivables and other receivables, the expected credit loss is determined on the basis of defaults expected in the next twelve month or in the remaining term. A review is carried out on each reporting date to assess whether the credit risk has increased significantly. The credit risk assessment is based on quantitative and qualitative information, such as information on credit default swaps, past experiences and forward-looking assumptions.
Forward-looking assumptions comprise sector and country -specific expectations on how credit risk will develop.

The following information and expectations, among other indications, may suggest a significant increase in the credit risk:

- Significant change in the financial instrument's internal or external credit rating;
- An adverse change in business, financial or economic conditions that has a significant impact on the customer's creditworthiness;
- Indications that a customer is facing considerable financial difficulties; or
- Failure to observe payment terms.

Trade receivables, on the other hand, use a simplified model to recognize the expected credit loss, based on an impairment matrix. For more information, refer to the explanations under Note 13.

Derivative financial instruments
The PVA TePla Group occasionally enters into forward exchange contracts to hedge exchange rate risks in connection with sales in foreign currencies (exchange rate hedging). Interest rate hedges are also concluded to hedge interest rate risks for financing investments in new buildings. These kind of derivatives are measured at fair value, both on initial recognition and on subsequent measurement. The changes resulting from this are recognized in profit or loss. The PVA TePla Group does not apply the option to designate a hedging relationship (hedge accounting).
Under exchange rate hedging, the measurement effects resulting from changes to exchange rates are recognized at the fair value of the derivative under other operating expenses or other operating income. Conversely, the corresponding changes in the market value of interest rate hedges are reported through profit or loss in the financial result ("finance income" or "finance costs").

All derivative financial instruments with a positive market value are recognized on the balance sheet under "other receivables" and those with a negative market value are reported under "other liabilities" (in each case as current).

Fair value measurement
The PVA TePla Group measures certain financial instruments at fair value as of the end of each reporting period. The fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. In measuring fair value it is assumed that the transaction in which the asset is sold or the liability is transferred takes place either on the principal market for the asset or liability, or the most advantageous market for the asset or liability if there is no principal market. The PVA TePla Group applies measurement methods that are appropriate in the circumstances and for which there are sufficient data to measure fair value. In doing so, the use of relevant, observable inputs is maximized and that of unobservable inputs is minimized. All assets and liabilities for which the fair value has been calculated or reported in the consolidated financial statements are assigned to the following levels of the measurement hierarchy based on the lowest input factor that is material overall for measurement:

- **Level 1:** Quoted prices (unadjusted) in active markets for identical assets or liabilities on the measurement date
- **Level 2:** Measurement method, with which the lowest input factor material for measurement is directly or indirectly observable on the market
- **Level 3:** Measurement method, with which the lowest input factor material for measurement is not directly or indirectly observable on the market.

12. INVENTORIES

[EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Raw materials and operating supplies	19,351	15,793
Work in progress	50,694	28,276
Finished products and goods	512	567
Gross value	**70,557**	**44,636**
less write-downs	-5,340	-3,634
Inventories	**65,217**	**41,002**

In fiscal year 2019, changes of impairment of EUR -2,686 thousand (previous year: EUR +624 thousand) were recognized in the income statement.

Presentation of Significant Accounting Policies
Inventories are recognized at cost in accordance with the weighted average cost method or net realizable value, whichever is lower. In accordance with IAS 2, cost includes not only directly attributable costs, but also production and material overheads as well as write-downs. Fixed overheads are taken into account on the basis of normal capacity utilization of the production facilities. The cost of idle production capacity is recognized in the consolidated income statement under cost of sales. Write-downs are charged on inventories when their costs exceed the expected net realizable value. The net realizable value is the expected disposal proceeds less any costs which are incurred until the sale.

13. TRADE AND OTHER RECEIVABLES AND CONTRACT ASSETS

[EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Trade receivables concerning product sales and services	14,645	15,129
Payments in advance	4,034	7,046
Other current receivables	9,474	3,965
Contract assets	10,458	7,350
Gross value	**38,611**	**33,490**
less write-downs	-776	-360
Trade and other receivables and contract assets	**37,835**	**33,130**

Accounts receivable are not interest-bearing and are generally due within 30 to 90 days.

[EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Contract costs incurred incl. share of profit (POC method)	15,507	9,264
less advance payments received	-8,336	-5,048
Subtotal	**7,170**	**4,216**
Unconditional payment obligations (advance payment invoices)	3,287	3,134
Contract assets	**10,458**	**7,350**

[EUR'000]	2019	2018
Write-downs on January 1	**-360**	**-329**
Addition	-720	-224
Utilization	+188	+22
Release	+116	+171
Write-downs on December 31	**-776**	**-360**

Presentation of Significant Accounting Policies

Trade receivables are carried at the fair value of the consideration provided (transaction price) from the time they were incurred. Trade receivables are not discounted as they generally do not contain any significant financing components and are usually due within one year.

Systems produced for specific customers to be recognized over a period of time using the POC method and for which the advance payments received exceed the contract costs incurred, including the share of profits are recognized under contract assets.

Trade receivables and contract assets are subsequently accounted for at amortized cost (less impairment losses). The PVA TePla Group uses a simplified method for calculating expected credit losses in order to determine im-pairment using the expected credit loss model. The impairment is then calculated using an impairment matrix based on past experience with credit losses and adjusted for future-oriented factors specific to the borrower and the economic conditions. The default risks for credit-impaired trade receivables and contract assets are subject to a special review on the basis of the individual case. Indications of credit impairment include primarily significant financial difficulties of the borrower or the likelihood of insolvency. Impairment is recognized using an allowance account through profit or loss in the consolidated income statement. If, in subsequent periods, the reasons for impairment no longer apply, impairment losses are reversed through profit or loss up to a maximum of the original cost. Impairment losses on trade receivables and income from reversals of impairment losses are reported on a net basis and recognized separately in the Group income statement ("impairment from financial assets").

14. DEFERRED TAX ASSETS/LIABILITIES

	Dec. 31, 2019		Dec. 31, 2018	
[EUR'000]	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Non-current assets	64	679	639	791
Inventories	595	11	255	0
Trade receivables	0	1,177	0	1,104
Tax loss carry-forwards	1,834	0	3,712	0
Pension provisions	2,419	0	1,875	0
Other provisions	114	690	24	517
Others	98	205	22	171
Total	**5,124**	**2,761**	**6,527**	**2,583**
Balance of deferred tax	**2,363**		**3,944**	

Tax loss carry-forwards are reviewed for potential utilization and capitalized using a company-specific tax rate on the basis of a multi-year budget. Provided utilization of loss carry-forwards appears likely for 2020 to 2022 based on the current budget, loss carry-forwards were reported. As the utilization of the loss carry-forwards within the forecast of a 2-5 year period is likely, they were classified entirely as recoverable.
Loss carry-forwards of EUR 1,107 thousand (previous year: EUR 11,849 thousand) relate to the German companies and USD 3,729 thousand (previous year: USD 1,575 thousand) for PVA TePla America Inc., Corona/USA. The tax loss carry-forwards of the German companies relate solely to the parent company PVA TePla AG, Wettenberg and the subsidiary PVA Metrology & Plasma Solutions GmbH, Wettenberg and were entirely capitalized.

No deferred taxes were recognized for differences between the carrying amounts in IFRS individual statements of financial position and in the tax basis of the investments (outside basis differences) as PVA TePla AG is able to control the timing of the reversal of temporary differences and there are no plans to sell investments indefinitely.

Presentation of Significant Accounting Policies
In accordance with IAS 12, on the basis of the liability method deferred taxes are formed for all temporary differences between the carrying amounts in the tax base and those in the IFRS statement of financial position. If the asset is realized or the liability is settled, temporary differences result in amounts for which tax is payable or deductible. Taxable temporary differences result in a deferred tax liability and tax-deductible temporary differences result in the recognition of deferred tax assets. Deferred taxes are also to be recognized on loss carryforwards, provided these are expected to be used in the future. Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period when the asset is realized or the liability is settled.

The carrying amount of the deferred tax assets is reviewed each year at the balance sheet date and reduced if it is no longer likely that there is sufficient taxable income to realize the asset in full or in part. In the event of a change in tax rates, the effects of this on deferred tax assets and liabilities are taken into consideration in profit or loss. In line with IAS 12 deferred tax assets and liabilities are not discounted and are reported in the consolidated balance sheet as non-current assets and liabilities. Current and deferred taxes are recognized through profit or loss as an expense, unless they relate to items that were recognized directly in equity. In this case, the taxes are also reported directly in equity.

Estimates regarding deferred taxes on loss carry-forwards are highly dependent on how the taxable entity's earnings perform. This means that the actual amounts reported in future periods may differ from the estimates.

15. FINANCIAL LIABILITIES

	December 31, 2019			December 31, 2018		
[EUR'000]	Current	Non-current	**Total**	Current	Non-current	**Total**
Liabilities from leases	639	1,565	2,204	-	-	-
Loans from credit institutes	669	1,666	2,335	670	2,333	3,003
Total	**1,308**	**3,231**	**4,539**	**670**	**2,333**	**3,003**

PVA TePla AG has a financing facility in the form of a syndicated loan contract, a mixed line of EUR 12.0 million (cash and guarantee line), a guarantee line of EUR 68.0 million and an increase option for another EUR 35.0 million (guarantee line) and another EUR 10.0 million (cash line).

Interest is according to EURIBOR with a graduated margin based on the debt ratio. As in the previous year, as of December 31, 2019, no cash lines had been drawn and EUR 49.7 million (previous year: EUR 61.1 million) of the guaranteed lines had been utilized as of the reporting date. The syndicated loan agreement defines financial covenants for compliance with standard financial ratios. These financial covenants were met in both fiscal year 2019 and in the previous year.

Further financing facilities of EUR 2.0 million and EUR 2.3 million are available as working capital financing. As of December 31, 2019 reporting date, the first cited facility had not been drawn (previous year: EUR 0.0 million) and there was utilization of EUR 2.3 million of the second facility (previous year: EUR 3.0 million). Of this amount, EUR 1.7 million (previous year: EUR 2.3 million) were recognized in non-current financial liabilities.

The average weighted interest rate for non-current loans from banks was 0.33% (previous year: 0.53%). As a result of scheduled loan repayments, non-current financial liabilities were reduced to EUR 1,666 thousand (previous year: EUR 2,333 thousand).

The repayment commitments for the non-current loans from banks are structured as follows:

[EUR'000]	2019	2018
Due		
Up to 1 month	336	337
Between 1 and 3 months	0	0
Between 3 and 1 year	333	333
Between 1 and 5 years	1,666	2,333
More than 5 years	0	0

The payment obligations from the leases carried on the balance sheet are structured as follows:

[EUR'000]	2019	2018
Due		
Up to 1 month	61	0
Between 1 and 3 months	121	0
Between 3 and 1 year	504	0
Between 1 and 5 years	1,357	0
More than 5 years	285	0

Presentation of Significant Accounting Policies
In addition to derivative finance instruments, financial liabilities of the PVA TePla Group comprise primarily loans from credit institutes, lease liabilities and trade payables. Financial liabilities are recognized in the consolidated balance sheet if the PVA TePla Group has a contractual obligation to transfer cash of other financial assets to a third party. All financial liabilities are measured at fair value upon initial recognition (less any directly attributable transaction costs).

At initial recognition financial liabilities are classified either at amortized cost or at fair value through profit or loss (FVTPL). A financial liability is classified as FVTPL if it is classified as held for trading, is a derivative or is designated as a derivative on initial recognition.

Financial liabilities at FVTPL are measured at fair value and net gains or losses, including interest expenses, are recognized in profit or loss. In subsequent measurements, other financial liabilities are measured at amortized cost using the effective interest method. These include in particular trade payables, which are generally not interest-bearing and are due within 30 to 60 days. Interest expenses and currency translation differences are recognized in profit or loss. Gains or losses from derecognition are also recognized in profit or loss.

Financial liabilities are derecognized if the underlying obligation relating to the liability is settled, canceled or expires. Gains or losses from derecognition are recognized in profit or loss.

For more information on lease liabilities, see the explanations on significant accounting policies in Note 9.

16. PENSION PROVISIONS

Provisions for pension obligations are recognized on the basis of pension plans for commitments to pay retirement, invalidity and dependents' benefits. The amount of benefit usually depends on the number of years of service and the salary of the respective employee.

Pension commitments exist at PVA TePla AG, PVA Industrial Vacuum Systems GmbH, PVA Crystal Growing Systems GmbH, PVA SPA Software Entwicklungs GmbH and PVA Vakuum Anlagenbau Jena GmbH, all based in Germany. These comprise exclusively old commitments.

New pension commitments are no longer granted. There are no pension obligations abroad. No material plan assets exist to cover future pension obligations within the PVA TePla Group.

The measurement of pension obligations is supported by actuarial reports. Biometric parameters have been calculated on the basis of the 2018 G mortality tables issued by Professor Dr. Klaus Heubeck. The resulting residual risks from accounting of pension obligations are related to risks from the change in actuarial parameters, which are shown in the table below. The most significant change risk relates to interest rates.

[in %]	Dec. 31, 2019	Dec. 31, 2018
Income trend	3.00	3.00
Pension trend	1.25	1.25
Staff turnover	1.50	1.50
Interest rate	0.78% - 1.00%	1.74% - 2.17%

[EUR'000]	2019	2018
Present value of future pensions on Jan. 1	15,195	14,339
Additions through company acquisition	0	303
Current service expense for services provided by employees in the fiscal year	147	142
Interest expense	284	238
Changes in the estimation of financial reporting	0	106
Pension payments	-523	-447
Actuarial gains (-) and losses (+)	2,120	-34
Present value of future pensions on Dec. 31	**17,223**	**15,195**

The current service cost is essentially recognized in the cost of sales and in administrative costs.

At the reporting date of December 31, 2019, it can be assumed that EUR 580 thousand (previous year: EUR 552 thousand) will be fulfilled within the next twelve months and EUR 16,643 thousand (previous year: EUR 14,643 thousand) will be fulfilled at a later date (over a very long term for some portions). On December 31, 2019, the weighted average term of defined pension plans was 16.1 years.

Sensitivity Analyses

While keeping to the other assumptions, the changes reasonably assumed possible on the balance sheet date December 31, 2019 would have influenced the defined pension plans as follows, based on actuarial gains and losses:

[EUR'000]	Increase	Reduction
Discount rate (0.25% change)	-644	682
Future pension increases (0.25% change)	567	-544

Defined contribution plans

Defined contribution plans of relevance to PVA TePla AG take the form of the employer's statutory pension insurance contributions, pension fund contributions and direct insurance contributions.
In fiscal year 2019, the corresponding expenditure amounted to EUR 2,810 thousand (previous year: EUR 2,156 thousand).

Presentation of Significant Accounting Policies
Pension provisions relate exclusively to defined benefit plans. The costs for providing these is calculated using the projected unit credit method, under which an actuarial valuation is carried out at each reporting date. Recognized provisions for defined benefit plans are determined using actuarial models based primarily on key assumptions including discount rates, mortality rates, salary and pension trends. Remeasurements, comprising actuarial gains and losses (excluding interest expense), are recognized directly in other comprehensive income. The remeasurements recognized in other comprehensive income are part of other reserves and are no longer reclassified in profit or loss to the Group income statement in subsequent periods. Past service cost is recognized as a personnel expense when the plan amendment occurs.

Interest expense is calculated by multiplying the discount rate by the pension obligation. The defined benefit costs include the service cost (including current service cost, past service cost and any gains or losses from the plan being amended, curtailed or settled) and the interest expense.

The PVA TePla Group reports the service cost in the Group income statement under operating expenses and the interest expense under finance costs. Gains or losses from curtailments or settlements are recognized directly in profit or loss.

Payments for defined contribution plans are recognized in profit or loss as personnel expenses in the functional area iwhen the eligible employee has performed the work.

17. OTHER PROVISIONS

[EUR'000]	Jan. 1, 2019	Changes to the companies included in consolidation	Utilization	Release	Addition	Dec. 31, 2019
Warranty	1,437	-342	-343	-43	1,216	1,925
Subsequent costs	96	0	-86	0	191	201
Archiving	53	0	-5	0	7	54
Penalties	0	0	0	0	48	48
Other	1,319	-77	-436	-201	780	1,387
Total	**2,905**	**-419**	**-870**	**-244**	**2,243**	**3,615**

In general, contracts with customers include warranty periods and periods for reporting defects following the completion of the specific projects.
These obligations are not considered as separate performance obligations and are therefore included in the total contract costs as estimated. If required, amounts are recognized under other provisions in accordance with IAS 37.

Other provisions contain non-current components in the amount of EUR 63 thousand (previous year: EUR 520 thousand). These relate primarily to provisions for archiving. All remaining other provisions are current in nature. Miscellaneous other provisions also include provisions for employees of EUR 392 thousand and variable remuneration components for Management Board members of EUR 625 thousand.

Presentation of Significant Accounting Policies
In accordance with IAS 37, a provision is recognized if a PVA TePla Group company has a current (legal or constructive) obligation as a result of past events, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and it is possible to reliably estimate the amount of the obligation. The amount to be carried as a provision is the best estimate of the expenditure required to settle the present obligations at the balance sheet date.

Provisions that will not result in an outflow of resources in the following year are recognized at the discounted settlement amount as of the balance sheet date, taking into account expected cost increases. The present value of a provision is calculated using pre-tax interest rates that take into consideration current market expectations regarding the interest effect and the risks specific to the obligation. In the event of discounting, the increase in provisions over time is recognized as a finance cost. The estimates are examined at each reporting date.

Claims for reimbursement (e.g. due to insurance contracts) are capitalized as a separate asset only when the receipt of the reimbursement is quite certain.

In the consolidated income statement, the expense from establishing a provision less the reimbursement is recognized.

18. CONTRACT LIABILITIES

[EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Contract liabilities (POC method)	4,296	8,374
Advance payments received concerning product sales and services	74,309	64,119
Contract liabilities	**78,605**	**72,493**

Of the EUR 72,493 thousand (previous year: EUR 41,265 thousand) advance customer payments recognized under "Contract liabilities" as of January 1, 2019, EUR 36,152 thousand was recognized as revenues (EUR 13,405 thousand) in the 2019 fiscal year.

[EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Advance payments received	9,647	16,975
less contract costs incurred incl. share of profit (POC method)	-5,351	-8,601
Contract liabilities (POC method)	**4,296**	**8,374**

As of the reporting date of December 31, 2019, contract liabilities (POC method) include outstanding advance payment from customers with legally enforceable payment claims amounting to EUR 4,195 thousand (previous year: EUR 3,134 thousand).

Presentation of Significant Accounting Policies
Systems produced for specific customers to be recognized over a period of time using the POC method and for which the advance payments received exceed the contract costs incurred, including the share of profits are recognized under contract liabilities. Advance payments received from customers relating to product sales and services that are not accounted for using the POC method are also recognized under contract liabilities.

G. NOTES ON THE CONSOLIDATED CASH FLOW STATEMENT

[EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Cash in bank	23,558	34,839
Cash in hand	9	11
Cash investment	2,003	5,164
Cash and cash equivalents (balance sheet)	25,570	40,014
Bank overdrafts	-	-
Cash funds (cash flow statement)	**25,570**	**40,014**

Payments for investments in intangible assets and property, plant and equipment include only cash effective acquisitions. In fiscal year 2019, EUR 0.7 million (previous year: EUR 1.0 million) was reclassified from inventories to property, plant and equipment. These items were non cash-effective.

The following table shows the changes in financial liabilities whose cash flows have been or will be shown in the cash flow statement as cash flows from financing activities:

[EUR'000]	Dec. 31, 2018	Cash effective changes	Non-cash effective changes: Acquisitions	Non-cash effective changes: Foreign exchange differences	Non-cash effective changes: Other changes	Dec. 31, 2019
Non-current financial liabilities	2,333	-	-	-	+898	3,231
Current financial liabilities	670	-667	-	-	+1,305	1,308
Total	**3,003**	**-667**	-	-	**2,203**	**4,539**

[EUR'000]	Dec. 31, 2017	Cash effective changes	Non-cash effective changes: Acquisitions	Non-cash effective changes: Foreign exchange differences	Non-cash effective changes: Other changes	Dec. 31, 2018
Non-current financial liabilities	3,001	-	-	-	-668	2,333
Current financial liabilities	883	-771	-	-	+558	670
Total	**3,884**	**-771**	-	-	**-110**	**3,003**

Presentation of Significant Accounting Policies
Cash and cash equivalents comprise cash in hand and immediately available bank balances as well as immediately available financial investments that are subject to only insignificant fluctuations in value and, measured from the time of acquisition, have a remaining term not exceeding three months. Cash and cash equivalents are measured at amortized cost. For more information, refer to the explanations under Note 11.

Cash flows for the fiscal year are recognized in the statement of Group cash flows in order to present information on the changes in the PVA TePla Group's cash and cash equivalents during the fiscal year. A distinction is drawn between three areas: Operating, investing and financing activities.

Cash flows from operating activities are calculated in accordance with the indirect method by adjusting profit or loss before income taxes to account for transactions of a non-cash nature and transactions associated with investment or financing. As with cash flows from financing activities, cash flows from investing activities are also calculated using the indirect method, i.e. by comparing gross cash payments and gross cash receipts.

H. NOTES ON THE CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

Share capital
As of December 31, 2019, the issued share capital of PVA TePla AG consisted of 21,749,988 no-par value shares (previous year: 21,749,988 no-par bearer shares) each with a nominal value of EUR 1.00.

Contingent and authorized capital
As of December 31, 2019, there is no contingent capital.

At the Annual General Meeting on June 21, 2017, the old authorization of the Management Board to increase the share capital valid until June 30, 2017 was canceled.
At the same time, the Annual General Meeting of PVA TePla AG authorized the Management Board to increase the Company's share capital with approval of the Supervisory Board on one or more occasions during the period until June 20, 2022 by a total of up to EUR 10,874,994 by issuing 10,874,994 new no-par value bearer shares against cash and/or non-cash contributions with shareholders´ subscription rights excluded to the extent permitted by law. No capital increases from this authorized capital were resolved either in 2018 or 2019.

Profit appropriation
The separate financial statements of PVA TePla AG (according to commercial law regulations) as of December 31, 2019 report a net profit of EUR 9,942 thousand (previous year: EUR 5,186 thousand) and retained earnings of EUR 26,534 thousand (previous year: EUR 16,592 thousand).

The Management Board and Supervisory Board propose that the retained earnings reported in PVA TePla AG's annual financial statements for fiscal year 2019 amounting to EUR 26,534 thousand be carried forward to a new account at the same amount. There were no withdrawals from the share premium or retained earnings.

I. OTHER DECLARATIONS

19. SEGMENT REPORTING

The PVA TePla Group is divided into the divisions Industrial Systems and Semiconductor Systems. Management, planning and controlling of PVA TePla Group are based on these two divisions. Segment reporting therefore follows the organizational structures of PVA TePla Group's internal management system.

Revenues by division

[EUR'000]	2019		2018	
Segment revenues	External revenues	Internal revenues	External revenues	Internal revenues
Industrial Systems	45,170	3,795	37,323	3,245
Semiconductor Systems	85,798	714	59,460	813
Total PVA TePla Group	**130,968**	**4,509**	**96,783**	**4,058**

As a matter of principle, transactions involving intersegment sales and revenues are conducted at arm's length conditions.

EBIT by Division

[EUR'000]	2019	2018
Segment Result		
Industrial Systems	3,485	2,111
Semiconductor Systems	12,741	10,620
Holding costs	-3,922	-3,224
Consolidation	1	-39
Total PVA TePla Group	**12,305**	**9,468**

Reconciliation of Segment Results to Consolidated Net Result

[EUR'000]	2019	2018
Operating result (EBIT)	**12,305**	**9,468**
Financial result	-486	-479
Net result before tax	11,820	8,989
Income taxes	-4,107	-3,021
Consolidated net result	**7,713**	**5,968**

In the current fiscal year, there were no non-cash segment expenses in the Semiconductor Systems division (previous year: EUR 1,907 thousand).

Revenues by region

[EUR'000]	2019	in %	2018	in %
Asia	43,899	33	53,411	55
Germany	52,536	40	20,522	21
Europe (without Germany)	21,291	16	17,107	18
North America	12,510	10	5,037	5
Other	732	1	706	1
Total PVA TePla Group	**130,968**	**100**	**96,783**	**100**

In fiscal year 2019, sales revenues of EUR 33.9 million (previous year: EUR 10.1 million) relate to sales revenues with one customer of the Group with a sales share exceeding 10% of total revenues and relate to the Semiconductor Systems segment.

20. ADDITIONAL DISCLOSURES ON FINANCIAL INSTRUMENTS

Finance risks

In addition to derivative finance instruments, financial liabilities of the PVA TePla Group comprise primarily loans from credit institutes, lease liabilities and trade payables. The main purpose of these financial liabilities is to finance operating activities of the PVA TePla Group. In addition to derivative financial instruments, financial assets of the PVA TePla Group comprise primarily cash and cash equivalents as well as current and non-current trade receivables which result directly for its operating activities.

When engaging in its operating activities, the PVA TePla Group is exposed to various finance risks. This include default, liquidity and market risks (currency and interest risks). The risk report as part of the Group management report contains a presentation of the risk management system in respect to the targets, methods and processes.
Financial risk management is implemented in line with principles specified by the company. These regulate hedging currency, interest and credit risks, cash management and short and long-term financing.
The objective is to reduce finance risks, taking into account hedging costs and the resulting risks taken. If appropriate, derivative finance instruments are concluded to hedge underlying transactions.
Derivative financial instruments are used solely as hedging instruments, meaning that they are not employed for trading or other speculative purposes. To minimize counterparty risk, the transactions are concluded only with counterparties which have a first-class credit rating.
The basic details of the financial policy are established annually by the Management Board and monitored by the Supervisory Board. The Management Board is directly responsible for the implementation of the financial policy and ongoing risk management.

Credit risk
The credit risk is the risk that a business partner might fail to meet his obligations within the framework of a financial instrument or a general customer agreement and that this might lead to a financial loss. In the course of its operating activities, the PVA TePla Group is exposed to default risks (especially arising from trade receivables) as well as risks in connection with financing activities, including deposits with banks and financial institutions, currency transactions and other financial instruments.

When engaging in its operating activities, the PVA TePla Group grants supplier credits to a broad range of customers. Theoretically, the maximum default risk is shown by the carrying amounts of the financial assets recognized in the balance sheet.

The PVA TePla Group recognized impairment of EUR 820 thousand (previous year: EUR 2,131 thousand) in the income statement on current and non-current trade receivables to cover known risks in fiscal year 2019.
Risks from advance payments are avoided with advance payment bonds. There are no discernible risks from other receivables. As of the December 31, 2019 reporting date, the PVA TePla Group had no other significant agreements that reduce the maximum exposure to credit risk.

The creditworthiness of customers is regularly reviewed. The risk of default is mitigated by credit checks and dunning. In its operating business, outstanding accounts receivables and contract assets are monitored locally (decentralized) and on an ongoing basis.
The PVA TePla Group has control procedures in place to ensure that services are provided only to customers who have proven to be credit-worthy in the past and to ensure that the default risk for these transactions remains within acceptable limits.

Default risks are taken into account through appropriate impairment losses. Impairment losses are analyzed to each reporting date using an impairment matrix to determine the expected credit losses.

The impairment rates are determined on the basis of the number of days that a receivable is due for various customer segments with similar default patterns combined in groups (according to criteria such as geographical region, product type, customer type and rating classification).
The calculation comprises the probability-weighted result, taking into account the interest effect as well as reasonable and supportable information on past events, current conditions and forecasts of future economic conditions available at the reporting date.

			Impairment Matrix			
[EUR'000]	**Dec. 31, 2019**	**With specific valuation allowance**	**Not past due**	**< 30 days past due**	**30 – 90 days past due**	**> 90 days past due**
Trade receivables (gross carrying amount)	14,645	1,138	4,006	4,368	2,104	3,029
Contract assets (gross value)	10,458	-	10,458	-	-	-
Weighted aver-age default rate (%) FY 2019	-	-	0.2%	0.3%	0.4%	0.5%
Weighted aver-age default rate (%) FY 2018	-	-	0.4%	0.5%	0.7%	0.9%
Impairment	-776	-711	-29	-13	-8	-15

Liquidity risks
The PVA TePla Group attaches greater importance to maintaining solvency at all times. To ensure solvency at all times and to achieve the highest level of financial flexibility, revolving liquidity planning has been prepared for the PVA TePla Group. A liquidity reserve is held in the form of credit facilities and cash on hand.

For more information on the maturities of financial liabilities, see the disclosures on the relevant balance sheet items in Note 15. The maturity analysis of the derivative financial liabilities can be found in the following section.

Market risks
Market risk is the risk that the fair value or future cash flows of a financial instrument might fluctuate as a result of changes in market prices. Market risk includes currency and interest risks.

Currency risk is defined as the risk that the fair value or future cash flows of a financial instrument are subject to fluctuations as a result of changes in currency prices. Fluctuating exchange rates impact the presentation of PVA TePla AG assets and liabilities in the consolidated financial statements, to the extent that assets and liabilities are denominated in currencies other than the euro. Foreign currency risks with a significant impact on the Group's cash flows are hedged.

Foreign currency risks in the context of operating activities primarily arise when planned transactions are settled in a currency other than the functional currency (EUR). These planned transactions relate in particular to expected future sales revenues invoiced in US dollars. To manage the currency risk, as far as possible the PVA TePla Group attempts to achieve cash inflows and outflows with matching time and currency.

PVA TePla AG, PVA Metrology & Plasma Solutions GmbH as well as PVA TePla Analytical Systems GmbH enter into foreign exchange forward contracts to hedge payment obligations. These derivative financial instruments have a term to maturity of up to one year and hedge payment obligations of EUR 979 thousand (previous year: EUR 2,090 thousand) as of December 31, 2019. In what follows, the expected net payment from currency hedging instruments is shown.

[EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Expected net payments		
Up to 1 month	-3	19
Between 1 and 3 months	-3	46
Between 3 months and 1 year	-1	0
Between 1 and 5 years	0	0

Interest income and expenses from financial instruments at the German companies are recognized in the functional currency (EUR). This means that foreign currency risks can arise only from the financial instruments and assets held by the individual companies outside Germany that would be taken directly to currency reserves in equity. For this reason, only an equity-based sensitivity analysis is performed.

If the value of the Euro had been 10% higher (lower) compared to the US dollar on December 31, 2019, the other reserves in equity would have been EUR 345 thousand lower (EUR 422 thousand higher) (December 31, 2018: EUR 278 thousand lower (EUR 339 thousand higher)).

If the value of the Euro had been 10% higher (lower) compared to the other currencies relevant to the Group on December 31, 2019, the other reserves in equity would have been EUR 120 thousand lower (EUR 149 thousand higher) (December 31, 2018: EUR 85 thousand lower (EUR 105 thousand higher)).

Interest risks result from non-current variable-interest liabilities. Such risks are minimized by the PVA TePla Group on the basis of ongoing observation of global interest policy, and if necessary, interest hedging measures.

The Company is mainly subject to interest rate risk in the Eurozone. Taking the existing and planned debt structure into account, the Company uses interest rate derivatives (interest rate swaps) in order to counteract interest rate risks.

A sensitivity analysis of the interest risks is shown below. These represent the effects of changes in market interest rates on interest payments, interest income and expenses, other earnings components and, where applicable, shareholders' equity.

Sensitivity analyses were performed for financial derivatives (swaps) not forming part of an effective hedge. If the market interest rate as of December 31, 2019 had been 100 basis points higher, earnings would have increased by EUR 27 thousand (previous year: EUR 50 thousand). If the market interest rate as of December 31, 2019 had been 100 basis points lower, earnings would have decreased by EUR 28 thousand (previous year: EUR 52 thousand).

Interest rate hedges with a total original volume of EUR 11,600 thousand were entered into in order to hedge the interest rate risk for financing investments in new buildings at the Wettenberg site. The outstanding balance of these hedging transactions on the reporting date of December 31, 2019 is EUR 2,333 thousand (previous year: EUR 3,000 thousand). The interest hedges have a term to maturity of up to five years. In what follows, the expected net payment from interest hedging instruments is shown.

[EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Expected net payments		
Up to 1 month	-54	-68
Between 1 and 3 months	0	0
Between 3 months and 1 year	-45	-58
Between 1 and 5 years	-114	-194
Over five years	0	-7

The remaining interest hedging instruments and underlying loans were concluded in 2007 on the basis of the corresponding interest rates. They hedge long-term, flexible financing for new construction at the Wettenberg location.

Effective on March 3, 2014, PVA TePla AG canceled two fixed-interest real estate loans secured by land charges for new construction in Wettenberg totaling EUR 5,684 thousand and combined then into a new loan for EUR 6,000 thousand with a term until December 2023. The new loan was synchronized with existing interest hedging transactions for a total of EUR 6,000 thousand. However, effectiveness between the new underlying transactions and existing hedging transactions according to IFRS was not achieved on the reporting date of December 31, 2019. The negative fair value of these hedging transactions was EUR -212 thousand on December 31, 2019 (previous year: EUR -327 thousand); fair value changes of EUR 127 thousand were recognized in financial expenses through profit or loss in the fiscal year (previous year: EUR 135 thousand) in financial income.

The corresponding contra-entry of the fair values of the interest derivatives as well as the applicable deferred taxes is made in other current and non-current financial liabilities as well as deferred tax assets or liabilities depending on changes in fair value.

Categories of Financial Instruments

Dec. 31, 2019	Carrying amount for each valuation category				not allocated to any valuation category	
	Non-current investments		Financial liabilities			
[EUR'000]	at fair value through profit or loss	at amortized cost	at fair value through profit or loss	at amortized cost	(excluded from the scope of IFRS 7)	Total carrying amounts
Non-current assets						
Non-current investments	-	3,014	-	-	-	3,014
Current assets						
Trade and other receivables	8	19,870	-	-	7,500	27,378
Cash and cash equivalents	-	25,570	-	-	-	25,570
Non-current liabilities						
Financial liabilities	-	-	-	3,231	-	3,231
Other non-current financial liabilities	-	-	114	-	-	114
Current liabili-ties						
Financial liabilities	-	-	-	1,308	-	1,308
Trade payables	-	-	-	10,792	-	10,792
Other short-time liabilities	-	-	99	-	1,200	1,299
Total	**8**	**48,454**	**213**	**15,331**	**8,700**	**72,706**

Dec. 31, 2018	Carrying amount for each valuation category				not allocated to any valuation category	
	Non-current investments		Financial liabilities			
[EUR'000]	at fair value through profit or loss	at amortized cost	at fair value through profit or loss	at amortized cost	(excluded from the scope of IFRS 7)	Total carrying amounts
Non-current assets						
Non-current investments	-	110	-	-	-	110
Current assets						
Trade and other receivables	1	14,769	-	-	11,010	25,780
Cash and cash equivalents	-	40,014	-	-	-	40,014
Non-current liabilities						
Financial liabilities	-	-	-	2,333	-	2,333
Other non-current financial liabilities	-	-	259	-	-	259
Current liabilities						
Financial liabilities	-	-	-	670	-	670
Trade payables	-	-	-	8,918	-	8,918
Other short-time liabilities	-	-	68	-	1,346	1,414
Total	**1**	**54,893**	**327**	**11,921**	**12,356**	**79,498**

In all measurement categories the carrying amount is a reasonable approximation for the fair value. For this reason there is no separate presentation of carrying amounts and market values. PVA TePla AG's financial instruments measured at fair value are allocated to "level 2" at which measurement is based on stock exchange or market prices of similar instruments or on measurement models based on input parameters observable in the market. The fair values of both forward exchange contracts and interest hedges were determined on the basis of discounted expected future cash flows. For the remaining durations of the finance instruments the relevant market interest rates are used.

Net gains and losses on financial instruments by measurement category

[EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Financial assets and liabilities at fair value through profit or loss	-192	-189
Financial assets measured at amortized cost	-722	-1,982
Financial liabilities measured at amortized cost	-134	-183
Total	**-1,048**	**-2,354**

The net result from the financial assets and liabilities measured at fair value through profit or loss results from changes in the market value of derivative hedging instruments. The change in derivative hedging instruments resulted in measurement changes of EUR 127 thousand (EUR 135 thousand) not impacting cash. All other changes were cash-effective.

Capital management

At the PVA TePla Group the primary objective of capital management is to ensure the financial flexibility required to achieve the growth and return targets. The focus of capital management is on the company's equity and on the borrowing required to financing operating activities. The PVA TePla Group manages the capital structure and makes adjustments taking account of the changes in the general economic situation. The key indicator for capital management is the equity ratio. Actual management is performed by optimizing yields and setting limits on the commitment of funds. Further objectives of capital management include ensuring the Group's liquidity by agreeing appropriate and sufficient credit lines and maintaining the current ratio of advance payments, as well as optimizing the financial result in order to improve returns.

[EUR'000]	Dec. 31, 2019	Dec. 31, 2018
Shareholders' equity	57,315	50,797
Total assets	**180,933**	**162,155**
Equity ratio	31.7%	31.3%

Equity increased to EUR 57,315 thousand in fiscal year 2019 (previous year: EUR 50,797 thousand).

21. CONTINGENT LIABILITIES AND OTHER FINANCIAL OBLIGATIONS

When engaging in its business activities, the PVA TePla Group is occasionally involved in legal disputes. The management is not aware of any events which would considerably impair the earnings, liquidity or financial position and earnings situation. Account is taken of the risks from legal disputes by establishing suitable provisions.

In fiscal year 2019, expenses for leases which were not recognized amounted to EUR 220 thousand, EUR 71 thousand of which related to short-term lease and EUR 149 thousand to leases for low-value assets.

Individual property leases include extension options after the end of the basic term (including the subsequent automatically renewing lease terms) which are included in each measurement of the lease liabilities.

For more information, refer to the relevant explanations in Section B "Changes to Accounting and Policies" and in Note 9 and Note 15 B.

Other financial commitments from master purchase agreements and other contracts (e.g. maintenance contracts, security services) can be broken down as follows:

[EUR'000]	Master purchase agreements	Other contracts
Remaining terms		
Up to 1 year	386	1.007
Between 1 and 5 years	190	144
More than 5 years	0	1

22. RELATED PARTIES

Related parties as defined by IAS 24 are legal or natural persons which can exercise at least a significant influence over PVA TePla AG or are subject to control, joint control or a significant influence by PVA TePla AG.
Related parties are also key management personnel, their close relatives and companies which are controlled, jointly controlled or significantly influenced by this group of persons.

In fiscal year 2019 and in the previous fiscal year, in connection with an existing consulting contract business relationships existed between PVA TePla AG and the main shareholder Peter Abel, who can exercise a significant influence on PVA TePla AG.
The volume of the business transactions amounted to EUR 448 thousand (previous year: EUR 357 thousand). Furthermore, there were liabilities of EUR 312 thousand as of December 31, 2019 (previous year: EUR 200 thousand).

Additional transactions with related parties with reference to the PVA TePla Group relate to business transactions with companies included in the consolidated financial statements. For information on the volume of these transactions, please see the presentation of sales revenues in the segment reporting under Note 19.
This also shows intra-Group revenues. All intra-Group transactions are handled at arm's length conditions and are eliminated in full when preparing the consolidated financial statements. They therefore have no impact on the net assets, financial position and results of operations of the PVA TePla Group.

Members of the Executive Board

Alfred Schopf (Chief Executive Officer)
Oliver Höfer (Production and Technology)

Total Remuneration of the Executive Board

[EUR'000]	2019	2018
Current benefits	1,323	951
Share-based payments	0	0
Post-employment benefits	0	0
Termination benefits	0	0
Other non-current benefits	0	292
Total	**1,323**	**1,243**

Non-current payments are due in connection with the long-term performance-based compensation. All other remuneration listed is payable over the short term.
Employer contributions to pension insurance are not paid. There are no pension commitments for any current Management Board members. No real share options were granted to members of the Management Board in fiscal year 2019 or in fiscal year 2018. There were no unusual transactions with related parties.

In fiscal year 2019, EUR 119 thousand was paid to former members of the Management Board as pensions (previous year: EUR 74 thousand).
As of the balance sheet date of December 31, 2019, there was a provision of EUR 2,403 thousand for these pension obligations (previous year: EUR 2,064 thousand).

Detailed information on the remuneration system and the remuneration components are shown in the remuneration report of the Group management report of the PVA TePla Group.

Members of the Supervisory Board

Alexander von Witzleben, Weimar (Chairman)
- Feintool International Holding AG, Lyss
  (President of the Administration Board)

Member of the following other supervisory bodies:
- VERBIO Vereinigte BioEnergie AG, Leipzig
  (Chairman of the Supervisory Board)
- KAEFER Isoliertechnik GmbH & Co. KG, Bremen
  (Member of the Advisory Board)
- Siegwerk Druckfarben AG & Co. KGaA, Siegburg
  (Member of the Supervisory Board)
- Arbonia AG, Arbon/Schweiz
- (President of the Board of Directors and CEO)
  (previously AFG-Arbonia-Forster-Holding AG)
- Artemis Holding AG, Aarburg/Schweiz
  (Member of the Advisory Board)

Prof. Dr. Gernot Hebestreit, Leverkusen (Deputy Chairman)
- Warth & Klein Grant Thornton AG, Düsseldorf
  (Partner and member of the Board of Directors)

Member of the following other supervisory bodies:
- Comvis AG, Essen
  (Deputy Chairman of the Supervisory Board)

Prof. Dr. Markus H. Thoma, Schöffengrund
- Physikalisches Institut der Universität Gießen, Gießen
  (Head of research group „Plasma and Astronautics Physics")

Member of the following other supervisory bodies:
- Nationales Zentrum für Plasmamedizin e.V.
  (member of the Board of Trustees)

Total Remuneration of the Supervisory Board

[EUR'000]	2019	2018
Fixed compensation	100	100
Variable compensation	0	0
Total	**100**	**100**

The remuneration of the Supervisory Board does not include any performance-related components.

Detailed information on the remuneration system and the remuneration components are shown in the remuneration report of the Group management report of the PVA TePla Group.

Presentation of Significant Accounting Policies
Related parties as defined by IAS 24 are such parties which PVA TePla AG controls, exercises joint control or exercise a significant influence on PVA TePla AG. Subsidiaries, joint ventures and associates as also considered as related parties for PVA TePla AG as well as subsidiaries and joint ventures of PVA TePla in relation to each other.
The same also applies to subsidiaries which are not fully consolidated. Related parties are also key management personnel, their close relatives and companies which are controlled, jointly controlled or significantly influenced by this group of persons.

23. AUDITOR FEES AND SERVICES

[EUR'000]	2019	2018
Audit of annual financial statements	269	243
Other assurance or valuation services	3	0
Tax consulting services	0	0
Other services	27	2
Total	**297**	**245**

Fees for audits of financial statements of Ebner Stolz GmbH & Co. KG related primarily to the audit of the consolidated financial statements and the financial statements of PVA TePla AG and various audits of financial statements of its subsidiaries including audit focus points agreed with the Supervisory Board.

Other services relate primarily to consultancy services in connection with company transactions.
Of the aforementioned costs incurred in the 2019 fiscal year, EUR 54 thousand relate to the previous year (previous year: EUR 31 thousand).

24. DECLARATION ON CORPORATE GOVERNANCE IN ACCORDANCE WITH ARTICLE 161 GERMAN STOCK CORPORATION ACT

The Management Board and Supervisory Board of PVA TePla AG have issued the Declaration of Compliance on the recommendations of the German Corporate Governance Codex (GCGC) in accordance with Article 161 of the German Stock Corporation Act (AktG) and made it available to shareholders.

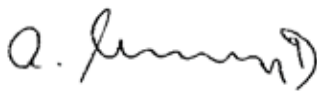
The full declaration is permanently available on the company's website at (*www.pvatepla.com/investor-relations/corporate-governance*). Available on the website are also the Declarations on Corporate Governance published in previous fiscal years.

25. SIGNIFICANT EVENTS AFTER THE REPORTING DATE

In reference to the fiscal year 2020 there are quite considerable economic uncertainties, due in particular to the spread of the corona virus. According to the current assessment of the PVA TePla AG Management Board this could result in considerable shifts of project realizations in the first half of 2020. Depending on the intensity of the corona crisis there could be a demand downturn and lost production. An estimate of the total financial impact is not possible at present because of the current dynamics and the unforeseeable duration of this situation

Wettenberg, March 20, 2020

PVA TePla AG



Chief Executive Officer

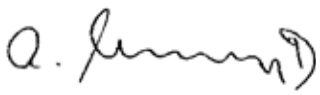
Oliver Höfer
Chief Operating Officer

Responsibility statement

"To the best of our knowledge we assure that in accordance with the applicable reporting principles, the Consolidated Financial Statements give a true and fair view of the net assets, financial position and profit or loss of the Group, and the Group Management Report give a true and fair view of the development and performance of the business and the position of the Group, together with a description of the principle opportunities and risks associated with the expected development of the Group."

Wettenberg, March 20, 2020

Alfred Schopf
Chief Executive Officer



Oliver Höfer
Chief Operating Officer

Independent Auditor's Report

To PVA TePla AG, Wettenberg

Report on the Audit of the Consolidated Financial Statements and the Group Management Report

Audit Opinions

We have audited the consolidated financial statements of PVA TePla AG, Wettenberg, and its subsidiaries (the Group), comprising the consolidated statement of financial position as at December 31, 2019, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the fiscal year from January 1 to December 31, 2019, and the notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we audited the Group management report of PVA TePla AG, Wettenberg, for the fiscal year from January 1 to December 31, 2019. We did not audit the contents of the Group's company management declaration published on the company's website, to which reference is made in section 1 of the Group management report, in compliance with German law.

In our opinion, based on the findings of our audit,

- the attached consolidated financial statements comply in all material respects with IFRSs, as adopted by the EU, and the additional requirements of German law pursuant to Section 315e (1) HGB and, in accordance with these requirements, give a true and fair view of the Group's net assets and financial position as of December 31, 2019, and of its results of operations for the fiscal year from January 1 to December 31, 2019, and

- the attached Group management report as a whole presents an accurate view of the Group's position. The Group management report is consistent with the consolidated financial statements, complies with German legal regulations and suitably presents the opportunities and risks of future development. Our audit opinion regarding the management report does not extend to the contents of the Group's company management declaration pursuant to Section 315d HGB published on the company's website, to which reference is made in section 1 of the Group management report.

Pursuant to Section 322 (3) Sentence 1 HGB, we state that our audit has not led to any reservations with regard to the compliance of the consolidated financial statements or the Group management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and the Group management report in accordance with Section 317 HGB, the EU Audit Regulation (No. 537/2014; hereinafter "EU-AR"), and German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (IDW). Our responsibility according to these regulations and standards is described in further detail in the "Responsibility of the Auditor for the Audit of the Consolidated Financial Statements and the Group Management Report" section of our auditor's report. We are independent of the consolidated companies in compliance with the provisions of European law, German commercial law and professional law and have fulfilled our other German professional obligations in compliance with these requirements. In addition, we declare pursuant to Article 10 (2) lit. f) EU-AR that we have provided no prohibited non-audit services referred to in Article 5 (1) EU-AR. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions regarding the consolidated financial statements and the Group management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are such matters that, in our professional judgment, were the most significant in our audit of the consolidated financial statements for the fiscal year from January 1 to December 31, 2019. These matters were considered in connection with our audit of the consolidated financial statements as a whole and the formulation of our audit opinion; we do not provide a separate audit opinion on these matters. We present the matters that we consider key audit matters below:

1) Revenue recognition
2) Measurement of work in progress

On 1) Revenue recognition

a) Risk for the financial statements

In the consolidated financial statements of PVA TePla AG, sales revenues of EUR 131.0 million are reported in the consolidated income statement.
In accordance with IFRS 15.35 c) period-related revenue recognition (POC-method) of system orders may only be used if an asset is created that has no alternative possible use and, in addition, where a right to payment for the service already provided exists, including an appropriate profit mark-up, that is enforceable by law. When using the POC method, the revenue is recognized over a period of time according to the progress of the service. The service rendered, including the prorated result, is recognized as revenues over the period of production in the sales revenues and the production progress is calculated on the basis of the previously recorded order costs in relation to the expected total contract costs (cost-to-cost method).

Furthermore, the contracts with customers regularly contain various performance promises, which may be classified as separate performance obligations and to which a part of the contract price is to be assigned.

The information provided by the company for revenue recognition in accordance with IFRS 15 is contained in sections A. 2) and C. 17) of the notes to the consolidated financial statements.

Determining whether a product or service is regarded as a separate performance obligation and determining the expected cost of the contract as part of the cost-to-cost method is subject to the Management Board's discretion. Furthermore, the individual contractual assessment whether the requirements of IFRS 15.35 c) for the period-related realization of revenue are met, as well as the split of the purchase price to the performance obligations, can lead to necessitating complex assessments by the accounting company. Against this backdrop, we considered these issues as particularly significant for our audit.

b) Audit approach and conclusions

We have performed an assessment of the basic accounting methods for plant types as well as the calculation models used in the context of the period-related revenue recognition using the cost-to-cost method. Furthermore, we paid tribute to the legal situation in individual countries or examined in random samples on a contractual basis whether there is a legal claim to payment of the services already provided in accordance with IFRS 15.37.

Based on risk-oriented selected samples of multiple-component contracts and the allocations of the proceeds to the individual performance obligations, we have assessed the estimates and assumptions made by the legal representatives in the context of individual case audits.

With regard to the examination of estimates of the expected production costs as part of the cost-to-cost method, we refer to the particularly important audit case 2) Measurement of work in progress.

The performed audit procedures did not lead to any objections with regard to the revenue recognition.

On 2) Measurement of work in progress

a) Risk for the financial statements

In the consolidated financial statements of PVA TePla AG, Wettenberg, assets of EUR 48.0 million are shown under "Work in progress" in the statement of financial position. They are measured at cost, including production and material overheads. With regard to the calculation of overheads and the expected contract costs and revenue, the measurement of inventories is subject to the management's discretion. Against this backdrop, in light of the significance for the determination of the percentage of completion in connection with period related revenue recognition according to IFRS 15 on the basis of the cost-to-cost method, and due to the size of the amount, the measurement of "work in progress" was particularly significant for our audit.

The company's disclosures on inventory measurement are included in section F.12 of the notes to the consolidated financial statements.

b) Audit approach and conclusions

Initially, we assessed the correct adoption of costs from the upstream systems. We then reviewed the hourly production cost rates and material overhead rates used in the measurement with regard to the costs included in their calculation and any idle capacity costs to be eliminated. In particular, we critically scrutinized and checked the plausibility of the management's assumptions. We examined the parameters including the calculation of hourly rates and overheads to check correct derivation from accounting.

In addition, our audit procedures concentrated on correct measurement of work in progress at the lower of cost or net realizable value. To this end, we audited the sale proceeds with any charges already contractually agreed or with charges for similar assets on a test basis. With regard to the expected contract costs, we evaluated the risk reports, minutes of Management Board and Supervisory Board meetings and contract controlling reports and discussed these matters and estimates with the management and other appointed employees. The forecast quality of the expected costs was additionally assessed on the basis of terminated contracts by comparing expected costs with costs actually incurred on a test basis.

To identify contracts with potential cost increases, mass data analyses of costs were also carried out, taking account of the respective cost types and their expected accumulation over the course of production. Abnormalities were then scrutinized critically and discussed with the employees responsible for the contract.

We found no material errors in the measurement methods or in the calculations and consider the assumptions made to be balanced and appropriate.

Other Information

The legal representatives are responsible for the other information. The other information includes:

- the Group's company management declaration published on the company's website, to which reference is made in section 1 of the Group management report,
- the other parts of the annual report, with the exception of the audited consolidated financial statements and Group management report and our auditor's report, and
- the responsibility statement pursuant to Section 297 (2) Sentence 4 HGB on the consolidated financial statements and the responsibility statement pursuant to Section 315 (1) Sentence 5 HGB on the Group management report.

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

As part of our audit of the consolidated financial statements, we have a responsibility to read the other information and to evaluate whether it

- exhibits material discrepancies with the consolidated financial statements, the Group management report or the knowledge we have obtained during our audit, or
- otherwise seems significantly incorrect.

Responsibility of the Legal Representatives and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

The legal representatives are responsible for preparing the consolidated financial statements, which in all material respects comply with IFRSs, as adopted by the EU, and the additional requirements of German law pursuant to Section 315e (1) HGB, and for the consolidated financial statements giving a true and fair view of the net assets, financial position and results of operations of the Group in accordance with these requirements. Furthermore, the legal representatives are responsible for the internal controls that they deemed necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

When preparing the consolidated financial statements, the legal representatives are responsible for assessing the Group's status as a going concern. In addition, they have a responsibility to disclose matters related to the status as a going concern, if relevant. They are also responsible for accounting on the basis of the going concern principle, unless they intend to liquidate the Group or discontinue its business operations, or there is no realistic alternative.

Moreover, the legal representatives are responsible for preparing the Group management report, which as a whole provides an accurate view of the Group's position and is consistent with the consolidated financial statements in all material respects, complies with German legal regulations and suitably presents the opportunities and risks of future development. The legal representatives are also responsible for the arrangements and measures (systems) that they considered necessary to enable the preparation of a Group management report in compliance with applicable German legal regulations and to allow sufficient, suitable evidence to be provided for the statements in the Group management report.

Responsibility of the Auditor for the Audit of the Consolidated Financial Statements and the Group Management Report

Our objective is to obtain reasonable assurance as to whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the Group management report as a whole provides an accurate view of the Group's position and is in all material respects consistent with the consolidated financial statements and with the findings of the audit, complies with German legal regulations and suitably presents the opportunities and risks of future development, and to issue an auditor's report containing our audit opinions regarding the consolidated financial statements and the Group management report.

Reasonable assurance is a high level of assurance but not a guarantee that an audit carried out in compliance with Section 317 HGB, the EU-AR and German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (IDW) will always uncover a material misstatement. Misstatements can result from transgressions or inaccuracies and are deemed material if it could be reasonably expected that they would individually or together influence the financial decisions made by users on the basis of the consolidated financial statements and Group management report.

We exercise due discretion during the audit and maintain a critical attitude. In addition,

- we identify and evaluate the risk of material misstatements, whether due to fraud or error, in the consolidated financial statements and the Group management report, plan and implement audit procedures in response to these risks and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk that material misstatements are not uncovered is higher in the case of transgressions than in the case of inaccuracies, as transgressions can entail fraudulent collaboration, falsifications, deliberate omissions, misleading depictions or the suspension of internal controls.
- we gain an understanding of the internal control system relevant for the audit of the consolidated financial statements and of the arrangements and measures relevant for the audit of the Group management report in order to plan audit procedures that are appropriate given the circumstances, but not with the aim of providing an audit opinion regarding the effectiveness of these systems.
- we evaluate the appropriateness of the accounting policies used by the legal representatives and the reasonableness of the estimated values presented by the legal representatives and the associated disclosures.
- we draw conclusions about the appropriateness of the going concern principle applied by the legal representatives and, on the basis of the audit evidence obtained, whether there is material uncertainty regarding events or circumstances that could cause significant doubt about the Group's ability to continue as a going concern. If we come to the conclusion that there is material uncertainty, we are obliged to call attention to the associated disclosures in the consolidated financial statements and in the Group management report in the auditor's report or, if these disclosures are inappropriate, to modify our respective audit opinion. We draw our conclusions on the basis of the audit evidence obtained up to the date of our auditor's report. However, future events or circumstances may mean that the Group is no longer a going concern.
- we evaluate the overall presentation, the structure and the content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events such that the consolidated financial statements give a true and fair view of the net assets, financial position and results of operations of the Group in accordance with IFRSs, as adopted by the EU, and the additional requirements of German law pursuant to Section 315a (1) HGB
- we obtain sufficient appropriate audit evidence for the company's accounting information or business activities within the Group in order to provide audit opinions regarding the consolidated financial statements and the Group management report. We are responsible for directing, monitoring and implementing the audit of the consolidated financial statements. We bear sole responsibility for our audit opinions.

- we evaluate the consistency of the Group management report with the consolidated financial statements, its legality and the view it gives of the position of the Group.
- we conduct audit procedures regarding the forward-looking disclosures made by the legal representatives in the Group management report. On the basis of sufficient appropriate audit evidence, we examine the significant assumptions underlying the legal representatives' forward-looking disclosures in particular and evaluate the appropriateness of the derivation of the forward-looking disclosures from these assumptions. We do not provide a separate audit opinion regarding the forward-looking disclosures or the underlying assumptions. There is a considerable, unavoidable risk that future events will differ significantly from the forward-looking disclosures.

Topics for discussion with those responsible for monitoring include the planned scope and scheduling of the audit as well as significant audit findings, including any deficiencies in the internal control system that we find during our audit.

We issue a statement to the monitors to the effect that we have complied with the relevant independence requirements and discuss with them all relationships and other matters that can reasonably be assumed to affect our independence and the safeguards put in place to protect against this.

From among the matters that we have discussed with the monitors, we determine which matters were most significant in the audit of the consolidated financial statements for the current reporting period and are therefore the key audit matters. We describe these matters in the auditor's report, unless laws or other legal provisions preclude their public disclosure.

Other Statutory and Legal Requirements

Other Disclosures Pursuant to Article 10 EU-AR

We were elected as the auditor of the consolidated financial statements by the Annual General Meeting on June 26, 2019. We were engaged by the Supervisory Board on June 26, 2019. We have been the auditor of the consolidated financial statements of PVA TePla AG, Wettenberg, without interruption since fiscal year 2007.

We declare that the audit opinions contained in this auditor's report are consistent with the additional report to the Supervisory Board according to Article 11 EU-AR (audit report).

Responsible Auditor

The auditor responsible for the audit is Mr. Carl-Markus Groß.

Frankfurt/Main, March 20, 2020

Ebner Stolz GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft

FINANCIAL CALENDAR

Date		Advise
May 8, 2020	Interim Announcement to the first quarter	
June 26, 2020	Annual Shareholders Meeting	
August 7, 2020	Half-Year Report	
November 7, 2020	Interim Announcement to the third quarter	
November 16-18, 2020	German Equity Forum	Frankfurt

IMPRINT

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