



D E S I G N O F I N N O V A T I O N

Annual Report 2019

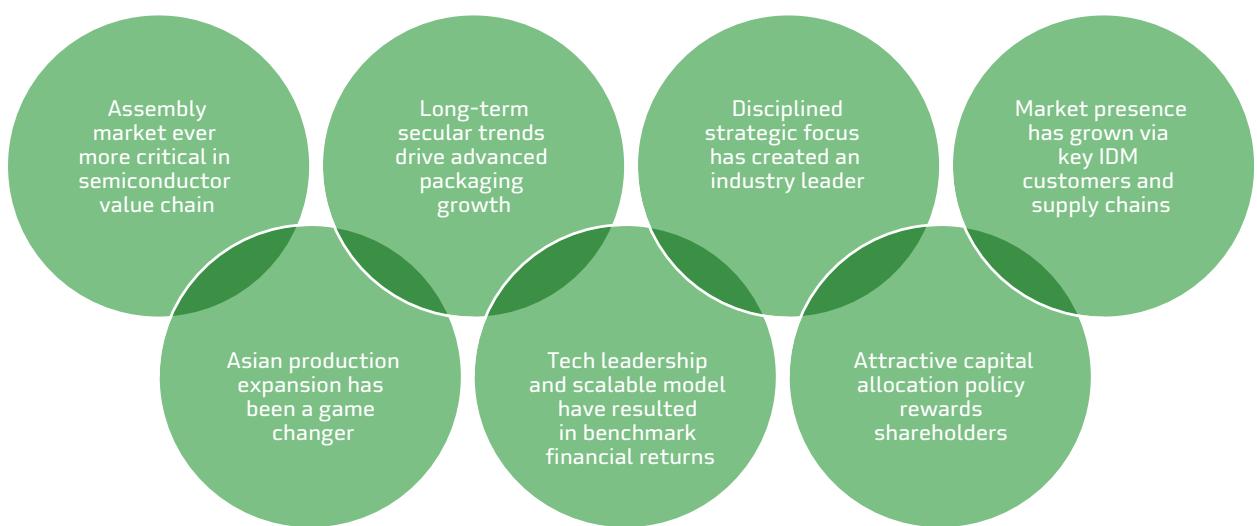


Besi

DESIGN OF INNOVATION

- Besi has a long tradition of innovation in the development of advanced die bonding, packaging and plating systems for the assembly equipment market
- We work closely with customers to produce systems with industry leading levels of accuracy, throughput and reliability
- Our products are used for leading edge applications such as 3D imaging, facial recognition, 5G networks, microLED screens, automotive electronics, cloud servers and high-performance computing
- We are currently investing in new assembly technologies such as FOWLP, TCB, TSV, ultra thin dies, hybrid bonding and large area and wafer level molding as well as solar and 3D-lithium-ion battery plating for the new digital society

INVESTMENT CONSIDERATIONS



FINANCIAL HIGHLIGHTS

	2019	2018
Revenue	€ 356.2 MM	€ 525.3 MM
Gross Margin	55.8%	56.8%
Net Income	€ 81.3 MM	€ 136.3 MM
Net Margin	22.8%	25.9%
Return on Avg Equity	24.2%	33.8%

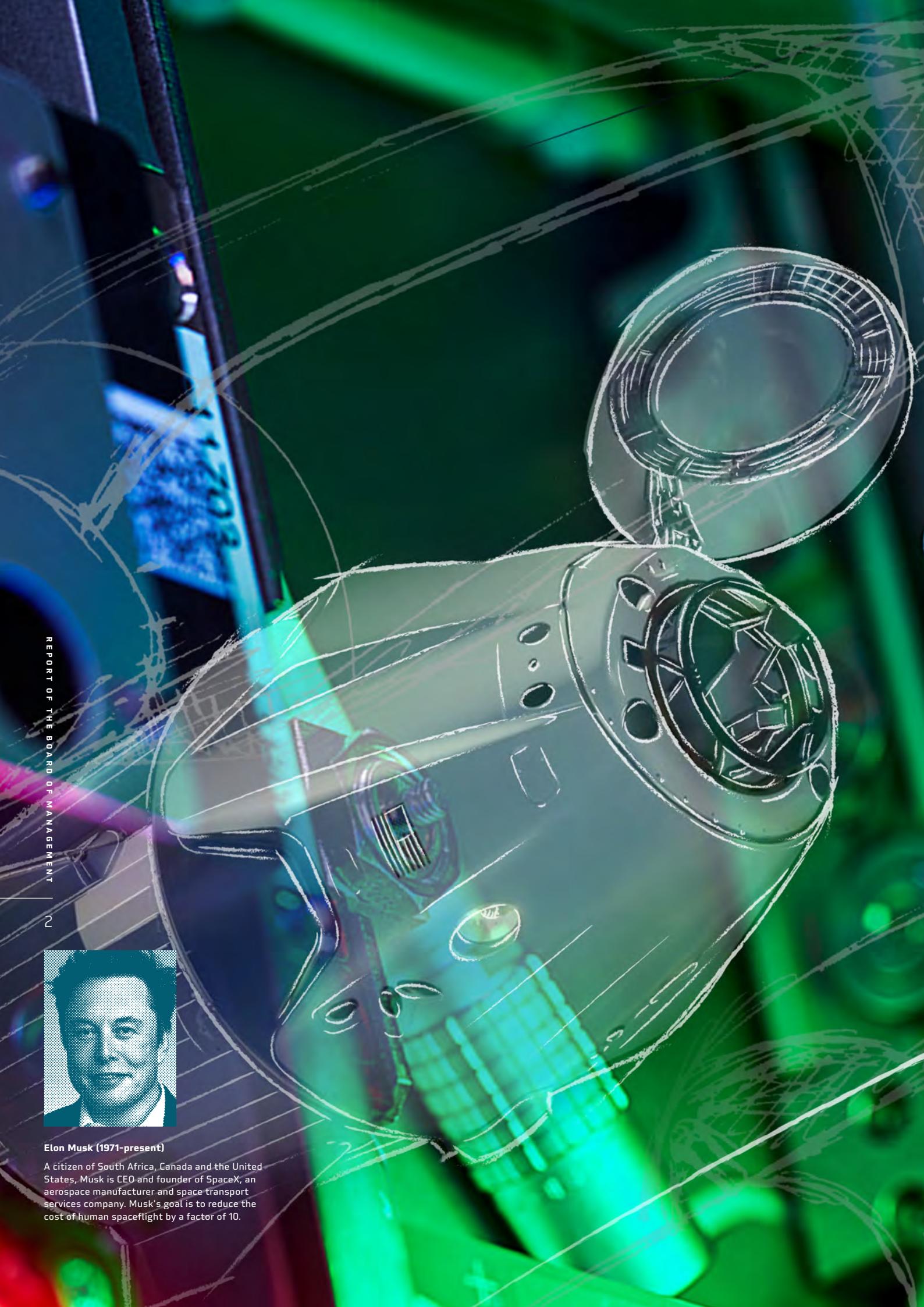
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Elon Musk (1971-present)

A citizen of South Africa, Canada and the United States, Musk is CEO and founder of SpaceX, an aerospace manufacturer and space transport services company. Musk's goal is to reduce the cost of human spaceflight by a factor of 10.



Report of the Board of Management

Company Profile

BE Semiconductor Industries N.V. ("Besi" or the "Company") is engaged in one line of business, the development, manufacturing, marketing, sales and service of semiconductor assembly equipment for the global semiconductor and electronics industries.

Our market

The semiconductor manufacturing process involves two distinct phases, wafer processing, commonly referred to as the front-end, and assembly/test operations which are commonly referred to as the back-end. Our equipment is used by customers principally to produce advanced semiconductor assemblies or "packages". Typically, such assemblies provide the electronic interface and physical connection between a semiconductor device, or "chip", and other electronic components and protect the chip from the external environment. VLSI Research, a leading independent industry analyst, estimated that the size of the assembly equipment market was approximately \$ 3.0 billion in 2019, or 5.0% of the total semiconductor equipment market. Annual growth rates in the semiconductor assembly equipment market can fluctuate greatly based on global economic cycles and the capital investment programs of our semiconductor and industrial customers.

Semiconductor assembly shares certain common processes but involves three distinct technologies currently depending on the product application required:

Leadframe assembly, the most traditional approach, involves the electrical connection of the chip via a wire bonding process to a metal leadframe. Leadframe assembly technology is most frequently used to produce semiconductor devices for mass market and consumer electronics applications.

Substrate assembly, an alternative assembly process, has gained increased market acceptance and is used most frequently in new product applications that require high degrees of miniaturization and chip density such as smart phones, tablets and portable personal computers as well as wireless, automotive and cloud based internet applications. In a typical substrate assembly, no metal leadframes are utilized and the electrical connection of the chip is made directly to a multi-layer substrate or through the creation of direct connections to the multi-layer substrate via a flip chip die bonding process.

Wafer level packaging, the most advanced assembly technology, eliminates the use of either a metal leadframe or laminated substrate for semiconductor assembly. In wafer level packaging, the electrical connections are directly applied to the chip without the need for an interposer. This process technology enables customers to achieve even higher degrees of miniaturization, chip density and performance and lower energy consumption than substrate assembly but at a higher cost and reduced yield currently. We anticipate that wafer level packaging will be more actively utilized for next generation applications such as big data, artificial intelligence and the digital society.

Besi is a leading provider of advanced packaging solutions to customers which incorporate both substrate and wafer level based packaging processes in their assembly operations. We define advanced packaging as the assembly of semiconductor devices with geometries below 28 nanometers and placement accuracy below 10 microns in 24/7 production environments. We estimate that approximately 75% of Besi's system revenue in 2019 was for advanced packaging applications of which 55% were for the most leading edge devices with geometries below 17 nanometers and placement accuracy below 7 microns.

Our market opportunities

The markets which we serve offer significant long-term opportunities for growth particularly in the most advanced packaging applications. Besi is well positioned to capitalize on end-user market opportunities, the most prominent of which include: (i) mobile internet devices (5G smart phones, wearable internet devices, other wireless devices and logistical systems), (ii) intelligent automotive components and sensors, (iii) computing (tablets, servers, PCs, flat panel displays, internet applications), (iv) data mining, (v) cloud computing and peripherals, (vi) the Internet of Everything including the smart management of residential, industrial and municipal equipment and functions, (vii) artificial intelligence, (viii) virtual and augmented reality, (ix) advanced medical equipment and devices, (x) solar, battery and renewable energy applications and (xi) LED devices.

Our products and services

Besi develops and supplies leading edge systems offering high levels of accuracy, reliability and productivity at a low cost of ownership. We offer customers a broad portfolio of systems which address substantially all the assembly process steps involved in leadframe, substrate and wafer level packaging. Our principal product and service offerings include:

- **Die attach equipment:** single chip, multi chip, multi module, flip chip, TCB, FOWLP and hybrid die bonding systems and die sorting systems.
- **Packaging equipment:** conventional, ultra thin and wafer level molding, trim and form and singulation systems.
- **Plating equipment:** tin, copper and precious metal plating systems and related process chemicals.
- **Services/Other:** tooling, conversion kits, spare parts and other services for our installed base of customers.

Our customers

Our customers are primarily leading multinational chip manufacturers, assembly subcontractors and electronics and industrial companies and include ASE, Amkor, Bosch, Forehope, Huatian, Infineon, JCET/STATS ChipPAC, LG Innotek, NXP Semiconductors, SPIL, STMicroelectronics and TFME. Customers are either independent device manufacturers ("IDMs") which purchase our equipment for internal use at their assembly facilities or assembly subcontractors which purchase our equipment to produce packages for third parties on a contract basis. Our equipment performs critical functions in our customers' assembly operations and in many cases represents a significant percentage of their installed base of assembly equipment.

Our global presence

We are a global company with headquarters in Duiven, the Netherlands. We operate seven facilities in Asia and Europe for production and development activities as well as nine sales and service offices across Europe, Asia and North America. We employed a total staff of 1,596 fixed

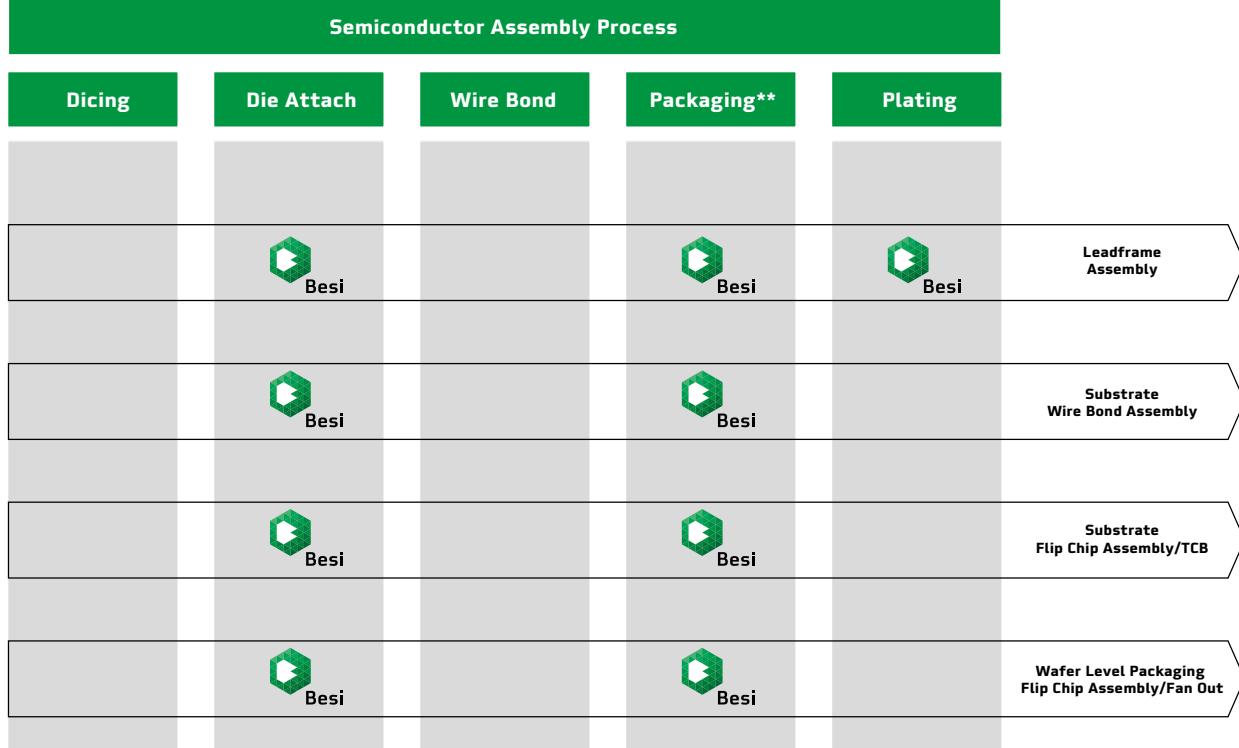
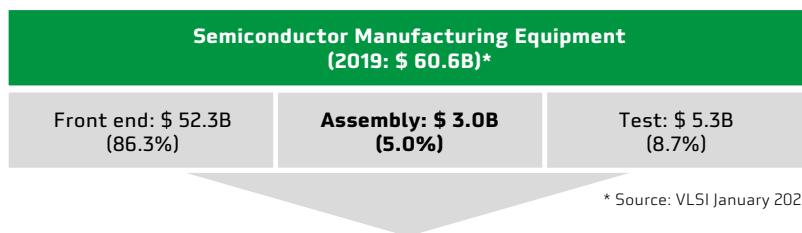
and temporary personnel at December 31, 2019, of whom approximately 68% were based in Asia and 32% were based in Europe and North America.

Our listings

Besi was incorporated under the laws of the Netherlands in May 1995 and had an initial public offering in December 1995. Besi's ordinary shares are listed on Euronext Amsterdam (symbol: BESI) and are included in the Amsterdam Midcap Index ("AMX index"). Our level 1 ADRs trade on the OTC markets (symbol: BESIY, Nasdaq International Designation). We also have two issues of Senior Unsecured Convertible Notes outstanding which are listed on the Deutsche Börse's Freiverkehr market. (See [Shareholder Information](#)).

More detailed information about Besi can be found at our website: www.besi.com.

FROM PROCESSED WAFER TO ASSEMBLED CHIP



** Includes Molding, Trim and Form and Singulation Systems.

Key Highlights 2019

Solid performance in challenging industry environment

- Revenue of € 356.2 million. Down 32.2% versus 2018
- Gross margin of 55.8% versus 56.8%
- Net income of € 81.3 million versus € 136.3 million
- Net margin of 22.8% versus 25.9%
- Return on average equity of 24.2% versus 33.8%
- Total shareholder return of 98.7% versus S&P 500 index of 66.5%

Peer leading operating efficiency

- Gross and net margins and return on equity highest amongst assembly equipment peers
- Operating discipline kept gross margins consistently above 55% despite market downturn and global trade tensions
- Profitability enhanced by strategic initiatives to align overhead and supply chain with industry conditions

Strong cash flow generation supports shareholder friendly capital allocation program

- Cash flow from operations of € 120.1 million represented 33.7% of revenue in 2019
- Net cash of € 130.3 million at year end reflects dividends paid and share repurchases totalling € 167.1 million during year
- Cash and deposits of € 408.4 million (€ 5.66 per basic share) provide solid basis for future growth
- New € 80 million revolving credit facility (expandable to € 136 million) provides attractive layer of growth capital
- Proposed 2019 dividend of € 1.01 per share. Pay-out ratio of approximately 90%

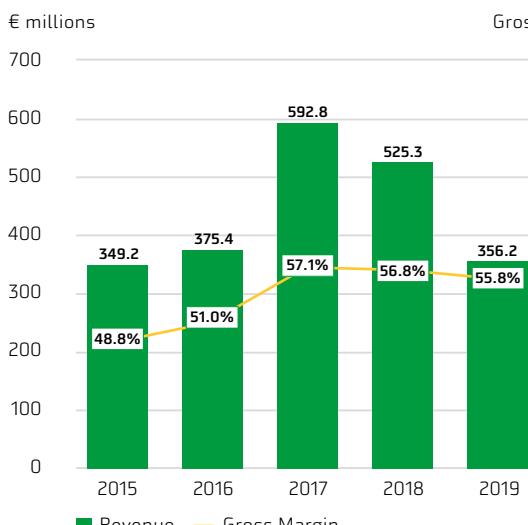
Strategic plan execution enhances returns from business model

- Structural cost reduction continues via 9.3% decrease in total headcount versus year end 2018
- Overhead reduction aided by continued West-East transfer of SG&A personnel
- New strategic initiatives developed for 2020-2025 to enhance long-term value creation

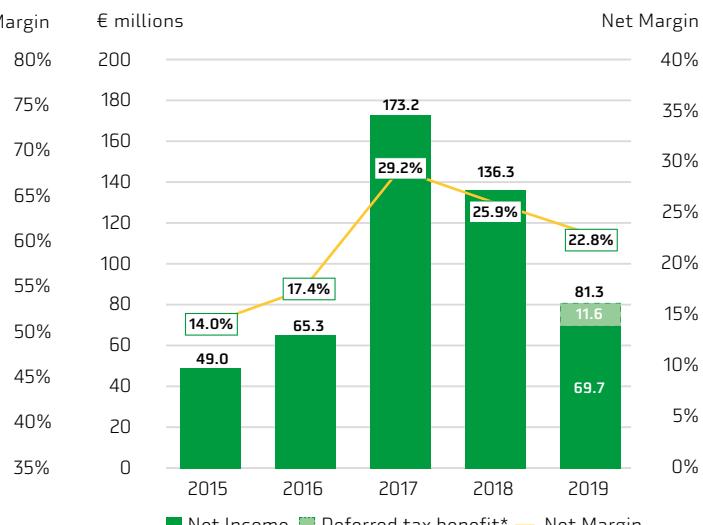
Well positioned for next industry upcycle

- Advanced packaging ever more critical part of semiconductor value chain for emerging digital applications
- Development efforts aligned with customer roadmaps for next investment round including:
 - Leading edge applications such as artificial intelligence, 5G network compatibility, cloud computing, data mining, autonomous driving and the Internet of Everything
 - Next generation 5G smart phone applications such as antennas and microLED screens
- Upside potential in next upcycle due to favorable secular trends, leading position in advanced packaging and highly scalable production

REVENUE AND GROSS MARGIN TRENDS



NET INCOME TRENDS



* Includes € 11.6 million tax benefit at Besi Switzerland in Q4-19.

Key Financial Highlights

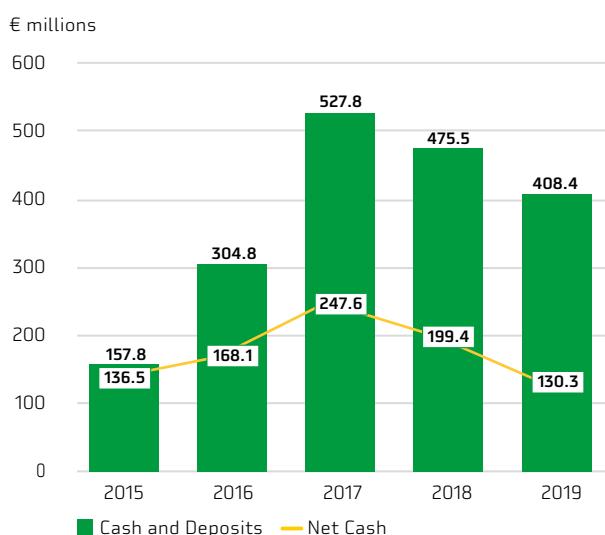
Year ended December 31,	2019	2018	2017	2016	2015
Operating data (in euro millions, except share and per share data)					
Revenue	356.2	525.3	592.8	375.4	349.2
Orders	348.7	483.1	680.9	373.8	348.3
Operating income	91.9	172.7	209.4	75.2	57.9
EBITDA	111.7	187.7	222.8	89.8	73.0
Net income	81.3	136.3	173.2	65.3	49.0
Net income per share ¹					
Basic	1.12	1.83	2.32	0.87	0.65
Diluted	1.06	1.68	2.17	0.85	0.64
Dividend per share ^{1,2}	1.01	1.67	2.32	0.87	0.60
Shares outstanding (in thousands) ³	72,212	73,570	74,551	74,653	75,727
Balance sheet data					
Cash, cash equivalents and deposits	408.4	475.5	527.8	304.8	157.8
Total debt	278.1	276.1	280.2	136.7	21.4
Net cash	130.3	199.4	247.6	168.1	136.5
Total equity	298.5	372.2	434.1	345.0	332.2
Financial ratios					
Gross profit as % of revenue	55.8	56.8	57.1	51.0	48.8
Operating income as % of revenue	25.8	32.9	35.3	20.0	16.6
Net income as % of revenue	22.8	25.9	29.2	17.4	14.0
Return on average equity (%)	24.2	33.8	44.4	19.3	14.8
Return on invested capital (%)	13.5	22.3	30.4	16.0	14.2
Current ratio	6.4	6.0	5.2	4.7	4.4
Solvency ratio	42.8	48.2	49.6	58.7	76.8
Headcount data					
Headcount fixed	1,534	1,692	1,724	1,586	1,499
Headcount temporary	62	67	316	83	40
Total headcount	1,596	1,759	2,040	1,669	1,539
Geographic data					
Revenue from Asia as % of total revenue	72.2	66.4	70.4	78.2	66.4
Headcount in Asia as % of total headcount	68.3	70.3	71.1	66.8	61.7
Selected non-financial and CSR data					
Energy use (GWh)	14.9	15.9	17.7	14.6	16.4
Waste (ton)	159	164	183	186	155
Water usage (m ³ in thousands)	27.3	27.2	32.6	26.2	28.8

¹ The number of shares and per share amounts have been adjusted for the two for one stock split effected on May 4, 2018.

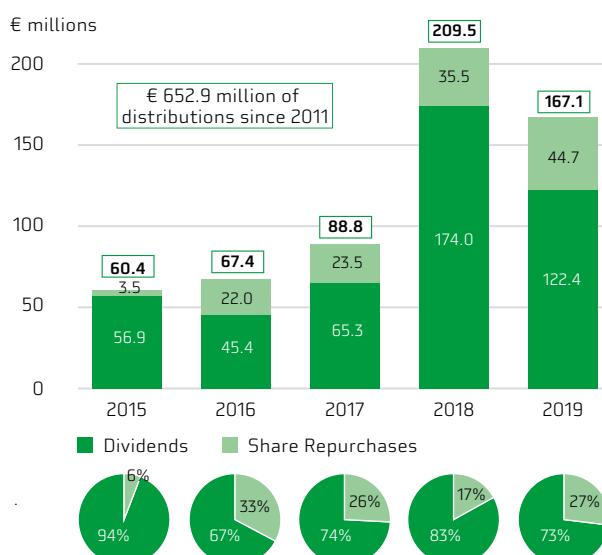
² Proposed 2019 dividend for approval at Besi's AGM to be held on April 30, 2020.

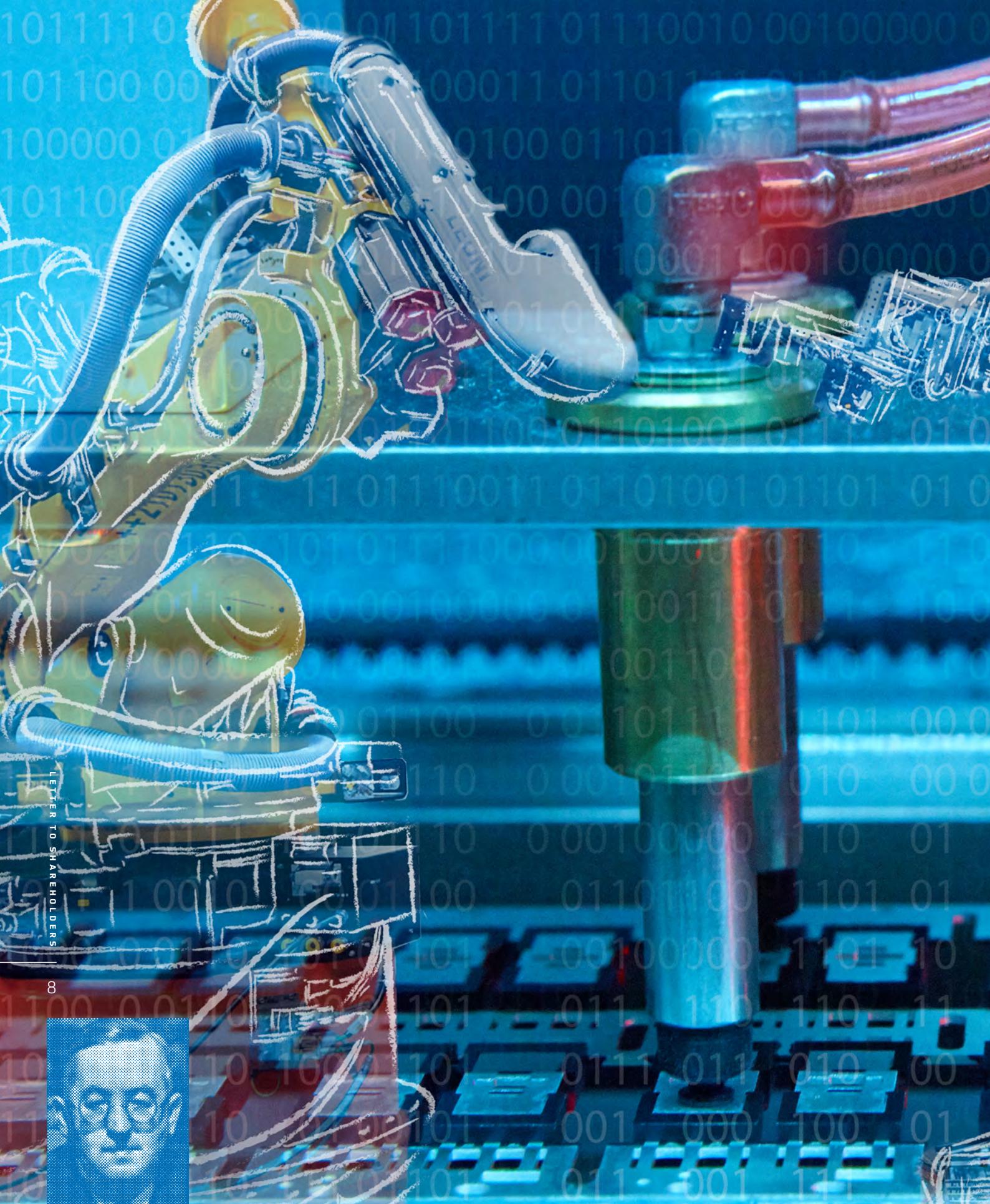
³ Net of shares held in treasury.

Liquidity Trends



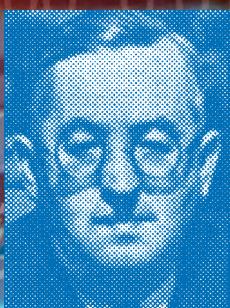
Capital Allocation Trends





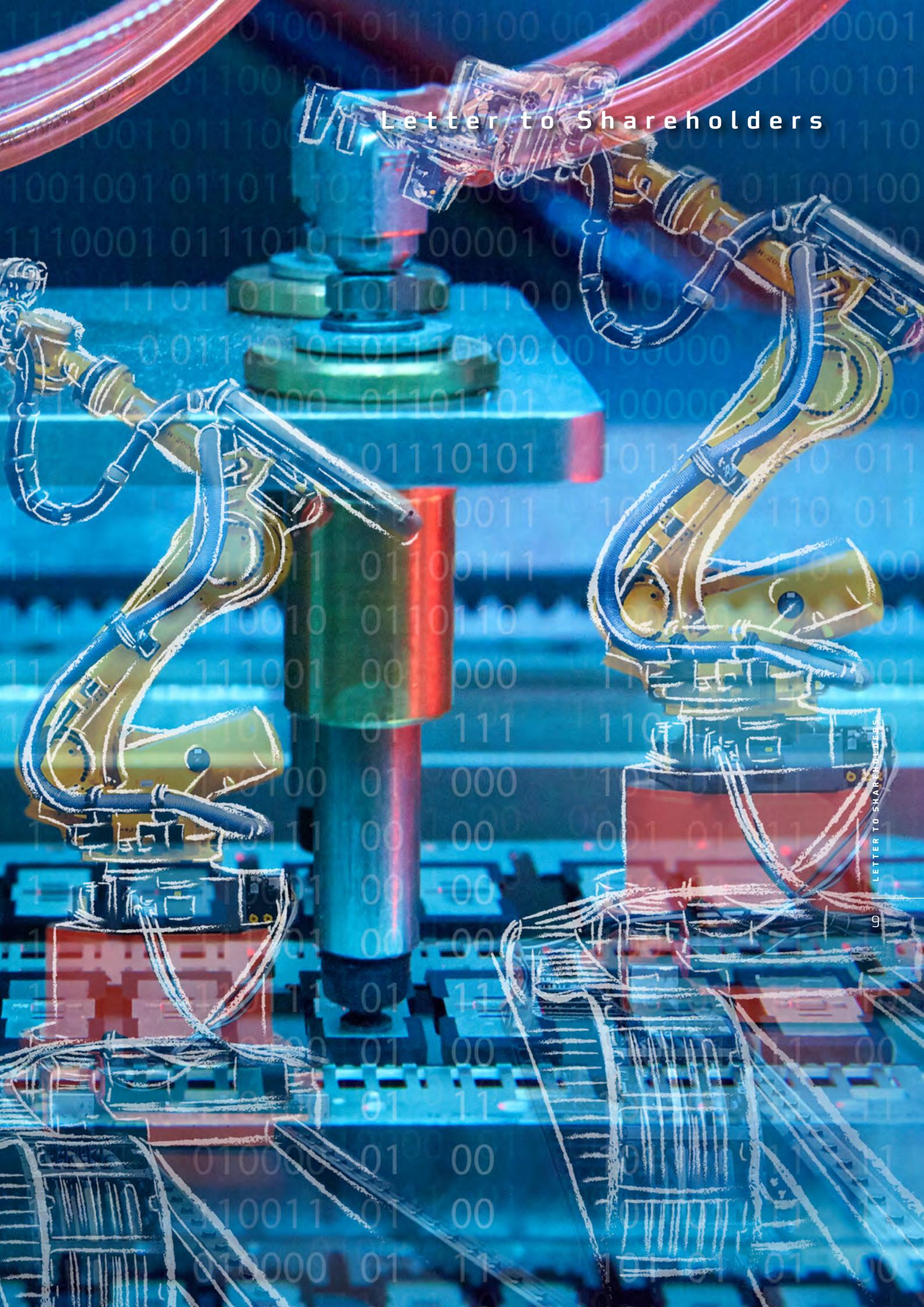
LETTER TO SHAREHOLDERS

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Josef Čapek (1902–1983)

'Robot' was first applied as a term for artificial automata in the 1920 play R.U.R. by the Czech writer, Karel Čapek. Josef Čapek was named by his brother Karel as the true inventor of the term robot. The word 'robot' itself was not new, having been already included in the Slavic language as *roboča* (forced laborer).



Letter to Shareholders

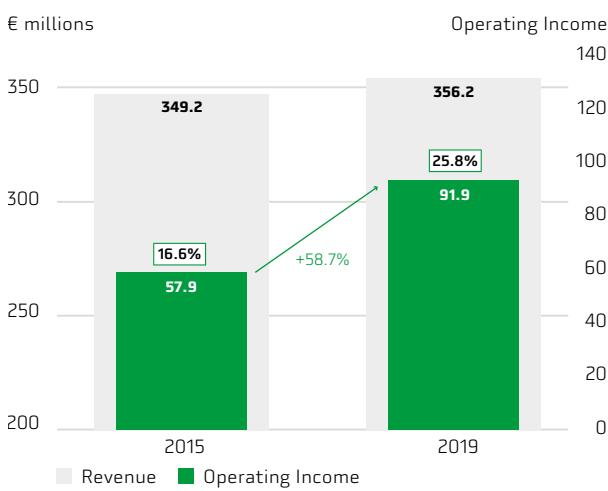
Letter to Shareholders

Dear Shareholders,

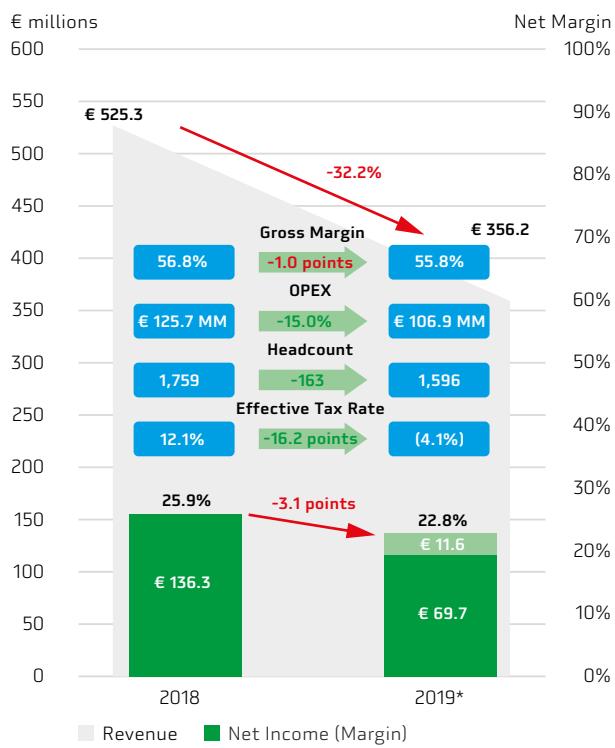
Besi generated solid results in 2019 against the backdrop of an industry downturn which persisted for most of the year. Consistent with a difficult market environment, revenue of € 356.2 million and net income of € 81.3 million declined by 32% and 40%, respectively, versus 2018. Revenue development was negatively influenced by supply/demand imbalances which began in Q2-18 post the large capacity build in 2017 and continued throughout 2019. In addition, revenue was also adversely affected by high levels of customer uncertainty caused by trade tensions between the US and China, particularly during the second and third quarters. Despite such headwinds, Besi achieved strong levels of profitability and efficiency as we further reduced overhead levels in alignment with market conditions, adjusted our Asian production model to reflect changing global supply chain realities and increased development efforts in preparation for the next customer investment round. Moreover, we realized quarterly gross margins in excess of 55% throughout the year, reduced base line operating expenses to their lowest levels since 2015 and maintained high levels of cash flow efficiency. In fact, operating income and operating margins in 2019, the bottom of this current downcycle, increased by 58.7% and 9.2 points, respectively, in comparison to the last industry downturn in 2015, on roughly comparable revenue levels (€ 356.2 million versus € 349.2 million).

Our favorable results during the current downturn demonstrate the improved scalability and profitability of our business model both in strong industry upcycles such as 2017 as well as during the sharp downdraft experienced in 2018 and 2019. As a result, Besi maintained peer leading metrics of profitability such as gross and net margins (55.8% and 22.8%, respectively) and return on equity (24.2%). We successfully reduced costs in the face of lower customer demand as a result of the ongoing execution of strategic initiatives including a 9.3% reduction in fixed overhead and tight control of inventory and supply chain activities. Besi's spares/service activities also helped provide some cushion during this downturn. This less cyclical, high margin business generated revenue equal to approximately 20% of consolidated revenue in 2019.

INCREASED PROFITABILITY VS. LAST DOWNTURN

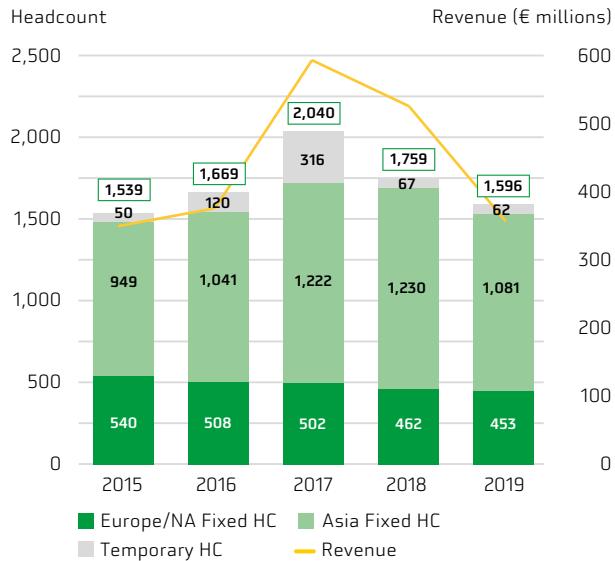


SOLID 2019 PERFORMANCE IN CHALLENGING MARKET



* Includes € 11.6 million tax benefit at Besi Switzerland in Q4-19.

ALIGNING HEADCOUNT WITH MARKET CONDITIONS



Besi ended the year with a solid liquidity base consisting of cash, cash equivalents and deposits aggregating € 408.4 million (€ 5.66 per basic share) which positions us favorably to take advantage of future growth opportunities. In addition, we bolstered our financing resources by securing a five-year, € 80 million revolving credit facility in July 2019 with a consortium of leading European banks. The facility can be expanded to € 136 million and its maturity extended to seven years at our discretion. We are pleased to add this flexible financing layer to Besi's capital structure, which replaces and centralizes various credit facilities at subsidiary levels.

Shareholders were rewarded for their investment in Besi both by our capital allocation policy and share price performance this year. In 2019, € 167.1 million was returned to shareholders in the form of dividends and share repurchases. Since 2011, total dividends and share repurchases have aggregated to € 652.9 million. Moreover, share repurchase activities since 2011 have enabled us to accumulate approximately 7.9 million shares in treasury by December 31, 2019 at an average cost per share of € 15.05. In the aggregate, share repurchases equaled 9.8% of total shares outstanding at year end.

In addition, Besi's shareholder total return was 98.7% in 2019 versus a 71.3% return by our most comparable peers and a 66.5% return for the benchmark Philadelphia Semiconductor ("SOX") index. Further, over the past five years, Besi's stock has produced a cumulative total return of 395.7%, significantly outpacing returns of both our peers and the SOX index. We can also report a significant expansion of our investor base this year, with numerous US, UK and European institutions now added to Besi's shareholder community.

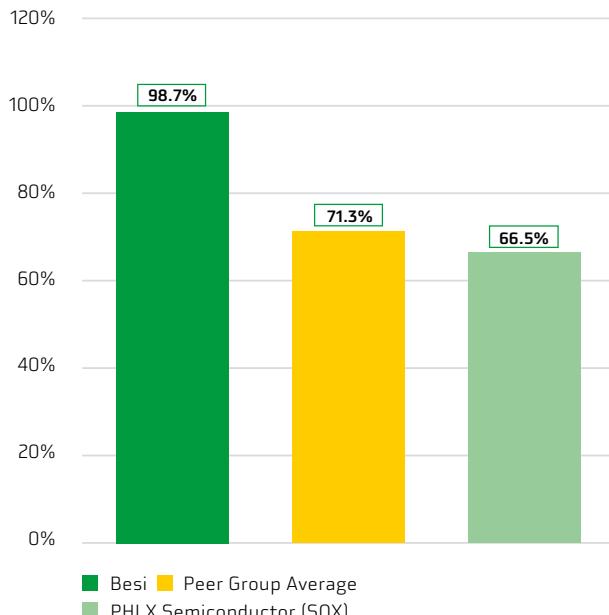
Given profits earned in 2019 and Besi's solid financial position, we propose to pay a cash dividend of € 1.01 per share for approval at Besi's AGM to be held on April 30, 2020. The proposed distribution is the ninth consecutive annual dividend paid and reflects a pay-out ratio relative to net income of 90%.

Business review

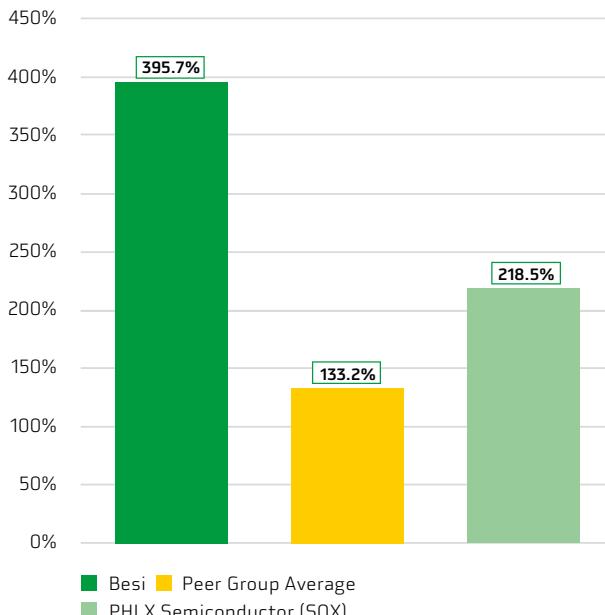
Semiconductor assembly equipment market declined significantly in 2019 versus 2018. Indications of a renewed industry upturn appeared in Q4-19

VLSI Research currently estimates that the semiconductor assembly equipment market declined by 30.4% in 2019 to reach a cyclical low of approximately \$ 3.0 billion. The current 2019 estimate reflects a much more negative outcome than the 5% decrease initially forecast as late as July 2019 and underlines the severity of the 2018-2019 downturn.

2019 TOTAL SHAREHOLDER RETURN BESI VS. PEER GROUP & SOX INDEX



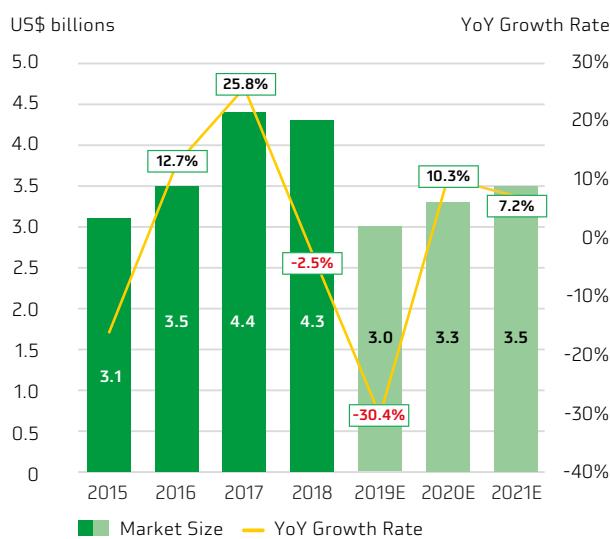
TOTAL CUMULATIVE SHAREHOLDER RETURN BESI VS. SOX INDEX 2015-2019



- Total shareholder return includes reinvestment of dividends.
- Besi returns calculated in euro. Philadelphia SOX returns calculated in US dollars.
- Peer group average consists of Kulicke & Soffa, ASM PT, Disco Corp., Towa, Tokyo Seimitsu.

Source: Bloomberg

ASSEMBLY EQUIPMENT MARKET TRENDS



Source: VLSI January 2020

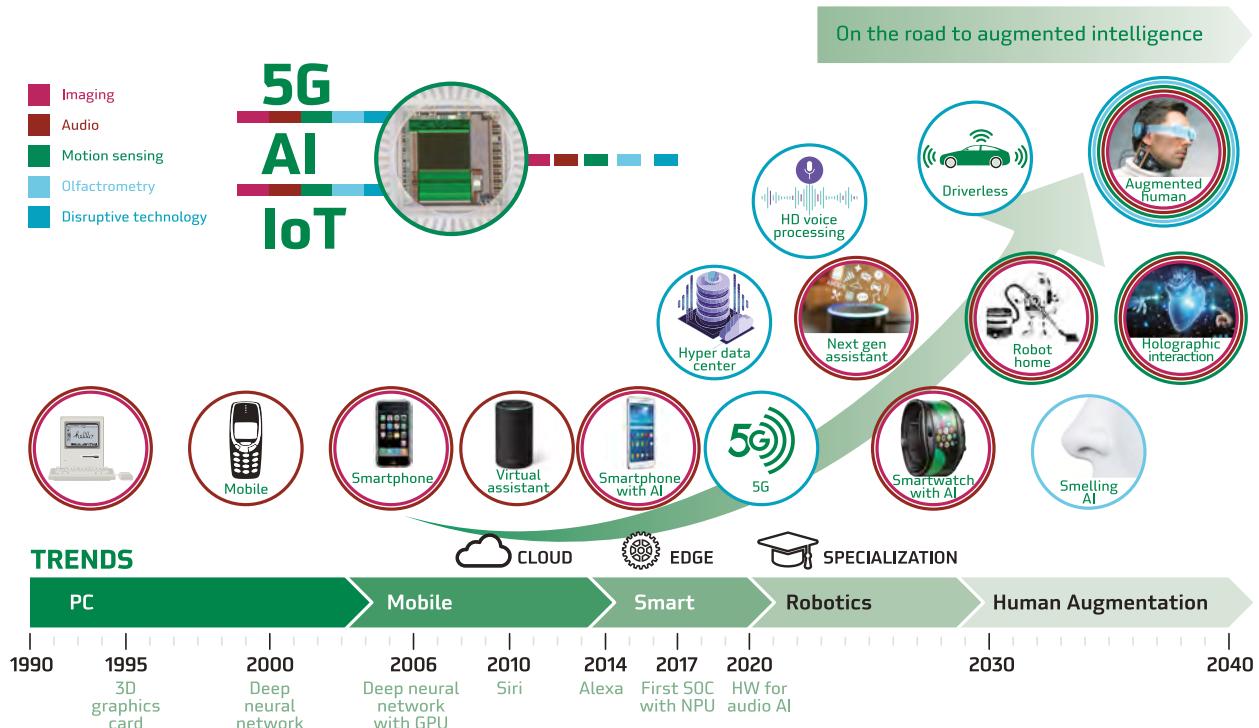
Looking forward, VLSI estimates that growth will return to the assembly equipment market with increases of 10.3% and 7.2% forecast for 2020 and 2021, respectively. VLSI believes that an upturn began in Q4-19 after an extended downturn of five to six quarters. Growth will be driven primarily by 5G network expansion, artificial intelligence, the Internet of Everything, innovations in packaging technology and the gradual reduction of excess industry capacity.

Strategically well positioned for next generation of electronics applications

We believe that we are in the early stages of a transition to a digital society accompanied by a new generation of electronics applications. In such a society, intelligence and electronic content in all facets of our life will increase such as smart mobility, homes, factories, municipalities and transportation to name just a few. Already, we see evidence daily of productivity enhancing technologies such as cloud computing, 5G networks, artificial intelligence, data mining and predictive analysis, autonomous driving, robotics and blockchain software. In response, new leading-edge semiconductor devices are being developed this investment cycle which will play a critical role in furthering the use of many such applications.

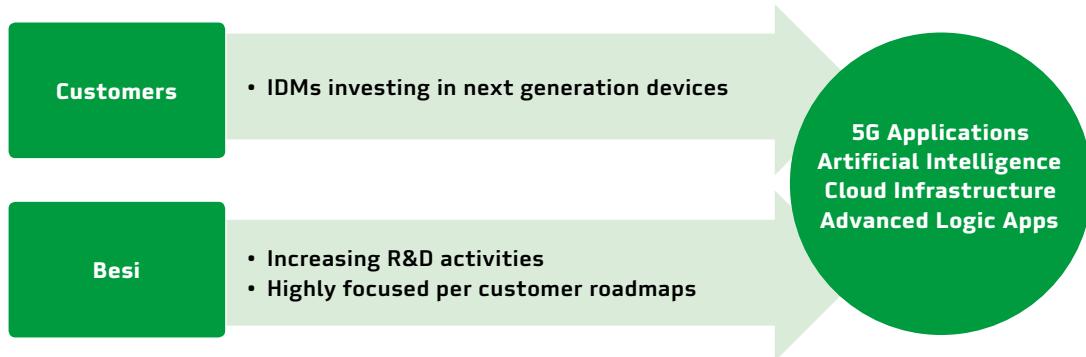
Consistent with these trends, a new technology cycle is underway wherein customers increasingly demand more complex advanced packaging solutions containing ever more functionality in ever smaller form factors. Advanced packaging is now recognized by customers as a critical part of the semiconductor value chain to produce next generation devices. As such, Besi is actively involved with the leading semiconductor producers and supply chains at an early stage in the design process. We are well positioned with an estimated 75% of our systems corresponding to the VLSI Research definition of advanced packaging, of which approximately 55% were in the most leading-edge applications (<7 micron accuracy and <17 nanometer form factor).

DIGITAL SOCIETY DRIVES GREATER COMPUTING AND DATA NEEDS



Source: Yole, January 2020

CURRENT TECHNOLOGY ROADMAP



In 2019, Besi significantly increased its development efforts in support of highly targeted customer roadmaps. At present, R&D activities are focused on the following applications and process technologies:

- Next generation 5G smart phone applications such as antennas and microLED screens.
- Hybrid bonding interconnects for the integration of multiple, high-end devices in logic applications.
- High volume TCB die bonding systems for advanced memory and logic applications.
- High speed flip chip die bonding systems for the assembly of <5 micron accuracy logic devices.

Besi's leading position in advanced packaging, engagement in leading edge customer roadmaps and scalable production favorably position us to capitalize on an exciting new era of industry applications and growth.

Successful strategic plan execution enhances revenue and profit potential in next industry upcycle

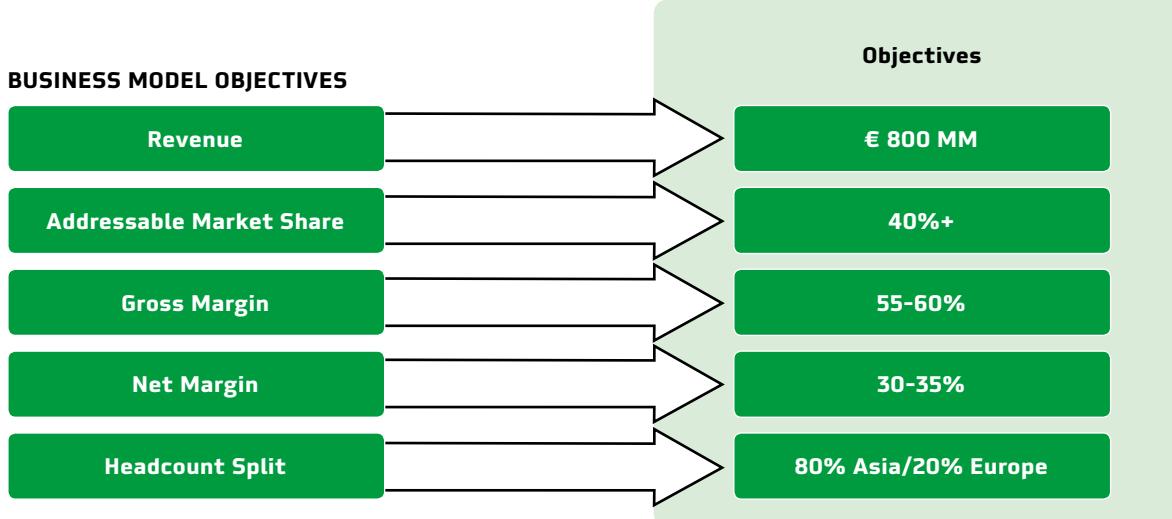
One of Besi's core strengths lies in its disciplined focus on expanding the revenue and profit potential of its business model. Besi's Board of Management reviews its strategy on a semi-annual basis. In addition, an independent consulting firm was engaged both in 2016 and 2019 to assess our strategic plan and long-term value creation model. Specific revenue and cost initiatives have been created for the next planning phase (2020-2025) and owners and targets designated.

Besi's new strategic plan includes initiatives to increase our market presence, revenue growth and market share. Revenue initiatives focus primarily on our largest end-user application markets: mobile internet, computing and automotive and the expansion of our addressable market and market share within each of these verticals. We estimate that these three areas represented approximately 32%, 22% and 17%, respectively, of our revenue in 2019.

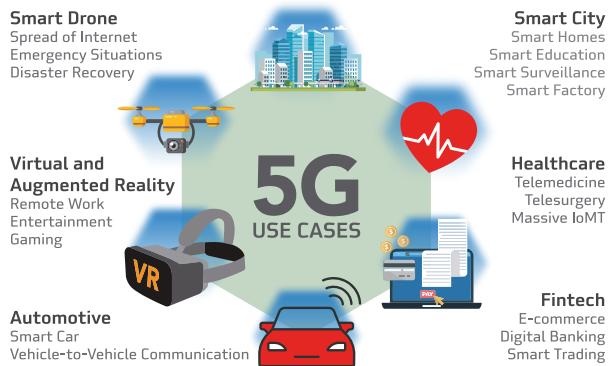
Revenue initiatives

In our largest market, mobile internet devices, there are many opportunities for future growth. A significant customer focus for the next investment round is the development of die bonding and packaging solutions for smaller, highly complex and feature packed 5G compatible smart phones. 5G is a unifying connectivity platform for future innovation enabling secure cloud access on a continuous basis at significantly higher data and video transmission speeds. User adoption of 5G capabilities should greatly expand mobile broadband activities and accelerate the usage of artificial intelligence for the Internet of Everything. The utilization of advanced packaging processes is essential to the realization of customer development roadmaps and new device introductions.

BUSINESS MODEL OBJECTIVES



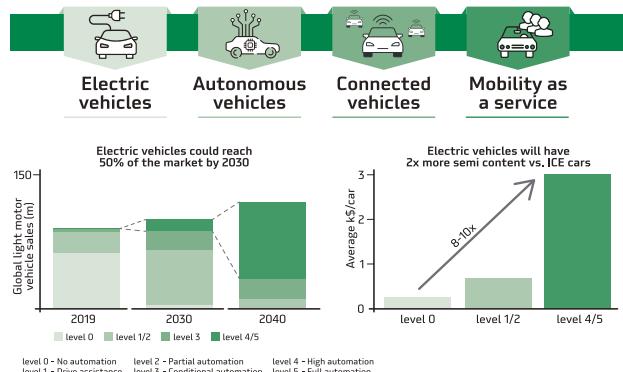
5G ROLL OUT CREATES NEW OPPORTUNITIES IN BESI END USER MARKETS



Source: KPMG, January 2020

Specifically, Besi is engaged in providing next generation mobile device capabilities such as microLED screens, 5G antennas, front-back facing cameras, multiple camera modules (8+) and enhanced 3D sensing and facial recognition features. Each of these applications has the potential to significantly increase Besi's addressable market. In addition, we look to leverage our technology position to expand opportunities in the Android market, particularly with Chinese subcontractors, as the Chinese government seeks to gain increased technological independence. We are also investing in a next generation of hybrid bonding systems to facilitate wafer level bonding integrating multiple devices at geometries as small as 7 nanometers.

MULTIPLE DRIVERS OF AUTOMOTIVE SEMICONDUCTOR GROWTH



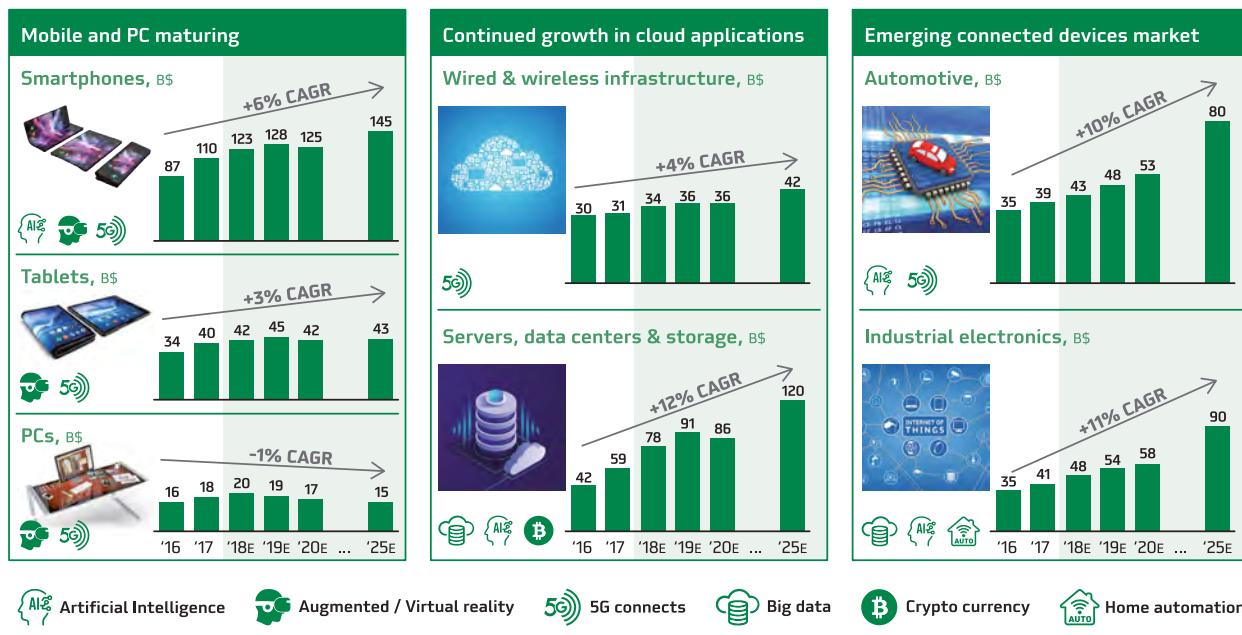
Source: KPMG Automotive Semiconductor Market Model, 2019

Another revenue initiative is to expand Besi's reach in the logic and memory markets in the era of cloud computing, data mining and artificial intelligence. One objective is to increase the market share of Besi's flip chip and 3D stacked die bonding solutions versus traditional wire bonding processes due to the increased complexity, accuracy and miniaturization required for next generation applications. Further, we see the introduction of high volume TCB die bonding systems for advanced memory and logic applications as another potential source of revenue growth given the push to <5 nano device geometries. In the automotive sector, Besi seeks to increase its share of existing European and North American customers due to the higher electronic content, performance and safety standards required for such markets. We also actively support customers in the development of autonomous driving applications and seek to expand our share of Japanese automotive supply chains.

"Leadership Program for Executive Development" awards, Besi APac, Malaysia.



CONTINUED GROWTH OF CLOUD INFRASTRUCTURE AND CONNECTED DEVICE MARKETS



Source: Gartner/Yole, January 2020

Operating initiatives

Besi's strategic operating initiatives aim to achieve a more scalable and lower cost manufacturing model. Successful implementation of 2016 strategic plan operating initiatives helped us maintain attractive levels of profitability in the current downturn.

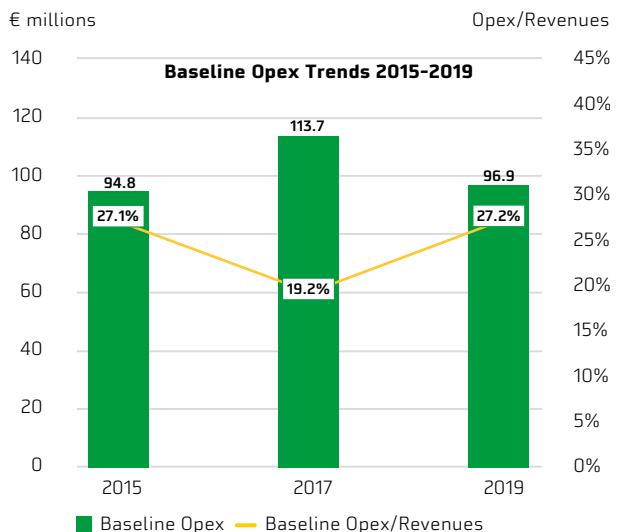
Key operating objectives achieved in 2019 included:

- The realignment of Asian production in response to global trade tensions wherein Besi's Chinese production is now primarily focused on Chinese customer locations.
- A 9.3% reduction of total headcount versus year end 2018.
- The continued transfer of general and administrative functions from Europe to Singapore.

For the 2020-2025 strategic plan, we see additional room to reduce structural costs in our operating model and will emphasize three areas of primary focus:

- Supply chain optimization through the consolidation of vendors and incremental purchasing efficiencies.
- Increased revenue per headcount.
- Labor, design and productivity efficiencies from the implementation of common components and modules in each next generation system design.

STRATEGIC INITIATIVES ALIGN OVERHEAD WITH MARKET CYCLES





Solar panels installed at Besi APac, Malaysia.

Corporate Social Responsibility ("CSR") activities

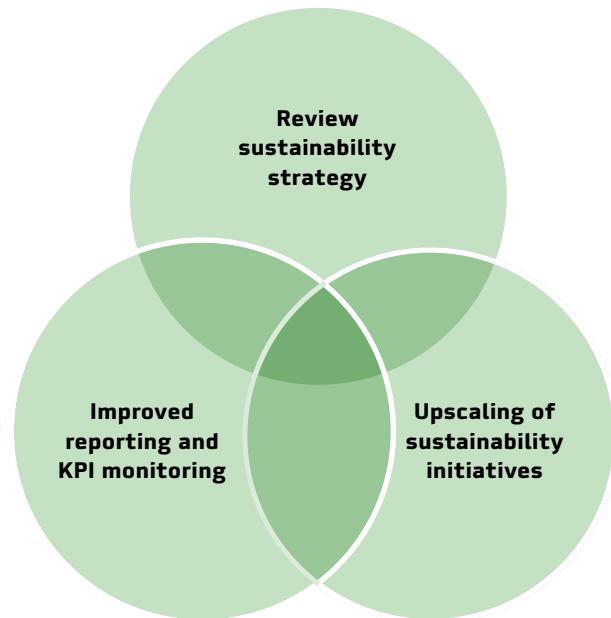
We have developed a CSR policy in recent years which seeks to promote Besi's business and financial interests in a socially responsible manner for the benefit of all stakeholders, partners, the environment and the local communities in which we operate. Besi is committed to running its operations in accordance with internationally recognized standards and best practices and to promote sustainability with all stakeholders including topics such as environmental conservation, human rights, conflict mineral free supply chains, hazardous materials, anti-corruption practices and corporate transparency.

We made progress on our CSR agenda in 2019, highlights of which included:

- Reduction of absolute levels of packaging, waste, water usage, hazardous materials and electricity in our operations versus 2018.
- Installation of solar panels at our principal Malaysian manufacturing facility with the objective of producing 15% of its power requirements.
- Receipt of the MISA '19 Audience Award for Besi's development of an innovative plating system designed to significantly increase solar panel efficiency.
- Achievement of Gold status by our Asian manufacturing operations post a Responsible Business Alliance ("RBA") validated audit process.

For 2020, major CSR priorities include (i) a review of Besi's sustainability strategy with a third party consultant, (ii) improved internal reporting and monitoring of KPI compliance and target achievement during the year and (iii) the upscaling of sustainability initiatives proposed by Besi personnel for consideration by senior management.

2020 CSR OBJECTIVES



Outlook

We are cautiously optimistic as we enter 2020. It appears that the current industry downcycle which began in Q2-18 ended in Q4-19. In this regard, Besi's Q4-19 orders grew by 22% on a quarterly sequential basis, a quarter which is typically our weakest from a bookings perspective. Improved industry conditions are also evident in VLSI's climate index set forth below and supported by recent announcements from leading memory and logic producers. The impact of the COVID-19 virus on the emerging industry recovery and Besi's 2020 prospects is difficult to assess at present but could cause volatility in the development of quarterly order patterns this year.

We are also optimistic about the next five-year planning phase and the revenue and profit initiatives established. These initiatives are supported by strong long-term growth drivers for the advanced packaging segment of the assembly equipment market including 5G network adoption, artificial intelligence and the continued build out of cloud computing infrastructure to name just a few. The issue, as always, is the near-term timing and translation of these opportunities into assembly equipment orders in any given quarter or fiscal year. That is the dynamic of our industry.

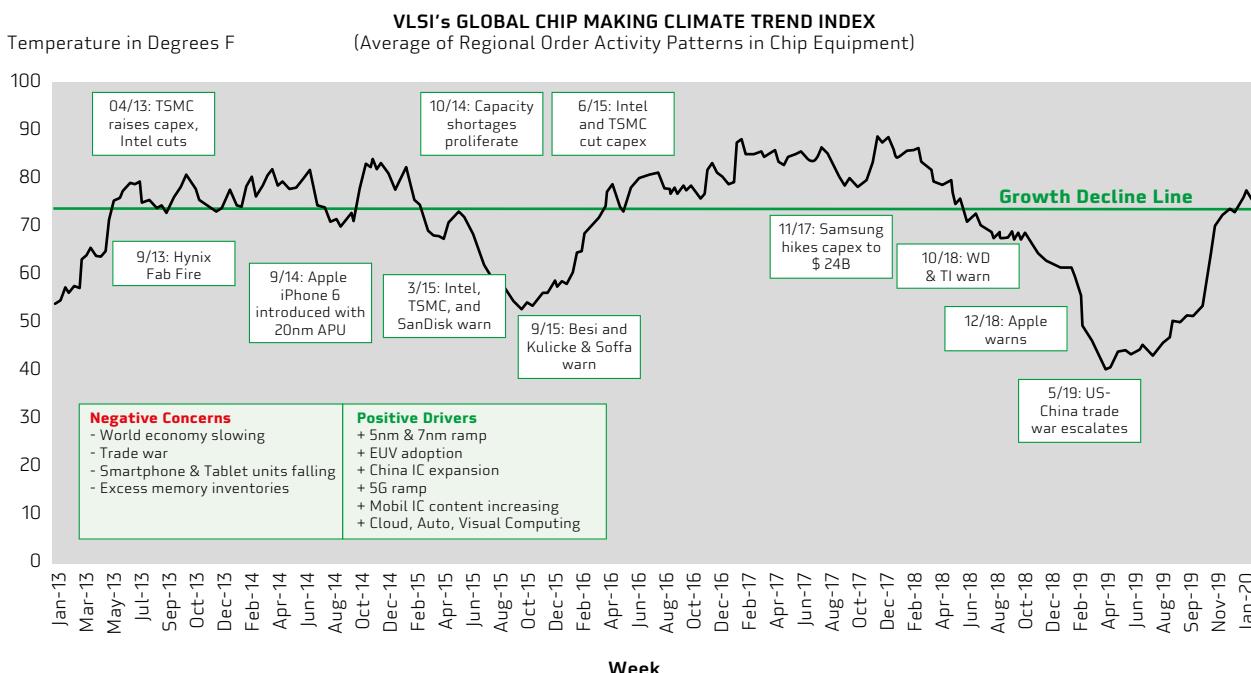
Besi has emerged from each of the past four downcycles a stronger company with increased revenue, market share and profit potential. We have a leading position in the advanced packaging space whose outlook is bright as an important enabler of the digital society and the new applications which will be generated along with it. In combination with new strategic initiatives, a highly scalable and flexible production model and ample liquidity, we are well positioned to take advantage of industry opportunities no matter which way the market moves in the quarters to come. We are excited about our industry's prospects and the opportunities available to create long-term value for all our stakeholders.

In closing, we want to thank our employees, customers, suppliers, business partners and shareholders for helping Besi navigate this industry downturn. Time now to focus our efforts on the many exciting growth opportunities present today as we move Besi forward in the next decade.

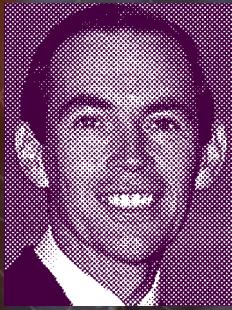
Board of Management
Richard W. Blickman

February 19, 2020

SEMICONDUCTOR EQUIPMENT OUTLOOK

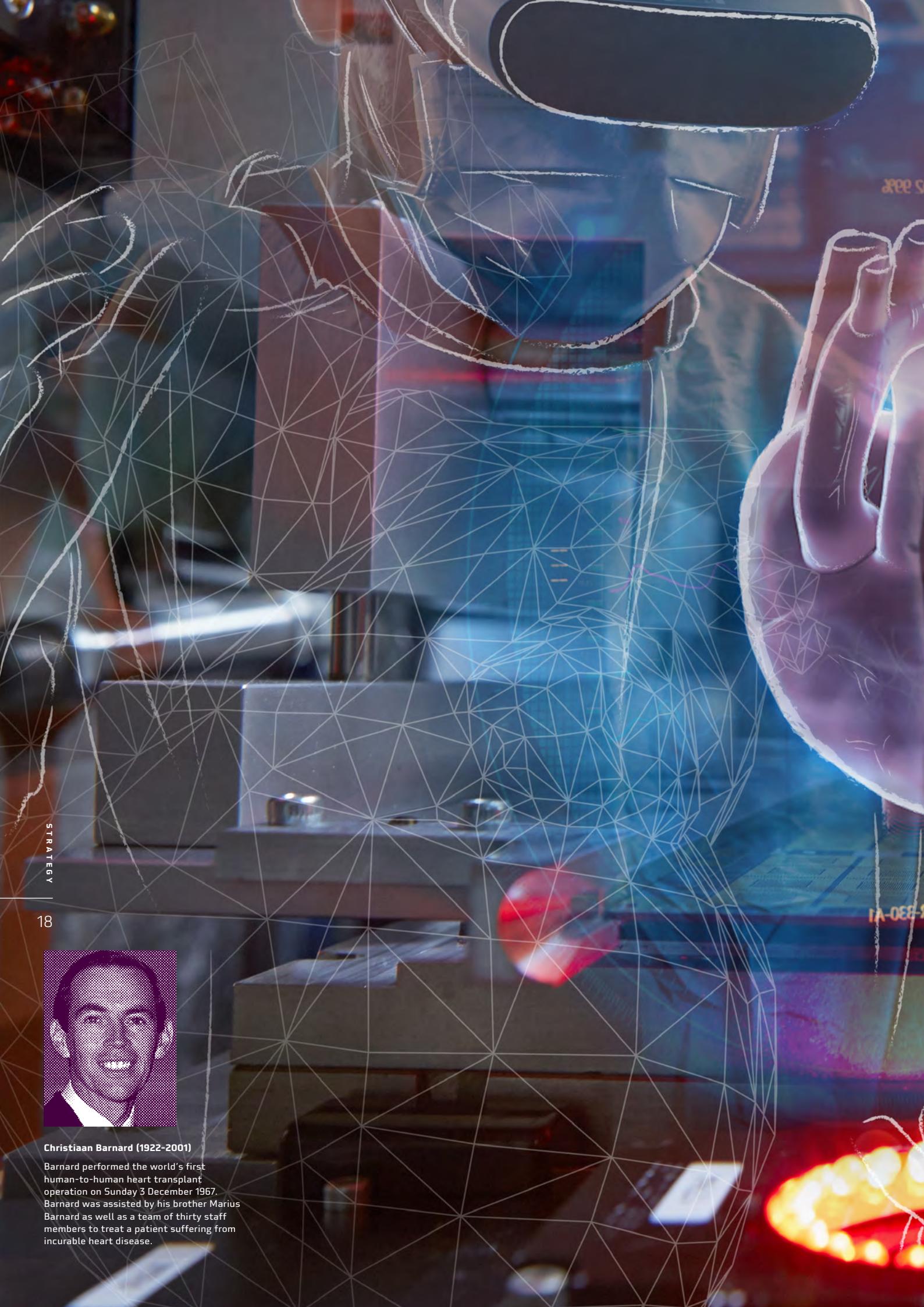


Source: VLSI February 2020



Christiaan Barnard (1922-2001)

Barnard performed the world's first human-to-human heart transplant operation on Sunday 3 December 1967. Barnard was assisted by his brother Marius Barnard as well as a team of thirty staff members to treat a patient suffering from incurable heart disease.





Strategy

Strategy

Strategic objective

Besi's objective is to become the world's leading supplier of semiconductor assembly equipment for advanced packaging applications and to exceed industry average benchmarks of financial performance. We also strive to create long-term value for stakeholders and operate our business in a sustainable way respecting both the environment and society.

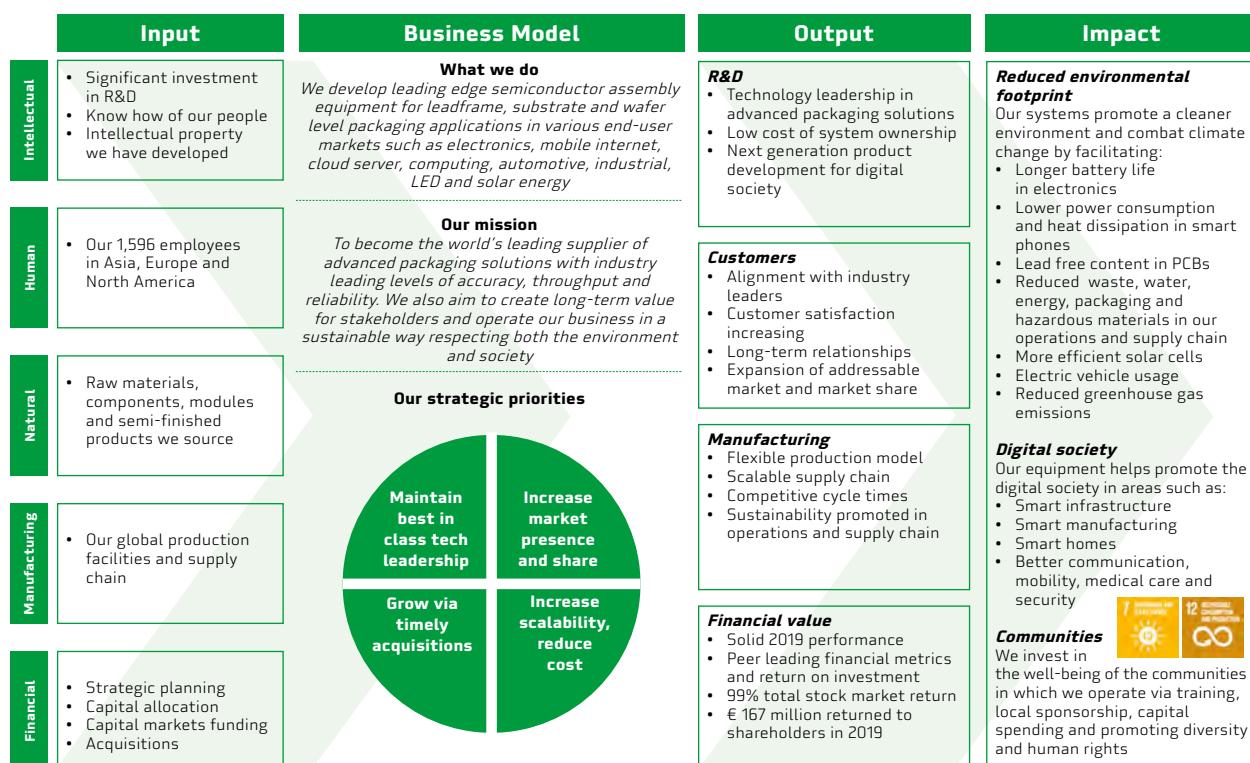
Summary strategy

Keys to long-term success in the assembly equipment industry include technological leadership, customer alignment, system reliability and accuracy in 24/7 production environments. Other keys include production flexibility and scalability in response to volatile swings in demand for an industry whose cycle times have become ever shorter. In addition, we recognize the importance of human and natural considerations in the development of our strategy such as our environmental footprint, the sustainable performance of our systems and the development of a business culture which is diverse, respects the rights of our employees and promotes the skills and talents of our personnel. Besi's business strategy has been developed with these considerations in mind.

One of our top priorities is the maintenance of technological leadership in the advanced packaging segment of the industry. This is the most rapidly growing part of our business with the greatest potential for future growth. We then aim to leverage this leadership position to generate ever higher levels of through cycle revenue, profitability and cash flow via a highly scalable and flexible Asian production model. Weekly analyses of order development and the supply chain combined with disciplined cost control efforts have enabled us to respond rapidly to changing market conditions, retain peer leading margins and generate high levels of cash flow to support a shareholder friendly capital allocation policy.

Besi's Board of Management reviews its strategy on a semi-annual basis. We also engaged an independent consulting firm in both 2016 and 2019 to assess our strategic plan and long-term value creation model and help formulate specific revenue and cost initiatives. The most recent plan assessment encompasses the period 2020-2025 with owners and targets designated. Besi's development and execution of strategic initiatives has favorably influenced our organizational development, financial performance and competitive position in recent years. It has also aided the implementation of sustainability themes.

SUMMARY OF BESI'S STRATEGY AND LONG-TERM VALUE CREATION PROCESS INCLUDING KEY INPUTS, OUTCOMES AND IMPACT ON SUSTAINABILITY THEMES



CURRENT OPERATIONAL PROFILE



- Development activities in Europe
- Production in Asia
- Sales/service activities in Asia, US and Europe

	YTD December 31, 2019	
	Europe/NA	Asia
Revenue (MMs)	€ 99.0	€ 257.2
Headcount	507	1,089
	27.8%	72.2%
	31.8%	68.2%

Strategic initiatives

The key initiatives to realize our strategic objectives and long-term value creation can be summarized as follows:

- *Research and Development*
 - Develop new products, processes and markets.
 - Develop common platforms and common parts for our systems.
- *Customers*
 - Strengthen and expand Besi's strategic long-term customer relationships.
 - Expand addressable markets, market share and revenue growth potential.
- *Human*
 - Create a workplace culture that encourages safe working conditions, respects human rights and diversity and promotes career development.
- *Natural*
 - Pursue a CSR strategy which balances Besi's business interests with its social and ecological responsibilities.
 - Reduce Besi's environmental footprint and our impact on sustainability in the communities in which we operate.
- *Manufacturing*
 - Achieve a more scalable, flexible and lower cost manufacturing model.
 - Expand our Asian operations, capabilities and supply chain activities.
- *Financial*
 - Exceed industry average benchmarks of financial performance.
 - Create long-term value for shareholders.
 - Selectively acquire companies with complementary technologies and products to help enhance returns from our business model.
 - Optimize capital allocation to enhance returns to shareholders.

Through the implementation of strategic initiatives, Besi seeks to (i) increase revenue at rates exceeding the growth rate of the assembly equipment market, (ii) become a more efficient and profitable company with increased market share in those segments of the assembly equipment market with the greatest potential for long-term growth and (iii) enhance production scalability and flexibility.

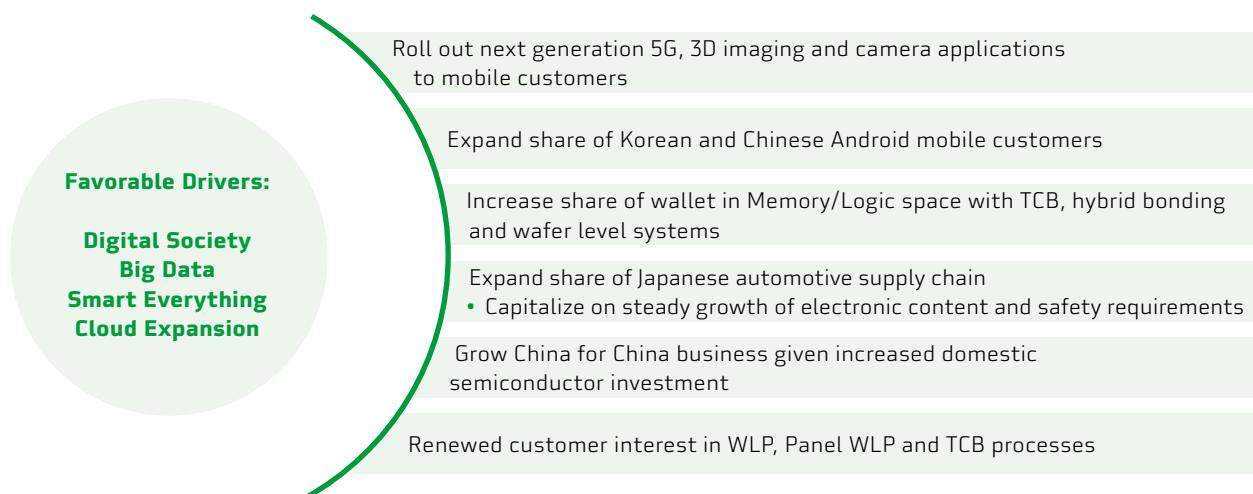
Besi seeks to achieve its strategic objectives in a socially responsible manner for the benefit of all stakeholders, partners, the environment and the local communities in which it operates. In addition, Besi wants to be a meaningful partner in the emerging digital society and to further advance information and communication technologies which can benefit sustainability themes in the future. We are also committed to being a good employer and to foster a workplace culture that encourages our employees to grow and excel in their careers.

Develop new products, processes and markets

Besi aims to provide global semiconductor manufacturers and subcontractors a compelling value proposition consistent with market requirements and new product development roadmaps. We seek to differentiate ourselves in the marketplace by means of a technology led product strategy that capitalizes on revenue opportunities in both premium and mainstream assembly equipment markets. Besi enters such markets with leading edge technology and products appealing to the first movers of the industry, typically leading global semiconductor manufacturers and other advanced industrial end-users. Upon commercial acceptance, we then attempt to maximize the return on investment of our products through continued system cost reduction so that they appeal to a broader, more mainstream customer base and extend their product life cycle. Mainstream customers are often Asian assembly subcontractors. Besi exits product markets when its technology becomes commoditized and returns on investment become unattractive. In pursuing its product strategy, Besi uses its core competency to (i) increase revenue by expanding its addressable market and market share and (ii) maximize the return on its technology investment.

Over the past five years, Besi has developed next generation die attach and packaging systems with a particular emphasis on substrate and wafer level packaging processes for mobile internet, computing, 5G and automotive end-user applications. Development efforts have focused on customer requirements for (i) thinner devices and higher levels of miniaturization, (ii) increased accuracy, performance, chip density and complexity, (iii) lower power consumption and (iv) shorter lead times, all at a lower overall cost of ownership. In addition, we design enhanced versions of each product line every one to two years to ensure that Besi's systems maintain their technological leadership in the areas of form factor, accuracy and throughput.

REVENUE OPPORTUNITIES



Key highlights in recent years include the development for production environments of:

- <3-micron accuracy flip chip and fan out wafer level die bonding systems and wafer level molding systems.
- A line of die bonding systems capable of assembling complex, <5-micron accuracy modules incorporating multiple components for advanced mobile internet applications such as facial recognition and 3D image sensing.
- High volume TCB die bonding systems for advanced memory and logic applications.
- Assembly solutions for next generation 5G smart phone applications such as antennas and microLED screens.
- A next generation of hybrid bonding systems capable of integrating multiple devices at geometries as small as 7 nanometers via a single interconnect.
- Leading edge solar and 3D lithium-ion battery plating systems.

Developing common platforms and common parts for our systems

Besi is re-engineering several of its existing product platforms to reduce their overall cost and manufacturing cycle time through more standardized design and manufacturing processes. As part of the streamlining process, we have focused on the development of common parts and common platforms for each successive, next generation die bonding and packaging system with the objective of decreasing the number of platforms for such products. This initiative will enable Besi to (i) reduce the number of components and machine parts per system, (ii) decrease average component costs, (iii) greatly simplify design engineering, (iv) shorten cycle times and (v) lower warranty expense. In this manner, Besi expects to achieve additional labor cost, supply chain and working capital efficiencies.

Strengthening and expanding strategic long-term customer relationships

One of Besi's primary business objectives is to develop close, strategic relationships with customers deemed critical to our technological leadership and growth. Besi's customer relationships, many of which exceed fifty years, provide us with valuable knowledge about semiconductor assembly requirements as well as new opportunities to jointly develop assembly systems. As such, they provide Besi with an important insight into future market trends and an opportunity to broaden the range of products sold to customers.

In order to sustain close relationships with customers and generate new product sales, Besi believes that it is critical to maintain a significant presence in after-sales and service in each of its principal markets. As such, Besi currently has nine regional sales and service offices in the Asia Pacific region, Europe and the United States and a direct sales force and customer service staff of 195 people at year end 2019, of whom 167 are located in Asia. Consistent with the migration of customers to Asia, we have strengthened our sales and customer service activities in this region and have shifted a significant portion of our resources to countries such as Singapore, China, Malaysia, Thailand, Taiwan and Korea. We also centralized all global spare parts activities in one business unit based in Singapore to increase customer satisfaction and efficiency. We plan to expand our Asian process support, order fulfillment and field service capabilities over the next five years to better serve a rapidly growing installed base of customers in the region.

Expanding addressable markets, market share and revenue growth potential

We seek to increase long-term revenue growth by expanding Besi's addressable markets and market presence via the following initiatives:

- Capitalize on Besi's advanced packaging expertise to capture sales for new device introductions and applications in the emerging digital society.
- Apply our leadership positions in FOWLP, TCB, Panel WLP, hybrid bonding and ultra thin and wafer level molding to engage with customers at the forefront of leading edge applications such as 5G network compatibility, artificial intelligence, autonomous and electric cars, virtual and augmented reality and cloud computing.
- Further penetrate the largest global smart phone and electronics supply chains with both high-end and high quality mainstream product offerings.
- Provide assembly solutions for new 5G applications such as microLED screens, antennas, enhanced 3D imaging, facial recognition, and 8+ camera modules.
- Expand our market share of Korean and Chinese Android mobile customers and of the Japanese automotive supply chain.
- Sell next generation equipment to increase Besi's share of wallet in the memory/logic space.
- Expand in the local Chinese handset, semiconductor and electronics industries.
- Gain market share from increased usage of flip chip, FOWLP and TCB assembly processes versus more conventional wire bonding solutions.
- Expand penetration of plating markets including high-end solar and battery plating applications.

The expansion of Besi's addressable markets and revenue potential will be aided by ongoing efforts to further improve our competitive cost position via Asian manufacturing and common platform initiatives and a further reduction of European based costs.

Creating a workplace culture that encourages safe working conditions, respects human rights and diversity and promotes career development

Besi is committed to being a good employer and to promote a workplace culture conducive to the achievement of its business and CSR objectives. Our human resources strategy is based on four pillars: (i) improving service excellence, (ii) increasing diversity, (iii) developing talent and leadership capabilities and (iv) fostering a workplace culture that encourages employees to grow and excel in their careers. Besi strives to employ high social and ethical standards and provide inspiring and safe working conditions with competitive employment terms and pay scale. A high level of employee satisfaction is a basic precondition to achieve our revenue and profit growth objectives. The 2019 biennial employee engagement survey indicated a high level of satisfaction in the organization.

We have helped promote employee engagement and improvements to Besi's workplace culture via the following activities in recent years:

- Development of initiatives to promote diversity.
- Offering training and development programs to advance skill sets and leadership capabilities.
- Establishment of a talent management and succession planning program for key employees at all Besi locations worldwide.
- Initiation of biennial employee satisfaction and employee engagement surveys at all Besi locations.
- Establishment of best practices Whistleblower procedure.

STRATEGIC CSR OBJECTIVES



Pursuing a CSR strategy which balances Besi's business interests with its social and ecological responsibilities

Our CSR policy focuses on the impact of our products, operations and supply chain on the environment and the communities in which we operate. In recent years, we have reduced the environmental impact of our production operations through programs designed to (i) eliminate materials, processes and hazardous waste deemed harmful to the environment, (ii) conserve natural resources such as water and electricity and (iii) reduce packaging, waste, transportation and energy consumption. Besi also places emphasis on transportation and packaging activities where we have realized reductions of CO₂ emissions and waste.

In addition, Besi has invested in the development of low carbon products and services to help customers operate more efficiently both in terms of environmental impact and cost savings, for instance by introducing products with fewer and lighter materials. We also analyze and investigate ways in which to reduce other environmentally harmful materials such as the usage of lead in our systems.

We made progress on our CSR agenda in 2019, highlights of which included:

- Reduction of absolute levels of packaging, waste, water usage, hazardous materials and electricity in our operations versus 2018.
- Installation of solar panels at our principal Malaysian manufacturing facility with the objective of producing 15% of its power requirements.
- Receipt of the MISA '19 Audience Award for Besi's development of an innovative plating system to significantly increase solar panel efficiency.
- Achievement of Gold status by our Asian manufacturing operations post an RBA validated audit process.
- Development by our packaging group of a system to better evaluate environmental aspects in the product design process.
- Execution of agreements by Besi's suppliers confirming their compliance with the Restriction of Hazardous Substances standard.
- Launch of new management training and e-learning programs at Besi's Asian manufacturing facilities.
- Initiatives undertaken to reduce travel including the usage of a new company wide video conferencing system.

Achieve a more scalable, flexible and lower cost manufacturing model

The semiconductor equipment market has become increasingly more volatile in recent years due to heightened global economic uncertainty, trade tensions, changing end market applications, more seasonal purchasing patterns and shorter lead times for delivery. In response, Besi decided to fundamentally reorganize its global operations and management structure starting in 2007 to streamline operations, transfer production and supply chain activities to its Asian operations, improve returns from its product portfolio, reduce break even revenue levels and increase through cycle profitability. European and North American headcount was significantly reduced, inefficient operations closed and substantially all European production and all tooling capacity were transferred to our Malaysian and Chinese facilities.

In addition, strategic initiatives were implemented to:

- Increase the scalability and flexibility of Besi's production model via the use of temporary Asian production personnel and the establishment of a high quality Asian supply chain network.
- Lower unit manufacturing costs and cycle times.
- Increase material cost efficiencies through common platform design and vendor consolidation.
- Transfer certain logistics, software support and technical personnel from Europe to Asia.
- Develop and staff an Asian sales, customer support and development center in Singapore.
- Expand Besi's Chinese production capabilities and Asian production flexibility.
- Reduce European facility space and fixed headcount.
- Simplify and harmonize diverse manufacturing and IT processes.
- Roll out and implement the SAP ERP system to all operations worldwide.

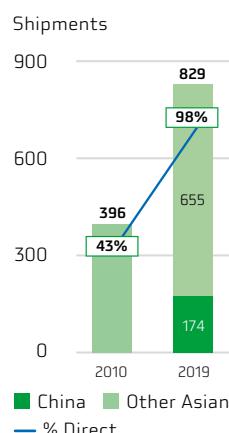
As a result, Besi has significantly reduced labor, material and overhead costs, improved delivery times and inventory turnover and enhanced its local customer presence. We have also been able to upwardly and downwardly scale our operations in response to volatile industry trends during the 2017-2019 period while consistently maintaining gross margins in excess of 55%. Increased scalability combined with tight inventory control have also greatly expanded Besi's cash generation capabilities and market share potential.

Key operational highlights in 2019 included:

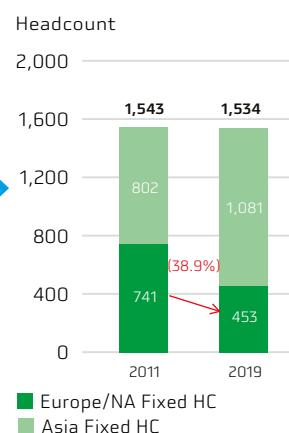
- The realignment of Asian production in response to global trade tensions wherein Besi's Chinese production is now primarily focused on Chinese customers.
- A 9.3% headcount reduction versus year end 2018 consistent with an ongoing industry downturn.
- The continued transfer of general and administrative functions from Europe to Singapore.

ASIAN PRODUCTION TRANSFER HAS INCREASED PROFITABILITY OF BUSINESS MODEL

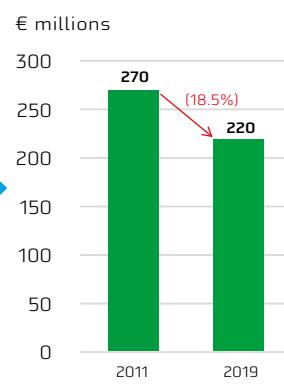
Asian production has significantly expanded



Leading to lower fixed European & NA headcount



Reduced break even revenue levels



Improved cash generation



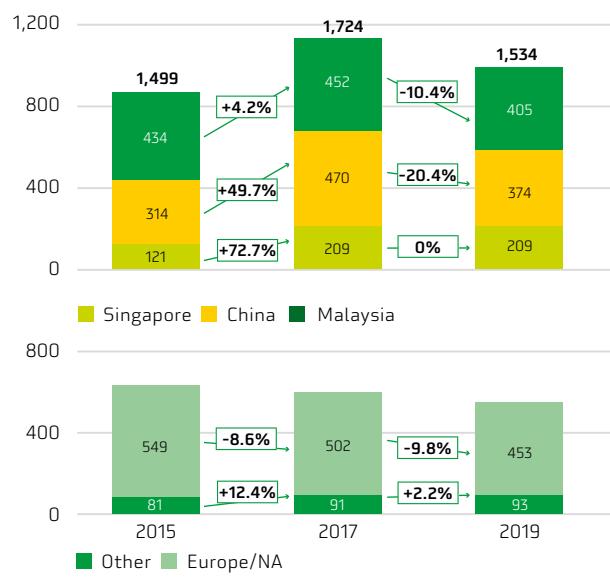
Expand our Asian operations, capabilities and supply chain activities

Besi has pursued strategic initiatives and made capital investments over the past decade in an effort to improve profitability, expand production capacity and better service a customer base that migrated from Europe and North America to Asia. In 2019, approximately 72% of revenue was derived from sales to Asian customer locations. In particular, we have funded expansions of our Malaysian and Chinese production facilities and Singapore development/sales and service center over the past five years to expand capacity and better service our Asian customer base.

In the Besi operating model, all system production, sourcing, product applications engineering, process and software support and tooling/spares operations take place at Besi's Asian locations. All product ownership and new product development remains at our European operations. Only highly customized systems are produced in Europe for which we generate attractive gross margins. In recent years, Besi has diversified its Asian manufacturing and engineering capabilities and significantly increased the scope of operations in China and Singapore to further drive cost reduction, increase capacity, technical and field service support and enhance our local customer presence. Additional selling, general and administrative functions will be transferred over the next five years from Besi's European locations to its operations in Singapore, Malaysia and China.

In addition, we have actively developed and qualified local supply chains for each of our Malaysian and Chinese operations which produce substantially all components, modules and subassemblies used in our assembly and plating system production. The successful development of a flexible Asian supply chain is an important factor in our profitable navigation of volatile semiconductor equipment markets and low capital intensity.

GEOGRAPHIC HEADCOUNT TRENDS*



Exceed industry average benchmarks of financial performance. Create long-term value for shareholders

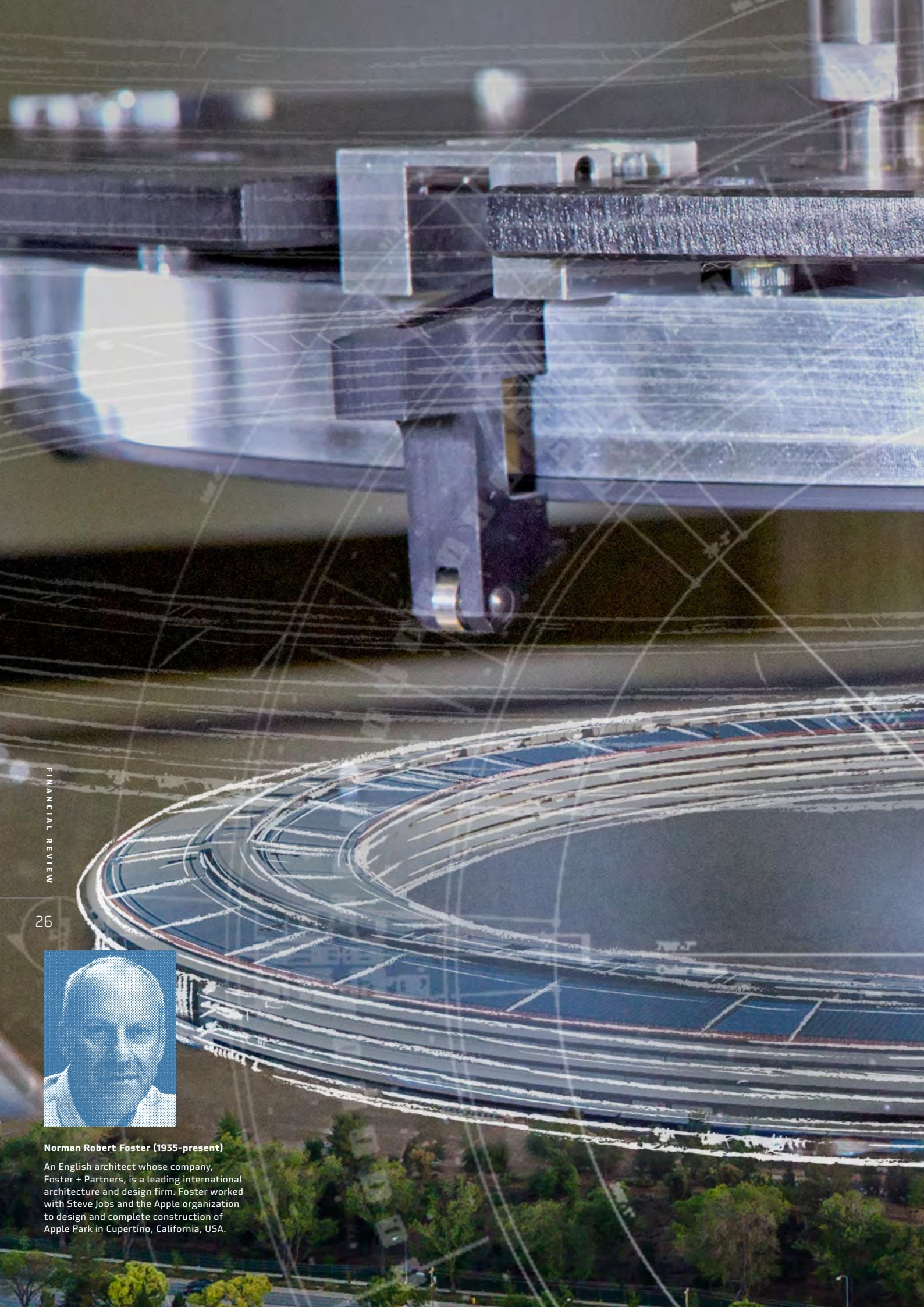
The successful execution of Besi's strategic plan and long-term valuation model has significantly benefited shareholders. Peer leading financial metrics have been achieved in the areas of gross, operating and net margin. Our addressable market share has also increased. In addition, Besi's capital allocation plan has resulted in the distribution to shareholders of € 652.9 million since 2011 in the form of dividends and share repurchases, of which € 167.1 million was distributed in 2019. Profit generation and capital allocation have also resulted in peer leading return on average equity of 24.2% in 2019 and an average of 27.3% over the past five years. Finally, shareholders have benefited from an increase of 98.7%, 160.1% and 395.7%, respectively, in their total stock market return (share price appreciation plus dividends) from an investment in Besi over the past year, three years and five years. This total return significantly exceeded total returns from an investment in the Philadelphia SOX index of leading semiconductor and semiconductor equipment companies and our peer group of assembly equipment companies during such periods.

Selectively acquire companies with complementary technologies and products

In order to provide customers with leading edge process solutions, it is critically important to identify and incorporate new technologies on a timely and continuous basis. As a result, Besi actively identifies and evaluates acquisition candidates that can assist it in (i) maintaining process technology leadership, (ii) increasing market share in those assembly markets with the greatest long-term potential such as wafer level packaging, (iii) enhancing the productivity and efficiency of our Asian manufacturing operations and (iv) growing less cyclical, "non-system" related revenues from tooling, spares and service.

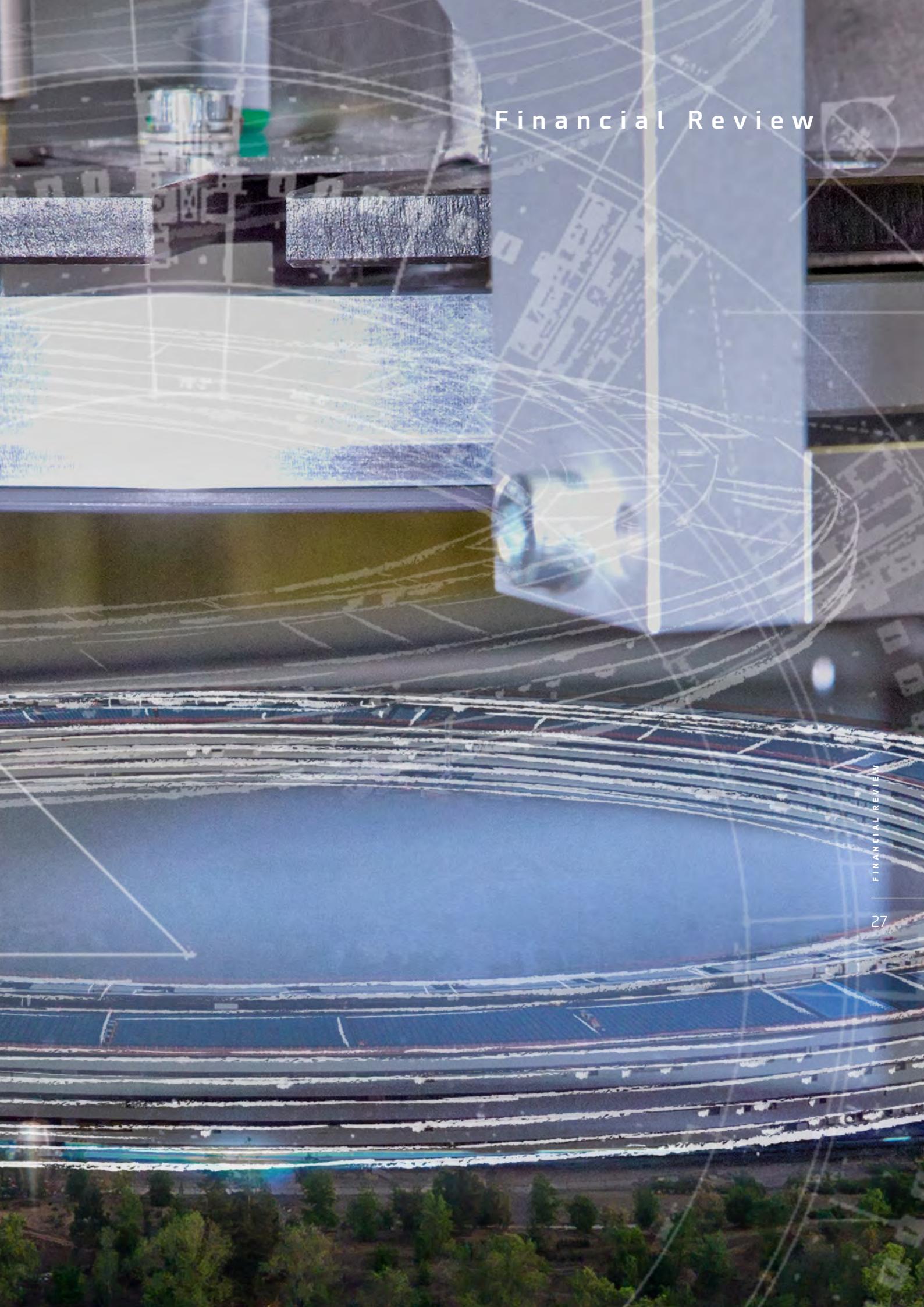
Besi has made four important acquisitions which have furthered its advanced packaging strategy, accelerated underlying organic growth and generated significant long-term value creation for stakeholders:

- In September 2000, RD Automation (USA) was acquired to advance Besi's product strategy into the front-end assembly process with the addition of flip chip capabilities.
- In January 2002, Laurier (USA) was acquired adding intelligent die sorting capabilities into its product range.
- In January 2005, Besi acquired Datacon (Austria) further extending its presence in the flip chip and die bonding equipment markets and increasing its scale in the assembly equipment market.
- In April 2009, Besi acquired Esec (Switzerland) to expand its position in the mainstream die bonding market, one of the most rapidly growing segments of the assembly equipment business.



Norman Robert Foster (1935-present)

An English architect whose company, Foster + Partners, is a leading international architecture and design firm. Foster worked with Steve Jobs and the Apple organization to design and complete construction of Apple Park in Cupertino, California, USA.



Financial Review



Financial Review

General

BE Semiconductor Industries N.V. ("Besi" or the "Company") is engaged in one line of business, the development, manufacturing, marketing, sales and service of semiconductor assembly equipment for the global semiconductor and electronics industries. Since Besi operates in one segment and in one group of similar products and services, all financial segment and product line information can be found in the [Consolidated Financial Statements](#).

Besi's revenue and results of operations depend in significant part on the level of capital expenditures by semiconductor manufacturers, which in turn depends on the current and anticipated market demand for semiconductors and for products utilizing semiconductors. Demand for semiconductor devices and expenditures for the equipment required to assemble semiconductors is highly cyclical, depending in large part on levels of demand worldwide for smart phones, tablets and other personal productivity devices, computing and peripheral equipment and automotive and industrial components, as well as the production capacity of global semiconductor manufacturers. Furthermore, a rise or fall in the sales levels of semiconductor equipment typically lags any downturn or recovery in the semiconductor market due to the lead times associated with the production of semiconductor equipment.

In recent years, Besi has experienced significant upward and downward movements in quarterly order rates due to global macroeconomic concerns, trade tensions and increased seasonality of end-user application revenue. Customer order patterns have become increasingly more seasonal due to the growing influence of more retail oriented electronics applications in the overall demand for semiconductor devices such as smart phones, tablets, wearable devices and automotive electronics. Order patterns have been characterized typically by a strong upward ramp in the first half of the year to build

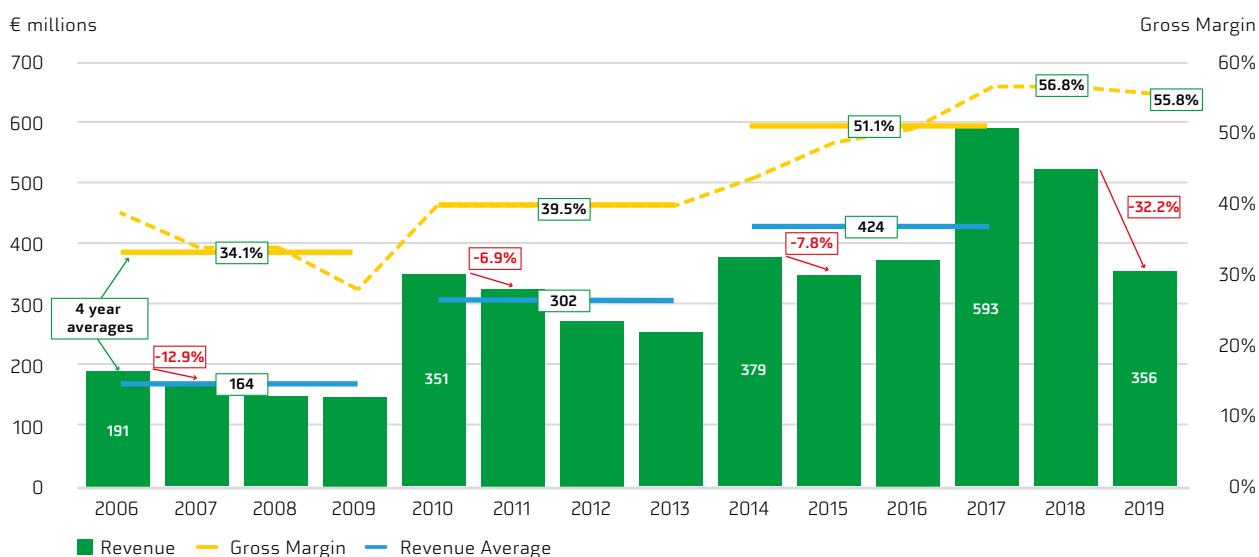
capacity for anticipated year end demand followed by a subsequent decline in the second half of the year as capacity additions are digested by customers. Volatile global macroeconomic conditions and seasonal influences have also contributed to the significant upward and downward movements in Besi's quarterly and semi-annual revenue and net income.

Besi's revenue is generated primarily by shipments to the Asian manufacturing operations of leading European and American independent device manufacturers ("IDMs") and Taiwanese, Chinese, Korean, Japanese and other Asian IDMs and subcontractors. Besi's sales to individual customers tend to vary significantly from year to year depending on global economic conditions generally and the specific capital expenditure budgets, new product introductions, production capacity and packaging requirements of its customers. For the year ended December 31, 2019, one customer represented 10.5% of Besi's revenue and its largest 10 customers accounted for 44.1% of revenue. In addition, Besi derives a substantial portion of its revenue from products that have an average selling price in excess of € 300,000 and that have lead times of approximately 4-12 weeks between the initial order and delivery of the product. The timing and recognition of revenue from customer orders can cause significant fluctuations in operating results from quarter to quarter. Besi only recognizes orders upon receipt and acceptance of a firm purchase order.

Corporate and financial structure

Besi's corporate organization consists of a Dutch holding company in which shareholders own ordinary shares and a network of wholly-owned subsidiaries located globally which reflects its product group and business activities. To get a better overview of Besi's largest shareholders, reference is made to the [Shareholder Information](#) section of the Annual Report.

THROUGH CYCLE REVENUE AND GROSS MARGIN TRENDS





Datacon 2200 evo advanced.

In general, Besi funds its operations through available cash on hand, cash generated from operations and, in some instances, funds the operations of its subsidiaries through intercompany loans and borrowings under its bank lines of credit. The working capital requirements of its subsidiaries are affected by the receipt of periodic payments on orders from its customers. Although its subsidiaries occasionally receive partial payments prior to final installation, initial payments generally do not cover a significant portion of the costs incurred in the manufacturing of such systems which requires Besi to finance its system production with internal resources and, in certain instances, via bank financing.

Currency exposure

Besi's reporting and functional currency is the euro. In 2019 and 2018, Besi's revenue denominated in euro represented 32% and 33% of its total revenue, respectively, while its costs and expenses denominated in euro represented 33% and 29%, respectively. As seen in the following table, the substantial majority of Besi's revenue is denominated in US dollars while in 2019, its costs were denominated in a variety of European and Asian currencies. In 2019, 58% of its costs and expenses were denominated in Malaysian ringgit and euro. The remainder of its costs were primarily represented by the Swiss franc, Chinese yuan, US dollar and Singapore dollar. Besi seeks to manage its exposure to currency fluctuations in part by hedging firmly committed orders denominated in US dollars and, in part, by hedging net exposures in its principal transaction currencies. Transaction costs for hedging sales contracts and any profit/loss resulting therefrom are recorded in the line item financial income (expense), net in Besi's Consolidated Income Statement.

	Revenue		
	2019	2018	2017
Euro	32%	33%	18%
US dollar	68%	67%	82%
Total	100%	100%	100%

	Costs and Expenses		
	2019	2018	2017
Euro	33%	29%	21%
US dollar	9%	9%	9%
Malaysian ringgit	25%	31%	31%
Swiss franc	10%	12%	19%
Chinese yuan	11%	10%	13%
Singapore dollar	9%	6%	5%
Other	3%	3%	2%
Total	100%	100%	100%

Given changes in the foreign currency composition of its revenue, costs and expenses, Besi's results of operations are increasingly affected by fluctuations in the value of, and relationships between, the euro, the US dollar, Malaysian ringgit, Swiss franc, Chinese yuan and Singapore dollar. In 2019, a 5.5% average appreciation of the US dollar versus the euro positively affected Besi's revenue development. In contrast, Besi's costs and expenses were negatively influenced primarily by an increase in the value of the Swiss franc, Singapore dollar and US dollar versus the euro. In addition, Besi's costs denominated in Malaysian ringgit and Chinese yuan can vary on an annual basis depending on the number of units produced in any particular year. Between 2017 and 2019, costs denominated in Malaysian ringgit and Chinese yuan decreased from 44% of total revenue to 36% of total revenue, respectively, primarily as a result of lower unit production in the current industry downturn.

Quarterly results of operations

(euro in millions)	Q1	Q2	Q3	Q4	2018 Total	Q1	Q2	Q3	Q4	2019 Total
Revenue	154.9	161.1	116.7	92.5	525.3	81.4	92.7	89.7	92.4	356.2
Orders	205.8	86.3	107.9	83.1	483.1	83.4	82.7	82.2	100.5	348.7
Net income	37.1	47.2	29.3	22.7	136.3	9.5	18.9	19.2	33.7*	81.3*

* Includes € 11.6 million tax benefit recorded in Q4-19 related to changes in Swiss fiscal policy.

Besi's quarterly results of operations in 2019 were adversely affected by an industry downturn which commenced in the second half of 2018 and continued throughout the year. In addition, quarterly results relative to 2018 were also adversely affected by global trade tensions, particularly between the United States and China, which increased customer caution relative to the timing of new order placement and created significant uncertainty as to the functioning of global supply chains. The impact of the industry downturn was felt across Besi's product portfolio, with particular weakness experienced in mobile internet and automotive applications.

In recent years, Besi's first half year revenue and net income have increased as compared to the prior semi-annual period as customers significantly added incremental semiconductor assembly capacity to meet rising orders for smart phones and automotive electronics and new device introductions. Typically, the seasonal upcycle has ended by early summer as customers digested incremental capacity additions made in the first half year.

This pattern held for 2018 but varied significantly in 2019 relative to historical trends. During 2019, order and revenue patterns varied by only a small amount sequentially due to the length and depth of the current industry downturn.

QUARTERLY REVENUE AND GROSS MARGIN TRENDS



2019 compared to 2018

Set forth below is a summary of our key income statement highlights for 2019 versus 2018:

(euro in millions, except %)	Year ended December 31,		Change	
	2019 % revenue	2018 % revenue	2019/2018 % points	
Revenue	356.2	100.0%	525.3	100.0%
Cost of sales	157.4	44.2%	226.8	43.2%
Gross profit	198.8	55.8%	298.5	56.8%
				(1.0)
SG&A expenses	71.5	20.1%	90.3	17.2%
R&D expenses	35.4	9.9%	35.4	6.7%
Total operating expenses	106.9	30.0%	125.7	23.9%
				(6.1)
Operating income	91.9	25.8%	172.7	32.9%
Financial expense, net	13.8	3.9%	17.8	3.4%
Income before income taxes	78.1	21.9%	154.9	29.5%
				(7.6)
Income taxes (benefit)	(3.2)	(0.9%)	18.7	3.6%
Net income	81.3	22.8%	136.3	25.9%
				(3.1)
Effective tax rate	(4.1%)*		12.1%	

*Effective tax rate in 2019 was 10.8% excluding € 11.6 million tax benefit in Q4-19.

Revenue/Orders

(euro in millions)	Year ended December 31, 2019	2018	% Change 2019/2018
Revenue	356.2	525.3	(32.2%)
Orders	348.7	483.1	(27.8%)
IDM	214.0	328.7	(34.9%)
Subcontractors	134.7	154.4	(12.8%)

Besi's revenue decreased by € 169.1 million, or 32.2%, in 2019 versus 2018. Besi's revenue development was negatively influenced by supply/demand imbalances which began in Q2-18 post the large capacity build in 2017 and continued throughout 2019. In addition, revenue was also adversely affected by high levels of customer uncertainty caused by trade tensions between the US and China, particularly during the second and third quarters. The revenue decline was broad based by product group, partially offset by favorable forex influences associated with a 5.5% average appreciation of the US dollar versus the euro.

Similarly, orders in 2019 decreased by 27.8% versus 2018. The order decrease was broad based across product lines and end-user applications, with particular weakness in orders for smart phone and automotive applications by IDM customers and their respective supply chains. In 2019, bookings by IDMs and subcontractors represented approximately 61% and 39%, respectively, of Besi's total orders versus 68% and 32%, respectively, in 2018.

Gross profit

Gross profit decreased by € 99.7 million, or 33.4%, versus 2018 primarily as a result of lower revenue levels. However, despite the revenue decrease, Besi's gross margin reduced only slightly to 55.8% versus 56.8% in 2018 primarily due to its realignment of temporary

production overhead and supply chain activities in response to changing market conditions. Gross margin levels in 2019 also benefited from favorable net forex influences from an appreciation of the US dollar versus the euro which more than offset increased costs from an increase in the value of the Swiss franc, Singapore dollar and US dollar versus the euro.

Selling, general and administrative expenses

Total SG&A expenses decreased by € 18.8 million, or 20.8%, in 2019 versus 2018. The decrease in 2019 was due primarily to (i) a € 3.8 million reduction in personnel expenses as a result of lower headcount levels, (ii) a € 2.7 million reduction in share-based compensation expense, (iii) a € 5.5 million reduction in variable sales related costs such as warranty, commission and freight and (iv) lower overhead costs generally, particularly discretionary travel expenses. As a percentage of revenue, SG&A expenses increased from 17.2% in 2018 to 20.1% in 2019.

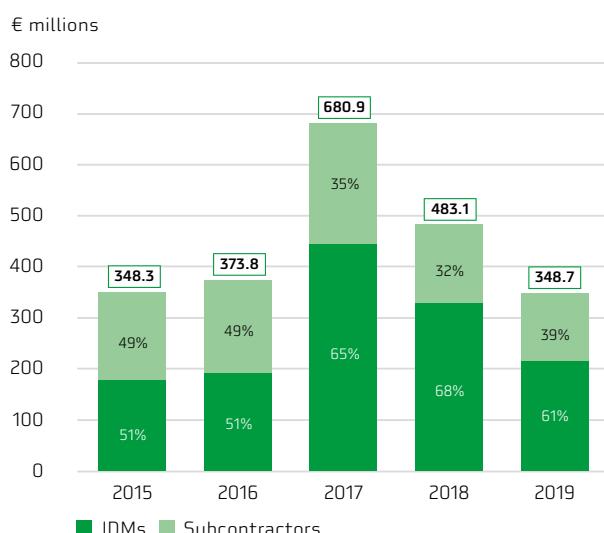
Research and development expenses

Besi's R&D spending is primarily focused on advancing its leadership position in advanced packaging process technology and regular system upgrades but can vary from year to year depending on specific customer roadmaps and the timing of new device introductions. R&D expense of € 35.4 million in 2019 was approximately equal to 2018 levels but, as a percentage of revenue, increased to 9.9% in 2019 versus 6.7% in 2018 as a result of significantly lower revenue.

Restructuring charges

Besi recorded € 0.2 million and € 1.0 million of restructuring charges in 2019 and 2018, respectively, related to employee severance which are included in cost of sales and operating expenses.

IDM/SUBCONTRACTOR ORDER TRENDS



QUARTERLY OPERATING EXPENSE TRENDS



■ Baseline Opex ■ Other Opex*

* Other Opex includes both short-term and long-term incentive comp, forex effects, restructuring costs and selected one-time effects.

Impairment of assets

Besi tests the value of its goodwill and other assets on its balance sheet according to IFRS on an annual basis or if a trigger for impairment occurs. An impairment charge of € 0.4 million was recorded in 2018 which was partially reversed in 2019 (€ 0.2 million) related to the valuation of land at one of its Dutch properties.

Operating income

Besi reported operating income of € 91.9 million in 2019, a decrease of 46.8% versus 2018. Similarly, operating margins declined from 32.9% to 25.8% primarily as a result of lower revenue partially offset by lower operating expenses.

Financial income (expense), net

The components of Besi's financial income (expense), net, for the years ended December 31, 2019 and 2018, were as follows:

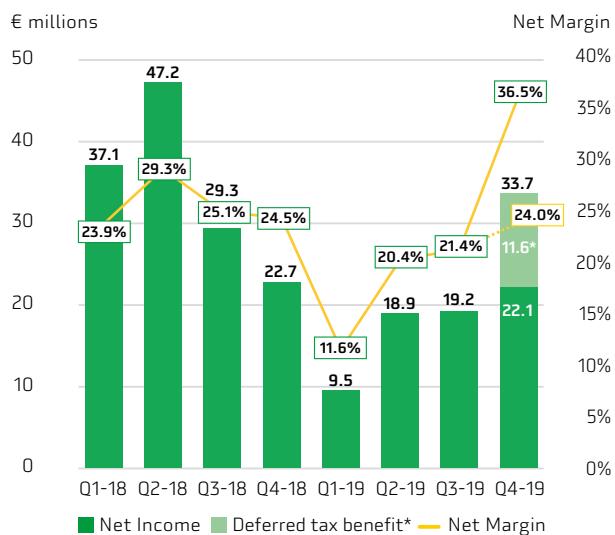
(euro in millions)	Year ended December 31,	
	2019	2018
Interest income	0.2	-
Interest expense	(10.2)	(9.8)
Interest income (expense), net	(10.0)	(9.8)
Hedging results	(3.4)	(7.5)
Net foreign exchange effects	(0.4)	(0.5)
Financial income (expense), net	(13.8)	(17.8)

Besi's financial expense, net, decreased by € 4.0 million in 2019 primarily due to lower hedging costs associated with lower revenue levels.

Income taxes

Besi recorded an income tax benefit of € 3.2 million in 2019 versus an income tax expense of € 18.7 million in 2018 with effective tax rates of negative 4.1% in 2019 and 12.1% in 2018. The 2019 tax benefit was primarily due to the recognition of a deferred tax asset of € 11.6 million in Q4-19 as a result of changes in Swiss fiscal policy. Besi's effective tax rate was 10.8% in 2019 excluding such benefit.

QUARTERLY NET INCOME TRENDS



* Includes € 11.6 million tax benefit at Besi Switzerland in Q4-19.

Net income

Besi's net income in 2019 was € 81.3 million, a decrease of € 55.0 million, or 40.4%, versus 2018 primarily as a result of a 32.2% revenue decrease and a 1.0% reduction in gross margins. Such adverse influences were partially offset by (i) an € 18.8 million decrease in operating expenses, (ii) a € 4.0 million reduction of financial expense, net and (iii) a deferred tax asset benefit of € 11.6 million.

Balance sheet, cash flow development and financing

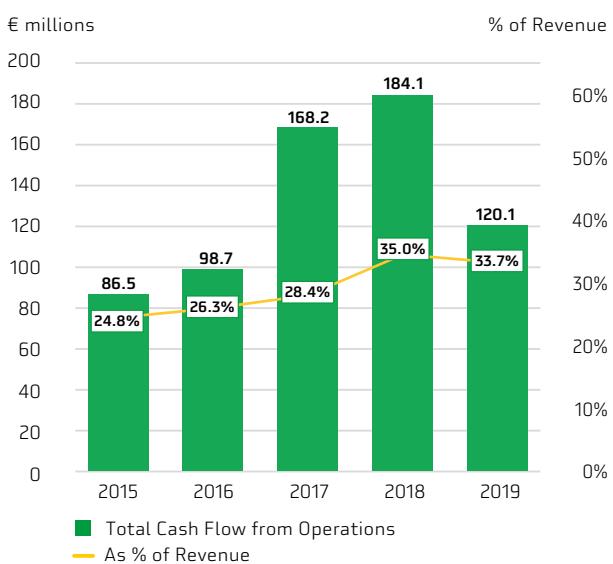
Cash flow

In 2019, Besi generated cash flow from operations of € 120.1 million which along with cash, cash equivalents and deposits outstanding, was utilized for the following principal purposes:

- € 122.4 million of cash dividends were paid to shareholders.
- € 44.7 million of ordinary shares were purchased and held in treasury.
- € 13.2 million of development expenses were capitalized.
- € 2.8 million of payments were made primarily to retire bank debt outstanding.
- € 2.5 million of net capital expenditures were made.

As a result of the above, Besi's cash and deposits decreased by € 67.1 million to reach € 408.4 million at December 31, 2019 principally due to dividends paid and shares repurchased which aggregated € 167.1 million. Similarly, our year end net cash position of € 130.3 million (defined as cash, cash equivalents and deposits less total debt) decreased by € 69.1 million versus year end 2018.

CASH FLOW GENERATION TRENDS



Working capital

Besi's working capital (excluding cash and debt) decreased by € 25.3 million, or 31.0%, to reach € 56.2 million at December 31, 2019. The decrease was due primarily to lower accounts receivable and inventory outstanding associated with lower sales volume as well as improvements in receivable collections and inventory management.

Capital expenditures

Besi's capital expenditures declined to € 2.5 million in 2019 versus € 6.6 million in 2018 primarily as a result of the completion in 2018 of its Chinese production capacity expansion. Besi anticipates that capital expenditures in 2020 will range between € 4 and € 5 million.

Financing

At December 31, 2019, Besi had € 278.1 million of total indebtedness outstanding, of which (i) € 277.1 million related to the 2016 and 2017 Convertible Notes (€ 300 million principal amount), (ii) € 0.5 million related to short-term bank loans and (iii) € 0.5 million related to short-term notes payable to banks under Besi's lines of credit.

Bank lines of credit

At December 31, 2019, Besi and its subsidiaries had available bank lines of credit aggregating € 97.8 million. At such date, utilization under the lines aggregated € 1.7 million of which € 0.5 million represented notes payable to banks and € 1.2 million related to bank guarantees. In general, interest is charged at the banks' base lending rates or Euribor/Libor plus an increment. Most credit facility agreements include covenants requiring Besi and/or its subsidiaries to maintain certain financial levels or financial ratios. Besi and all its applicable subsidiaries were in compliance with all loan covenants at December 31, 2019.

2019 bank revolving credit facility

On July 24, 2019, BE Semiconductor Industries N.V. entered into an € 80 million revolving credit facility due 2024 with a consortium of European banks (the "2019 Facility"). The 2019 Facility can be expanded to € 136 million and its maturity extended to 2026. Interest rates on borrowings under the 2019 Facility vary per currency utilized and the level of cash balances outstanding and amounts utilized. The 2019 Facility replaces and centralizes various credit facilities at subsidiary levels. It ranks pari passu with the 2016 and 2017 Convertible Notes and is secured by guarantees from certain operating subsidiaries. Borrowings under the 2019 Facility can be repaid at any time at 100% of principal amount and can be used for working capital and other corporate purposes. The principal covenants associated with the 2019 Facility include a maintenance test of consolidated debt to equity and a limitation on the incurrence of additional permitted indebtedness.

Issuance of Convertible Notes

On December 2, 2016, Besi issued € 125 million principal amount of 2.5% Senior Unsecured Convertible Notes due December 2023 (the "2016 Convertible Notes"). Interest on the 2016 Convertible Notes is payable semi-annually in arrears. The 2016 Convertible Notes will be repaid at maturity at 100% of their principal amount plus accrued and unpaid interest and convert into approximately 6.3 million Besi ordinary shares at a conversion price of € 19.93 (subject to adjustment). The original exercise price of € 43.51 has been adjusted for the two for one stock split effective May 4, 2018 and dividends paid subsequent to the date of issuance of the 2016 Convertible Notes in accordance with the terms and conditions related thereto. The net proceeds from the offering totaled € 122.7 million and were added to Besi's cash and deposits.

On December 6, 2017, Besi issued € 175 million principal amount of 0.5% Senior Unsecured Convertible Notes due December 2024 (the "2017 Convertible Notes"). Interest on the 2017 Convertible Notes is payable semi-annually in arrears. The 2017 Convertible Notes will be repaid at maturity at 100% of their principal amount plus accrued and unpaid interest and convert into approximately 3.6 million Besi ordinary shares at a conversion price of € 48.68 (subject to adjustment). The original exercise price of € 99.74 has been adjusted for the two for one stock split effective May 4, 2018 and dividends paid subsequent to the date of issuance of the 2017 Convertible Notes in accordance with the terms and conditions related thereto. The net proceeds from the offering totaled € 172.3 million and were added to Besi's cash and deposits.

Both the 2016 and 2017 Convertible Notes were privately offered to institutional investors and are listed on the Deutsche Börse's Freiverkehr market.

Besi may redeem each of the outstanding 2016 and 2017 Convertible Notes at 100% of their principal amount after December 23, 2020 (in the case of the 2016 Convertible Notes) and after December 27, 2021 (in the case of the 2017 Convertible Notes), provided that the market value of its ordinary shares exceeds 130% of the then effective conversion price for a specified period of time. In the event of a change of control (as defined), each noteholder will have the right to require Besi to redeem all (but not less than all) of its Convertible Notes at 100% of their principal amount together with accrued and unpaid interest thereon. The terms and conditions governing each of the 2016 and 2017 Convertible Notes contain no incurrence tests nor maintenance covenants which could materially limit Besi's ability to conduct its operations in the normal course.

Capital allocation

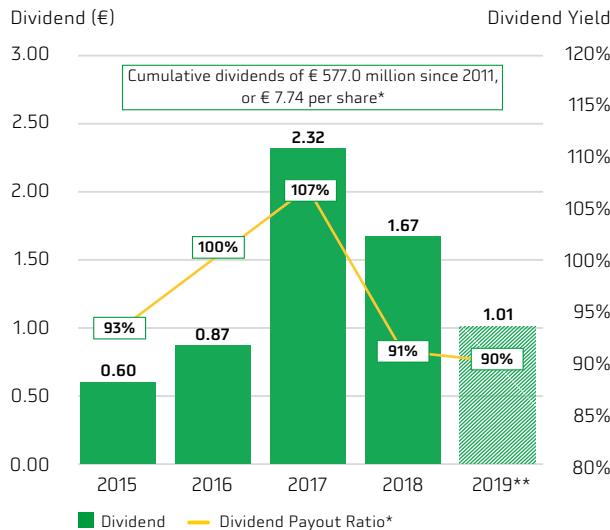
Besi's capital allocation policy seeks to provide a current return to shareholders in the form of cash dividends and share repurchases while retaining a capital base sufficient to fund future growth opportunities.

Dividends

Besi's dividend policy considers the payment of dividends on an annual basis based upon (i) a review of its annual and prospective financial performance, liquidity and financing needs, the prevailing market outlook and Besi's strategy, market position and acquisition strategy and/or (ii) a dividend payout ratio in the range of 40-100% relative to net income to be adjusted accordingly if the factors referred to under (i) so require.

Due to Besi's earnings and cash flow generation in 2018, the Board of Management proposed and Besi paid a cash dividend to shareholders of € 1.67 per share which resulted in cash payments to shareholders of € 122.4 million.

DIVIDEND TRENDS



Due to Besi's earnings and cash flow generation in 2019, the Board of Management will propose a cash dividend to shareholders of € 1.01 per share for approval at Besi's Annual General Meeting of Shareholders to be held on April 30, 2020.

The payments for the year 2018 and proposed for the year 2019 represent a dividend payout ratio relative to net income of 91% and 90%, respectively.

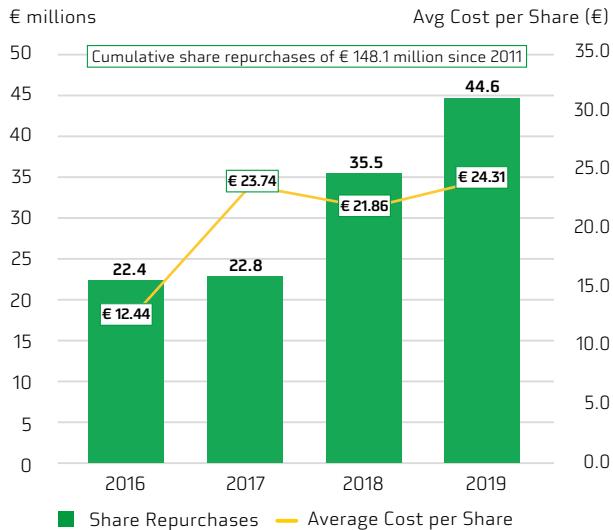
Share repurchase program

On July 26, 2018, Besi announced a € 75 million share repurchase program through October 26, 2019 (the "2018 program") which represented approximately 4.2% of shares outstanding at such date. The 2018 program was initiated for capital reduction purposes and to help offset dilution associated with Besi's 2016 and 2017 Convertible Notes and share issuance under employee stock plans. On October 24, 2019, Besi extended the 2018 program for an additional year until October 26, 2020. From program inception through December 31, 2019, a total of 3.1 million shares have been repurchased at an average price of € 21.91 per share for a total of € 67.1 million under this program.

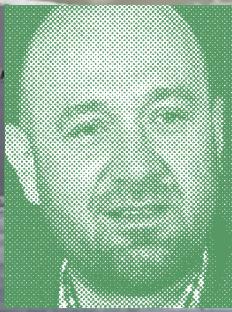
At present, Besi has shareholder authorization to purchase up to an aggregate of 10% of its ordinary shares outstanding (approximately 8.0 million shares) until October 26, 2020. At December 31, 2019, Besi held approximately 7.9 million shares in treasury equal to approximately 9.8% of its ordinary shares outstanding at a weighted average price of € 15.05 per share.

Besi believes that its cash position, internally generated funds and available lines of credit will be adequate to meet its anticipated levels of capital spending, research and development, debt service requirements, working capital and capital allocation policy for at least the next twelve months.

SHARE REPURCHASE ACTIVITY



Risks and Risk Management



Jürgen Hermann Mayer (1965–present)

A German architect and artist. Mayer focuses on designing works at the intersection of architecture, communication and leading edge technology. In his urban planning and building schemes, Mayer explores the relationship between the human body, technology and natural forms. Mayer designed the Metropol Parasol (Seville, Spain).



Risks and Risk Management

Over the past decade, the importance of internal control and risk management systems has grown substantially for Besi as a result of its increased size and complexity, changing market conditions and substantial expansion of its business operations outside of Europe. Besi's internal control and risk management systems have been designed to address and help limit the risk factors. In 2019, the most important components of Besi's internal control and risk management system were:

Financial risk management

- An extensive and documented process for preparing Besi's annual budget, quarterly estimates and reports of its monthly financial and non-financial information compared with the budgeted and quarterly estimated information.
- Monthly business reviews with product group and production site managers with respect to their monthly and quarterly bookings, revenue, working capital and results of operations together with discussions of general market, economic, technological, ecological and competitive developments.
- Daily reviews of the foreign currency positions of all significant operating companies.
- Annual documentation and analysis of key risks and the development and control of such risks.
- Weekly management reviews of its business, operations, cash and inventory development.
- Compliance with finance and controlling guidelines governing its financial accounting and reporting procedures.
- Compliance with internal controls over financial reporting that have been implemented in all significant operating companies.
- Regular management review of key staff development.
- Regular analyses of operational risks at the subsidiary level.
- Regular analyses of Besi's capital structure, financing requirements, tax position and transfer pricing system.

All material findings that result from the use of Besi's internal control and risk management system for financial risks are discussed with the Audit Committee and Supervisory Board including the:

- Development of Besi's revenue, orders, results of operations and balance sheet versus budget as well as developments in the global economy and semiconductor assembly equipment market and their impact on Besi's financial results.
- Progress of ongoing strategic initiatives and cost reduction efforts.
- Status of key customer relationships.
- Analysis of orders lost to competitors and the development of Besi's competitors' business.
- Material developments in Besi's research and development activities.
- Foreign currency exchange rate developments.
- Status of its current corporate governance procedures.
- Status of systems and procedures and activities to monitor and evaluate risks from fraud, bribery or corruption in Besi's operations.

In addition to internal controls over financial reporting, the operation of Besi's internal control system is also assessed by the external auditor where deemed relevant in the context of the audit of the annual Financial Statements. The results of this audit are discussed with the Board of Management and the Audit Committee of the Supervisory Board.

Other operational risks such as the hedging of financial exposures, internal financial reporting and transfer pricing are governed by a set of internal Besi guidelines. In addition, insurance policies are in place to cover the typical business risks associated with Besi's operations and are reviewed every year. Besi's policies regarding foreign currency hedging, interest rate, credit, market and liquidity risks are further described in the Financial Statements.

Besi also evaluates CSR and non-financial risks that could affect both its strategy and business operations. Besi's CSR strategy is influenced by important global trends currently such as climate change, natural resource conservation, pollution and the circular economy as well as human challenges such as diversity, human rights and the recruitment of qualified technical personnel. Short and long-term topics are assessed through measures such as materiality analyses, key performance indicators for energy, water and waste usage, customer and employee satisfaction metrics, supplier audits and continuous stakeholder dialogue. Besi's CSR and non-financial risks are governed by a set of guidelines and instructions including:

- ISO 14001 environmental management certification
- RBA Supplier Certification
- Conflict Minerals Policy
- Code of Conduct
- Supply Chain Policy
- Code of Ethics for Senior Financial Officers
- Whistleblower procedure
- Guidelines regarding authorizations
- Reporting of fraudulent activities
- Supplier Code of Conduct

There were no indications that Besi's internal control and risk management systems did not function properly in 2019. Please refer to [Internal Control and Risk Management](#) of the Corporate Governance section for further information.

Risk appetite

Besi's risk appetite is primarily based on defined and agreed upon strategies and the individual objectives and initiatives within such strategies. Management believes that Besi's risk appetite is aligned with its strategy and priorities. The Board of Management monitors the operation of its internal control and risk management system and carries out a systematic assessment of its design and effectiveness at which time it also assesses its risks, including residual risks, net of risk mitigating measures. The Board of Management discusses the effectiveness of the design and operation of the internal control and risk management system with the Audit Committee and provides input to the Supervisory Board.



Small Group Activity competition, Besi APac, Malaysia.

Our risk appetite differs per risk type:

- *Strategic risks and risks related to the semiconductor industry:* Besi seeks to realize its strategic ambitions and priorities and is willing to accept reasonable risks to achieve such objectives.
- *Operational risks:* Besi has a variety of operating initiatives and challenges in its strategic planning that require an appropriate level of management attention. We seek to mitigate risks that could negatively affect our realization of operating initiatives and efficiency targets while ensuring that our quality standards are unaffected in the process.
- *Financial risks:* Besi's financial strategy is focused on generating increased revenue, profit and cash flow from its business model, maintaining a strong financial position and creating long-term value for its shareholders. We seek to mitigate risks which could negatively influence our results of operations, financial condition and access to capital markets while maintaining optimal operating and financing flexibility and an attractive capital allocation policy for the benefit of stakeholders.
- *Legal and regulatory risks:* Besi strives to be fully compliant with its Code of Conduct and all applicable national and international laws and regulations in the markets and jurisdictions in which it operates. Besi seeks to comply with all environmental and labor laws and uses its best efforts to comply with best practice standards in the jurisdictions in which Besi operates.

Besi does not rank the individual risks identified by management. We believe that all risks described herein have significant relevance and that a ranking process would negate the purpose of a comprehensive risk assessment.

Risks factors relating to Besi, its industry, its business and its shares

Strategic risks

Besi's business and results of operations may be negatively affected by general economic and financial market conditions and volatile spending patterns by its customers.

Although the semiconductor industry's business cycle can be independent of the general economy, global economic conditions may have a direct impact on demand for semiconductor devices and ultimately demand for semiconductor manufacturing equipment. Accordingly, Besi's business and financial performance is affected, both positively and negatively, by fluctuations in the macroeconomic environment. As a result, the Company's visibility as to future demand is generally limited and its ability to forecast future demand is difficult.

For example, between 2010 and 2013, sovereign debt concerns involving eurozone countries significantly adversely affected global economic conditions which, in turn, had a negative impact on demand for semiconductor devices and semiconductor manufacturing equipment. In the third quarter of 2015, Besi experienced an abrupt and rapid reduction in orders as customers digested capacity added in 2014 and the first half of 2015, along with typical downward order pressure from seasonal factors. Similarly, an abrupt decline in demand for mobile applications (in particular order cancellations by a single IDM customer) caused second quarter 2018 orders to decline by 58% relative to the first quarter of 2018. Such order weakness continued in the second half of 2018 and throughout 2019 as customers digested significant capacity added in 2017.

Besi believes that historic volatility in capital spending by customers is likely to persist in the future. In addition, future economic downturns and/or geopolitical events could adversely affect Besi's customers and suppliers which would in turn have an impact on Besi's business and financial condition.

Besi's business includes significant operations in Europe. Disruptions to European economies could have a material adverse effect on Besi's operations, financial performance, share price and access to credit markets. The financial markets have experienced concern as to the ability of certain European countries to finance their deficits, service debt burdens and refinance debt maturities. Global markets also have experienced concern as to the possible contagion effects of a potential default by a European sovereign issuer, its impact on economic growth in emerging markets and other developed markets and its impact on corporations' abilities to access credit and capital markets.

Besi also may face heightened risks as a result of the withdrawal of the United Kingdom from the European Union, commonly referred to as "Brexit". The future effects of Brexit are uncertain and will depend on any agreements the United Kingdom makes to retain access to European Union markets either during a transitional period or more permanently. Brexit could, among other outcomes, disrupt the free movement of goods, services and people between the United Kingdom and the European Union and significantly disrupt trade between the United Kingdom and the European Union. In addition, Brexit could lead to legal uncertainty and potentially divergent national laws and regulations, including tax laws and regulations, as the United Kingdom determines which European Union laws to replace or replicate.

Given the scale of its European operations and scope of its relationships with customers and counterparties, Besi's results of operations and financial condition could be materially and adversely affected by persistent disruptions in European financial markets, the attempt of a country to abandon the euro, the impact of Brexit, the effects of austerity measures on eurozone economies, the failure of a significant European financial institution, even if not an immediate counterparty to Besi, persistent weakness in the value of the euro and the potential adverse impact on global economic growth and capital markets if eurozone issues spread to other parts of the world as a result of the default of a eurozone sovereign or corporate issuer.

Besi may acquire or make investments in companies or technologies that could disrupt its ongoing business, distract its management and employees, increase its expenses and adversely affect its results of operations. As part of its growth strategy, Besi may from time to time acquire or make investments in companies and technologies. Besi could face difficulties in integrating personnel and operations from the acquired businesses or technology and in retaining and motivating key personnel from these businesses. In addition, these acquisitions may disrupt Besi's ongoing operations, divert management resources and attention from day-to-day activities, increase its expenses and adversely affect its results of operations and the market price of its ordinary shares. In addition, these types of transactions often result in charges to earnings for items such as business unit restructuring, including charges for

personnel and facility termination and the amortization of intangible assets or in-process research and development expenses. Any future acquisitions or investments in companies or technologies could involve other risks, including the assumption of additional liabilities, dilutive issuances of equity securities, the utilization of cash and the incurrence of debt.

Acts of war or terrorism could adversely affect Besi's business and results of operations.

Threats or acts of war or terrorism may adversely affect our business. Terrorist attacks in Europe and other regions globally as well as continuing hostilities in the Middle East and elsewhere have created significant instability and uncertainty in the world. In addition, terrorist attacks, including cyberterrorism, that directly impact our facilities or those of our suppliers or customers could have an adverse impact on our sales, supply chain, production capabilities and costs. Any such events could have a material adverse effect on world markets, our business and our results of operations.

Trade, political and economic frictions in the Asia Pacific region could adversely affect Besi's revenue and results of operations.

Due to the complex relationships among China, Japan, Korea, Taiwan and the United States, there is inherent risk that political and diplomatic influences might lead to trade disruptions. A significant trade disruption in any area where we do business could have a material adverse impact on our future revenue and profitability. Tariffs, additional taxes or trade barriers may increase our manufacturing costs, decrease margins, reduce the competitiveness of our products or inhibit Besi's ability to sell products or purchase necessary equipment and supplies, all of which could have a material adverse effect on our business, results of operations and financial condition.

In addition, there are risks that governments may, among other things, insist on the use of local suppliers, compel companies to partner with local companies to design and supply equipment on a local basis, require the transfer of intellectual property rights and/or local manufacturing or provide special incentives to government backed local customers to buy from local competitors even if their products are inferior to ours, all of which could adversely impact our revenue, margins and financial condition. Many of these challenges are particularly applicable in China, which is a fast-developing market for the semiconductor equipment industry and an area of anticipated growth for Besi's business. Further, the political and economic climate in China at both the national and regional levels can be fluid and unpredictable. China has announced and begun implementation of state-sponsored initiatives to build domestic semiconductor capacity and supply chains. As such, Besi may be at a disadvantage in competing with entities associated with such government efforts based on their lower cost of capital, access to government subsidies and decision making, preferential sourcing practices, stronger local relationships or otherwise.

Semiconductor industry related risks

Besi's revenue and results of operations depend in significant part on demand for semiconductors which is highly cyclical and has increasingly become more seasonal in nature.

Besi's customers' capital expenditures for semiconductor manufacturing equipment depend on the current and anticipated market demand for semiconductors and products using semiconductors. The semiconductor industry is highly cyclical and volatile and is characterized by periods of rapid growth followed by industry-wide retrenchment. These periodic downturns have included, among other things, diminished product demand, production overcapacity, over supply and reduced prices, all of which have been regularly associated with substantial reductions in capital expenditures for semiconductor facilities and equipment and a reduction of Besi's revenue.

Over the past decade, Besi has experienced significant upward and downward movements in quarterly order rates due to global macroeconomic concerns, the timing of industry capacity additions and seasonality associated with end-user application revenue which materially affected and, in certain instances, adversely affected its revenue, results of operations and orders. Customer order patterns have become increasingly more seasonal due to the growing influence of more retail oriented electronics applications in the overall demand for semiconductor devices such as smart phones, tablets, wearables and automotive electronics and the timing of new product introductions. As such, typical annual order patterns have been characterized by a strong ramp in the first half of the year to build capacity to meet anticipated year end demand followed by a subsequent decline in the second half of the year as capacity additions are digested by customers.

Due to the lead times associated with the production of semiconductor equipment, a rise or fall in the level of sales of semiconductor equipment typically lags any downturn or recovery in the semiconductor market by approximately three to six months. This cyclical has had, and is expected to continue to have, a direct adverse effect on Besi's revenue, results of operations and orders. Industry downturns can be severe and protracted and will continue to adversely affect Besi's revenue, results of operations and orders.

Because of the lengthy and unpredictable sales cycle for its products, Besi may not succeed in closing transactions on a timely basis, if at all, which could adversely affect its revenue and operating results.

The average selling price for a material portion of Besi's equipment exceeds € 300,000, and as a result of such potential investment size, the sales cycles for these transactions are often lengthy and unpredictable. Factors affecting the sales cycle include:

- Customers' capital spending plans, capacity utilization rates, technology roadmaps and budgetary constraints.

- Timing related to the adoption, testing, qualification and introduction of new devices and process technologies and related equipment.
- The timing of customers' budget cycles.
- Customers' internal approval processes.

These lengthy sales cycles may cause Besi's revenue and results of operations to vary from period to period and it may be difficult to predict the timing and amount of any variations. Besi may not succeed in closing such large transactions on a timely basis or at all, which could cause significant variability in its revenue and results of operations for any particular period.

Recent consolidation activity and industry alliances in the semiconductor industry have further increased customer concentration and the risk of loss.

There has been, and Besi expects that there will continue to be, consolidation within the semiconductor industry resulting in fewer potential customers for its products and services, and, more significantly, the potential loss of business from existing customers that are a party to a merger if the combined entity decides to purchase all of its equipment from one of Besi's competitors. Further industry consolidation could result in additional negative consequences to Besi including increased pricing pressure, increased customer demands for enhanced or new products, greater sales and promotional costs and the potential for increased oversight from regulatory agencies. Any of the foregoing events would have an adverse impact on Besi's business, results of operations and financial condition.

Some of our customers and potential customers are entering into alliances or other forms of cooperation with one another to expedite the development of processes and other manufacturing technologies. One of the results of this cooperation may be the definition of a system or particular tool set for a certain function or a series of process steps that uses a specific set of manufacturing equipment. These decisions could work to Besi's disadvantage if a competitor's equipment becomes the standard equipment for such function or process. Even if Besi's equipment was previously used by a customer, that equipment may be displaced in current and future applications by the equipment standardized through such cooperation. These forms of cooperation may have a material adverse effect on Besi's business, financial condition and results of operations.

In addition, various industries have experienced consolidation and other ownership changes or the emergence of dominant firms and supply chains within those industries, including the smart phone, computing and automotive industries. Any future changes in market structure to industries in which we sell our equipment could decrease the number of potential customers for our product offerings and/or risk an increase in competition for our clients' equipment purchases. Moreover, our competitors may respond to such changes in market conditions by lowering prices and attempting to lure away our customers.



The team involved in the first Datacon 8800 FC Quantum shipment from Besi Leshan, China.

Besi may experience increased price pressure on its product sales.

Typically, Besi's average selling prices for mature products have declined over time. Besi seeks to offset this decline, in part, by continually developing and introducing next generations of its principal products. In addition, it has reduced its cost structure by consolidating and transferring production operations to lower cost areas, expanding its lower cost Asian sources of supply, reducing other operating costs and pursuing product strategies focused on product performance and customer service. If these efforts do not fully offset any such price declines, Besi's financial condition and operating results may be materially and adversely affected.

Besi may fail to compete effectively in its markets.

Besi faces substantial competition on a worldwide basis from established companies based in Japan, Korea, Singapore, China, various other Pacific Rim countries and the United States, many of which have greater financial, engineering, manufacturing and marketing resources than Besi. Besi believes that once a semiconductor manufacturer has decided to buy semiconductor assembly equipment from a particular vendor, the manufacturer often continues to use that vendor's equipment in the future. Accordingly, it is often difficult to achieve significant sales to a particular customer once another vendor's products have been installed. Furthermore, some companies have historically developed, manufactured and installed back-end assembly equipment internally, and it may be difficult for Besi to sell its products to these companies or, in attempting to make sales to such companies, risk exposing Besi's proprietary technology to a potential competitor.

Besi's ability to compete successfully in its markets depends on a number of factors both within and outside its control including:

- Price, product quality and system performance to customer specifications.
- Ease of use and reliability of its products.
- Manufacturing lead times, including the lead times of Besi's subcontractors.
- Cost of ownership.
- Success in developing or otherwise introducing new products.
- Market and economic conditions.
- Local market presence, particularly in Asian markets, and the quality of Besi's after-market sales and service support in each region in which it operates.

In addition, there is substantial competition for qualified and capable personnel who are in high demand, particularly in Asia, which may make it difficult for Besi to recruit and retain qualified employees.

If Besi fails to compete effectively based upon these or other factors, its business and results of operations could be adversely affected.

Besi must introduce new products in a timely fashion and its success is dependent upon the market acceptance of these products.

The semiconductor equipment industry is subject to rapid technological change and new product introductions and enhancements. The success of Besi's business strategy and results of operations are largely based upon accurate anticipation of customer and market requirements. Besi's ability to implement its overall strategy and remain competitive will depend in part upon its ability to develop new and enhanced products and introduce them at competitive price levels in order to gain market acceptance. Besi must also accurately forecast commercial and technical trends in the semiconductor

industry so that its products provide the functions required by its customers and are configured for use in their facilities. Besi may not be able to respond effectively to technological changes or to specific product announcements by competitors. As a result, the introduction of new products embodying new technologies or the emergence of new or enhanced industry standards could render Besi's existing products uncompetitive from a pricing standpoint, obsolete or unmarketable.

In addition, Besi is required to invest significant financial resources in the development of new products or upgrades to existing products and in its sales and marketing efforts before such products are made commercially available and before Besi is able to determine whether they will be accepted by the market. Revenue from such products will not be recognized until long after Besi has incurred the costs associated with designing, creating and selling such products. In addition, due to the rapid technological changes in its market, a customer may cancel or modify a product before it begins manufacture of the product and receives revenue from the customer. While Besi typically imposes a fee when its customers cancel an order, that fee may not be sufficient to offset the costs Besi incurred in designing and manufacturing such product. In addition, the customer may refuse or be unable to pay the cancellation fee Besi assesses. It is difficult to predict with any certainty the frequency with which customers will cancel or modify their projects or the effect that any cancellation or modification would have on Besi's results of operations.

Besi cannot provide any assurance that it will be successful in developing new or enhanced products in a timely manner or that any new or enhanced products that it introduces will achieve market acceptance.

Besi may not be able to protect its intellectual property rights which could make it less competitive and cause it to lose market share.

Although Besi seeks to protect its intellectual property rights through patents, trademarks, copyrights, trade secrets, confidentiality and assignment of invention agreements and other measures, there can be no assurance that it will be able to protect its technology adequately, that Besi's competitors will not be able to develop similar technology independently, that any of Besi's pending patent applications will be issued or that intellectual property laws will protect Besi's intellectual property rights. In addition, Besi operates internationally and intellectual property protection varies among the jurisdictions in which it conducts business. In certain jurisdictions, the prevention of theft or copying can be challenging. Litigation may be necessary in order to enforce Besi's patents, copyrights or other intellectual property rights, to protect its trade secrets, to determine the validity and scope of the proprietary rights of others or to defend against claims of infringement. Litigation could result in substantial costs and diversion of resources, distract Besi's management from operating the business and could have a material adverse effect on its business and operating results.

In addition, third parties may seek to challenge, invalidate or circumvent any patent issued to Besi, the rights granted under any patent issued to Besi may not provide competitive advantages and third parties may assert that Besi's products infringe patent, copyright or trade secrets of such parties. Also third parties may challenge, invalidate or circumvent technology which Besi licenses from third parties. If any party is able to successfully claim that Besi's creation or use of proprietary technology infringes upon their intellectual property rights, Besi may be forced to pay damages. In addition to any damages Besi may have to pay, a court could require Besi to stop the infringing activity or obtain a license which may not be available on terms which are favorable to Besi or at all.

Operational risks

Difficulties in forecasting demand for Besi's product lines may lead to periodic inventory shortages or surpluses. Besi typically operates its business with limited visibility of future demand. As a result, it sometimes experiences inventory shortages or surpluses. Besi generally orders supplies and otherwise plans production based on internal forecasts for demand. Besi has in the past failed, and may fail again in the future, to accurately forecast demand for its products. This has led to, and may in the future lead to, delays in product shipments or, alternatively, an increased risk of inventory obsolescence. If it fails to accurately forecast demand for its products, Besi's business, results of operations and financial condition may be materially and adversely affected.

Besi depends on its suppliers for critical raw materials, components and subassemblies on a timely basis. If suppliers do not deliver their products on a timely basis, particularly during a large order ramp, our revenue, customer relationships and market share could be materially and adversely affected.

Besi's assembly equipment, particularly its advanced packaging product lines, is highly complex and requires raw materials, components, modules and subassemblies having a high degree of reliability, accuracy and performance. Besi relies on subcontractors to manufacture many of these components and subassemblies and in certain instances, on sole suppliers for such items, on a timely basis as our order ramps can be steep and industry cycle times are decreasing. As a result, Besi is exposed to a number of significant risks, including:

- Decreased control over the manufacturing process for components, modules and subassemblies.
- Changes in our manufacturing processes in response to changes in the market, which may delay our shipments.
- Potential for inadvertent use of defective or contaminated raw materials.
- The relatively small operations and limited manufacturing resources of some of our suppliers, which may limit their ability to manufacture and sell subassemblies, modules, components or parts in the volumes Besi requires and at acceptable quality levels, prices and timetable.

- The potential inability of suppliers to meet customer demand requirements during volatile cycles.
- Reliability or quality issues with certain key components, modules and subassemblies provided by single source suppliers as to which Besi may not have any short-term alternative.
- Shortages caused by disruptions at our suppliers and subcontractors for a variety of reasons, including work stoppage or fire, earthquake, flooding or other natural disasters.
- Delays in the delivery of raw materials, modules or subassemblies, which, in turn, may delay shipments to our customers.
- Loss of suppliers as a result of consolidation of suppliers in the industry, bankruptcy or insolvency.
- The potential copying or theft of proprietary designs for unauthorized use or sale to third parties including competitors.

If Besi were unable to deliver products to its customers on time and at expected cost for these or any other reasons, or it were unable to meet customer expectations as to cycle time, or it were unable to maintain acceptable product quality or reliability, then its business relationships, market share, financial condition and operating results could be materially and adversely affected.

Undetected problems in Besi's products could directly impair its financial results.

If flaws in design, production, assembly or testing of its products (by Besi or its suppliers) were to occur, the Company could experience a rate of failure in its products that could result in substantial repair, replacement or service costs and potential damage to its reputation. Continued improvements in manufacturing capabilities, control of material and manufacturing quality and costs and product testing are critical factors to Besi's future growth. There can be no assurance that the Company's efforts to monitor, develop, modify and implement appropriate tests and manufacturing processes for its products will be sufficient to permit it to avoid a rate of failure in its products that results in substantial delays in shipments, significant repair or replacement costs and/or potential damage to its reputation, any of which could have a material adverse effect on Besi's business, results of operations and financial condition.

Costs of product defects and errata (deviations from product specifications) due to, for example, problems in Besi's design and manufacturing processes could include:

- Writing off the value of inventory.
- Disposing of products that cannot be fixed.
- Retrofitting products that have been shipped.
- Providing product replacements or modifications.
- Defending against litigation.

Besi's use of global and diverse information technology systems could result in ineffective or inefficient business management and could expose it to security threats to its data resources and intellectual property.

Besi currently utilizes a variety of information technology ("IT") systems to run its global operations. At present, Besi's operations rely on a range of different software systems to manage its sales, administrative and production functions. Some of these systems are proprietary and others are purchased from third party vendors. In addition, some of these systems are maintained on-site by Besi personnel while others are maintained off-site by third parties.

We maintain and rely extensively on IT systems and network infrastructures for the effective operation of our business and protection of our technological resources. We also hold large amounts of data in data center facilities around the world upon which our business depends. We could experience a disruption or failure of our systems, or the third-party hosting facilities or other services that we use. Such disruptions or failures could include a major earthquake, fire, cyber-attack, act of terrorism or other catastrophic event, as well as power outages or telecommunications infrastructure outages, or a decision by one of our third-party service providers to close facilities that we use without adequate notice or other unanticipated problems with the third-party services that we use, including a failure to meet service standards. As a highly automated business, any such disruptions or failures could (i) result in the destruction or disruption of any of our critical business operations, controls or procedures, or IT systems, (ii) severely affect our ability to conduct normal business operations, including delaying completion of sales and provision of services, (iii) result in a material weakness in our internal control over financial reporting, (iv) harm our reputation and (v) adversely affect our ability to attract and retain customers, any of which could materially adversely affect our future operating results.

Besi believes that there has been a global increase in IT security threats and higher levels of professionalism in computer crime which pose a greater risk to the confidentiality, availability, distribution and integrity of its internal data and information. Besi relies on commercially available systems, software, tools and monitoring to provide security for the processing, transmission and storage of confidential information. A disruption, infiltration or failure of our IT systems or any of our data centers could occur as a result of technological error, computer viruses, or third-party action, including intentional misconduct by computer hackers, physical break-ins, the actions of state actors, industrial espionage, fraudulent inducement of employees, or customers to disclose sensitive information such as user names or passwords, and employee or customer error or malfeasance.

A security breach could result in unauthorized access to or disclosure, modification, misuse, loss, or destruction of our or our customer's data (including proprietary design information, intellectual property, or trade secrets). Because there are many different security



Besi worldwide Sales Meeting, Singapore, March 2019.

breach techniques and such techniques continue to evolve, we may be unable to anticipate attempted security breaches and implement adequate preventative measures. Any security breach or successful denial of service attack could result in a loss of customer confidence in the security of our products and damage to our brand, reduce the demand for our offerings, disrupt our normal business operations, compromise our competitive technological position, require us to spend material resources to investigate or correct the breach, expose us to legal liabilities, including litigation, regulatory enforcement, and indemnity obligations, and materially adversely affect our operating results.

Any significant disruption in Besi's operations could reduce the attractiveness of its products and result in a loss of customers.

The timely delivery and satisfactory performance of Besi's products are critical to its operations, reputation and ability to attract new customers and retain existing customers. Besi's administrative, design and systems manufacturing are located all over the world, including locations in the Netherlands, Malaysia, Singapore, Austria, China and Switzerland. Some of Besi's facilities are in locations that have experienced severe weather conditions, fire, natural disasters, flooding, political unrest and/or terrorist incidents. If the operations at any of its facilities were damaged or destroyed as a result of any of the foregoing, or as a result of other factors, Besi could experience interruptions in its service, delays in product deliveries and it would likely incur additional expense in arranging new production facilities which may not be available on timely or commercially reasonable terms, or at all. Any interruptions in Besi's operations or delays in delivering its products could harm its customer relationships, damage its brand and reputation, divert its employees' attention, reduce its revenue, subject it to liability and cause customers to cancel their orders, any of which could adversely affect Besi's business, financial condition and results of operations. It is unclear whether Besi's insurance policies would adequately compensate it

for any losses that it would incur as the result of a production or service disruption or delay.

Besi is largely dependent upon its international operations.

Besi has manufacturing and/or sales and service facilities and personnel in the Netherlands, Austria, Malaysia, Korea, Hong Kong, Singapore, China, the Philippines, Taiwan, Thailand, Switzerland and the United States. Its products are marketed, sold and serviced worldwide. In addition, 84% of its sales in 2019 were to customers outside of Europe and 69% of its employees were located in facilities outside of Europe at year end 2019.

Besi's operations are subject to risks inherent in international business activities including, in particular:

- General economic, banking and political conditions in each country.
- The overlap of different tax structures and potentially conflicting interpretations of tax regulations.
- Management of an organization spread over various countries.
- Currency fluctuations which could result in increased operating expenses and reduced revenue and foreign currency controls.
- Greater difficulty in accounts receivable collection and longer collection periods.
- Difficulty in enforcing or adequately protecting Besi's intellectual property in foreign jurisdictions.
- Unexpected changes in regulatory requirements, compliance with a variety of foreign laws and regulations.
- Less developed and predictable legal systems.
- Tariffs, import and export licensing requirements, trade restrictions, restrictions on foreign investments and changes in freight rates.
- Political unrest and terrorist activities in the countries in which it operates.
- Ethical issues such as corruption, bribery and human rights violations.

Also each region in the global semiconductor equipment market exhibits unique characteristics that can cause capital equipment investment patterns to vary significantly from period to period.

Besi's Asian operations represented approximately 72% of its revenue in 2019 and 68% of its employees at year end 2019. Geographically focused disruptions or failures, such as natural disasters, acts of terrorism, geopolitical conflict or other localized catastrophic events as well as power outages or telecommunications infrastructure outages in our Asian operations could have a material adverse effect on our business and results of operations.

In addition, compliance with foreign laws and regulations that are applicable to our international operations is complex and may increase our cost of doing business in international jurisdictions, and our international operations could expose us to fines and penalties if we fail to comply with these regulations. These laws and regulations include anti-bribery laws and local laws prohibiting corrupt payments to governmental officials. Although we have implemented policies and procedures designed to help ensure compliance with these laws, there can be no assurance that our employees, partners, and other persons with whom we do business will not take actions in violation of our policies or these laws. Any violations of these laws could subject us to civil or criminal penalties, including substantial fines or prohibitions on our ability to offer our products and services to one or more countries, and could also materially damage our reputation and our brand.

Recent regulations related to conflict minerals and hazardous materials may force us to incur additional expenses, make our supply chain more complex and result in damage to Besi's customer reputation.

US, European and Chinese regulatory authorities have established initiatives with respect to the usage by corporations of certain minerals and metals, known as conflict minerals, in their products, regardless of whether these products are manufactured by third parties. These regulations require companies to conduct due diligence and disclose whether such minerals originate from the Democratic Republic of Congo ("DRC") and/or certain adjoining countries. The implementation of such regulations could adversely affect the sourcing, availability and pricing of minerals used in the manufacture and assembly of semiconductor devices. In addition, since Besi's supply chain is complex, verification of the origins of these materials in our products through due diligence procedures initiated by us may be difficult and costly and may not be possible at all, which may harm Besi's reputation. In such event, we may also face difficulties in satisfying customers who require that all our product components be certified as conflict-free.

Besi is subject to environmental rules and regulations in a variety of jurisdictions.

We are subject to a variety of governmental regulations related to the use, storage, discharge and disposal of chemical by-products of, and water used in, our manufacturing processes. Environmental claims or the failure to comply with any present or future regulations could result in the assessment of damages or imposition of fines against Besi, suspension of production or a cessation of operations. New regulations could require us to acquire costly equipment or to incur other significant expenses. Any failure by us to control the use or adequately restrict the discharge of hazardous substances could subject Besi to future liabilities.

Our business may be harmed if we fail to attract and retain qualified personnel.

Besi's future success depends in significant part on the continued contribution of its senior executive officers and key employees including a number of specialists with advanced university qualifications in engineering, electronics, software and computing. In addition, we need to ensure that we can attract and retain other qualified management, technical, sales and support personnel for operations, particularly to help expand Asian production and technical capabilities.

Besi's business and future operating results also depend on the continuous monitoring and adjustment of our Asian production capacity given increased seasonal influences on order rates. We believe that our ability to increase the manufacturing capacity of subsidiaries has from time to time been constrained by the limited number of such skilled technical and production personnel. Competition for such personnel is intense and we may not be able to continue to attract and retain such personnel. The loss of any key executive or employee or the inability to attract and retain skilled executives and employees as needed could adversely affect our business, financial condition and results of operations.

Asian production and personnel expansion could expose us to additional risks related to human rights issues in the region.

In recent years, we have significantly increased our production, engineering and supply chain capabilities in Asia (Malaysia, China and Singapore) to increase Besi's local presence and make our operations more efficient. As such, Asian personnel have grown to represent 68% of our total headcount at year end 2019 and revenue from Asian customers represented approximately 72% of consolidated revenue. As a more active Asian participant, we may be confronted with issues of corruption and human rights violations which are significant topics in the region. In addition, our expanded operations in Asia could expose us to the risk of fraud or bribery in our supply chain activities.

Financial risks

Besi's historical financial results have fluctuated significantly and may continue to do so in the future. Besi's quarterly revenue, orders and operating results have fluctuated significantly in the past and may continue to do so in the future. Besi believes that period to period comparisons of its operating results are not necessarily indicative of future operating results. Factors that have caused Besi's operating results to fluctuate in the past and which are likely to affect them in the future, many of which are beyond its control, include the following:

- Global macroeconomic trends and geopolitical events which may influence levels of gross domestic product, purchasing power and consumer confidence of various regions, including both developed and lesser developed countries, and may affect the willingness of our customers to invest in new production capacity.
- The number and frequency of new electronics introductions, particularly for retail applications such as mobile, computing and automotive end-user markets.
- The volatility and seasonality of the semiconductor industry and its impact on semiconductor equipment suppliers.
- Industry capacity utilization, pricing and inventory levels.
- The timing of new customer device introductions and production processes which could require the addition of new assembly equipment capacity.
- The length of sales cycles and lead-times associated with Besi's product offerings.
- The timing, size and nature of Besi's transactions.
- The financial health and business prospects of Besi's customers.
- The impact on potential orders from consolidation trends among semiconductor producers.
- The proportion of semiconductor demand represented by corporate and retail end-user applications.
- Besi's ability to scale its operations on a timely basis consistent with demand for its products.
- The ability of Besi's suppliers to meet its needs for products on a timely basis.
- The success of Besi's research and development activities.
- The market acceptance of new products or product enhancements by Besi or its competitors.
- The timing of new personnel hires and the rate at which new personnel becomes productive.
- Changes in pricing policies by Besi's competitors.
- Changes in Besi's operating expenses.
- Besi's ability to adequately protect its intellectual property.
- Besi's ability to integrate any future acquisitions and any restructuring charges related thereto.
- The fluctuation of foreign currency exchange rates.

Because of these factors, investors should not rely on quarter to quarter comparisons of Besi's results of operations as an indication of future performance. In future periods, Besi's results of operations could differ from estimates of public market analysts and investors. Such discrepancies could cause the market price of its securities to decline.

Besi's orders at any particular date may not be indicative of its future operating results.

Besi's orders aggregated € 348.7 million in 2019. Orders are subject to customer cancellation at any time upon payment of a negotiated cancellation fee. During market downturns, semiconductor manufacturers historically have cancelled or deferred additional equipment purchases. Besi's bookings may also be influenced by seasonal factors which typically cause order levels to decline in the second half of the year from peak levels reached at the end of the second quarter. As a result of industry conditions and/or seasonal influences, Besi's orders declined by approximately 46% and 60%, respectively, from highest to lowest quarterly level in 2017 and 2018. Orders can also be affected by customer cancellations. For example, orders declined by 34.8% in the second quarter of 2018 versus the first quarter of 2018 primarily due to the cancellation by a single customer of € 28 million in orders.

Because of the possibility of changes in delivery schedules, expedited cycle times, cancellations and delays in product shipments, Besi's orders at any particular date may not be representative of actual revenue for any succeeding period. Besi's current and future dependence on a limited number of customers increases the revenue impact of each customer's delay or deferral activity.

Besi may not be able to adjust its costs and overhead levels quickly enough to offset revenue declines that it may experience in the future.

Besi's business is characterized by high fixed cost levels, including personnel, facility and general and administrative costs as well as expenses related to the maintenance of its manufacturing equipment. Besi's expense levels in future periods will be based, in large part, on its expectations regarding future revenue sources and, as a result, its operating results for any given period in which material orders fail to occur, are delayed or deferred could vary significantly. Due to the nature of such fixed costs, Besi may not be able to reduce its fixed costs sufficiently or in a timely manner to offset any future revenue declines. Besi's inability to align revenue and expenses in a timely and sufficient manner will have an adverse impact on its gross margins and results of operations.

Financial risks

Besi's historical financial results have fluctuated significantly and may continue to do so in the future. Besi's quarterly revenue, orders and operating results have fluctuated significantly in the past and may continue to do so in the future. Besi believes that period to period comparisons of its operating results are not necessarily indicative of future operating results. Factors that have caused Besi's operating results to fluctuate in the past and which are likely to affect them in the future, many of which are beyond its control, include the following:

- Global macroeconomic trends and geopolitical events which may influence levels of gross domestic product, purchasing power and consumer confidence of various regions, including both developed and lesser developed countries, and may affect the willingness of our customers to invest in new production capacity.
- The number and frequency of new electronics introductions, particularly for retail applications such as mobile, computing and automotive end-user markets.
- The volatility and seasonality of the semiconductor industry and its impact on semiconductor equipment suppliers.
- Industry capacity utilization, pricing and inventory levels.
- The timing of new customer device introductions and production processes which could require the addition of new assembly equipment capacity.
- The length of sales cycles and lead-times associated with Besi's product offerings.
- The timing, size and nature of Besi's transactions.
- The financial health and business prospects of Besi's customers.
- The impact on potential orders from consolidation trends among semiconductor producers.
- The proportion of semiconductor demand represented by corporate and retail end-user applications.
- Besi's ability to scale its operations on a timely basis consistent with demand for its products.
- The ability of Besi's suppliers to meet its needs for products on a timely basis.
- The success of Besi's research and development activities.
- The market acceptance of new products or product enhancements by Besi or its competitors.
- The timing of new personnel hires and the rate at which new personnel becomes productive.
- Changes in pricing policies by Besi's competitors.
- Changes in Besi's operating expenses.
- Besi's ability to adequately protect its intellectual property.
- Besi's ability to integrate any future acquisitions and any restructuring charges related thereto.
- The fluctuation of foreign currency exchange rates.



"Leadership Program for Executive Development" awards, Besi APac, Malaysia.

A limited number of customers have accounted for a significant percentage of Besi's revenue, and its future revenue could decline if it cannot maintain or replace these customer relationships.

Historically, a limited number of Besi's customers have accounted for a significant percentage of its revenue. In 2019, one customer represented 10.5% of Besi's revenue and its largest 10 customers accounted for 44.1% of revenue. Besi anticipates that its results of operations in any given period will continue to depend to a significant extent upon revenue from a relatively limited number of customers. In addition, Besi anticipates that the composition of such customers will continue to vary from year to year so that the achievement of its long-term goals will require the maintenance of relationships with Besi's existing customers and obtaining additional customers on an ongoing basis. Besi's failure to enter into and realize revenue from a sufficient number of customers during a particular period could have a significant adverse effect on Besi's revenue.

In addition, there are a limited number of customers worldwide interested in purchasing semiconductor manufacturing equipment and an even more limited number of major customers and supply chains for specific end market applications such as smart phones, tablets, wearables, laptops, computers and automotive electronics. As a result, if only a few potential customers were to experience financial difficulties or file for bankruptcy protection or if there were further customer or supply chain consolidation, the semiconductor equipment manufacturing market as a whole, and Besi's revenue and results of operations specifically, could be negatively affected.

Besi's results of operations have in the past and could in the future be affected by currency exchange rate fluctuations.

The following tables set forth Besi's revenue and costs and expenses by principal functional currency for 2019, 2018 and 2017:

	Revenue		
	2019	2018	2017
Euro	32%	33%	18%
US dollar	68%	67%	82%
Total	100%	100%	100%

	Costs and Expenses		
	2019	2018	2017
Euro	33%	29%	21%
US dollar	9%	9%	9%
Malaysian ringgit	25%	31%	31%
Swiss franc	10%	12%	19%
Chinese yuan	11%	10%	13%
Singapore dollar	9%	6%	5%
Other	3%	3%	2%
Total	100%	100%	100%

Besi's principal reporting currency is the euro. In 2019, 2018 and 2017, Besi's revenue denominated in euro represented 32%, 33% and 18% of its total revenue, respectively, while its costs and expenses denominated in euro represented 33%, 29% and 21%, respectively, each year. The majority of its revenue is denominated in US dollars while in 2019, its costs were denominated in a variety of European and Asian currencies. In 2019, 58% of Besi's costs and expenses were denominated in Malaysian ringgit and euro. The remainder of its costs were primarily represented by the Swiss franc, Chinese yuan, US dollar and Singapore dollar.

Due to its global operations and differences in the foreign currency composition of its revenue and costs and expenses, Besi's results of operations could be adversely affected by fluctuations in the values of, and the relationships between, the euro, the US dollar, Swiss franc, Malaysian ringgit, Chinese yuan and Singapore dollar. Besi seeks to manage its exposure to currency fluctuations in part by hedging firmly committed sales contracts denominated in US dollars. While management will continue to monitor its exposure to currency fluctuations and may use financial hedging instruments to minimize the effect of these fluctuations, Besi cannot assure that exchange rate fluctuations will not have a material adverse effect on its results of operations or financial condition.

Besi's principal competitors are domiciled in countries utilizing primarily US dollars and/or Japanese yen as their principal currencies for the conduct of their operations. Besi believes that a decrease in the value of the US dollar and US dollar linked currencies or Japanese yen in relation to the euro could lead to intensified price-based competition in its markets resulting in lower prices and margins and could have a negative impact on its business and results of operations.

Weaknesses in its internal controls and procedures could result in material misstatements to Besi's financial statements and/or a deterioration of its financial condition.

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal controls over financial reporting are processes designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with IFRS. A material weakness is a control deficiency, or combination of control deficiencies, that result in a more than remote likelihood that a material misstatement of annual or interim financial statements will not be prevented or detected. Besi's internal controls may not prevent all potential errors or fraud. Any control system, no matter how well designed and implemented, can only provide reasonable and not absolute assurance that the objectives of the control system will be achieved.

There were no indications that Besi's internal control and risk management systems did not function properly in either 2019 or 2018. However, there can be no assurance that situations will not arise in the future that could compromise the integrity of Besi's internal controls and systems which could affect investor confidence in Besi and the price of its ordinary shares.

Our business, reputation and financial position may be harmed by unethical behavior and non-compliance with Besi's Code of Conduct.

Besi seeks to conduct its business in accordance with internationally recognized standards and best practices. We have adopted social, ethical and environmental standards for our operations that typically exceed minimum legal and regulatory compliance levels and

applied European social and ethical standards wherever possible. Besi has established a Code of Conduct which governs the behavior of our employees worldwide on matters such as corruption and human rights behavior as well as integrity and ethical behavior, all of which are important values to the Company.

However, we might still encounter unethical behavior and breaches to our Code of Conduct due to intentional fraudulent behavior by individual employees. Issues can arise unintentionally as well as from a lack of adherence to appropriate rules and regulations. Unethical behavior and misconduct could lead to fines, penalties and claims by injured parties as well as material financial loss and damage to the reputation of Besi and its stakeholders.

Ordinary share related risks

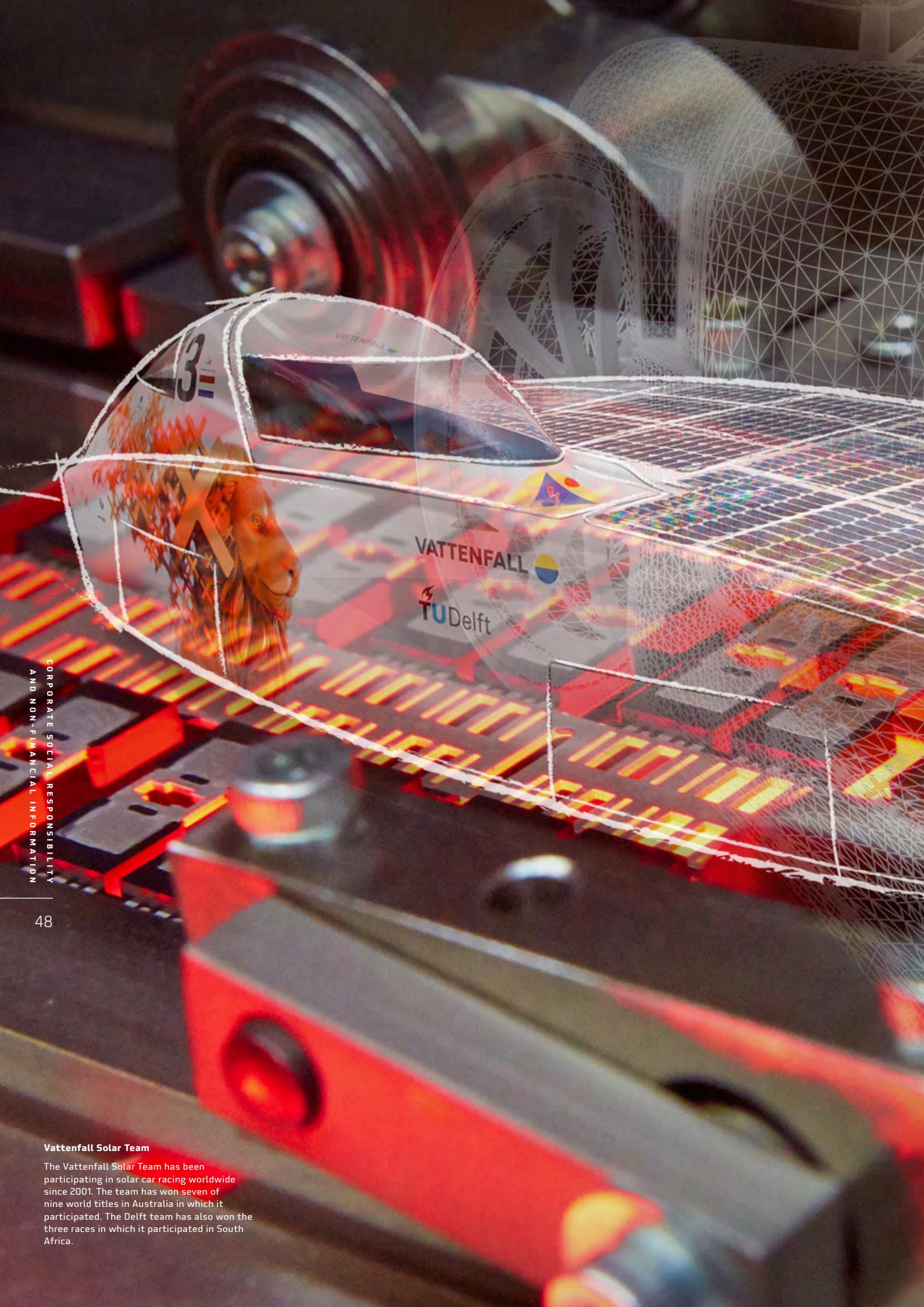
Anti-takeover provisions could delay or prevent a change of control including a takeover attempt that might result in a premium over the market price for Besi's ordinary shares.

Besi's articles of association provide for the possible issuance of preference shares. In April 2000, Besi established the foundation "Stichting Continuïteit BE Semiconductor Industries" (the "Foundation") whose board consists of four members, three of whom are independent of Besi. Besi has granted the Foundation a call option pursuant to which the Foundation may purchase preference shares in a maximum amount equal to the total number of Besi's ordinary shares outstanding at the time of exercise of the option minus one. If the Foundation were to exercise the call option, it may result in delaying or preventing a takeover attempt including a takeover attempt that might result in a premium over the market price for Besi's ordinary shares.

We may not declare dividends at all or in any particular amount in any given year.

Besi aims to pay an annual dividend in accordance with its dividend policy and seeks to increase its annual dividend over time. On an annual basis, the Board of Management (with Supervisory Board approval) will submit a proposal for approval at the AGM with respect to the amount of dividend to be declared for the prior fiscal year. The proposal in any given year will be subject to (i) Besi's review of its annual and prospective financial performance and liquidity and financing needs, the prevailing market outlook, its strategy, market position and acquisition strategy and/or (ii) a target dividend payout ratio in the range of 40-100% relative to net income to be adjusted accordingly if the factors referred to under (i) so require.

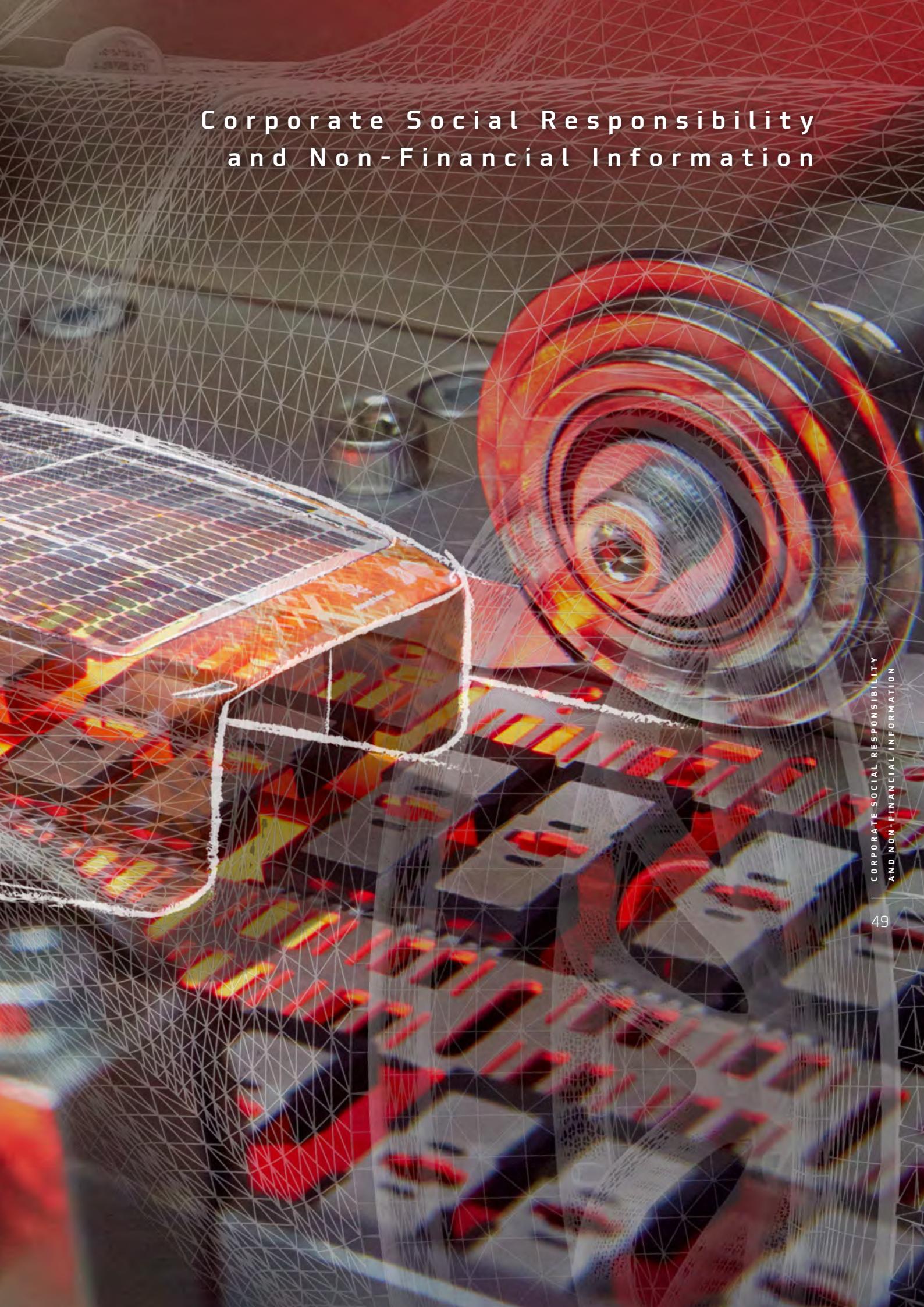
Accordingly, the Board of Management may decide not to pay a dividend, or a lower dividend, with respect to any particular year in the future which could have a material adverse effect on the price of Besi's ordinary shares.



Vattenfall Solar Team

The Vattenfall Solar Team has been participating in solar car racing worldwide since 2001. The team has won seven of nine world titles in Australia in which it participated. The Delft team has also won the three races in which it participated in South Africa.

Corporate Social Responsibility and Non-Financial Information



Corporate Social Responsibility and Non-Financial Information

Trends and developments

Besi's business is the development and sale of semiconductor assembly equipment. We form a part of the Information and Communications Technology ("ICT") value chain in which many customers request information about our sustainability performance. In addition, there are a number of global sustainability trends which affect our business such as the further digitalization of society, climate change, natural resource conservation, pollution and the circular economy.

Current ICT trends could lead to real breakthroughs in how society functions in a safer, more environmentally efficient manner. One such example is the Internet of Everything incorporating smart cities, smart manufacturing, smart mobility and self-driving electric cars with artificial intelligence. It is estimated that ICT has the potential to generate a 20% reduction of global CO₂ emissions by 2030 compared to 2015 levels and decouple economic growth rates from emissions growth rates (source: the Global e-Sustainability Initiative ("GeSI") SMARTer2030 report). Many of Besi's assembly systems help promote these ICT advancements as they are used for digital applications such as smart phones, 5G networks, tablets, high-end sensors, intelligent automotive electronics, autonomous cars, cloud servers, data mining and artificial intelligence applications. Our system solutions contribute to a more efficient and cleaner industry by means of applications including longer battery life for electronic devices, more efficient solar cells and lower power consumption and heat dissipation in smart phones. Additionally, our systems play a role in increased automotive electronic content and intelligence which can help foster the development of next generation electric and autonomous vehicles without fossil fuel generated combustion engines. Consequently, our products are relevant in helping combat climate change.

Another trend which affects Besi's business is the circular economy. As opposed to a linear economy in which we make, use and dispose of materials, a circular economy emphasizes (i) the usage of materials for as long as possible, (ii) the extraction of their maximum value while in use and (iii) the recovery and regeneration of products and materials at the end of each service life. Besi contributes to the circular economy by designing high quality, flexible systems which have long useful lives and can be repurposed by customers or by Besi for other production requirements to extend their useful lives.

Strategy

In light of the socio-economic trends above, Besi has expanded its corporate social responsibility ("CSR") activities in recent years with a focus on the environmental impact of its products and operations as well as sustainability in the supply chain and the communities in which we operate.

Besi aims to report its CSR activities in line with the Global Reporting Initiative Sustainability Reporting Standards. Besi's external auditor was not engaged to perform an audit of the CSR and non-financial information which follows below or elsewhere in this Annual Report.

Products

Besi develops high quality, premium priced system solutions for its customers offering leading edge reliability, accuracy, throughput, system uptime, yield of defect free devices, longevity and low environmental footprint. Besi's development efforts also focus on system efficiency both in terms of environmental impact and productivity/cost savings, with a particular emphasis on:

- Energy efficiency.
- The recycling potential of applied production materials.
- The recycled content in our products.
- Minimizing the use of hazardous components in our systems.
- The exclusion of conflict materials from our design process.

As a result, we can provide customers a low total cost of ownership and an attractive return on initial investment, all the while promoting sustainability themes in our operations.

In addition, Besi systems can be customized, reconfigured and redeployed for other production purposes over their product lifespan, thus extending their useful life, reducing their environmental impact and conserving raw materials. Our extensive global network of field service and spare parts also helps customers extend the useful life of our systems.

Operations and supply chain

Besi outsources a significant portion of its production to third party subcontractors and vendors and focuses primarily on final assembly and quality and assurance activities at its operating sites. As such, only a small portion of the total cost of system production occurs at Besi's facilities. Therefore, the sustainability of our supply chain is a key consideration. Besi continuously investigates ways to improve the transparency and performance of its supply chain and their compliance with best practices for sustainability activities.

All of Besi's operations have a certified ISO 14001 management system in place ensuring a high level of quality and safety in the production process. In 2017, Besi completed the renewal process for its ISO 14001 certification and realized 100% conformance with ISO 14001:2015 contractor management requirements during the year. In 2018, Besi APac was the first entity to be fully certified according to this updated standard. Following certification, Besi APac was able to evaluate the risks of many aspects of its operations in an integrated way including environmental, social and business considerations. In addition, Besi APac was

externally audited in 2019 by the Responsible Business Alliance ("RBA"), an organization committed to the development of a responsible electronics supply chain worldwide. Besi APac completed the RBA validated audit process achieving Gold status with a score of 193.1 out of 200. As a result, we can provide an RBA audit report to customers saving the time and management effort necessary to conduct such an audit themselves.

Besi undertakes activities in many areas to reduce the environmental footprint of its operations. For example, we have increased production efficiency by centralizing all production at two Asian manufacturing facilities, by centralizing all global spare parts activities at one location in Singapore and by sourcing from local suppliers. Besi has also established initiatives to improve the efficiency of its Asian air conditioning systems, to implement solar power for sustainable energy production wherever possible and to eliminate waste and excess packaging throughout its operations. Further, Besi tries to limit the usage of air transportation (as this has a high environmental impact) and is further implementing initiatives to reduce business travel globally for its personnel.

Our stakeholders

Stakeholder engagement is at the core of our CSR strategy. Besi identifies its key stakeholders based on the nature and level of their engagement as well as our impact on their interests. Engagement with stakeholders helps Besi identify the opportunities, issues and risks that affect its business and performance. We gather insights through internal and external audits, supplier audits, dialog with investors, customers and personnel as well as management reviews and surveys, all of which provide valuable input when assessing our long-term value creation model. We listen to the concerns of our stakeholders, try to be as responsive as possible in the context of our business conduct and strive to exceed stakeholder expectations whenever possible.

Shareholders are engaged through quarterly and annual conference calls, presentations, roadshows, conferences, participation at Besi's Annual General Meeting of Shareholders ("AGM") and through an active investor relations program. Shareholders expect Besi to protect their investment and provide a competitive return on invested capital while operating responsibly as a corporate citizen. Investor interest in sustainability is growing as a consideration in both European and North American markets. Investors are also requesting more information from us than in previous years particularly in the areas of conflict minerals and climate change as well as fossil fuel and CO₂ reduction strategies and human rights within the supply chain.

Besi's investor relations activities ensure that we remain in close contact with investors in Europe, North America and Asia. As part of our activities, we conduct meetings on a regular basis with shareholders, research analysts and other investment professionals and encourage them to ask questions during our earnings calls, meetings and at our AGM. In this manner, we engage in important face to face dialogue with such stakeholders and receive valuable feedback about our business and CSR issues.

Customer relationships are vital to Besi's growth and ability to improve sustainability efforts. Providing superior customer support is central to our corporate philosophy. We have a very experienced sales and service team whose aim is to maintain close, strategic relationships with key customers as they provide valuable insight into semiconductor device roadmaps, assembly equipment requirements and future market trends. Moreover, they provide partnership opportunities to develop new assembly equipment and sustainability solutions for the market. Customer satisfaction is an important measure to determine if customer needs are being fulfilled along with areas for improvement. Besi conducts annual customer satisfaction surveys to assess existing relationships and identify areas for improvement. We see an increasing number of customers paying attention to topics such as conflict minerals, labor conditions, human rights, environmental performance, innovation and compliance with the RBA Code of Conduct.

Employees expect Besi to use high social and ethical standards in its operations and to provide inspiring and safe working conditions with competitive terms and conditions. A high level of employee satisfaction is a basic precondition to achieve our revenue and profit growth. Moreover, Besi considers open and constructive labor relations as a key ingredient for success. We encourage an atmosphere of open dialogue between managers and employees. During performance appraisal conversations, we encourage employees to raise their concerns and interests to their managers and vice versa. Employee interests are communicated in a more institutional way via Works Council representation. In Europe, we hold meetings with the Works Councils twice a year to listen to the views of employees and communities. We also conduct Town Hall meetings for our employees on a quarterly basis so that they are informed as to business and financial developments at the Company.

Suppliers expect a long-term relationship that is mutually beneficial. We engage with our suppliers through direct dialogue and constructive audits. Besi performs a third-party external audit annually for all significant production and development facilities with respect to its ISO 9001 and ISO 14001 capabilities. Social and ethical CSR topics are included on the agenda as well. But most of all, we work together with suppliers to lower our joint environmental footprint and create sustainable products and supply chains.

Society expects Besi to respect national and international laws and regulations, minimize negative outcomes and provide transparency on economic, environmental and social issues. Besi abides by appropriate social, ethical and environmental standards for its operations which typically exceed minimum legal and regulatory compliance levels. We also engage in responsible tax practices and pay our fair share of taxation in all jurisdictions in which we have operations.

Local governments expect compliance with local laws, regulations and care for the health, safety and security of their communities. In Asian countries such as China, CSR topics such as clean technologies are being given higher priority particularly in light of serious environmental issues in local communities. In all its operations, Besi uses European social and ethical standards wherever possible and participates in dialogue with local chambers of commerce as appropriate.

Besi relies on healthy and stable **local communities** in the regions where it operates. We aim to have a positive impact on communities through good corporate and employee conduct and invest in several community projects, particularly in Asia. Besi senior managers review concerns raised by local communities and try to communicate issues and best practices to all stakeholders.

Materiality assessment and key themes

Besi regularly evaluates CSR topics deemed important to the conduct of its operations and the development of our corporate culture. We periodically reassess our societal and environmental impact in consideration of stakeholders' and adjust the ranking of high and medium assessment priorities. In addition, we have narrowed the focus of our CSR strategy to a more limited number of specific themes applicable to our business for which we can gradually develop programs appropriate to Besi's size, nature and culture. Each theme is addressed and monitored by various key performance indicators ("KPIs") to highlight any requisite actions. Below, we present our material themes:

Sustainable supply chain

Besi feels a shared responsibility for sustainability issues in its supply chain including the sourcing of raw materials and semi-finished products. We discuss and audit our suppliers on various sustainability issues such as conflict free minerals, human rights and child labor conditions as well as environmental issues. By dialogue and auditing, we strive to enhance sustainability throughout the entire supply chain.

Employees

We can only assure our profitability, sustainability and long-term growth if our employees are engaged and motivated in a corporate culture which encourages good working conditions and career advancement. Besi strives to be a good employer by engaging, supporting and developing its people and treating their safety and well-being as a paramount concern. The issue of human well-being deserves considerable attention especially given our increased presence in Asian countries.

Environmental impact of operations and transportation
Besi recognizes the environmental impact of its operations and aims to significantly and systematically decrease its environmental footprint through both reduced CO₂ emissions and costs. Our internal energy program encourages and helps employees make positive changes in workplace energy consumption. We also focus on water usage and efficiency and a reduction of the total waste generated from our operations. We place emphasis on transportation and packaging activities

where we have identified the potential for significant reductions of CO₂ emissions, waste, packaging and costs.

Ethical behavior

Besi operates with proper ethical standards in compliance with the relevant laws and regulations in its local jurisdictions. Because of growing semiconductor demand, Besi has shifted its production and supply chain network to Asia to increase efficiency, improve its local customer presence and to support local economies. As a more active Asian participant, Besi will also have more interaction with local communities and governments and may be confronted with issues of compliance and corruption. We aim to minimize these risks in our operations.

Community involvement

We contribute to the well-being of those living in the environments in which we operate and consider it an important aspect of our CSR strategy. For each of our operations, we develop tailor made activities addressing the needs and customs of the local society.

Product quality and sustainable impact

We contribute to a more efficient and cleaner industry through our products, particularly low carbon products and services. Besi continually seeks potential opportunities to develop new ways to assemble semiconductors and components used in advanced electronic applications. We invest in the development of low carbon products and services to help our customers operate more efficiently and in a more environmentally friendly and cost saving manner, for instance by introducing products with fewer and lighter materials. We also seek to reduce or eliminate wherever possible the usage of hazardous materials in our product design, production processes and supply chain.

Besi works closely together with its suppliers to reduce the customer's total cost of ownership by means of higher accuracy, greater throughput, smaller footprint, lower energy consumption and lead-free board usage, all of which should favorably influence a customer's usage of environmental resources.

CSR governance

Accountable to the Supervisory Board and shareholders, Besi's Board of Management is responsible for developing its CSR strategy and realizing its objectives. Our CSR management approach is fully aligned with Besi's hierarchical structure. Line managers are responsible for CSR issues in their respective departments. Besi has assigned independent staff officers in the fields of human resources, environment, quality and integrity at all locations to support line managers. In addition, we have implemented externally certified ISO 9001 and ISO 14001 management systems to manage quality and environmental issues in our production operations.

Health and safety have been included in our ISO 14001 management system. All of Besi's production sites have environment, health and safety ("EHS") officers and committees and a health and safety management system. These committees have representatives from each department and are responsible for inspection,

enforcement and promotion of health and safety within the workplace. EHS Committee inspections are conducted quarterly to identify and address any unsafe acts and conditions that may exist. Employees regularly receive EHS training. Our Malaysian operation has its own Health & Safety Committee as required by law.

CSR initiatives, progress, developments and risks related thereto are discussed regularly between the Board of Management and the Supervisory Board and are reported in the Annual Report including CSR, non-financial information and non-financial risks that could affect both Besi's strategy and business operations. Please refer to [Risks and Risk Management](#) for an overview of Besi's most important risks. Short and long-term topics are assessed by management through measures such as materiality analysis, key performance indicators for energy, water and waste usage, packaging, customer and employee satisfaction metrics, supplier audits and continuous stakeholder dialogue.

CSR activities 2019

We made progress on our CSR agenda in 2019, highlights of which included:

- Reduction of absolute levels of packaging, waste, water usage and electricity in our operations versus 2018.
- Installation of solar panels at our principal Malaysian manufacturing facility with the objective of producing 15% of its power requirements.
- Receipt of the MISA '19 Audience Award for Besi's development of an innovative plating system to increase solar panel efficiency.
- Achievement of Gold status by Besi's Asian manufacturing operations post an RBA validated audit process.
- Development by our packaging group of a system to better evaluate environmental aspects in the product design process.

- Execution of agreements by Besi's suppliers confirming their compliance with the Restriction of Hazardous Substances ("RoHS") standard.
- Launch of new management training and e-learning programs at Besi's Asian manufacturing.
- Launch of a Quality and Reliability Campaign at Besi's Malaysian and Chinese operations.
- Initiatives undertaken to reduce travel including usage of a new company wide video conferencing system.

Quality and sustainable impact of products

Customer satisfaction

Customer satisfaction is an important measure to determine the level of customer fulfillment with Besi's products, services, technology and other forms of customer engagement. It also helps us to identify areas for improvement.

We regularly receive feedback about our products and services through Besi's sales and service departments and periodically through customer scoring of our performance based on designated criteria. In addition, once a year, we perform a customer satisfaction survey through which we measure our performance with customers on topics such as service and support, technological issues and quality and product management. The survey results form part of the management review per product group. Besi achieved an average score of 80% in 2019, an increase of 5% versus 2018 based on 52 survey respondents. All aspects of Besi's performance showed an upward trend with Quality being highlighted as the most important factor in our improved performance (an increase of 7% versus 2018). Besi scored highest in the areas of Project Management, Commercial & Administration and Technical Issues. Relative to competitors, customers were particularly satisfied with the reliability and durability of Besi's products as well as our technical support and customer service.

CSR Highlights 2019

Environmental Footprint	Human Resources	Supply Chain
<p>Reduced packaging, energy, waste and water usage</p> <p>Installed solar panels at Malaysia facility</p> <p>Developed system to better assess sustainability in product design</p> <p>Received MISA '19 Audience Award for plating system to increase solar panel efficiency</p>	<p>Launched new management training, corporate governance and e-learning programs</p> <p>Implemented video conferencing system to reduce corporate travel</p>	<p>Achieved RBA Gold status</p> <p>Increased supply chain compliance with RoHs standards</p>

Sustainability impact of products

Besi has invested in several activities to improve the sustainability impact of its products. In 2019, Besi contributed to a more efficient, cleaner industry through its offering of low carbon products and services and upgrade kits to customers for certain product series which can increase the lifespan of our systems and contributes to the circular economy.

In addition, efforts continued this year to further embed sustainability in our product development. Besi Netherlands, our packaging systems unit, began the development of a system in 2019 to better incorporate environmental concerns into its equipment design. The system calculates an environmental impact score for a specific design. One part of the score multiplies the weight of the materials used in the design by an environmental score for the materials utilized. The second part of the score is calculated based on the efficiency of the design including the amount of airflow, waste and production time required. As such, the R&D department can better evaluate product sustainability early in the design phase.

Besi continued to examine its usage of scarce materials such as virgin versus recycled content by monitoring its material streams in terms of volume and character. In addition, we have an initiative in place since 2016 to replace the lead used in our systems with a more environmentally friendly option as a means of reducing hazardous waste in our operations. Currently, all new designs are lead free. Other materials initiatives include the development of a die attach system with halogen free cabling and the elimination of PVC from our packaging system designs as it could be considered harmful to the environment.

Other product innovations have also favourably influenced the sustainability performance of our systems. In 2019, Besi developed a plating system which helps produce the most efficient solar panel on the market by substituting copper instead of silver in the plating process. The usage of copper versus silver plating on a solar panel creates more surface to capture sunlight thus significantly increasing its efficiency and output. In addition, copper conducts electricity more efficiently than silver and is currently less expensive in price. Besi was awarded the MISA '19 Audience Award for this sustainability innovation.

Employees and culture

Human resources strategy

Besi is committed to being a good employer and to promote a workplace culture conducive to the achievement of its business and CSR objectives. We seek to be a preferred employer by offering flexible working conditions, good training and development programs, competitive pay and attractive short and long-term incentive compensation programs for management personnel. Our human resources ("HR") strategy is based

on four pillars: (i) improving HR service excellence, (ii) increasing diversity, (iii) developing leadership talents and capabilities and (iv) promoting a workplace culture that is collegial and friendly and which encourages our employees to grow and excel in their careers.

Improving HR service excellence

Besi's HR policies can vary per region due to the different work performed per facility, local circumstances and customs and government regulations. In recent years, we have actively pursued the automation and harmonization of systems and procedures of the various product groups and geographic locations through the staged adoption of a SAP enterprise software system. In this manner, we can better monitor personnel hours, engagement and utilization levels. The harmonization process is ongoing.

Increasing diversity

Besi values and encourages cultural, age and gender diversity in its workforce and management. We try to create an inclusive culture to help broaden our perspective and contribute to growth. Equal opportunities are provided to all employees and applicants as is embodied in our Code of Conduct.

Diversity was encouraged in 2019 through targeted hiring programs at Besi's Singapore and Malaysia facilities and internship programs at our Austrian operations. In general, the available pool of female engineers in the communities in which we operate is still relatively low both in Europe and Asia. Besi APac's HR program aims to hire more women, particularly in management positions, and to improve the ratio of women relative to men in the organization.

In Europe, Besi is working with FemTech, a program initiated by the Austrian government, in order to attract more female employees. FemTech's goal is to raise awareness and enhance the visibility of women in research and technology. In order to increase diversity, women are preferred candidates for job openings assuming similar qualifications.

A breakdown of our gender diversity figures for the past three years is provided below. In the aggregate, it shows improvement in both female representation in the workforce and in management positions, particularly in Asia, where approximately 70% of our employees are located.

Indicator	2019	2018	2017
Female employees			
Malaysia	24%	23%	23%
China	14%	13%	12%
Singapore	33%	30%	30%
Other Asia	5%	6%	6%
Total Asia	21%	19%	19%
Europe and USA	10%	11%	10%
Total	17%	17%	16%

Indicator	2019	2018	2017
Female employees in management positions			
Malaysia	28%	29%	23%
China	24%	14%	14%
Singapore	21%	21%	17%
Total Asia	23%	18%	15%
Europe and USA	5%	8%	9%
Total	15%	14%	13%

Training and talent development

One of Besi's main challenges is to attract and retain skilled workers at both its European and Asian operations. Competition is intense for qualified and experienced technical personnel with skill sets compatible with the semiconductor assembly equipment market. As such, a key component of Besi's HR strategy is training and talent development.

Training activities

Besi provides a variety of education and training programs to its employees. Currently, there are training programs targeted to advance skill sets and leadership capabilities in the areas of research and development, sales and general management as well as the development of prospects through internships. Many training programs are offered to employees through sessions at recognized training facilities. Besi also encourages technical knowledge exchanges amongst its employees and the development of cross functional skills by organizing training and short or long-term overseas exchange projects.

Key employee training activities in 2019 included the following:

- Besi's Malaysian operations conducted a Team Training Program whereby all staff was educated and trained together to promote greater loyalty, productivity and performance. In addition, e-Learning and Individual Contributor Development programs were conducted.
- Besi's Chinese operations organized a leadership training program for its employees.
- Besi's Singapore development group started a Team Technical Sharing Program both within and across individual teams whereby issues and knowledge are discussed amongst staff to facilitate solutions to specific technical problems.

Talent development activities

Besi has initiated a variety of programs at its Asian operations to identify and promote talent development and internal mobility. At Besi's Malaysian operations, management has established a talent development program whose objective is to provide opportunities for advancement for its key employees via vacancies within their group, mobility to other groups or the performance of other job functions. A total of 53 people moved internally to a higher job position in 2019. No job vacancies were filled outside the group due to challenging industry conditions during the year.

At Besi's Singapore and China operations, a skills matrix was developed this year to better determine current employee capabilities and define areas for improvement.

Headcount development and turnover

The table below presents metrics related to Besi's headcount development between 2017 and 2019. During this period, headcount levels varied consistent with upward and downward changes in assembly equipment market conditions. The employee turnover rate increased during the period whilst the number of new hires decreased in 2018 and 2019 primarily related to the ongoing industry downturn.

Indicator	2019	2018	2017
Total headcount fixed	1,534	1,692	1,724
Employee turnover	16%	14%	11%
New employee hires	6%	13%	20%

Employee satisfaction

Engaged and satisfied employees are critical to our success. As such, Besi monitors employee satisfaction across regional operations through periodic employee surveys. An employee engagement survey was conducted in 2019, for which 92% of Besi employees participated. Of those who responded, 85% said they were "highly satisfied" with their jobs. The overall score was 2% above the average benchmark of high-tech companies globally participating in the survey. Compared to the previous engagement survey conducted in 2017, a higher score was achieved for safety and working conditions. The score declined on the topic of corporate social responsibility. Feedback suggested a lack of sufficient communication on the topic to employees. As a result, Besi intends to communicate in greater detail and more frequently to employees about CSR activities going forward.

Health, safety and well-being

Besi monitors incidents in the workplace at all locations worldwide. Incidents are grouped into categories by severity: (i) fatalities, (ii) major absences (of more than 4 days), (iii) minor absences (of less than 4 days) and (iv) first aid (cases in which employees can resume work immediately after treatment or the following day). In general, safety hazards at Besi are limited and incidents are few as our production facilities are generally clean environments with no heavy chemicals present. In 2019, no fatalities nor serious first aid cases were reported.

Besi also tracks sick leave rates, the results from which are presented below. In general, the results show a relatively stable level of days lost to sickness over the past three years.

Indicator	2019	2018	2017
Sickness Rate			
Asia	1.3%	1.4%	1.5%
Europe	2.1%	2.0%	2.0%
Total	1.7%	1.6%	1.7%

Sustainable supply chain

Besi adheres to high ethical standards and expects the same from its suppliers. As such, we have adopted three policies to promote a sustainable supply chain: A Conflict Minerals Policy, a Supply Chain Policy and a Supplier Code of Conduct based on the code set forth by the RBA.

The Code of Conduct is based on international norms and standards including the Universal Declaration of Human Rights, ILO International Labor Standards and the OECD Guidelines for Multinational Enterprises. Besi's Supply Chain Policy and Code of Conduct ("CoC") have been fully in accordance with RBA requirements since 2018. In addition, we began alignment of our operations and supply chain with the Restriction of Hazardous Substances (RoHS) directive in 2019.

Integrating sustainability in Besi's supply chain

Besi's suppliers are requested to follow the RBA CoC, particularly in such areas as human rights, product quality, health and safety and environmental matters. We also ask suppliers to have their own suppliers understand and promote the CoC with a particular focus on those suppliers which represent a large portion of our supply chain purchases. Such vendors typically supply items such as modules, components and subsystems for the equipment we assemble in our operations. For our largest suppliers, Besi's General Work Agreement ("GWA") typically includes an appendix which outlines the RBA CoC requirements and required conflict minerals due diligence. Currently, we use a General Procurement Contract ("GPC") for smaller suppliers which is presently being amended to also include the CoC and Conflict Mineral requirements. All such agreements are requested to be signed and recognized by each Besi supplier. On an annual basis, we share our knowledge about RBA requirements and related policies with our largest and most material suppliers. We also recommend that suppliers engage in an external audit. In addition, we ask suppliers to do a self-assessment as a means of verifying compliance with RBA requirements.

Compliance with Besi's Conflict Minerals Policy can be fulfilled by filling and officially signing a Conflict Minerals Review Template ("CMRT") declaration (the conflict mineral due diligence agreement). As such, Besi is fully aligned with the Conflict Free Sourcing Initiative ("CFSI") as empowered by the RBA and the GeSi. Upon contract or GWA renewal, Besi asks its suppliers to fill and sign this CMRT declaration. In addition, Besi asks all suppliers between itself and the smelter to adopt its policy and take the same measures for compliance.

In its conflict minerals due diligence, Besi has focused on compliance with the requirements as defined in the Dodd Frank Act in the United States. In 2020, we will evaluate compliance with requirements as defined by the EU and the China Chamber of Commerce of Metals Minerals & Chemicals Importers & Exporters ("CCCMC") and prepare for an update of our Conflict Mineral Policy considering EU and Chinese standards.

The Restriction of Hazardous Substances ("RoHS") is an EU directive that restricts the use of six hazardous materials in the manufacturing of various types of electronic and electrical equipment. We believe that all our systems are compliant with the RoHS standard.

In 2019, Besi asked all suppliers for which the RoHS standard applies to sign a RoHS agreement confirming RoHS standard fulfilment of which approximately 90% complied.

Sustainable supply chain targets

We established three targets and KPIs for 2019 to measure our sustainable supply chain performance:

- Executed Code of Conduct self-assessment questionnaires should represent in excess of 65% of purchasing volume.
- Signed GPCs or GWAs should represent in excess of 70% of purchasing volume by means of converting Signed Side Letter agreements into GPC or GWA content.
- Executed Conflict-Free Sourcing Initiative - Conflict Minerals Reporting Templates (CFSI-CMRT) should represent in excess of 65% of purchasing volume.

Code of Conduct	Target as % of purchasing volume	2019
Code of Conduct		
Code of Conduct Self-Assessment Questionnaires (SAQ)	65%	62%
Transform Signed Side Letter agreements	70%	61%
Conflict Minerals		
Conflict-Free Sourcing Initiative - Conflict Minerals Reporting Templates (CFSI-CMRT)	65%	65%

Supplier audits

Besi evaluates suppliers by means of its Quarterly Business Review process under which we regularly conduct performance reviews and key supplier audits. Audits are conducted by multi-disciplinary teams from Besi's Quality, Material Management and Product Development departments. Reviews are performed against a comprehensive set of criteria including policies for environmental management, ethics and human rights matters. All supplier audit results become part of Besi's Business Quality Report. In 2019, we started to incorporate RBA requirements in our supplier performance reviews.

In 2019, we conducted performance reviews of 32 suppliers in Malaysia and 12 key suppliers in China representing approximately 57% of total purchasing volume. The outcomes of these reviews showed an average score of approximately 80% (out of a maximum 100%) based on certain business and quality performance criteria. We communicated the overall performance score to all key suppliers at the 2019 Annual Supplier Day. In addition, we scheduled and completed 48 annual supplier audits this year. In aggregate, all such suppliers represented approximately 42% of Besi's total purchasing volume in 2019. For 2020, we anticipate conducting 55 annual supplier audits and performance reviews.

Post completion of supplier audits, priority issues are established and re-audited typically one to three months post the audit to determine success. Besi collaborates with suppliers whenever possible to implement corrective actions. However, Besi may terminate a supplier relationship and look for an alternative supplier if no structural improvement is realized over a reasonable period of time. Two supplier relationships were terminated in 2019 in accordance with our Quarterly Business Review process. Besi's Malaysian and Chinese operations have also launched a Quality and Reliability Campaign to help improve supplier performance.

Conflict minerals

The issue of conflict minerals utilization is an important supply chain topic currently, particularly in Europe and the United States. The supply chain of conflict minerals is highly complex, consisting of many tiers formed by traders and producers before the smelter process is reached and even more tiers that lead to the actual mine. The term "conflict mineral" includes coltan (from which tantalum is derived), cassiterite (tin), gold, wolframite (tungsten), or collectively "3TG". These minerals are commonly used in the electronics industry. Profits from conflict minerals found in the DRC have supported armed conflict, human rights violations and labor and environmental abuses in the region for years. Besi is dedicated to mitigating the usage of conflict minerals in its supply chain.

In May 2017, the EU passed new regulations with the aim of providing more transparency and certainty surrounding supply chain practices of EU companies sourcing materials from conflict affected and high risk areas. The objectives of the regulations were to stop conflict minerals and metals from being exported to the EU, to stop global and EU smelters and refiners from using conflict minerals and to stop mine workers from being abused.

Besi's product specifications to suppliers specifically prohibit the usage of conflict materials. In addition, as Besi buys its feedstock from parts manufacturers, it is positioned several tiers away from the smelter process and is not importing raw minerals itself. Even so, it is difficult to assess definitively whether 3TG materials have been actually used during the smelting, component or subassembly process before arrival at Besi. This is due to the variety of potential unspecified or upstream processes used by a variety of supply chain participants. Nevertheless, we are dedicated to the usage of conflict free minerals from the DRC and its neighboring countries so that responsible mining in the area is encouraged. As such, Besi's Conflict Minerals Policy requires suppliers to:

- Make a commitment to eliminate conflict minerals from the DRC or one of its neighboring countries in its supply chain.
- Identify and disclose all smelters or refiners of tantalum, tin, tungsten or gold.
- Use smelters validated by an independent private sector audit firm.

We conducted a conflict mineral due diligence exercise in recent years whose objective was to identify smelters for 3TG minerals. As a result of such investigation, Besi was able to further increase the number of approved smelters.

Local sourcing

Virtually all of Besi's supply chain has been moved to Asia consistent with its Asian production transfer and the geographic revenue mix of its customers. In this regard, we have developed local supply chain sourcing objectives as a means of (i) increasing customer proximity and potential revenue opportunities via direct shipments and shorter cycle times and (ii) reducing transportation costs and the environmental impact from the extra transportation and packaging steps involved in shipping systems back and forth from Europe to Asia prior to final customer delivery. Wherever possible, Besi intends to source as many materials, components and subassemblies in the country where its production facilities are located. Moreover, local sourcing both stimulates local economies and reduces transportation costs and the environmental impact on our upstream supply chain. In 2019, we sourced approximately 85% of the material needs of our Asian operations from Asian vendors.

Our environmental impact

Besi's impact on the environment is principally related to its energy and materials usage. One of our key initiatives in recent years is a reduction of energy usage and CO₂ footprint via renewable energy generation projects.

Besi's energy consumption can be detailed as follows:

- (i) Energy required for facilities (light, air conditioning, PCs etc.).
- (ii) Energy required for production processes (machines, engines, motors etc.).
- (iii) Energy required for transportation/logistics processes.

In 2017, Besi performed an energy audit at its Malaysian operations as part of a multi-year program to investigate additional potential energy savings pursuant to a grant from the Malaysian government. As a result of the audit, it was determined that the facility's air conditioning systems represented the largest potential area for improved energy efficiency. Such systems are essential to protect against corrosion and damage in Besi's production environment, particularly in Asian locations that have a high degree of heat and humidity during much of the year. In 2019, Besi upgraded its HVAC systems and expects to provide approximately 15-20% of the facility's energy needs. The objective is to generate 30% of the facilities' energy needs, the maximum permitted by the Malaysian government. In addition, the system upgrade enables us to digitally monitor and better track levels of CO₂-emissions at the facility. Besi is also investigating the installation of solar panels at other production locations.

The table below details our energy consumption both in absolute and relative terms. It shows an absolute decline in energy usage by 13% over the past three years but an increase in relative energy use due to declining revenue over the period consistent with adverse market conditions.

Indicator	2019	2018	2017
Electricity (GWh)	12.7	13.2	15.2
Other energy use (GWh)	2.2	2.7	2.5
Total energy use (GWh)	14.9	15.9	17.7
Relative energy use*	0.042	0.030	0.030

* GWh/revenue (in euro millions).

Environmental impact of our transportation and logistics processes

The transportation of Besi's equipment, spare parts and assemblies has been a particular focus given customers' requirements for speed, reliability, cost and environmental impact. We have implemented a number of measures to improve delivery times to our predominantly Asian installed base of customers and to reduce transportation costs and their environmental impact.

Towards this end, Besi seeks to procure more goods on a local level which helps decrease aggregate transport costs and their associated environmental impact. It also can result in shorter lead times for customer deliveries. In addition, the transportation of heavy parts (>100 kg) is now carried out by sea transportation instead of by plane. If time is of the essence and sea transportation is not an option, Besi will opt for truck transit instead of air transit which results in significantly less harmful emissions. Finally, we encourage suppliers to follow our transportation and logistics methods to reduce related costs and minimize any adverse environmental impact.

Environmental impact of our business travel

Employee business travel represents another aspect of Besi's impact on the environment. Employees travel frequently both locally and overseas given the global scope of our business and the need to interface with customers for sales, marketing, development and service calls.

Management is undertaking measures to reduce employee business travel. In 2019, Cisco's WebEx conferencing software was implemented company-wide to improve productivity, free up management resources, reduce business travel and lower costs. In addition, Besi's Meco plating group is piloting the use of a Hololens at customer locations such that a Besi technician can remotely analyze a service problem digitally and thus eliminate a site visit. If the pilot is deemed successful, Besi will consider applications at other product groups as well. This program offers the possibility of significant reductions in Besi's business travel, related costs and our environmental impact while substantially increasing employee productivity.

ESH awareness campaign

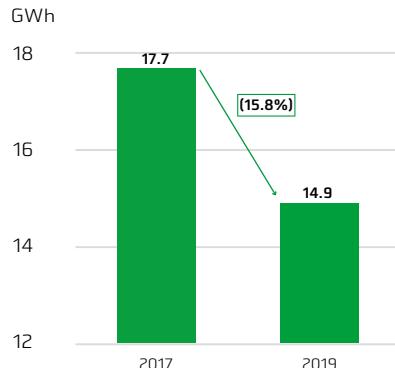
Besi APac organizes an Environment, Safety and Health ("ESH") awareness campaign on an annual basis. In 2018, the campaign theme was 'Mind your posture'. In 2019, the theme was 'Beat plastic pollution' which corresponded to the United Nations theme for World Environmental Day. During the campaign, several activities were organized to raise awareness among employees of the issues involved including the removal from the canteen of all single use plastics and the distribution to employees of reusable straws and coffee cups.

Packaging and waste

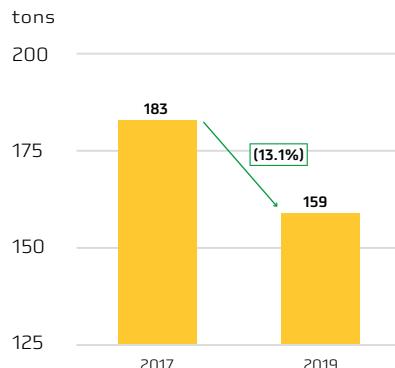
Besi seeks to reduce waste in its operations wherever possible. In all facilities, waste separation systems are in place and the re-use, reduce, recycle concept is communicated to employees. Our principal focus is the reduction of waste used in the packaging process wherein we use materials such as plastic, wood and cardboard to ensure proper protection. In order to minimize waste, packaging quality has been improved to better protect products during transport. Existing

REDUCING BESI'S ENVIRONMENTAL IMPACT

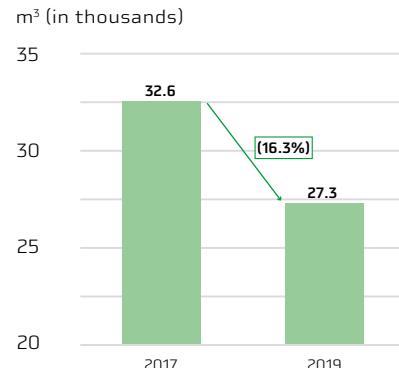
Energy Usage



Waste Usage



Water Usage



packaging materials are also re-used multiple times. Moreover, we assess on an ongoing basis the recycling potential and re-use of packaging materials as well as the ability to recycle parts, components, modules and subassemblies used in Besi's systems to further reduce waste in our operations. Besi is currently investigating the replacement of polystyrene packaging material with a more sustainable and recyclable alternative such as compressed wood.

Indicator	Unit	2019	2018	2017
Hazardous waste	Ton	21	37	30
Non-hazardous waste	Ton	138	127	153
Total waste ton	Ton	159	164	183
Relative waste	kg/revenue*	447	312	310

* In euro millions.

As a result of our efforts, we have achieved a 6% reduction in waste produced between 2017 and 2019 and a 26% reduction in hazardous waste.

Water usage

At present, Besi's Chinese facility is the only one which uses water as part of its production process. There have been no material leakages or spills at this facility for at least the past five years. Besi is also in compliance with all local requirements regulating concentrations of contamination substances. We have bought several new machines with better water management, recycling and filtering capabilities and a new water filtration system which helped us reduce water consumption between 2017 and 2019 by 19% as per the table below.

Indicator	Unit	2019	2018	2017
Water usage	m³	27,316	27,206	32,562
Water usage efficiency	m³/revenue*	77	52	55

* In euro millions.

Ethical behaviour

Anti-corruption and bribery

The importance of appropriate anti-corruption and human rights policies has increased with Besi's expansion of its Asian operations, supply chain and logistics activities. We have appointed a Director of Internal Control who reports to the Senior Vice President Finance and Chairman of the Audit Committee. Besi has also completed an internal risk assessment of anti-corruption policies and procedures in the organization. In addition, an external assessment was conducted by an independent accounting firm of policy content and implementation, the initial results of which were discussed and implemented in 2016. A second phase of this assessment focused on detailed testing of identified fraud risks which was finalized in 2017. The outcomes of this assessment were discussed by senior management in 2017 and actions were taken, where appropriate, as a result of their recommendations. In 2019, we organized a web-based e-learning for all our employees on anti-bribery, corruption and corporate governance policies.

Code of Conduct

Besi has a Code of Conduct to guide the activities of all its employees which is publicly available on our website. Moreover, the Whistleblower procedure (also available online) sets out responsibilities, procedures and support functions in reporting violations of the Company's Code of Conduct. Besi's Code of Ethics for Senior Financial Officers sets out further responsibilities for those employees in positions of leadership across the Company. These procedures are made known to employees through the website, intranet, employee handbook and during new employee orientation. Employees can raise concerns through helplines, the HR department and management. The Whistleblower procedure is updated on an annual basis to meet best practice standards and published on the Company's website. In both 2018 and 2019, violations of the Code of Conduct were reported by means of the Whistleblower procedure. These incidents were promptly responded to by Besi senior management, adjudicated in a satisfactory manner and were immaterial to our financial results.

Responsible tax practices

Besi follows the principle of responsible tax practices, meaning full compliance with tax obligations in the areas where the factual economic activities of its operations take place. Besi's production and sales activities determine where taxes need to be paid.

Community involvement

Besi supports several activities in the local communities in which it operates, particularly in Asia where the assistance is more greatly needed. Besi also supports local technical universities in the regions in which it operates through interchange and dialogue.

Since 2014, Besi APac has supported the IDEAS Academy (Education is for ALL), a local non-profit organization which provides education to underprivileged Malaysian youth, especially refugee children. Besi APac supports the organization financially as well as through the provision of laptops.

In China, we work closely together with local authorities, the Chinese government and employees to identify and make contributions of money and time to support deserving projects. In 2019, local schools in mountain villages in the Leshan region were supported financially to help improve teaching facilities and class rooms and to fund scholarships. In addition, Besi Leshan has been supporting a school for the vision and hearing impaired and is running a program for physically challenged children in conjunction with the Chinese government.

Outlook

Besi is committed to further expand and refine its CSR initiatives and policies, KPI metrics and performance related thereto, public reporting and management. For 2020, Besi's major CSR priorities include (i) a review of Besi's sustainability strategy, (ii) improved internal reporting and monitoring of KPI compliance and target achievement during the year and (iii) the upscaling of sustainability initiatives suggested by Besi personnel for consideration by senior management.

Shareholder Information



Santiago Calatrava (1951-present)

A world renowned Spanish architect, structural engineer, sculptor and painter, particularly known for his bridges supported by single leaning pylons, as well as his railway stations, stadiums, and museums, whose sculptural forms often resemble living organisms. Calatrava also produced the futuristic City of Arts and Sciences.

Shareholder Information

Euronext Amsterdam listing

Besi's ordinary shares are listed on Euronext Amsterdam and are included in the Euronext AMX index. The stock symbol is BESI and the ISIN code is NL0012866412.

	2019	2018
Number of ordinary shares, net of shares held in treasury	72,212,422	73,569,611
Average daily shares traded	533,123	773,207 ¹
Highest closing price (in euro)	35.12	44.55 ¹
Lowest closing price (in euro)	17.50	15.82 ¹
Year end share price (in euro)	34.46	18.48

¹ The number of shares and share prices have been adjusted for the two for one stock split effected on May 4, 2018.

Nasdaq International Designation

Besi's Level 1 ADRs are traded in the OTC markets (symbol: BESIY) and have participated in the Nasdaq International Designation program since December 2015. Investors in Besi's Level 1 ADRs can find real-time quotes, news and financial information about Besi at www.nasdaq.com.

Convertible Note listings

Besi has outstanding € 125 million of 2.5% Senior Unsecured Convertible Notes due 2023 (the "2016 Convertible Notes") and € 175 million of 0.5% Senior Unsecured Convertible Notes due 2024 (the "2017 Convertible Notes") both of which are listed on Deutsche Börse's Freiverkehr market (ISIN XS1529879600 and XS1731596257, respectively), www.boerse-frankfurt.de.

Besi's equity structure

At the AGM of April 26, 2018, the General Meeting of Shareholders approved a stock split of Besi's shares which was effectuated on May 4, 2018 whereby each issued ordinary share was split into two shares. Besi's authorized share capital now consists of 160,000,000 ordinary shares and 160,000,000 preference shares. At December 31, 2019, the number of issued and outstanding ordinary shares was 80,067,842 of which Besi held 7,855,420 shares in treasury.

BESI MARKET INFORMATION

Symbol/ Index	<ul style="list-style-type: none"> • BESI • Euronext Midcap AMX
Market Cap*	<ul style="list-style-type: none"> • € 2.5 billion (\$ 2.8 billion)
Dividend Policy	<ul style="list-style-type: none"> • Pay out 40-100% of net income per annum

* As of December 31, 2019.

The foundation "Stichting Continuiteit BE Semiconductor Industries" (the "Foundation") has been granted an option to acquire protective preference shares, which would, if the option were exercised, allow the Foundation to acquire a maximum of 50% of the total issued capital including the preference shares.

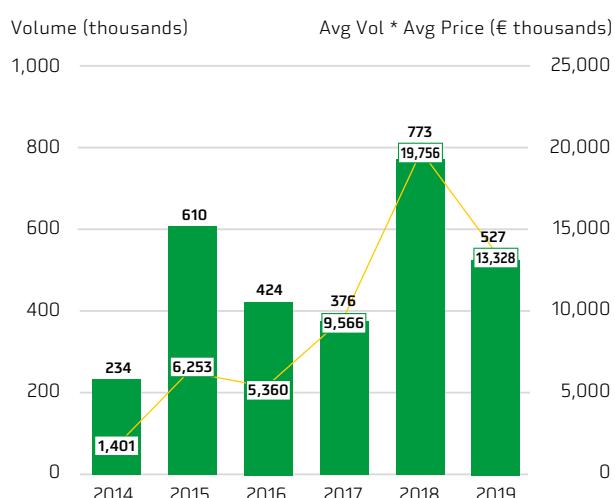
Issuance of ordinary shares and pre-emptive rights

Ordinary shares may be issued pursuant to a resolution of the General Meeting of Shareholders. The General Meeting of Shareholders may grant the authority to issue ordinary shares to the Board of Management for a maximum period of five years. After such designation, the Board of Management may determine the issuance of ordinary shares subject to the approval of the Supervisory Board. The foregoing applies accordingly to the granting of rights to subscribe for ordinary shares but shall not be applicable to the issuance of ordinary shares to a party exercising a previously acquired right to subscribe for ordinary shares.

Currently, the General Meeting of Shareholders has delegated its authority to the Board of Management until May 14, 2021, subject to the approval of the Supervisory Board, to issue ordinary shares and grant rights to subscribe for ordinary shares up to a maximum of 10% of Besi's issued share capital as at April 26, 2019.

Holders of ordinary shares have a pro-rata pre-emptive right in relation to any ordinary shares issued, which right may be limited or excluded. Such shareholders have no pro-rata pre-emptive right with respect to (i) any ordinary shares issued against contributions other than in cash, (ii) any issuance of preference shares, or (iii) any ordinary shares issued to employees (including members of the Board of Management). The foregoing applies accordingly to the granting of rights to subscribe for ordinary shares but shall not be applicable to the issuance of ordinary shares to a party exercising a previously acquired right to subscribe for ordinary shares. On the basis of a designation by the General Meeting of Shareholders, the Board of Management has the power, subject to the approval of the Supervisory Board, to limit

AVERAGE DAILY VOLUME & LIQUIDITY





Fico AMS-LM.

or exclude the pre-emptive right in relation to any ordinary shares issued and rights to subscribe for ordinary shares granted until May 14, 2021, subject to the 10% maximum as described above. The designation may be renewed for a maximum period of five years. In the absence of such designation, the General Meeting of Shareholders has the power to limit or exclude such pre-emptive right.

Issuance of preference shares

The provisions in Besi's articles of association for the issuance of preference shares are similar to the provisions for the issuance of ordinary shares described herein. However, an issuance of preference shares will require the prior approval of the General Meeting of Shareholders if it would result in an outstanding number of preference shares exceeding 100% of the number of outstanding ordinary shares and the issuance is effected pursuant to a resolution of a corporate body other than the General Meeting of Shareholders, such as the Board of Management. Furthermore, within two years after the first issuance of such preference shares, a General Meeting of Shareholders will be held to determine the repurchase or cancellation of the preference shares. If no resolution to repurchase or cancel the preference shares is adopted, another General Meeting of Shareholders with the same agenda must be convened and held within two years after the previous meeting and this meeting will be repeated until no more preference shares are outstanding. This procedure does not apply to preference shares that have been issued pursuant to a resolution by the General Meeting of Shareholders.

In connection with the issuance of preference shares, it may be stipulated that an amount not exceeding 75% of the nominal amount ordinarily payable upon issuance of shares may be paid only if the Company requests payment.

The Foundation

Under the terms of an agreement entered into in April 2002 between the Company and the Foundation, the Foundation has been granted a call option, pursuant to which it may purchase a number of preference shares up to a maximum of the total number of outstanding ordinary shares at the time of exercise of the option minus one. This call option agreement was revised in May 2008 to comply with applicable laws. The purpose of the Foundation is to safeguard the interests of the Company, the enterprise connected therewith and all the parties having an interest therein and to exclude as much as possible influences which could threaten, among other things, the Company's continuity, independence and identity. Until the call option is exercised by the Foundation, it can be revoked by the Company, with immediate effect. The aim of the preference shares is, amongst other things, to provide a protective measure against unfriendly take-over bids and other possible influences that could threaten the Company's continuity, independence and identity, including, but not limited to, a proposed resolution to dismiss the Supervisory Board or the Board of Management.

The Foundation was established in April 2000. The board of the Foundation currently consists of four members, three of whom are independent of Besi and one of whom is a former member of the Supervisory Board. Please refer to the chapter Other Information for additional information on the Foundation and its board members.

Voting rights

Each share (whether it is an ordinary share or a preference share) carries the right to cast one vote. Resolutions by the General Meeting of Shareholders require the approval of an absolute majority of votes validly cast, unless otherwise required by Dutch law or Besi's articles of association.

Repurchase and cancellation of shares

The Board of Management may cause the Company to repurchase for consideration any class of shares in its own capital which have been paid-up, subject to certain provisions of Dutch law and Besi's articles of association, if (i) the shareholders' equity less the payment required to make the acquisition does not fall below the sum of the paid-up and called part of the issued share capital and any reserves required to be maintained by Dutch law or Besi's articles of association and (ii) the Company and its subsidiaries would thereafter not hold shares (in pledge) with an aggregate nominal value exceeding 50% of the Company's issued share capital. Shares held by the Company or any of its subsidiaries will have no voting rights and the Company may not receive dividends on shares it holds in its own capital. Any such repurchases may only take place if the General Meeting of Shareholders has granted the Board of Management the authority to effect such repurchases, which authorization may apply for a maximum period of 18 months. The Board of Management is currently authorized to repurchase up to 10% of Besi's issued share capital as at the time of such repurchase through October 26, 2020.

Upon a proposal of the Board of Management and the approval of the Supervisory Board, the General Meeting of Shareholders has the power to decide to cancel shares acquired by the Company or to reduce the nominal value of the ordinary shares. Any such proposal is subject to the relevant provisions of Dutch law and Besi's articles of association.

Change of control provisions in significant agreements

Each of Besi's 2016 and 2017 Convertible Notes contain change of control provisions under which in the event of a change of control of Besi (as defined), the holder of a Convertible Note will have the right to require Besi to redeem that Convertible Note at 100% of its principal amount together with accrued and unpaid interest thereon. In addition, Besi's revolving credit facility entered into in July 2019 with a consortium of banks contains a provision requiring the repayment of all borrowings outstanding upon a change of control of Besi (as defined) at 100% of its principal amount outstanding. At December 31, 2019, there was no change of control provision contained in any other of Besi's material agreements.

Dividend policy

Besi considers the payment of dividends on an annual basis based upon (i) a review of its annual and prospective financial performance, liquidity and financing needs, the prevailing market outlook and Besi's strategy, market position and acquisition strategy and/or (ii) a dividend payout ratio in the range of 40-100% relative to net income to be adjusted if the factors referred to under (i) so require.

Due to Besi's earnings and cash flow generation in 2018, the Board of Management proposed and Besi paid a cash dividend to shareholders equal to € 1.67 per share, which resulted in cash payments to shareholders of € 122.4 million.

Due to Besi's earnings and cash flow generation in 2019, the Board of Management will propose a cash dividend to shareholders equal to € 1.01 per share for 2019 for approval at Besi's Annual General Meeting of Shareholders to be held on April 30, 2020.

The payments for the year 2018 and proposed for the year 2019 represent a dividend payout ratio relative to net income of 91% and 90%, respectively.

Ownership interests in the ordinary shares

Under the Dutch Financial Supervision Act (Wet op het financieel toezicht, "Wft"), the following parties have notified the Dutch Authority for the Financial Markets (Autoriteit Financiële Markten, "AFM") of their share interests in the Company equal to or exceeding 3%:

BlackRock, Inc.

Notification effective March 15, 2019 7.81%*

BE Semiconductor Industries N.V.

Notification effective August 16, 2011 5.12%

Kempen Capital Management N.V.

Notification effective October 25, 2018 5.10%

Goldman Sachs Group, Inc.

Notification effective January 14, 2020 4.99%

Teslin Participaties Coöperatief U.A.

Notification effective October 25, 2019 4.98%

Capital Research and Management Company

Notification effective May 22, 2019 3.90%**

Norges Bank

Notification effective January 10, 2020 3.49%

Lucerne Capital Management GP, LLC

Notification effective August 10, 2018 3.19%

Wellington Management Group LLP

Notification effective February 19, 2020 5.03%**

Smallcap World Fund, Inc.

Notification effective April 11, 2019 3.03%

* Voting rights as per the filing were 8.49%.

** Represents voting rights held by the institution as per the AFM filing.

A list of share and voting interests in the Company of 3% or more can be found on the AFM website: www.afm.nl.

Analysts

The following sell side analysts cover Besi's shares:

Arete Research	Martin Alipiev
Berenberg	Trion Reid
Bryan, Garnier & Co.	Frédéric Yoboué
Degroof Petercam	Michael Roeg
Deutsche Bank	Rob Sanders
ING	Marc Hesselink
Insinger Gilissen	Jos Versteeg
Kempen	Nigel van Putten
Kepler Cheuvreux	Peter Olofsen

Investor relations

Besi uses a range of activities to initiate and maintain contact with investors. After publication of its annual and quarterly results, roadshows are held in Europe and the United States to meet existing and potential new institutional investors. Planned roadshows and presentations can be found on the Besi website. Contacts with institutional investors are further maintained by means of conference calls, conferences organized by brokers and Euronext and by investor visits to Besi.

The Company's investor outreach includes meetings with institutional and retail investors, research analysts, private investors, journalists and media outlets to help communicate the Besi story to the investment community and general public. Shareholders are also engaged through quarterly and annual conference calls and participation at Besi's Annual General Meeting of Shareholders ("AGM").

Investors in Europe and North American markets are increasingly considering sustainability and CSR themes as part of their investment process. Investors are requesting more CSR information from us than in previous years particularly in the areas of conflict minerals and climate change as well as fossil fuel and CO₂ reduction strategies and human rights within the supply chain. Shareholders expect Besi to protect their investment and provide a competitive return on invested capital while operating responsibly as a corporate citizen. Besi has engaged in important face to face dialogue with such stakeholders and received valuable feedback about its business and CSR issues in its 2019 investor relations program.

Important investor relations dates in 2020 that are currently planned (subject to change) are as follows:

April 30, 2020	2020 first quarter results
April 30, 2020	Annual General Meeting of Shareholders, to be held at Besi in Duiven at 10.30 a.m.
July 28, 2020	2020 second quarter results
October 22, 2020	2020 third quarter results
February 2021	2020 fourth quarter and annual results

Prevention insider trading

Besi has implemented a Code of Conduct governing the use of inside information by the members of the Supervisory Board, the member of the Board of Management and any other designated persons, including key staff members. In addition, there is a separate Code of Conduct governing the use of inside information by Besi employees generally. Designated persons have agreed in writing to observe the relevant Code of Conduct concerning the reporting and regulation of transactions in Besi securities (and other designated securities) and the treatment of price-sensitive information. Besi has appointed a compliance officer who is responsible for monitoring compliance with the Codes of Conduct and communication with the AFM.

Besi Incentive Plan

Besi may grant performance shares on an annual conditional basis to the member of the Board of Management, key employees and officers under the current Besi Incentive Plan. Further information on this subject is given in the [Remuneration Report](#).

Besi Share Price Development

BESI'S SHARE PRICE VS. SOX INDEX AND STOXX EUROPE 600 INDEX

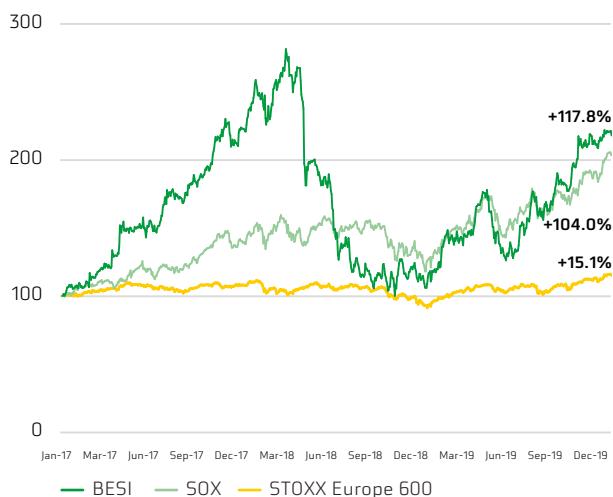
(Since January 1, 2019 until December 31, 2019; rebased to 100)



Source: Capital iQ

BESI'S SHARE PRICE VS. SOX INDEX AND STOXX EUROPE 600 INDEX

(Since January 1, 2017 until December 31, 2019; rebased to 100)



Source: Capital iQ

Corporate Governance



Santiago Calatrava (1951-present)

A world renowned Spanish architect, structural engineer, sculptor and painter, particularly known for his bridges supported by single leaning pylons, as well as his railway stations, stadiums, and museums, whose sculptural forms often resemble living organisms. Calatrava also produced the futuristic City of Arts and Sciences.

Corporate Governance

Besi acknowledges the importance of good corporate governance, the most important elements of which are transparency, independence and accountability. Important corporate governance developments in applicable jurisdictions are followed closely and rules are implemented where appropriate.

Besi's ordinary shares are listed on Euronext Amsterdam. Accordingly, Besi complies with all applicable listing rules of Euronext Amsterdam.

Besi applied the Dutch Corporate Governance Code as revised in 2016. Deviations from the Dutch Corporate Governance Code are explained below under [Explanation of Deviations from the Dutch Corporate Governance Code](#). The Dutch Corporate Governance Code can be found at www.mccg.nl.

Board of Management

The role of the Board of Management is to manage the Company and its affiliated enterprises and to ensure their continuity, which includes, among other things, (i) the formulation of a long-term value creation strategy, (ii) the identification, analysis and management of the risks inherent in the business and associated with the long-term value creation strategy and initiatives related thereto and (iii) establishing Besi's risk appetite and implementing measures necessary to mitigate any risks undertaken.

In discharging its role, the member of the Board of Management shall be guided by the interests of the Company and its affiliated enterprises as well as the interests of the Company's shareholders and other stakeholders. Members of the Board of Management are required to put the interests of the Company ahead of their own interests and to act critically and independently when carrying out their responsibilities. The Board of Management is also charged with establishing and maintaining internal procedures which ensure that all relevant information is provided to the Board of Management and the Supervisory Board in a timely manner.

The Company's articles of association provide that certain resolutions of the Board of Management require the prior approval of the Supervisory Board. Pursuant to Dutch law and the Company's articles of association, decisions of the Board of Management involving a major change in the Company's identity or character are subject to the approval of the General Meeting of Shareholders.

Appointment and replacement of members of the Board of Management

Members of the Board of Management are appointed by the General Meeting of Shareholders. A resolution of the General Meeting of Shareholders to appoint a member of the Board of Management requires an absolute majority of the votes validly cast in the event and to the extent the appointment occurs pursuant to, and in accordance with, a proposal of the Supervisory Board. Such resolution requires at least two thirds of the votes validly cast representing more than one third

of the issued capital in the event and to the extent the appointment does not occur pursuant to, and in accordance with, a proposal thereto of the Supervisory Board.

Members of the Board of Management may at any time be suspended or dismissed by the General Meeting of Shareholders. A resolution for suspension or dismissal of a member of the Board of Management requires an absolute majority of the votes validly cast in the event and to the extent the suspension or dismissal occurs pursuant to, and in accordance with, a proposal of the Supervisory Board. A resolution for suspension or dismissal requires at least two thirds of the votes validly cast representing more than one third of the issued capital in the event and to the extent the suspension or dismissal does not occur pursuant to, and in accordance with, a proposal thereto of the Supervisory Board. Members of the Board of Management may also be suspended by the Supervisory Board.

Remuneration Report

The [Remuneration Report](#) is included in a separate section in this Annual Report.

Conflicts of interest – members of the Board of Management

Any appearance of a conflict of interest between the Company and members of the Board of Management should be prevented. If a member of the Board of Management has a direct or indirect personal conflict of interest with the Company, he or she shall not participate in the deliberations and the decision-making process of the Board of Management for such matter. If, as a result thereof, no resolution of the Board of Management can be adopted, the resolution may be adopted by the Supervisory Board. No conflict of interest of material significance to Besi and/or the member of the Board of Management was reported in 2019.

Supervisory Board

The role of the Supervisory Board is to supervise the policies executed by the Board of Management and the general affairs of the Company and its affiliated enterprises and to assist the Board of Management by providing advice. In discharging their role, Supervisory Board members are guided by the interests of Besi and its affiliated enterprises as well as the relevant interests of Besi's stakeholders. Supervisory Board members are also required to put the interests of Besi ahead of their own interests and to act critically and independently vis-a-vis one another, the Board of Management and any particular third party interests involved. Further, the Supervisory Board also has due regard for corporate social responsibility issues that are relevant to Besi. The Supervisory Board annually evaluates its own functioning.

Each member of the Supervisory Board is currently considered independent within the meaning of best practice provision 2.1.8 of the Dutch Corporate Governance Code.

Each Supervisory Board member has the specific expertise required for the fulfilment of his/her duties. The composition of the Supervisory Board shall be such that the requisite expertise, background, competencies and independence are present for it to carry out its duties properly. The Supervisory Board shall aim for a diverse composition with respect to experience, background, competencies, education, nationality, age and gender. A Supervisory Board member shall be reappointed only after careful consideration. The profile criteria referred to above shall also be taken into account in the event of a reappointment.

Regulations governing the Supervisory Board ("Regulations Supervisory Board") are posted on Besi's website: www.besi.com.

Appointment and replacement of members of the Supervisory Board

Members of the Supervisory Board are appointed with due observance of the requisite profile for the size and composition as adopted by the Supervisory Board from time to time, subject to the provisions of Dutch law and Besi's articles of association.

Members of the Supervisory Board are appointed by the General Meeting of Shareholders. A resolution for appointment requires an absolute majority of the votes validly cast in the event and to the extent the appointment occurs pursuant to, and in accordance with, a proposal of the Supervisory Board. Such resolution requires at least two thirds of the votes validly cast representing more than one third of the issued capital in the event and to the extent the appointment does not occur pursuant to, and in accordance with, a proposal thereto of the Supervisory Board.

Members of the Supervisory Board may be suspended or dismissed at any time by the General Meeting of Shareholders. A resolution for suspension or dismissal requires an absolute majority of the votes validly cast in the event and to the extent the suspension or dismissal occurs pursuant to, and in accordance with, a proposal of the Supervisory Board. A resolution for suspension or dismissal requires at least two thirds of the votes validly cast representing more than one third of the issued capital in the event and to the extent the suspension or dismissal does not occur pursuant to, and in accordance with, a proposal thereto of the Supervisory Board.

Supervisory Board committees

The Supervisory Board has two committees: the Audit Committee and the Remuneration and Nomination Committee. The function of the committees is to prepare and facilitate the decision-making of the Supervisory Board. The terms of reference of the committees are posted on Besi's website: www.besi.com.

Remuneration Supervisory Board

The General Meeting of Shareholders shall determine the remuneration of Supervisory Board members. The Remuneration Report contains the information prescribed by applicable law on the level and structure

of the remuneration of individual Supervisory Board members. The remuneration of the members of the Supervisory Board is fixed and does not depend on the results of the Company. In addition, Besi does not grant Supervisory Board members any personal loans, guarantees or the like. Further, none of the members of the Supervisory Board personally maintains a business relationship with Besi other than as a member of the Supervisory Board. At December 31, 2019, no members of the Supervisory Board owned shares of the Company.

At the Annual General Meeting of Shareholders to be held on April 30, 2020, a Remuneration Policy for the Supervisory Board will be put to a vote. If adopted, the Supervisory Board members must from then onwards be remunerated within the scope of that Remuneration Policy for the Supervisory Board.

Conflicts of interest – members of the Supervisory Board

Any appearance of a conflict of interest between the Company and Supervisory Board members should be prevented. If a member of the Supervisory Board has a direct or indirect personal conflict of interest with the Company, he or she shall not participate in the deliberations and the decision-making process of the Supervisory Board for such matter. The Supervisory Board is responsible for resolving conflicts of interest regarding members of the Board of Management, members of the Supervisory Board and majority shareholders. If all members of the Supervisory Board are conflicted, then the Supervisory Board shall remain authorized to adopt resolutions. No conflicts of interest of material significance to Besi and/or the members of the Supervisory Board were reported in 2019.

Diversity

The Supervisory Board currently has a diverse composition in terms of experience, background, competencies, education and nationality and is on all those points in line with the objectives of its diversity policy and Supervisory Board profile. Diversity in general and gender diversity in particular are important factors in the selection process of Supervisory Board candidates. Currently, the Board consists of four male members and one female member. When considering new candidates, the Supervisory Board will retain an active and open attitude with respect to the selection of female candidates. Gender is, however, only one factor of diversity. The qualifications of a particular person and the requirements for the position shall always prevail over all other factors and considerations when filling a vacancy.

At present, the Board of Management consists of one person, i.e. Besi's Chief Executive Officer and Chairman of the Board of Management. As such, there is currently no diversity policy or target for the Board of Management.

Directors and Officers insurance policy

Members of the Board of Management and the Supervisory Board and certain senior management members are covered under Besi's Directors and Officers insurance policy. Although the insurance policy provides for broad coverage, members of the Board of

Management and the Supervisory Board and certain senior management members may be subject to uninsured liabilities. Besi has agreed to indemnify members of the Board of Management and the Supervisory Board and certain senior management members against certain claims brought against them in connection with their position with the Company provided that such individual acted in good faith and in a manner he/she reasonably believed to be in or not opposed to the best interests of Besi and, with respect to any criminal action or proceedings, such individual had no reasonable cause to believe his/her conduct was unlawful.

Shareholders and the General Meeting of Shareholders

Good corporate governance requires the participation of shareholders. It is in the interest of the Company that as many shareholders as possible participate in Besi's decision-making at the Annual General Meeting of Shareholders or any Extraordinary General Meeting of Shareholders. Pursuant to Dutch law and the Company's articles of association, any decisions of the Board of Management involving a major change in the identity or character of the Company or its enterprise shall be subject to the approval of the General Meeting of Shareholders.

The Board of Management provides shareholders and other parties in the financial markets with equal and simultaneous information about matters that may influence Besi's share price. Contacts between the Board of Management on the one hand and the press, analysts and shareholders on the other hand should be handled and structured carefully, and Besi should do nothing which might compromise the independence of analysts in relation to the Company and vice versa.

The Board of Management and the Supervisory Board shall provide the General Meeting of Shareholders with the information that it requires for the exercise of its powers subject to such limitations allowable under applicable law. If price-sensitive information is provided during a General Meeting of Shareholders or if a response to shareholders' questions has resulted in the disclosure of price-sensitive information, then such information will be made public without delay.

Good corporate governance requires significant attendance by shareholders at Besi's General Meeting of Shareholders. Therefore, Besi is actively involved in proxy solicitation as a means of increasing the attendance and participation of its shareholders at its General Meeting of Shareholders.

Amendment of Besi's articles of association

Besi's articles of association may be amended by a resolution of the General Meeting of Shareholders. A resolution of the General Meeting of Shareholders to amend the articles of association may only be adopted at the proposal of the Board of Management, which proposal requires the approval of the Supervisory Board. Those who have convened a General Meeting of

Shareholders at which a proposal to amend the articles of association will be brought up for discussion must deposit simultaneously with the convocation a copy of the proposal in which the proposed amendment has been included at Besi's office for inspection by every person entitled to attend the General Meeting of Shareholders until the end of the relevant meeting. The persons entitled to attend meetings must be given the opportunity to obtain a copy of the proposal free of charge. The proposal will also be published on Besi's website: www.besi.com.

External audit

The Board of Management is primarily responsible for the quality and completeness of publicly disclosed financial reports. The Supervisory Board oversees the Board of Management as it fulfills this responsibility.

The General Meeting of Shareholders appoints the external auditor. The Supervisory Board submits a nomination for the appointment of the external auditor to the General Meeting of Shareholders upon the advice of the Audit Committee and the Board of Management. It negotiates the terms of engagement of the external auditor, including their remuneration, upon the proposal of the Audit Committee and after consultation with the Board of Management. The Chairman of the Audit Committee acts as the principal contact for the external auditor if, during the performance of its audit, it discovers or suspects an instance of misconduct or any irregularity. The external auditor attends the meeting of the Supervisory Board at which the report of the external auditor is discussed. They also discuss the findings and outcomes of their audit work and the management letter with the Audit Committee and the Board of Management simultaneously.

Internal control and risk management

Besi has an internal control and risk management system that is suitable for the Company. The form and structure of this system is outlined under [Risks and Risk Management](#).

The Company's internal control and risk management function operates under the responsibility of the Board of Management which is monitored on an ongoing basis. The Board of Management reviews the effectiveness of the design and operation of the internal control and risk management system twice a year as part of Besi's internal control procedures.

Besi's internal control system consists of a formal framework defining key risks and key controls over financial reporting, an internal control charter outlining audit systems and procedures as well as the internal control and audit plan for the year. Operational, IT, compliance, tax and fraud controls are included in this framework. The internal control system over financial reporting also contains clear accounting rules, has been implemented in substantially all operations and material subsidiaries and supports common accounting and regular financial reporting in standard forms.

In 2019, Besi's finance staff carried out all planned internal control activities and reported its findings to the Board of Management and the Audit Committee. In 2018, Besi hired an independent audit firm to help identify and monitor potential risks of fraud, bribery and corruption in its Asian supply chain, logistics and purchasing activities and further enhanced its internal control procedures during 2019. In addition, it has enhanced its global internal audit function in recent years as well as systems and procedures in such areas in view of increased business and risk management activities at Besi's Chinese, Malaysian and Singapore operations.

In consideration of the above factors, the Board of Management states that for the year ended December 31, 2019:

- This Annual Report provides sufficient insights into any failings in the effectiveness of Besi's internal control and risk management systems.
- Besi's internal control and risk management systems provide reasonable assurances that the financial reporting contains no material inaccuracies.
- It is justified that Besi's financial reporting is prepared on a going concern basis considering the current state of affairs.
- This Annual Report refers to those material risks and uncertainties which are relevant to Besi's continuity for the twelve months following the preparation of this Annual Report.

Explanation of deviations from the Dutch Corporate Governance Code

Deviations from the Dutch Corporate Governance Code are listed and explained below.

Provision 1.3.1

Since the internal audit function is the responsibility of the Board of Management, the appointment and dismissal of the senior internal auditor by the Board of Management is not submitted for approval to the Supervisory Board. Instead, the Supervisory Board only oversees the appointment and dismissal of the senior internal auditor.

Provision 1.4.2

The sensitivity of the Company's results to material changes in external factors is not provided for competitive reasons. For a detailed description of material risks, reference is made to Risks and Risk Management.

Provision 2.2.1

The Company respects the rights of the member of the Board of Management who was a member at the time of the first implementation of the Dutch Corporate Governance Code. For that reason, there was no adjustment of his employment agreement.

Provision 2.3.2

In order to simplify and enhance the efficiency of Besi's governance structure, the Supervisory Board decided to reduce the number of Committees to two: the Audit Committee and the Remuneration and Nomination Committee.

Provision 3.1.2

Based on Besi's Remuneration Policy for the Board of Management, the Supervisory Board upon recommendation of its Remuneration and Nomination Committee may award conditional performance shares that vest after three years. The shares vested are subject to a two-year lock up period provided, however, that the member of the Board of Management will be allowed to sell sufficient shares to cover any income tax liability upon vesting of the performance shares. In accordance with the Remuneration Policy for the Board of Management, the Supervisory Board may award additional performance shares to the Board of Management which may vest immediately but may be subject to additional terms and conditions as determined by the Supervisory Board. For any additional performance shares awarded to the Board of Management under the Remuneration Policy applicable as from 2020, the two-year lock up period is extended to five years in compliance with the Dutch Corporate Governance Code.

Provision 3.2.3

The Company respects the rights of the member of the Board of Management who was a member at the time the Dutch Corporate Governance Code came into force. For that reason, it did not adjust his employment agreement as it was signed prior to that date.

Provision 4.2.3

The Company acknowledges the importance of disclosing material information to all shareholders similarly at the same moment in time. It is currently not practically possible to make every meeting and presentation to analysts and investors accessible to all shareholders. As far as practicable possible, meetings and presentations will be announced and posted on Besi's website: www.besi.com.

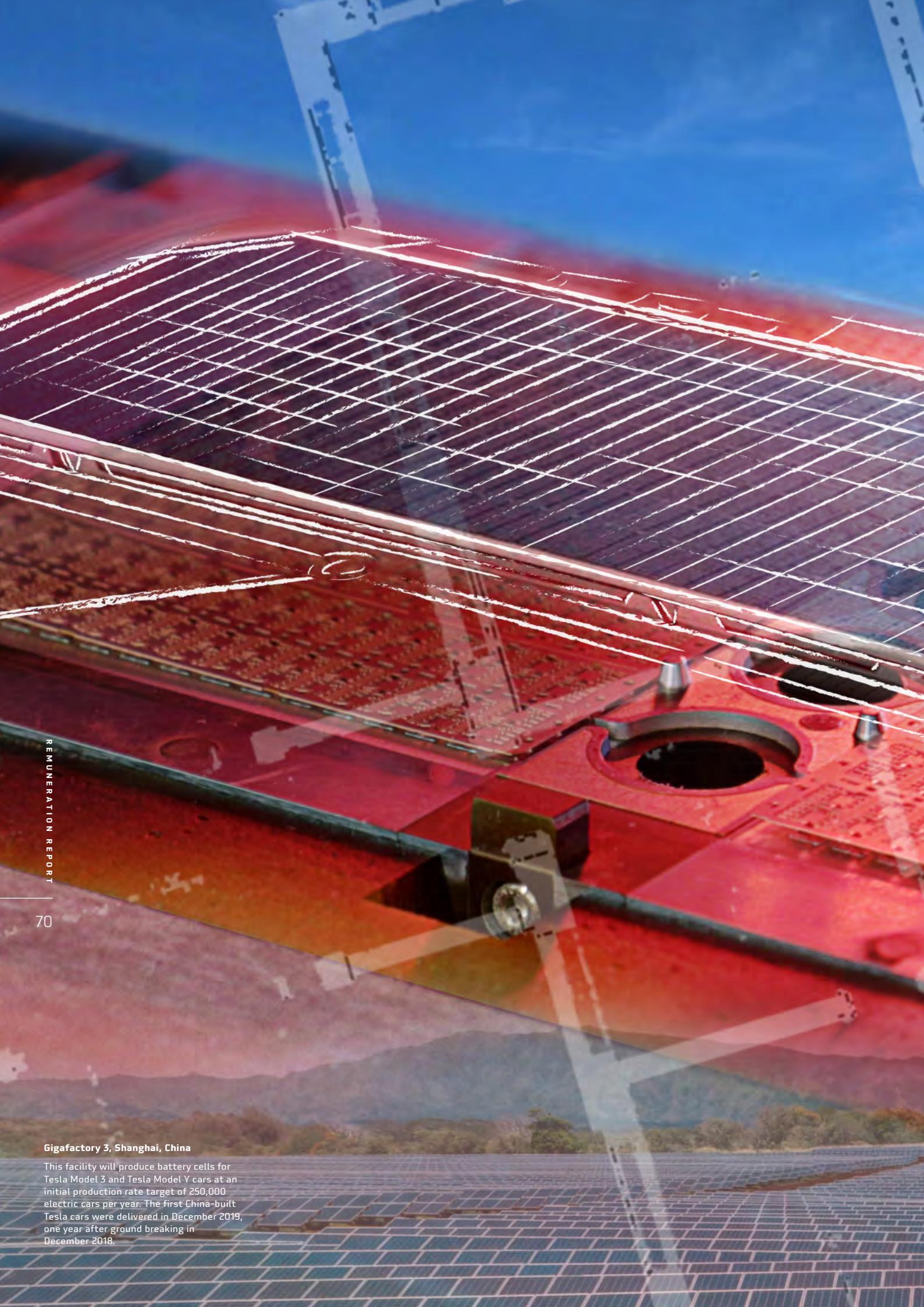
Director's Statement of Responsibilities

In accordance with statutory provisions, the Board of Management states, to the best of its knowledge that:

- The Financial Statements provide a true and fair view of the assets, liabilities, financial position and result for the financial year of Besi and its subsidiaries included in the consolidation as a whole.
- The Report of the Board of Management provides a true and fair view of the position at the balance sheet date and of the performance of the business during the financial year of Besi and its subsidiaries, details of which are contained in the Financial Statements. The Report of the Board of Management provides information on any material risks to which Besi is exposed.

Board of Management
Richard W. Blickman

February 19, 2020



Gigafactory 3, Shanghai, China

This facility will produce battery cells for Tesla Model 3 and Tesla Model Y cars at an initial production rate target of 250,000 electric cars per year. The first China-built Tesla cars were delivered in December 2019, one year after ground breaking in December 2018.

Remuneration Report

Remuneration Report

This Remuneration Report provides an overview of the Remuneration Policy, the remuneration structure, the application of the Remuneration Policy and the components of the remuneration of the Board of Management and the Supervisory Board during 2019. The Company has successfully attracted and retained executives who are capable of leading and overseeing the Company at all levels and the Remuneration Policy is designed to facilitate this process. This Remuneration Report is the remuneration report in accordance with article 2:135b of the Dutch Civil Code and the Dutch Corporate Governance Code.

The Remuneration and Nomination Committee (the 'Committee') of the Supervisory Board oversees all remuneration decisions and determines the criteria to measure the performance of the Board of Management whereby considering the roles and responsibilities. For determining the remuneration of the Board of Management, the Committee is informed about the remuneration of the direct reports to the Board of Management including the Short-Term and Long-Term Incentive Plans applicable which are fully aligned with the performance conditions as operated under the Remuneration Policy.

As we believe that all employees are integral to our success, we are committed to fair and responsible remuneration. We therefore consider remuneration of the members of the Board of Management and the Supervisory Board in the light of the remuneration of all employees, associated pay ratios. Over time we have made adjustments to our Remuneration Policy to reflect our commitment to paying fairly, responsibly and transparently. The Supervisory Board undertakes to engage actively with shareholders in order to address all legitimate and reasonable objections and concerns. We invite our shareholders to engage with us regarding our policy and reporting.

In implementing the Remuneration Policy, the Committee analyzes the possible outcomes of its variable remuneration elements and how they may affect the total remuneration of the Board of Management. In this respect, regular scenario analyses are undertaken whereby the development of the underlying share price of the Company's shares is considered. This with due regard for the risks to which variable remuneration may expose the Company. Variable remuneration shall be linked to predetermined, assessable and influenceable targets which are predominantly of a long-term and sustainable nature and linked to Besi's strategy, including associated business objectives, values, purpose and vision of the Company.

The dynamic environment in which Besi participates, makes it important that we define our common values based on our vision. Our common values help provide a uniform response to internal and external challenges so that we achieve our business goals in a right and fair way. For this purpose, we have defined our Code of Conduct. This Code of Conduct addresses our responsibilities to the Company, to each other and what our stakeholders may expect from us. It is available on

the corporate website for further review. In determining the actual remuneration of the Board of Management, the Committee assesses the actual performance delivered based on its strategy in line with the Code of Conduct and takes into account the impact of the overall remuneration of the Board of Management on the pay differentials within the Company. When determining remuneration, the Committee also obtains the views of the members of the Board of Management relating to the level and structure of remuneration.

The Remuneration Policy was successfully applied in 2019 without exceptions. During the course of the year, the Committee completed the review, analysis and evaluation of the current policy in connection with its strategy. As a result, a new policy was proposed and approved by the Annual General Meeting of Shareholders on April 26, 2019. The new Remuneration Policy 2020-2023 will be applicable for a four-year period starting as from January 1, 2020.

Remuneration Policy

The Remuneration Policy applicable for the year 2019, as outlined in the Remuneration Policy 2017-2019, was approved by the Annual General Meeting of Shareholders held on April 29, 2016. This Remuneration Policy 2017-2019 extends the Remuneration Policy 2011-2016 that was developed in view of changes in legislation and a review of external market best practices, taking into account the principles and best practice provisions of the Dutch Corporate Governance Code.

The Supervisory Board seeks to achieve three broad goals in connection with Besi's Remuneration Policy and decisions regarding individual compensation:

- The Supervisory Board structures the Company's remuneration programs in a manner that it believes will enable Besi to retain, motivate and attract executives who are capable of leading the Company to achieve its business objectives.
- The Supervisory Board establishes remuneration programs that are designed to reward members of the Board of Management for the achievement of specified business objectives as a whole or the individual executive's particular business unit. By linking remuneration to specific goals, the Supervisory Board believes that it creates a performance-oriented environment for the Company's executives.
- The Company's remuneration programs are intended to provide members of the Board of Management with an equity interest in the Company so as to link a portion of executive remuneration with the long-term performance of Besi's ordinary shares and to align their interests with those of shareholders.

The Supervisory Board regularly (i) reviews Besi's business objectives, (ii) undertakes risk assessments, (iii) assesses Besi's overall performance with respect to its business objectives and (iv) considers the performance of the individual member of the Board of Management compared to specific business objectives. Based on these objectives, the Supervisory Board determines a balanced mix between fixed and variable

remuneration components and a set of key performance indicators linked to the variable remuneration components that are aligned with the Company's business objectives. In determining the remuneration of the members of the Board of Management, the Supervisory Board also takes into account the impact of the overall remuneration of the Board of Management with respect to pay differentials in the Company.

In its evaluation of the efficacy of Besi's Remuneration Policy, the Supervisory Board has performed in-depth scenario analyses of the variable remuneration components under the policy. The probability of vesting and pay-out of the performance share awards have been taken into account in these scenario analyses. The Supervisory Board has set the performance targets on the basis of the outcome of the scenario analyses. Pay differentials and the executive's position within Besi have also been considered and discussed, including the internal pay ratio. In 2019, the internal pay ratio was 37 (2018: 39) based on the annual total remuneration of the member of the Board of Management and the average total remuneration of all other full-time employees, as reported in accordance with IFRS, excluding discretionary elements.

Furthermore, when drafting the remuneration proposal for the member of the Board of Management, the Supervisory Board annually considers the views of the member of the Board of Management with regard to the level and structure of their own remuneration.

Remuneration structure

The total remuneration package of the member of the Board of Management is established on an annual basis by the Supervisory Board, upon proposal of the Committee, and consists of five components based on the goals set forth above:

1. Base Salary
2. Short-Term Incentive (annual performance based cash bonus)
3. Long-Term Incentive (annual conditional award of performance shares)
4. Pension
5. Other Benefits

The above components are regularly compared with a balanced remuneration reference group of companies selected based on industry, size and geographical spread to determine the total remuneration package and pay mix for the member of the Board of Management whereby considering the actual roles and responsibilities. The following companies are included in this remuneration reference group, updated for any acquisitions or delistings.

Remuneration Reference Group

Aalberts Industries N.V.
Accell Group N.V.
Aixtron SE
Arcadis N.V.
ASM International N.V.
Axcelis Technologies, Inc.
Brooks Automation, Inc.
Cohu, Inc.
Corbion N.V.
Infineon Technologies AG
Kendrion N.V.
Koninklijke Wessanen N.V.
Kulicke & Soffa Industries, Inc.
Lam Research Corporation
Nova Measuring Instruments Ltd.
Onto Innovation, Inc.¹
STMicroelectronics N.V.
SÜSS MicroTec SE
TKH Group N.V.
Veeco Instruments, Inc.

¹ Following the completion of the merger between Nanometrics, Inc. and Rudolph Technologies, Inc. on October 25, 2019, Nanometrics, Inc. was replaced by Onto Innovation, Inc., the successor post-merger entity.

The composition of this remuneration reference group will be reviewed by the Supervisory Board on a regular basis and updated, if necessary, to ensure an appropriate composition. Any substantial changes to the composition of the remuneration reference group will be subject to the approval of the Annual General Meeting of Shareholders.

In establishing remuneration for members of the Board of Management, the Supervisory Board consults a professional external remuneration consultant in carrying out its duties. The Supervisory Board verifies that the consultant concerned does not similarly provide advice to the Board of Management so that no conflicts of interest exist.

1. Base Salary

Each year, the Supervisory Board reviews the annual base salary for the member of the Board of Management and considers whether to adjust base salary levels. Base salary of the member of the Board of Management will be determined by comparing the base salary levels within median and upper quartile levels of the remuneration reference group. In setting the positioning of base pay levels, the Supervisory Board also considers the historic salary levels of the individual and the nature of the individual's roles and responsibilities.

2. Short-Term Incentive (annual cash bonus)

The annual cash bonus opportunity is linked to the achievement of pre-determined performance conditions based on financial and non-financial objectives as determined by the Supervisory Board. The following performance measures apply:

- *Net Income expressed as a percentage of Revenue.*
The financial measure net income is preferred over other financial ratios for the Short-Term Incentive since Net Income is:
 - A key indicator for evaluating the overall performance of Besi for the year and therefore an important contributor to shareholder value.
 - A key factor given the cyclical market in which Besi operates.
 - A financial measure that can be influenced by the member of the Board of Management.
- *Personal performance of the member of the Board of Management.*
The annual criteria to measure the personal performance of the member of the Board of Management are at the sole discretion of the Supervisory Board. As such, the Supervisory Board can focus on certain targets that are considered important for the upcoming year and ensure sustainable value creation in the medium and long-term in line with Besi's strategy. The Committee will propose to the Supervisory Board annually both financial and non-financial criteria to measure the personal performance of the member of the Board of Management.

The total annual cash bonus opportunity of the member of the Board of Management shall be determined on the basis of the following performance/pay-out grid. However, the Supervisory Board will apply a total annual voluntary bonus cap of 80% of such individuals' gross annual salary during the Company's financial year preceding the year in which such Annual Cash Bonus is awarded, except if (i) the Supervisory Board uses its discretionary power to adjust (upwards or downwards) or (ii) decides to not apply this total annual voluntary bonus cap in the event that extraordinary and/or sustainable performance is delivered.

Short-Term Incentive: Performance versus pay-out	At target At minimum Perfor-mance	
in % of the individual's gross annual base salary		
Net Income as % of Revenue ¹	0%	70%
Personal Performance Targets ²	0%	30%
Total annual bonus pay-out ³	0%	80%

¹ Net Income/Revenue: the actual pay-out ranges from 0% (threshold) to 70% of the individual's gross annual base salary.

² Personal performance: the actual pay-out ranges from 0% to maximum 30% of the individual's gross annual base salary.

³ A cumulative annual voluntary cash bonus cap of 80% based on the individual's gross annual salary is applicable depending on the Company's Net Income and the individual's personal performance. The Supervisory Board holds the discretionary power to determine the application of this value cap.

3. Long-Term Incentive (annual conditional award of performance shares)

The Long-Term Incentive consists of a conditional award of performance shares. The award represents a conditional right to receive a certain number of Besi shares depending on the achievement of pre-determined financial performance objectives set by the Supervisory Board over a three-year performance period, which include:

- *Net Income/Revenue over three calendar years,* i.e. Net Income expressed as a percentage of Revenue over the three-year performance period. Net Income/Revenue is considered a key measure for creating sustainable long-term shareholder value.
- *Relative Total Shareholder Return ('TSR').*
The development of Besi's share price including the reinvestment of dividends during a three-year performance period will be compared to a comparator group of 19 listed companies operating in the semiconductor equipment industry, whereby three-month share price averaging is being applied at the start and at the end of the TSR performance period. The TSR over the three-year performance period is also considered a key measure for indicating the development of shareholder value and Besi's TSR relative to its comparators in the semiconductor equipment industry and is an appropriate performance measure to align the interests of the members of the Board of Management with those of shareholders. The composition of the comparator group will be reviewed annually by the Supervisory Board and, if required, will be adjusted due to changes in the performance, size and market value, among other considerations, of the companies involved which could affect comparability. Adjustments to the comparator group, including replacements, will be based on predetermined internal guidelines. The TSR comparator group currently consists of the following companies:

TSR comparator group (excluding Besi)

Aixtron SE
Applied Materials, Inc.
ASM International N.V.
ASML Holding N.V.
ASM Pacific Technology Ltd.
Axcelis Technologies, Inc.
Brooks Automation, Inc.
Cohu, Inc.
Disco Corporation
Entegris, Inc.
Kulicke & Soffa Industries, Inc.
Lam Research Corporation
Nova Measuring Instruments Ltd. ¹
Onto Innovation, Inc. ²
Shinkawa Ltd.
SÜSS MicroTec SE
Tokyo Electron Ltd.
Tokyo Seimitsu Co., Ltd.
Veeco Instruments, Inc.

¹ Subsequent to the acquisition by Veeco that was announced on February 2, 2017, Ultratech, Inc.'s shares were delisted. As such, it has been removed and replaced by Nanometrics, Inc. as of the business day prior to the acquisition announcement date.

² Following the completion of the merger between Nanometrics, Inc. and Rudolph Technologies, Inc. on October 25, 2019, Nanometrics, Inc. was replaced by Onto Innovation, Inc., the successor post-merger entity.

Conditional award

The number of performance shares conditionally awarded will be determined by the Supervisory Board based on at target level equal to 100% of the individual's gross annual base salary, as follows:

At target number of performance shares to be awarded is determined based on (i) 100% of the individual's gross annual base salary, divided by (ii) the average closing price of Besi's shares for all trading days in the calendar quarter immediately preceding the start of the three-year performance period.

Vesting

At the end of the three-year performance period, depending on Besi's actual performance during the performance period, the number of shares that become unconditional (i.e. number of shares vesting) will be determined. Vested shares are subject to a two-year lock-up period which means that the member of the Board of Management will have to retain them for two years following the vesting date. However, he will be allowed to sell sufficient shares to cover the income tax liability upon vesting of the performance shares. The actual number of performance shares which will vest at the end of the three-year performance period will be determined based on the following grid:

The performance shares awarded subject to Besi's TSR performance are based on the actual absolute ranking of Besi within the comparator group and vest in a range between 0% and 75% of the total number of performance shares awarded to the individual. The vesting is determined based on the following schedule:

Ranking of Besi in comparator group based on relative TSR during performance period versus pay-out	Vesting percentage performance shares
Top 3	75%
Rank 4 - Rank 6	50% (at target)
Rank 7 - Rank 12	25%
Rank 13 - Rank 20	0%

Performance adjustment

After evaluating the three-year performance period for awards made from 2017 up to and including 2019, the Supervisory Board may at its absolute discretion upwardly or downwardly adjust the number of performance shares that will vest by a maximum of 20%. This discretionary performance adjustment may be applied by the Supervisory Board to reflect the overall performance achieved and market developments, and further aligns the interests of members of the Board of Management with those of shareholders.

Long-Term Incentive: Performance versus vesting	At minimum	At target performance	At maximum (stretched performance)
in % of the number of performance shares awarded			
Net Income as % of Revenue ¹	0%	50%	75%
Relative TSR performance ²	0%	50%	75%
Total number of shares vesting	0%	100%	150%

¹ Half of the performance shares awarded is linked to Besi's Net Income relative to its revenue over the three-year performance period; the vesting range is between 0% and 75% of the total number of performance shares awarded to the individual.

² Half of the performance shares awarded is linked to Besi's relative TSR performance.

Clawback and ultimate remedium

The Short-Term Incentive and Long-Term Incentive components for the member of the Board of Management are subject to clawback provisions. In addition, risk assessment tests are in place and measures are included in the variable remuneration documentation for members of the Board of Management to ensure that shareholders' interests are protected. In this respect, the Supervisory Board holds the discretionary authority to reclaim all or part of the Short-Term Incentive and Long-Term Incentive if such variable remuneration has been made based on incorrect financial data or other data or in the case of fraud, gross negligence, willful misconduct or any activity detrimental to the Company. This clawback is applicable to both the vested and unvested part of the Long-Term Incentive components.

The Short-Term Incentive and Long-Term Incentive components for members of the Board of Management are also subject to ultimate remedium clauses. The Supervisory Board holds the discretionary authority to adjust the value of the conditional variable remuneration components downwards as well as upwards. The adjustment can be made if the Supervisory Board is of the opinion that an unfair result would be produced due to extraordinary circumstances. In this assessment, Besi's overall performance will also be taken into consideration.

Additional discretionary performance share awards

The Supervisory Board may at its absolute discretion, upon recommendation of the Committee, award additional performance shares to members of the Board of Management as a reward for extraordinary achievements or exceptional performance in a year, up to a maximum of 120,000 shares per year (as adjusted for the two for one stock split effected on May 4, 2018) which may be subject to additional terms and conditions as determined by the Supervisory Board. In case the Supervisory Board in any year decides to apply an upward performance adjustment with respect to the vesting of Long-Term Incentive performance shares, as referred to under Performance adjustment, such additional performance shares that will vest upon this performance adjustment are included in the maximum of 120,000 additional performance shares that can be awarded to members of the Board of Management at the discretion of the Supervisory Board.

Number of shares available

The aggregate total number of performance shares available under Besi's Long-Term Incentive arrangement (for all participants including the members of the Board of Management) shall not exceed 1.5% of the total number of outstanding shares as at the 31st of December of the year prior to the year in which the performance shares are awarded.

4. Pensions

Different pension arrangements are provided to members of the Board of Management based on their salaries, local customs and the rules existing in their countries of origin. A defined contribution scheme is in place for statutory directors, of whom the CEO is currently the only one. Due to legislative changes enacted in the

Netherlands as from the beginning of 2015, part of the pension contribution is no longer tax exempt. As such, in order to provide for a market competitive pension arrangement for Dutch members of the Board of Management, the pension contribution is now based on a premium ladder as in effect from 2014. However, commencing in 2015, a portion of this contribution is funded directly to the personal pension account of the statutory director as a tax exempt contribution and the remaining balance is paid to the statutory director as a taxable pension allowance which can be used by the statutory director to build up his net pension on a voluntary basis.

5. Other benefits

Other benefits awarded to members of the Board of Management are linked to base pay and in line with general prevailing market practice. These other benefits include expense compensation, medical insurance and social security premiums.

Loans

As a policy, the Company does not provide loans to members of the Board of Management.

Employment contracts/service contracts

Service contracts with any new member of the Board of Management will in principle be entered into for a period of four years. Existing employment contracts for an indefinite period of time will not be replaced by contracts with a limited period or by contracts with different conditions. The current notice period applicable to the member of the Board of Management is six months.

Severance payment

The remuneration paid to members of the Board of Management in the event of dismissal may not exceed the individual's gross annual base salary (fixed component). If the maximum of one year's salary would be manifestly unreasonable for a member of the Board of Management who is dismissed during his first term of office, such Board of Management member shall be eligible for severance pay not exceeding two times his annual base salary.

Application of the Remuneration Policy in 2019

The Supervisory Board upon recommendation of the Committee applied the Remuneration Policy in 2019 as set forth below. The only member of the Board of Management in 2019 was Richard W. Blickman, Besi's CEO.

1. Base Salary

At the end of 2017, the base salary of the CEO was reviewed, taking into consideration the remuneration reference group. The Committee analyzed and considered the outcome of this review and recommended to the Supervisory Board, as outlined in the Remuneration Policy 2017-2019, to set the base salary of the CEO to between median and upper quartile market levels of the remuneration reference group in line with the Remuneration Policy 2017-2019. The Supervisory Board, following the recommendation of the Committee, decided that the 2019 base salary of the CEO should be set at € 600,000, unchanged as compared to 2018.



Fico Compact Line - X.

At the end of 2019, the base salary of the CEO was reviewed, taking into consideration the remuneration reference group. The Committee analyzed and considered the outcome of this review and recommended to the Supervisory Board a base salary for the CEO set between the median and 90th percentile levels of the remuneration reference group, as outlined in the Remuneration Policy 2020-2023. The Supervisory Board, following the recommendation of the Committee, decided that the 2020 base salary of the CEO will remain unchanged at € 600,000, equal to the base salary applicable for both 2018 and 2019.

2. Short-Term Incentive

The Short-Term Incentive (cash bonus) awarded to the member of the Board of Management is based on the following pre-determined performance conditions: (i) Net Income expressed as a percentage of Revenue and (ii) personal performance expressed in certain financial and non-financial targets that were considered important for 2019. The Committee reviewed at year end the quality of the pre-determined financial and non-financial performance and the sustainable value delivered in order to determine the vesting of the Short-Term Incentive awarded for 2019.

Besi's 2019 Net Income as a percentage of Revenue was 22.8%. Based on the pre-defined target set, the performance achieved was well above the maximum target range set. Upon recommendation by the Committee, the Supervisory Board awarded the member of the Board of Management for the first financial performance condition a cash bonus equal to 70% of his annual base salary for the year 2019. Furthermore, the Committee thoroughly reviewed the performance realized by the member of the Board of Management in relation to seven equally weighted pre-defined personal financial and non-financial performance objectives representing 30% of the total cash bonus. These seven pre-defined

personal financial and non-financial performance objectives related to (i) the continued implementation of Besi's strategic plan 2017-2021, (ii) succession planning for the management team, (iii) succession planning for key staff, (iv) execution of organizational initiatives in accordance with Besi's strategy, (v) progress of new development programs, (vi) the build out of Besi's R&D efforts and organizational structure at its Singapore operations and (vii) execution of corporate social responsibility programs and initiatives. Based on this review and upon the recommendation by the Committee, the Supervisory Board decided to award the member of the Board of Management a cash bonus related to personal performance equal to 30% of his annual base salary for 2019.

Consequently, the sum of the financial and non-financial targets comprising the total cash bonus for the year 2019 equalled 100% of the gross annual base salary of the member of the Board of Management. This total cash bonus percentage is higher than the voluntary bonus cap of 80% of the gross base annual salary for the member of the Board of Management in 2019. Based on the Company's active measures to align overhead with market conditions, solid financial performance and peer leading financial metrics despite an ongoing industry downturn, the Supervisory Board unanimously decided, upon recommendation of the Committee, to use its discretionary power to waive the 80% voluntary bonus cap and to award the maximum cash bonus for 2019 equal to 100% of gross base salary (€ 600,000).

3. Long-Term Incentive

As from 2014, the Long-Term Incentive (annual conditional award of performance shares) is subject to continued employment and based on the following pre-determined performance conditions: (i) Net Income as a percentage of Revenue over three calendar years and (ii) the development of Besi's share price including

the reinvestment of dividends during a three-year performance period compared to a comparator group of 19 listed companies operating in the semiconductor equipment industry.

For the three-year performance periods 2017-2019, 2018-2020 and 2019-2021, the "at target (100%)" number of performance shares (adjusted for the two-for-one stock split effected in May 2018) conditionally awarded aggregated 36,074, 18,026 and 32,887 shares, respectively. The number of at target shares awarded was calculated based on the gross annual base salary divided by the average closing share price for all trading days in the fourth quarter of the year immediately preceding the start of the performance period. The performance shares conditionally awarded will vest in 2020, 2021 and 2022. The number of shares that will actually vest will be based on the above mentioned pre-determined performance conditions.

The number of performance shares (adjusted for the two for one stock split effective May 4, 2018) which could vest for the three-year performance periods 2017-2019, 2018-2020 and 2019-2021 range between nil (in the case of below threshold performance) to a maximum of 54,111 shares (2017-2019 award), 27,039 shares (2018-2020 award) and 49,331 (2019-2021 award). The member of the Board of Management could receive 150% of the "at target" number of performance shares awarded if stretched performance is achieved with respect to both performance measures during each respective performance period.

Based on the actual performance realized for the 2017-2019 performance share award based on the Net Income as a percentage of Revenue (50% of the award) and Relative TSR performance (50% of the award) during the three-year performance period 2017-2019 (i) Net Income as a percentage of Revenue overachieved the target resulting in a maximum vesting of 75% of this part of the performance shares awarded and (ii) Besi ranked within the TSR comparator group at the 8th position resulting in a vesting of 25% of the performance shares awarded.

The Supervisory Board may in accordance with the Remuneration Policy 2017-2019 upwardly or downwardly adjust the number of Performance Shares that may vest by a maximum of 20%. For the 2017-2019 performance award, the Supervisory Board decided to not apply this 20% performance adjustment. As a result, 100% of the 36,074 shares related to the 2017 performance award will vest on April 30, 2020, subject to continued employment until this date. The vested shares are subject to a two-year lock-up period, except for the shares that may be sold to cover the withholding/income tax liability upon vesting of the performance shares.

Under the Remuneration Policy 2017-2019, the Supervisory Board may, at its own discretion and upon recommendation of the Committee, award additional performance shares to the member of the Board of Management as a reward for extraordinary achievements or exceptional performance, up to a maximum of 120,000 shares (adjusted for the two for one stock split on May 4,

2018). In 2019, the Supervisory Board conditionally awarded the member of the Board of Management the maximum of 120,000 shares. This extraordinary conditional award was made in recognition of the continued successful implementation of Besi's business and CSR strategy, active measures to align overhead with market conditions, achievement of high levels of profitability and gross and net margins in an industry downturn, maintenance of peer leading financial metrics and continued implementation of an attractive capital allocation plan which distributed approximately € 167 million to shareholders even during an industry downcycle. As a result of his activities and leadership, the Company is fit for purpose, has successfully retained its position (i) as a technological leader in the assembly equipment industry with timely and sustainable forward strategic thinking as to Besi's internal development, (ii) in the market and (iii) compared to the competition. Other items have also been considered in addition to the Company's performance and performance of the member of the Board of Management such as market developments and the views of society. This means that the Supervisory Board may consider and downwardly adjust additional Performance Shares awarded in the event of a market downturn or a high underlying share price. The extraordinary award vested on January 17, 2019 as approved by the Supervisory Board. The vested shares are subject to a two-year lock-up period which means that the member of the Board of Management will have to retain them for two years following the vesting date.

Clawback and ultimate remedium

In line with Dutch law and the Remuneration Policy, the Short-Term Incentive and Long-Term Incentive components for the member of the Board of Management are subject to clawback provisions and ultimate remedium clauses. During 2019, no circumstances have been identified by the Supervisory Board that result in any adjustments or clawback.

4. Pensions

Prior to 2015, a defined contribution scheme with an annual contribution (based on a maximum allowed percentage of base salary for tax purposes) was in place for the member of the Board of Management. As a result of the legislative changes applicable for Dutch pension arrangements as from January 1, 2015, the Committee reviewed Besi's pension policy for Board of Management members during 2014.

Based on the outcome of this review, as from January 1, 2015, pension contributions for members of the Board of Management will continue to be based on contributions applicable for 2014. However, a portion of this contribution will be funded directly to the personal pension account of the member of the Board of Management as a tax exempt contribution and the remaining balance will be paid as a taxed pension allowance, which can be used by the member of the Board of Management to build up his pension on a voluntary basis.

5. Other benefits

Other benefits include expense compensation, medical insurance and social security premiums.

Total remuneration

Remuneration of the Board of Management recognized by the Company for the years ended December 31, 2019 and 2018 was as follows:

(in euros, except for performance shares)	Year ended December 31,	
	2019	2018
Base salary	600,000	600,000
Annual cash bonus	600,000	600,000
Other benefits ¹	239,475	231,766
Total cash benefits	1,439,475	1,431,766
Pension contribution ²	33,159	38,912
Equity compensation benefits: Incentive Plan ³	791,569	786,782
Total remuneration, excluding discretionary elements	2,264,203	2,257,460
Equity compensation benefits: Discretionary grant ⁴	2,270,400	4,551,000
Total remuneration	4,534,603	6,808,460
Conditional performance shares awarded ⁵	32,887	18,026

¹ Other benefits include expense compensation, medical insurance, employer social security contributions and for 2019 and 2018 a taxable pension allowance of € 181,008 and € 171,279, respectively.

² The pension arrangements for the member of the Board of Management are defined contribution plans. The Company does not have any further pension obligations beyond an annual contribution.

³ Expenses recognized in 2019 and 2018 for performance shares awarded from 2015 to 2019 made under the Incentive Plan as determined in accordance with IFRS.

⁴ Expenses recognized in 2019 and 2018 for a discretionary award of 120,000 shares which vested on January 17, 2019 and 120,000 shares which vested on February 19, 2018, as determined in accordance with IFRS.

⁵ Performance shares for 2019 and 2018 may vest in 2022 and 2021, respectively, subject to continued service and the actual performance during the performance period 2019-2021 and 2018-2020, respectively.

Other remuneration information

The actual cash remuneration paid and the value of the vested equity remuneration to the Board of Management by the Company for the years ended December 31, 2019 and 2018 were as follows:

(in euros)	Year ended December 31,	
	2019	2018
Base salary	600,000	600,000
Fringe benefits	239,475	231,766
Total fixed remuneration	839,475	831,766
One-year variable	2,870,640	5,151,000
Equity compensation benefits: Incentive Plan	2,325,093	3,075,014
Total variable remuneration	5,195,733	8,226,014
Pension expense	33,159	38,912
Total remuneration	6,068,367	9,096,692
Proportion of fixed and variable remuneration	14%/86%	9%/91%

The following table shows the shares awarded or due to the member of the Board of Management, Richard Blickman, for the last five reported financial years:

							Information regarding the reported financial year					
The main conditions of share award plans					Opening balance	During the year			Closing balance			
Name of Director, position	Specification of plan	Performance period	Award date	Vesting date	End of holding period	Shares awarded at the beginning of the year	Shares awarded	Performance adjustment	Shares vested	Shares subject to a performance condition	Shares awarded and unvested at year end	Shares subject to a holding period
R.W. Blickman (CEO)	2014 PSP	Jan 1, 2014 - Dec 31, 2016	April 30, 2014	April 30, 2017	April 30, 2019	-	-	-	-	-	-	-
	2015 PSP	Jan 1, 2015 - Dec 31, 2017	April 30, 2015	April 30, 2018	April 30, 2020	-	-	-	-	-	-	99,209
	2016 PSP	Jan 1, 2016 - Dec 31, 2018	April 29, 2016	April 29, 2019	April 29, 2021	56,448	-	28,224	84,672	-	-	84,672
	2017 PSP	Jan 1, 2017 - Dec 31, 2019	May 1, 2017	April 30, 2020	April 30, 2022	36,074	-	-	-	36,074	36,074	-
	2018 PSP	Jan 1, 2018 - Dec 31, 2020	April 26, 2018	AGM 2021	AGM 2021+ 2 years	18,026	-	-	-	18,026	18,026	-
	2019 PSP	Jan 1, 2019 - Dec 31, 2021	April 26, 2019	AGM 2022	AGM 2022+ 2 years	-	32,887	-	-	32,887	32,887	-
	2019 PSP disc.	Jan 1, 2019 - Dec 31, 2019	Jan. 17, 2019	Jan. 17, 2019	Jan. 17, 2021	-	120,000	-	120,000	-	-	120,000
						Total	110,548	152,887	28,224	204,672	86,987	86,987
												303,881

The following table shows the summary of the short-term incentive and long-term incentive in the reported financial year:

Performance criteria applicable for STI and LTI	Relative weighting	Performance incentive zones			Performance realized and actual award outcome
		Minimum target/threshold levels and corresponding award	Maximum performance levels and corresponding award		
R.W. Blickman (CEO)	STI - Net Income as % of Revenue	70%	Below threshold (0%); € 0	Maximum performance (70%); € 420,000	Vesting at maximum performance (70%); € 420,000
	Personal performance: (i) implementation strategic plan 2017-2021, (ii) succession planning management team, (iii) succession planning key staff, (iv) execution of organizational initiatives in accordance with strategy, (v) focus on new development areas, (vi) R&D efforts and organizational structure Singapore; and (vii) maintenance of corporate social responsibility programs and initiatives.	30%	Below threshold (0%); € 0	Maximum performance (30%); € 180,000	Vesting at maximum performance (30%); € 180,000
R.W. Blickman (CEO)	LTI - Net Income as % of Revenue	50%	Below threshold (0%); 0 shares, at threshold (25%); 9,018 shares - at target (50%) 18,037 shares	Maximum performance (75%); 27,056 shares	Vesting at maximum level 75%; 27,056 shares
	LTI - relative Total Shareholder Return	50%	Below threshold (0%); 0 shares, at threshold (25%); 9,018 shares - at target (50%) 18,037 shares	Maximum performance (75%); 27,056 shares	Vesting at threshold level 25%; 9,018 shares
	LTI - Performance adjustment	20%	Minimum (minus 20% of award) -/- 7,215	At max (+20% of award); 7,215	No performance adjustment

The following table shows the comparables used to evaluate remuneration and company performance over the last five reported financial years:

Year ended December 31,	2019	2018	2017	2016	2015
<i>Director's actual cash remuneration and value of equity remuneration</i>					
R.W. Blickman (CEO) Board of Management	6,068,367	9,096,692	7,911,037	5,857,080	5,236,735
Annual change	-33%	15%	35%	12%	
<i>Company performance</i>					
Net Income as % of Revenue realized	22.8%	25.9%	29.2%	17.4%	14.0%
Total shareholder return - 1 year (base = 100%)	199%	57%	229%	179%	107%
Total shareholder return - 3 year (base = 100%)	260%	234%	437%	442%	366%
<i>Average actual cash remuneration and value of equity remuneration on a full-time equivalent basis of employees</i>					
Annual change	0%	-2%	8%	-3%	

Loans

At the end of 2019, no loans, advances or guarantees were outstanding to the CEO in accordance with the Remuneration Policy.

Remuneration Supervisory Board members

The remuneration of Supervisory Board members is reviewed on an annual basis. Effective April 26, 2018, the General Meeting of Shareholders approved the proposal of the Supervisory Board, upon recommendation of the Committee, to upwardly adjust the remuneration of the Supervisory Board by 10% given that the last adjustment was made in 2014 and in light of the associated increase in the responsibilities, workload and liabilities of Supervisory Board members during such time given Besi's growth. Furthermore, an intercontinental travel allowance was introduced and approved in order to retain and attract international Supervisory Board members based on a review by an independent external expert utilizing a compensation benchmark of AMX companies. The AMX companies were selected based on their comparable size and market capitalization as determined by Euronext Amsterdam.

The current remuneration of Supervisory Board members is as follows:

- Member of the Supervisory Board, including committee membership(s): € 62,700.
- Member of the Supervisory Board and Chair of a committee: € 66,000.
- Chairman of the Supervisory Board: € 79,200.
- Meeting attendance fees, including conference calls: none.
- Intercontinental travel allowance: € 6,000 for physical attendance of at least three meetings.

Currently no formal Remuneration Policy is in place for Supervisory Board members. As required by Dutch law, a Remuneration Policy will be proposed to the General Meeting of Shareholders on April 30, 2020.

The members of the Supervisory Board are not entitled to any performance or equity related compensation and are not entitled to any pension allowance or contribution.

Loans

At the end of 2019, no loans, advances or guarantees were outstanding for each of the members of the Supervisory Board.

The total cash remuneration of the members of the Supervisory Board for the years ended December 31, 2019 and 2018 was as follows:

(in euros)	2019	2018	2017	2016	Year ended December 31, 2015
L.J. Hijmans van den Bergh – Chair	53,900	-	-	-	-
D.J. Dunn – Member and chair Remuneration and Nomination Committee	66,000	64,088	60,000	60,000	60,000
N. Hoek – Member and chair Audit Committee	66,000	44,967	-	-	-
C. Bozotti – Member	62,700	31,350	-	-	-
M. ElNaggar – Member	70,700	60,884	57,000	57,000	57,000
Former members of the Supervisory Board:					
T. de Waard	26,400	76,800	72,000	72,000	72,000
K.W. Loh	26,900	60,884	57,000	57,000	38,000
J.E. Vaandrager	-	20,000	60,000	60,000	60,000
D. Lindenbergh	-	-	-	-	19,000
Total remuneration	372,600	358,973	306,000	306,000	306,000

All cash remuneration is fixed and has no variable component.

Neurosurgery methods

Neuroradiology methods are used in modern neurosurgery diagnosis and treatment. They include computer assisted imaging computed tomography (CT), magnetic resonance imaging (MRI), positron emission tomography (PET), magnetoencephalography (MEG), and stereotactic radiosurgery (SRS).



Report of the Supervisory Board

Report of the Supervisory Board

Besi is pleased to present its 2019 Annual Report prepared by the Board of Management. The Annual Report includes Besi's Financial Statements as prepared by the Board of Management for the financial year ended December 31, 2019. At its meeting on February 19, 2020, the Supervisory Board approved these Financial Statements. Ernst & Young Accountants LLP ("EY"), independent external auditors, duly examined the 2019 Besi Financial Statements and issued an unqualified opinion thereon.

The Supervisory Board recommends that the General Meeting of Shareholders adopts the 2019 Financial Statements as submitted by the Board of Management and approved by the Supervisory Board. The Board of Management has also submitted a proposal stating that a cash dividend of € 1.01 per share will be declared for the year ended December 31, 2019.

Supervision

Besi has a two-tier board structure consisting of a Board of Management and a Supervisory Board that is responsible for supervising and guiding the Board of Management. The Board of Management is currently comprised of one member, Mr Richard Blickman. The Supervisory Board is currently comprised of five members, all of whom are considered independent within the meaning of best practice provision 2.1.8 of the Dutch Corporate Governance Code. In the opinion of the Supervisory Board, the independence requirements referred to in best practice provisions 2.1.7 to 2.1.9 (inclusive) of the Dutch Corporate Governance Code have been fulfilled.

Name	Year elected	Term end
Mr Lodewijk Hijmans van den Bergh, Chairman	2019	2023
Mr Douglas Dunn, Vice Chairman	2019	2021
Ms Mona ElNaggar	2016	2020
Mr Niek Hoek	2018	2022
Mr Carlo Bozotti	2018	2022

At the Annual General Meeting of Shareholders held on April 26, 2019, Mr Lodewijk Hijmans van den Bergh was appointed for a four-year term and Mr Douglas Dunn was reappointed for a two-year term to the Supervisory Board. Mr Hijmans van den Bergh was subsequently appointed as Chairman of the Supervisory Board.

The Supervisory Board considers its current composition to be aligned with its objective for an adequate spread of knowledge and experience amongst its members in relation to the technological and global character of Besi's business as well as an adequate level of knowledge and experience in financial, economical, technological, social and legal aspects of international business and government and public administration. The Supervisory Board believes that it has the requisite

expertise, background, competencies and independence to carry out its duties properly and that all members of the Supervisory Board have sufficient time to spend on their respective duties and responsibilities.

The Supervisory Board currently has a diverse composition in terms of experience, background, competencies, education and nationality and is on all those points in line with the objectives of its diversity policy and Supervisory Board profile. Diversity in general and gender diversity in particular are important factors in the selection process of Supervisory Board candidates. When considering new candidates, the Supervisory Board will retain an active and open attitude with respect to the selection of female candidates. Gender is, however, only one factor of diversity. The qualifications of a particular person and the requirements for the position shall always prevail over all other factors and considerations when filling a vacancy.

During 2019, the Supervisory Board held seven meetings, of which three consisted of conference calls and two were combined meetings of the Supervisory Board and the Audit Committee. Further, the Supervisory Board made a full week trip to visit Besi Leshan, China, Besi Singapore and Besi APac in Shah Alam, Malaysia. During 2019, one member was absent with notice for two Supervisory Board meetings and one member was absent with notice for one Supervisory Board meeting.

Supervisory Board meeting topics

Key topics discussed by the Supervisory Board during 2019 included:

- Besi's annual budget as well as the quarterly revised estimates thereto.
- Quarterly business reviews and a review and discussion of Besi's 2020 annual budget with the Board of Management, certain members of senior management and key Besi staff.
- Besi's technology roadmap and related R&D programs.
- Semi-annual reviews of current strategic planning initiatives and the principal risks associated therewith as well as the implementation of Besi's long-term value creation strategy.
- The engagement of an independent consulting firm to conduct a new strategic planning review for the period 2020-2025 as well as issues and initiatives to consider related thereto.
- Succession planning and related development programs for members of senior management and key Besi staff.
- The ongoing transfer of operations from Europe to Asia and reductions to Besi's cost structure.
- Potential strategic alliances and acquisitions.
- The general risks associated with Besi's operations.
- The execution of a new € 80 million revolving credit facility with a consortium of European banks.

- Corporate social responsibility related topics including the [Corporate Social Responsibility](#) section of the Annual Report.
- The assessment and review provided by the Board of Management of the structure and operation of Besi's internal control and risk management systems as well as any significant changes thereto.
- The ongoing operational alignment of all Besi's processes, procedures, ERP and IT systems.
- The functioning and performance evaluation of the Board of Management, the Supervisory Board, the Audit Committee, the Remuneration and Nomination Committee and the individual members of the Supervisory Board. As part of this evaluation, the Supervisory Board conducted a self-assessment (without the presence of the member of the Board of Management), the results of which concluded that there is a proper mix of background and skills at the Supervisory Board level and that the Supervisory Board works well as a team with open and direct communication.
- The new Remuneration Policy, the remuneration of the Board of Management and the Remuneration Report.

Other meeting topics discussed in 2019 included Besi's capital allocation policy.

Capital allocation policy

The Board of Management is responsible for Besi's optimal capital allocation and has adopted a policy which aims to enhance shareholder returns via dividends and share repurchases.

Due to Besi's earnings and cash flow generation in 2019, the Board of Management will propose a cash dividend to shareholders equal to € 1.01 per share for 2019 for approval at Besi's Annual General Meeting of Shareholders to be held on April 30, 2020.

In addition, on October 24, 2019, Besi announced the extension of its 2018 share repurchase program (the "2018 Program"), under which a maximum of € 75 million of shares can be repurchased for capital reduction purposes and to help offset potential dilution from Besi's Convertible Notes and employee share issuances under Besi's long-term incentive compensation plans, until October 26, 2020. Under the 2018 Program, a total of 3.1 million shares were repurchased from July 26, 2018 (inception) through December 31, 2019 at an average price per share of € 21.91 for a total of € 67.1 million. A total of 1.8 million shares were repurchased in 2019 at an average price per share of € 24.31 for a total of € 44.6 million.

Supervisory Board committees

The Supervisory Board has established two committees, the Audit Committee and the Remuneration and Nomination Committee. These committees operate under terms of reference that have been approved by the Supervisory Board. Members of these committees are appointed from among the Supervisory Board members.

Audit Committee

The Audit Committee consists of all Supervisory Board members. The Chairman is Mr Hoek. The Audit Committee fulfills its responsibilities by carrying out the activities enumerated in its terms of reference including assisting the Supervisory Board in fulfilling its oversight responsibilities by reviewing:

- The effectiveness of Besi's internal control and risk management systems and the internal audit function as described under [Risks and Risk Management](#) and in the chapter [Internal control and risk management](#) under Corporate Governance in this Annual Report.
- The analysis and assessment provided by the Board of Management of the structure and operation of Besi's internal control and risk management systems and any significant changes thereto.
- Besi's capital structure, financing and treasury operations.
- Besi's European and global tax structure and transfer pricing policy including, in particular, developments affecting fiscal Base Erosion and Profit Shifting ("BEPS").
- Auditing, accounting and financial reporting processes and critical accounting policies, new accounting pronouncements and the further development of International Financial Reporting Standards as adopted by the EU ("IFRS"). In 2019, particular attention was paid to the preparation and impact assessment for the implementation of IFRS 16 Leases.
- The quality of work, reporting, expertise and independence of EY, Besi's independent external auditor on a regular basis and, in particular, the appropriateness of the provision of non-audit services. During 2019, no non-audit services took place in the Netherlands. Non-audit services outside the Netherlands were kept to a minimum in order to prevent a potential conflict of interest.
- The terms of EY's engagement, including the scope of the audit, the materiality thresholds to be used and the audit fee.
- The receipt, retention and treatment of complaints and the anonymous submission of confidential concerns by employees involving accounting matters on the basis of Besi's Whistleblower procedure, which can be found on the Company's website: www.besi.com.
- The information and communication technology deployment, including the ongoing implementation of the global ERP system and monitoring enhancements made to the SAP system in 2018 and 2019.
- Besi's cybersecurity profile including risks and measures available to counter the rising threat of cybercrime.

In 2019, the Audit Committee had four meetings, two of which were via conference call, to discuss the items above as well as the scope and results of EY's audit of the Financial Statements. EY attended two meetings of the Audit Committee in 2019. The Audit Committee separately met with EY once without the presence of the Board of Management. In 2019, one member was absent with notice for two Audit Committee meetings and one member was absent with notice for one Audit Committee meeting.



Visit Supervisory Board to Besi Leshan, China.

The Audit Committee terms of reference are posted on Besi's website: www.besi.com.

Remuneration and Nomination Committee

The Remuneration and Nomination Committee consists of all Supervisory Board members. The Chairman of the Remuneration and Nomination Committee is Mr Dunn.

The Remuneration and Nomination Committee has the following responsibilities with respect to remuneration for which it fulfills its obligations by:

- Making a proposal to the Supervisory Board for the Remuneration Policies to be pursued.
- Annually reviewing and proposing the corporate goals and objectives related to the compensation of the Board of Management.
- Making a proposal for the remuneration of the member of the Board of Management within the scope of the Remuneration Policy for the Board of Management adopted by the General Meeting of Shareholders for adoption by the Supervisory Board. Such proposal shall, in any event, deal with:
 - The remuneration structure.
 - The amount of the fixed and variable remuneration components.
 - The performance criteria used.
 - The scenario analyses carried out.
 - Company-wide pay ratios.
- Overseeing Besi's equity incentive plans.
- Preparing the Remuneration Report.

The Remuneration and Nomination Committee has the following responsibilities with respect to the selection and nomination of Supervisory Board members and members of the Board of Management for which it fulfills its obligations by:

- Determining selection criteria and appointment procedures for Supervisory Board members and members of the Board of Management.
- Periodically assessing the size and composition of the Supervisory Board and the Board of Management and making proposals for the composition profile of the Supervisory Board.

- Periodically assessing the functioning of individual Supervisory Board members and members of the Board of Management and providing reports to the Supervisory Board.
- Creating and updating succession plans for Supervisory Board members and the members of the Board of Management.
- Making proposals for appointments and reappointments.
- Supervising the policy of the Board of Management on selection criteria and appointment procedures for senior management.

The Remuneration and Nomination Committee met once in 2019 to discuss the topics above at which no members were absent. The member of the Board of Management was not present during the meeting.

The Remuneration and Nomination Committee's terms of reference are posted on the Company's website: www.besi.com.

Remuneration Report

The Remuneration Report is included in a separate section in this Annual Report.

Corporate governance

The Supervisory Board acknowledges the importance of good corporate governance, the most important elements of which are transparency, independence and accountability. The Supervisory Board continuously reviews important corporate governance developments. Reference is made to the Corporate Governance section in this Annual Report. Deviations from the Dutch Corporate Governance Code are explained in that section.

The Supervisory Board would like to express its thanks and appreciation to all involved for their hard work and dedication to the Company in 2019. In particular, we would like to thank management and employees for their actions taken this year to help Besi achieve a solid performance in a challenging industry environment.

The Supervisory Board
Lodewijk J. Hijmans van den Bergh, Chairman

February 19, 2020

Board of Management and Supervisory Board Members

Board of Management

Richard W. Blickman (male, 1954)

Dutch nationality
Appointed since 1995

Chief Executive Officer, Chairman of the Board of Management

Additional functions

Member of the Netherlands Academy of Technology and Innovation.

Supervisory Board

Lodewijk J. Hijnmans van den Bergh (male, 1963)

Chairman
Dutch nationality
Member since 2019
Current term 2019 - 2023

Partner at law firm De Brauw Blackstone Westbroek N.V.

Additional functions

Member of the Supervisory Board of HAL Holding N.V. (Vice Chairman), Chairman of the Boards of Utrechts Universiteitsfonds, Fortino Capital Partners N.V. and the Supervisory Council of Stichting NKI-AVL (Stichting Het Nederlands Kanker Instituut-Antoni van Leeuwenhoek Ziekenhuis) and member of the Supervisory Council of Luchtverkeersleiding Nederland (Netherlands Air Traffic Control).

Douglas J. Dunn (male, 1944)

Vice Chairman
British nationality
Member since 2009
Current term 2019 - 2021

Additional functions

Non-executive director of the board of Global Foundries

Mona ElNaggar (female, 1967)

British and American nationality
Member since 2012
Current term 2016 - 2020

Partner at Valo Ventures

Niek Hoek (male, 1956)

Dutch nationality
Member since 2018
Current term 2018 - 2022

Managing director of Brandaris Capital Holding B.V.

Additional functions

Chairman of the Supervisory Board of Arcadis N.V., Chairman of the Supervisory Board of Van Oord N.V., member of the Supervisory Board of Anthony Veder Group N.V. (Netherlands Antilles), Chairman of the Board of Stichting Preferente Aandelen Nedap and Executive Director of Dutch Star Companies ONE N.V.

Carlo Bozotti (male, 1952)

Italian and Swiss nationality
Member since 2018
Current term 2018 - 2022

Industrial Partner of FSI, private equity firm

Additional functions

Non-executive director of the board of Avnet Inc. and Lumsom S.p.A.

The Supervisory Board has formed the following committees:

Audit Committee

Members: Niek Hoek (Chairman), Carlo Bozotti, Douglas Dunn, Mona ElNaggar and Lodewijk Hijnmans van den Bergh.

Remuneration and Nomination Committee

Members: Douglas Dunn (Chairman), Carlo Bozotti, Mona ElNaggar, Lodewijk Hijnmans van den Bergh and Niek Hoek.



Mels Crouwel (1953 - present)

As an architect Crouwel wants to contribute to a better world by designing better buildings that make people happy and enhance their lives.



Financial Statements 2019

Consolidated Statement of Financial Position

(euro in thousands)	Note	December 31, 2019	December 31, 2018
<i>Assets</i>			
Cash and cash equivalents	3	278,398	295,539
Deposits	4	130,000	130,000
Trade receivables	5	81,420	106,347
Inventories	6	46,578	60,237
Income tax receivable		1,114	159
Other receivables	7	9,132	8,015
Prepayments	8	3,608	3,322
Total current assets		550,250	603,619
Property, plant and equipment	9	30,383	28,551
Right of use assets	19	11,132	-
Goodwill	10	45,289	45,099
Other intangible assets	11	42,593	38,334
Deferred tax assets	29	14,978	4,769
Deposits	4	-	50,000
Other non-current assets	12	2,255	2,317
Total non-current assets		146,630	169,070
Total assets		696,880	772,689
<i>Liabilities and equity</i>			
Notes payable to banks	13	476	2,812
Current portion of long-term debt	18	515	1,502
Trade payables	14	30,278	33,158
Income tax payable		7,612	15,704
Provisions	15	2,868	5,201
Other payables	16	28,282	26,375
Other current liabilities	17	16,597	16,174
Total current liabilities		86,628	100,926
Long-term debt	18	277,067	271,824
Lease liabilities	19	7,859	-
Deferred tax liabilities	29	8,858	10,244
Provisions	20, 25	16,890	15,013
Other non-current liabilities	17	1,070	2,494
Total non-current liabilities		311,744	299,575
Share capital	21	800	800
Share premium		159,672	197,280
Retained earnings		77,417	125,859
Other reserves	21	60,619	48,249
Equity attributable to owners of the Company		298,508	372,188
Total liabilities and equity		696,880	772,689

Consolidated Statement of Comprehensive Income

(euro in thousands, except share and per share data)	Note	Year ended December 31, 2019	2018
Revenue	23, 24	356,195	525,256
Cost of sales		157,389	226,793
Gross profit		198,806	298,463
Selling, general and administrative expenses		71,519	90,284
Research and development expenses		35,366	35,451
Total operating expenses		106,885	125,735
Operating income		91,921	172,728
Financial income	28	200	23
Financial expense	28	(13,984)	(17,807)
Financial income (expense), net		(13,784)	(17,784)
Income before income tax		78,137	154,944
Income tax expense (benefit)	29	(3,183)	18,688
Net income		81,320	136,256
<i>Other comprehensive income</i>			
Actuarial gain (loss), net of income tax		(1,315)	425
Items that will not be reclassified to profit and loss		(1,315)	425
Currency translation differences		5,878	7,058
Unrealized hedging results, net of income tax		464	(835)
Items that may be reclassified subsequently to profit or loss		6,342	6,223
Other comprehensive income (loss), net of income tax		5,027	6,648
Total comprehensive income		86,347	142,904
Total net income per share attributable to the equity holders of the parent company ¹			
Basic		1.12	1.83
Diluted ²		1.06	1.68
Weighted average number of shares used to compute income per share ¹			
Basic	30	72,796,679	74,440,864
Diluted	30	83,149,840	84,754,069

¹ The share and per share data have been retroactively adjusted for the two for one stock split effected in May 2018.

² The calculation of the diluted income per share for the year 2019 and 2018 assumes the exercise of equity-settled share-based payments. The calculation also assumes the conversion of the Company's Convertible Notes due 2023 and 2024, respectively, as such conversion would have a dilutive effect.

Consolidated Statement of Changes in Equity

(euro in thousands, except for share data)	Number of ordinary shares out- standing ¹	Share capital	Share premium	Retained earnings	Other reserves (Note 21)	Total attribut- able to equity holders of the parent
Balance at January 1, 2019	80,067,842	800	197,280	125,859	48,249	372,188
Currency translation differences	-	-	-	-	5,878	5,878
Actuarial gain (loss)	-	-	-	-	(1,315)	(1,315)
Unrealized hedging results	-	-	-	-	464	464
Other comprehensive income for the year	-	-	-	-	5,027	5,027
Net income	-	-	-	81,320	-	81,320
Total comprehensive income for the year	-	-	-	81,320	5,027	86,347
Dividend paid to owners of the Company	-	-	-	(122,419)	-	(122,419)
Legal reserve	-	-	-	(7,343)	7,343	-
Equity-settled share-based payments	-	-	7,289	-	-	7,289
Purchase of treasury shares	-	-	(44,678)	-	-	(44,678)
Deferred tax convertible	-	-	(219)	-	-	(219)
Balance at December 31, 2019	80,067,842	800	159,672	77,417	60,619	298,508
Balance at January 1, 2018	40,033,921	400	222,322	173,380	38,030	434,132
Effect of adoption of new accounting standards (IFRS15)	-	-	-	(6,188)	-	(6,188)
Balance at January 1, 2018 adjusted	40,033,921	400	222,322	167,192	38,030	427,944
Currency translation differences	-	-	-	-	7,058	7,058
Actuarial gain (loss)	-	-	-	-	425	425
Unrealized hedging results	-	-	-	-	(835)	(835)
Other comprehensive income for the year	-	-	-	-	6,648	6,648
Net income	-	-	-	136,256	-	136,256
Total comprehensive income for the year	-	-	-	136,256	6,648	142,904
Dividend paid to owners of the Company	-	-	-	(174,018)	-	(174,018)
Legal reserve	-	-	-	(3,571)	3,571	-
Equity-settled share-based payments	-	-	9,991	-	-	9,991
Purchase of treasury shares	-	-	(35,467)	-	-	(35,467)
Deferred tax convertible	-	-	834	-	-	834
Stock split ²	40,033,921	400	(400)	-	-	-
Balance at December 31, 2018	80,067,842	800	197,280	125,859	48,249	372,188

¹ The outstanding number of ordinary shares includes 7,855,420 and 6,498,231 treasury shares at December 31, 2019 and December 31, 2018, respectively.

² At the AGM of April 26, 2018, the General Meeting of Shareholders approved a stock split of the Company's shares whereby each issued ordinary share was split into two shares.

Consolidated Statement of Cash Flows

(euro in thousands)	Note	Year ended December 31,	
		2019	2018
<i>Cash flows from operating activities</i>			
Income before income tax		78,137	154,944
<i>Adjustments to reconcile income before income tax to net cash flows</i>			
Depreciation, amortization and impairment	9, 11, 19	19,825	15,008
Share-based payment expense	25	7,289	9,991
Financial expense, net	28	13,784	17,784
Curtailment gain	25	(421)	(832)
<i>Effects on changes in assets and liabilities</i>			
Decrease (increase) in trade receivables		26,437	49,938
Decrease (increase) in inventories		7,699	9,295
Increase (decrease) in trade payables		(3,227)	(30,687)
Changes in provisions		(1,561)	(2,963)
Changes in other working capital		(6,733)	(14,342)
		141,229	208,136
Interest received		185	23
Interest paid		(4,947)	(4,615)
Income tax paid		(16,359)	(19,432)
Net cash provided by operating activities		120,108	184,112
<i>Cash flows from investing activities</i>			
Capital expenditures	9, 11	(2,511)	(6,573)
Proceeds from sale of property		159	-
Capitalized development expenditures	11	(13,226)	(11,449)
Investment in deposits	4	-	(180,000)
Repayment of deposits	4	50,000	-
Net cash provided by (used in) investing activities		34,422	(198,022)
<i>Cash flows from financing activities</i>			
Proceeds from (payments of) bank lines of credit	18	(2,336)	1,070
Payments on debts	18	(419)	(9,771)
Proceeds from (payments on) lease liabilities	19	(3,525)	-
Purchase treasury shares		(44,678)	(35,467)
Dividend paid to shareholders		(122,419)	(174,018)
Purchase minority interest		-	(321)
Net cash provided by (used in) financing activities		(173,377)	(218,507)
Net change in cash and cash equivalents		(18,847)	(232,417)
Effect of changes in exchange rates on cash and cash equivalents		1,706	150
Cash and cash equivalents at beginning of the period	3	295,539	527,806
Cash and cash equivalents at end of the period	3	278,398	295,539

Notes to the Consolidated Financial Statements

1. Basis of presentation

General

BE Semiconductor Industries N.V. ("Besi" or "the Company") was incorporated in the Netherlands in May 1995 as the holding company for a worldwide business engaged in the development, production, marketing and sales of back-end equipment for the semiconductor industry. BE Semiconductor Industries N.V.'s principal operations are in the Netherlands, Austria, Switzerland, Malaysia, Singapore and China. BE Semiconductor Industries N.V.'s principal executive office is located at Ratio 6, 6921 RW Duiven, the Netherlands. Statutory seat of the Company is Amsterdam; number at Chamber of Commerce is 09092395.

The Consolidated Financial Statements of BE Semiconductor Industries N.V. for the year ended December 31, 2019, were authorized for issue in accordance with a resolution of the directors on February 19, 2020. The Consolidated Financial Statements of the Company as at December 31, 2019 will be presented to the Annual General Meeting of Shareholders for their adoption on April 30, 2020.

Statement of compliance

The Company's Consolidated Financial Statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as adopted by the European Union. They also comply with the financial reporting requirements included in section 9 of Book 2 of the Netherlands Civil Code, as far as applicable.

This is the first set of the Company's annual financial statements in which IFRS 16 Leases has been applied. Changes to significant accounting policies are described in [Note 2](#).

2. Summary of significant accounting principles

Presentation

The accompanying Consolidated Financial Statements include the accounts of BE Semiconductor Industries N.V. and its consolidated subsidiaries (collectively, "the Company"). The financial statements are presented in thousands of euro, rounded to the nearest thousand, unless stated otherwise. The accounting principles which the Company uses to prepare the Consolidated Financial Statements are based on historical cost, unless stated otherwise. Exceptions to the historical cost basis include derivative financial instruments and share-based compensation which are based on fair value. In addition, for pensions and other post-retirement benefits, actuarial present value calculations are used.

At the AGM of April 26, 2018, the General Meeting of Shareholders approved a stock split of the Company's shares, effective May 4, 2018 whereby each issued ordinary share was split into two shares. Unless otherwise noted, impacted amounts and share and per share information included in the financial statements and notes thereto have been retroactively adjusted for the stock split as if such stock split occurred on the first day of the first period presented.

Principles of consolidation

The Consolidated Financial Statements comprise the financial statements of BE Semiconductor Industries N.V. and its subsidiaries as at December 31, 2019. Subsidiaries are entities controlled by the Company. The Company controls an entity when it is exposed to, or has right to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the Consolidated Financial Statements from the date on which control commences until the date on which control ceases. The financial statements of the subsidiaries are prepared for the same reporting period as the parent company, using consistent accounting policies. All intra-group balances, income and expenses and unrealized gains and losses resulting from intra-group transactions are eliminated in full. Accounting policies, as set out below, have been applied consistently for all periods presented in these Consolidated Financial Statements and by all subsidiaries.

As of December 31, 2019 and 2018, the following subsidiaries are included in the accompanying Consolidated Financial Statements:

Name	Location and country of incorporation	Percentage of ownership
BE Semiconductor Industries USA, Inc.	Chandler, Arizona, USA	100%
BE Semiconductor Industries Holding GmbH	Radfeld, Austria	100%
Besi USA, Inc.	Chandler, Arizona, USA	100%
Besi Singapore Pte. Ltd.	Singapore, Singapore	100%
Besi Korea Ltd.	Seoul, South Korea	100%
Besi Asia Pacific Holding B.V.	Duiven, the Netherlands	100%
Besi Philippines, Inc.	Muntinlupa City, Philippines	100%
Besi Netherlands B.V.	Duiven, the Netherlands	100%
Fico International B.V.	Duiven, the Netherlands	100%
Besi Leshan Co., Ltd.	Leshan, China	100%
Besi APac Sdn. Bhd.	Shah Alam, Malaysia	100% ¹
ASM Fico (F.E.) Sdn. Bhd.	Shah Alam, Malaysia	99.9% ²
Fico Hong Kong Ltd.	Hong Kong, China	100%
Meco International B.V.	Drunen, the Netherlands	100%
Meco Equipment Engineers B.V.	Drunen, the Netherlands	100%
Besi North America, Inc.	Chandler, Arizona, USA	100%
Datacon Eurotec GmbH i.L.	Berlin, Germany	100%
Datacon Beteiligungs GmbH	Radfeld, Austria	100%
Besi Austria GmbH	Radfeld, Austria	100%
Esec International B.V.	Duiven, the Netherlands	100%
Besi Switzerland AG	Steinhausen, Switzerland	100%
Esec China Financial Ltd.	Hong Kong, China	100%
Besi (Shanghai) Trading Co., Ltd.	Shanghai, China	100%
Besi (Thai) S&S Ltd.	Bangkok, Thailand	100% ^{1,3}
Besi Spares and Tooling AG	Steinhausen, Switzerland	100%

¹ In order to comply with local corporate law, a non-controlling shareholding (less than 0.1%) is held by Company Management.

² In order to comply with local corporate law, a non-controlling shareholding is held by Company Management.

³ Besi Thai (S&S) Ltd. has been incorporated as of May 21, 2019.

All intercompany profits, transactions and balances have been eliminated in the consolidation.

Foreign currency translation

The Consolidated Financial Statements are presented in euros, which is the parent company's functional and presentation currency. Each entity in the group determines its own functional currency and items included in the financial statements of each entity are measured using that functional currency. The principal exchange rates against the euro used in preparing the Consolidated Statement of Financial Position and the Consolidated Statement of Comprehensive Income are:

	Consolidated Statement of Financial Position		Consolidated Statement of Comprehensive Income	
	2019	2018	2019	2018
US dollar	1.12	1.14	1.12	1.18
Swiss franc	1.09	1.13	1.11	1.16
Malaysian ringgit	4.58	4.73	4.64	4.76
Chinese yuan	7.82	7.87	7.73	7.80

Transactions in foreign currencies are initially recorded at the functional currency rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are translated at the functional currency rate of exchange ruling at the balance sheet date. All differences are accounted for into the Consolidated Statement of Comprehensive Income. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates as at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined. Any goodwill arising on the acquisition of a foreign operation and any fair value adjustments to the carrying amounts of assets and liabilities arising on the acquisition are treated as assets and liabilities of the foreign operation and translated at the closing rate. The assets and liabilities of foreign operations are translated into euros at the rate of exchange ruling at the balance sheet date and their Statement of Comprehensive Income is translated at the weighted average exchange rates for the year. The exchange differences arising on the translation of assets and liabilities are recognized in other comprehensive income ("OCI"), and presented as legal currency translation adjustment in equity. On disposal of a foreign entity, the deferred cumulative amount recognized in equity relating to that particular foreign operation is recognized in the Consolidated Statement of Comprehensive Income.

Changes in accounting policies

Except for the changes below, the Company has consistently applied the accounting policies to all periods presented in these Consolidated Financial Statements.

The Company has applied IFRS 16 as from January 1, 2019. Due to the transition method chosen by the Company in applying this standard, comparative information throughout these financial statements has not been restated to reflect the requirements of the new standards.

A number of other new standards and amendments are also effective as from January 1, 2019 but they do not have a material effect on the Company's financial statements. These new standards and amendments are as follows:

- IFRIC Interpretation 23 Uncertainty over Income Tax Treatments
- Amendments to IAS 19 Plan Amendment, Curtailment or Settlement
- Annual IFRS Improvement Process (Amendments to IFRS 3, 11 and IAS 12, 23)

IFRS 16 - Leases

The Company has applied IFRS 16 using the modified retrospective approach. Accordingly, the comparative information presented for 2018 has not been restated – i.e. it is presented, as previously reported, under IAS 17 and related interpretations. The Company also elected to use the recognition exemptions for lease contracts that, at commencement date had a lease term of 12 months or less and do not contain a purchase option ("short-term leases") and lease contract for which the underlying asset is of low value ("low value assets"). As a lessee, the Company leases assets including land and building, equipment and company cars.

At transition, the Company has applied the practical expedient to grandfather the definition of a lease on transition. The lease liabilities were measured at the present value of the remaining lease payments, discounted at the Company's incremental borrowing rate as at January 1, 2019. Right of use assets are measured at an amount equal to the lease liability, adjusted by the amount of any prepaid payments. The Company used the following practical expedients when applying IFRS 16 to leases previously classified as operating leases under IAS 17:

- Applied a single discount rate to a portfolio of leases with similar characteristics and country.
- Excluded initial direct costs from measuring the right of use assets at the date of initial application.
- Used hindsight when determining the lease term if the contract contains options to extend.

On transition to IFRS 16, the Company recognized right of use assets and lease liabilities. The impact on transition is summarized below:

(euro in thousands)	Impact of adopting IFRS 16 on opening balance
Assets	
Right of use assets	14,458
Property, plant & equipment	(75)
Total assets	14,383
Liabilities	
Lease liabilities - non-current	11,113
Lease liabilities - current (included in other payables)	3,345
Long-term debt and financial leases	(75)
Total liabilities	14,383

The transition to IFRS 16 has no impact on the retained earnings at January 1, 2019.

The lease liabilities as at January 1, 2019 under IFRS 16 can be reconciled to the operating lease commitments as of December 31, 2018, as follows:

(euro in thousands)	Total
Operating lease commitments as at December 31, 2018	12,478
Finance lease liabilities as recognized as at December 31, 2018	75
Recognition exemption for short-term leases and leases of low value assets	(371)
Service components excluded from lease liabilities under IFRS 16	(2,075)
Extension options reasonable to be exercised	4,454
Other	93
Lease liabilities, undiscounted	14,654
Discounting at weighted average rate of 0.97% (range from 0.00% to 3.73%)	(196)
Lease liabilities at January 1, 2019	14,458

Cash and cash equivalents

Cash and cash equivalents consist of highly liquid investments with an original maturity date at the date of acquisition of three months or less. Cash and cash equivalents are measured at amortized cost. Money market funds are also included as cash equivalents. The money market funds are readily convertible to a known amount of cash and are subject to an insignificant risk of changes in value.

Deposits

Deposits consist of cash and cash equivalents which have been placed on deposit with a maturity between 3 and 24 months.

Trade receivables and other receivables

Trade and other receivables are initially measured at transaction price and subsequently at amortized cost less any impairment loss. The Company applies the expected credit loss model to determine any trade receivables impairment losses. The trade receivables do not contain a significant financing component (in accordance with IFRS 15) and therefore the loss allowance is always measured as equal to lifetime expected credit losses. The Company uses a provisioning matrix to calculate the level of the provision and measures lifetime expected credit losses at percentages of amounts outstanding for current trade receivables, 30 days past due, 60 days past due, 90 days past due and over 120 days past due. The total accounts receivable impairment consists of two elements: provision if and when required based on Company estimates and additional provision as determined by the use of the provision matrix. Impairment losses and any subsequent reversals are recognized in the Consolidated Statement of Comprehensive Income.

Inventories

Inventories are stated at the lower of cost (using moving weighted average costs) or net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and costs to make the sales. Cost includes net prices paid for materials purchased and all expenses to bring the inventory to its current location, charges for freight and custom duties, production labor costs and factory overhead.

Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation and impairment charges. Costs include expenditures that are directly attributable to the acquisition of the asset, including financing expenses of capital investment projects under construction.

Depreciation is calculated using the straight-line method, based on the following estimated useful lives:

Category	Estimated useful life
Land	Not depreciated
Buildings	15-30 years
Leasehold improvements ¹	10-15 years
Machinery and equipment	2-10 years
Office furniture and equipment	3-10 years

¹ Leasehold improvements are depreciated over the shorter of the lease term or economic life of the asset.

Where parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items of property, plant and equipment. The residual value, if not insignificant, is reassessed annually.

The Company recognizes in the carrying amount of an item of property, plant and equipment the cost of replacing part of such an item when that cost is incurred if it is probable that the future economic benefit relating to that subsequent expenditure will flow to the Company and the cost can be measured reliably. Other costs are recognized in the Consolidated Statement of Comprehensive Income as expense, as incurred.

Right of use assets

Accounting principles applicable from January 1, 2019

Definition of a lease

At inception of a contract, the Company assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, the Company uses the definition of a lease in IFRS 16. This policy is applied to contracts entered into, on or after January 1, 2019.

At commencement or on modification of a contract that contains a lease component, the Company allocates the consideration in the contract to each lease component on the basis of its relative stand-alone price.

Right of use assets

The Company recognizes right of use assets at the commencement date of the lease (i.e. the date the underlying asset is available for use). Right of use assets are measured at cost, less any accumulated depreciation and impairment losses, and adjusted for any remeasurement of lease liabilities. The cost of right of use assets includes the amount of lease liabilities recognized, initial direct costs incurred, and lease payments made at or before the commencement date less any lease incentives received. The right of use asset are depreciated on a straight-line basis over the shorter of the lease term and the estimated useful lives of the assets (see accounting policy for property, plant and equipment).

In addition, the right of use asset is periodically assessed for impairment losses, and adjusted for certain remeasurements of the lease liability.

Lease liabilities

Lease liabilities are initially measured at the present value of the lease payments that are not paid at the commencement date discounted using the Company's incremental borrowing rate.

Lease payments included in the measurement of the lease liabilities comprise the following:

- Fixed payments, including in-substance fixed payments.
- Lease payments in an optional renewal period if the Company is reasonably certain to exercise an extension option.

In calculating the present value of lease payments, the Company uses the incremental borrowing rate at the lease commencement date. After the commencement date, the amount of lease liabilities is increased to reflect the accretion of interest and reduced for the lease payments made. In addition, the carrying amount of lease liabilities is remeasured if there is a modification, a change in the lease term, a change in the in-substance fixed lease payments. When the lease liability is remeasured in this way, a corresponding adjustment is made to the carrying amount of the right of use asset, or is recorded in profit or loss if the carrying amount of the right of use asset has been reduced to zero.

Short-term leases and leases of low-value assets

The Company applies the short-term lease recognition exemption to its short-term leases of machinery and equipment (i.e. those leases that have a lease term of 12 months or less from the commencement date and do not contain a purchase option). It also applies the lease of low-value assets recognition exemption to leases of office equipment that are considered of low value (i.e. below € 5,000). Lease payments on short-term leases and leases of low-value assets are recognized as expense on a straight-line basis over the lease term.

Significant judgement in determining the lease term of contracts with renewal options

The Company determines the lease term as the non-cancellable term of the lease, together with any periods covered by an option to extend the lease if it is reasonably certain to be exercised. The Company has the option, under some of its leases to lease the assets for additional terms of one to five years. The Company applies judgement in evaluating whether it is reasonably certain to exercise the option to renew. It considers all relevant factors that create an economic incentive for it to exercise the renewal. After the commencement date, the Company reassesses the lease term if there is a significant event or change in circumstances that is within its control and affects its ability to exercise (or not to exercise) the option to renew.

Accounting principles applicable before January 1, 2019

Assets acquired under financial leases are included in the Statement of Financial Position at the present value of the minimum future lease payments and are depreciated over the shorter of the lease term or their estimated economic lives. A corresponding liability is recorded at the inception of the financial lease and the interest element of financial leases is charged to interest expense. Operating lease payments are recognized as an expense in the Consolidated Statement of Comprehensive Income on a straight-line basis over the lease term.

Intangible assets

Intangible assets are valued at cost less accumulated amortization and impairment charges. All intangible assets are tested for impairment whenever there is an indication that the intangible asset may be impaired. Other intangible assets, such as goodwill and intangible assets not yet in use, are not amortized, but tested for impairment annually. In cases where the carrying value of the intangibles exceeds the recoverable amount, an impairment charge is recognized in the Consolidated Statement of Comprehensive Income.

Business combinations and goodwill

Business combinations are accounted for using the acquisition method as at the acquisition date, which is the date on which control is transferred to the Company. Control is the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities. In assessing control, the Company takes into consideration potential voting rights that currently are exercisable.

The Company measures goodwill at the acquisition date as:

- The fair value of the consideration transferred; plus
- The recognized amount of any non-controlling interests in the acquiree; plus
- If the business combination is achieved in stages, the fair value of the existing equity interest in the acquiree; less
- The net recognized amount (generally fair value) of the identifiable assets acquired and liabilities assumed.

Costs related to the acquisition, other than those associated with the issue of debt or equity securities, that the Company incurs in connection with a business combination are expensed as incurred.

Any contingent consideration payable is recognized at fair value at the acquisition date. If the contingent consideration is classified as equity, it is not measured and settlement is accounted for within equity. Otherwise, subsequent changes to fair value of the contingent consideration are recognized in profit or loss.

Capitalized development expenses

Expenditures for research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, are recognized in the Consolidated Statement of Comprehensive Income as an expense, as incurred. Expenditure for development activities, whereby research findings are applied to a plan or design for the production of new or substantially improved products and processes, is capitalized if the product or process is technically and commercially feasible, the Company has the intention and sufficient resources to complete development, the Company has the ability to use or sell the development and the ability to reliably measure the expenditure attributable to the development during its process.

The expenditure capitalized includes the cost of materials, direct labor and other directly attributable costs. Other development expenditures are recognized in the Consolidated Statement of Comprehensive Income as an expense, as incurred. Government grants to compensate for the cost of an asset are deducted from the cost of the related asset. Capitalized development expenditures are stated at cost less accumulated amortization and impairment losses.

Other identifiable intangible assets

Other intangible assets that are acquired by the Company are stated at cost (i.e. fair value of the consideration given) at the date of acquisition less accumulated amortization and impairment losses.

Amortization

Amortization is charged to the Consolidated Statement of Comprehensive Income on a straight-line basis over the estimated useful lives of intangible assets unless such lives are indefinite. Amortization of capitalized development expenses and other intangible assets commence from the date they are available for use.

The estimated useful lives are as follows:

Category	Estimated useful life
Software	3-5 years
Development expenses	3-7 years

The Company does not have any other intangible assets with indefinite lives.

The amortization is recognized in the Consolidated Statement of Comprehensive Income in cost of sales, selling, general and administrative expenses and research and development expenses.

Impairment of non-financial assets

The carrying amounts of the Company's non-financial assets are reviewed at each year's end balance sheet date to determine whether there is any indication of impairment. If such indication exists, the asset's recoverable amount is estimated. For goodwill and intangible assets that are not yet available for use, the recoverable amount is estimated at each balance sheet date.

An impairment loss is recognized whenever the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. Impairment losses are recognized in the Consolidated Statement of Comprehensive Income. Impairment losses recognized in respect of cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to cash-generating units (group of units) and then to reduce the carrying amount of the other assets in the unit (group of units) on a pro-rata basis.

Calculation of recoverable amount

The recoverable amount of other assets is the higher of their fair value less costs of disposal and value-in-use. In assessing value-in-use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Reversals of impairment

An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. Impairment losses in respect of goodwill are not reversed. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

Other non-current assets

Funds with insurance companies for pension liability are stated at fair value.

Other current liabilities

Other current liabilities consist of notes payable to banks, trade payables and other payables and are initially measured at fair value and subsequently at amortized cost, using the effective interest method.

Financial assets and liabilities

Financial assets recognition and derecognition

With the exception of trade receivables that do not contain a significant financing component the Company initially measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs.

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is derecognized when:

- The rights to receive cash flows from the asset have expired.
- The Company retains the right to receive cash flows from the asset, but has assumed an obligation to pay them in full without material delay to a third party under a "pass-through" arrangement.
- The Company has transferred its rights to receive cash flows from the asset and either (i) has transferred substantially all the risks and rewards of the asset, or (ii) has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.
- When the Company has transferred its rights to receive cash flows from an asset and has neither transferred nor retained substantially all the risks and rewards of the asset nor transferred control of the asset, the asset is recognized to the extent of the Company's continuing involvement in the asset. Continuing involvement that takes the form of a guarantee over the transferred asset is measured at the lower of the original carrying amount of the asset and the maximum amount of consideration that the Company could be required to repay.

Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the marketplace are recognized on the trade date, i.e. the date that the Company commits to purchase or sell the asset.

Financial assets

On initial recognition, a financial asset is classified as measured at: amortized cost; Fair Value through Other Comprehensive Income ("FVOCI") – debt investment; FVOCI – equity investment; or Fair Value through Profit and Loss ("FVTPL"). Financial assets are not reclassified subsequent to their initial recognition unless the Company changes its business model for managing financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

A financial asset is measured at amortized cost if it meets both the following conditions and is not designated as at FVTPL:

- It is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- Its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- It is held within business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- Its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Company may irrevocably elect to present subsequent changes in the investment's fair value in other comprehensive income. This election is made on an investment-by-investment basis. All financial assets not classified as measured at amortized cost or FVOCI as described above are measured at FVTPL. This includes all derivative financial assets. On initial recognition, the Company may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortized cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

Business model assessment

The Company makes an assessment of the objective of the business model in which a financial asset is held at portfolio level because this best reflects the way the business is managed and information is provided to management. The information considered includes the stated policies and objectives for the portfolio and the operation of those policies in practice, how the performance of the portfolio is evaluated and reported to the Company's management, the risks that affect the performance of the business model and how those risks are managed, how managers of the business are compensated and the frequency, volume and timing of sales of financial assets in prior periods, the reasons for such sales and expectations about future sales activity.

Financial assets that are held for trading or are managed and whose performance is evaluated on a fair value basis are measured at FVTPL.

Assessment whether contractual cash flows are solely payments of principal and interest

For the purposes of this assessment, "principal" is defined as the fair value of the financial asset on initial recognition. "Interest" is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs (e.g. liquidity risk and administrative costs), as well as a profit margin. In assessing whether the contractual cash flows are solely payments of principal and interest, the Company considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition.

Subsequent measurement and gains and losses

Financial assets at FVTPL: These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognized in profit or loss. Financial assets at amortized cost: These assets are subsequently measured at amortized cost using the effective interest method. The amortized cost is reduced by impairment losses. Interest income, foreign exchange gains and losses and impairment are recognized in profit or loss. Any gain or loss on derecognition is recognized in profit or loss. Debt investments at FVOCI: These assets are subsequently measured at fair value. Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment are recognized in profit or loss. Other net gains and losses are recognized in OCI. On derecognition, gains and losses accumulated in OCI are reclassified to profit or loss. Equity investments at FVOCI: These assets are subsequently measured at fair value. Dividends are recognized as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognized in OCI and are never reclassified to profit or loss.

Impairment of financial assets

Impairment

The Company recognizes loss allowances for expected credit losses ("ECLs") on the following:

- Financial assets measured at amortized cost;
- Debt investments measured at FVOCI; and
- Contract assets.

The Company measures loss allowances at an amount equal to lifetime ECLs, except for debt securities that are determined to have low credit risk at the reporting date and other debt securities and bank balances for which credit risk has not increased significantly since initial recognition, which are measured at 12-month ECLs. 12-month ECLs are the portion of ECL that result from default events on a financial instrument that are possible within the 12 months after the reporting date. Financial instruments for which a 12-month ECL is recognized are referred to as "Stage 1 financial instruments". Lifetime ECLs are the ECLs that result from all possible default events over the expected life of the financial instrument. Financial instruments for which a lifetime ECL is recognized but which are not credit-impaired are referred to as "Stage 2 financial instruments".

Loss allowances for trade receivables and contract assets are always measured at equal to lifetime expected credit losses. When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Company considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Company's historical experience and informed credit assessment and including forward-looking information.

Measurement of ECLs

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Company expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

Credit-impaired financial assets

At each reporting date, the Company assesses whether financial assets carried at amortized cost and debt securities at FVOCI are credit-impaired. A financial asset is "credit-impaired" when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

Presentation of allowance for ECL in the Statement of Financial Position

Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets. For debt securities at FVOCI, the loss allowance is charged to profit or loss and is recognized in OCI.

Write-off

The gross carrying amount of a financial asset is written off when the Company has no reasonable expectations of recovering a financial asset in its entirety or a portion thereof. The Company individually makes an assessment with respect to the timing and amount of write-off based on whether there is a reasonable expectation of recovery. The Company expects no significant recovery from the amount written off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Company's procedures for recovery of amounts due.

Derivative financial instruments and hedge accounting

In line with its hedging strategy, the Company uses derivative financial instruments to hedge its exposure to foreign currency exchange rate fluctuations relating to operational activities denominated in foreign currencies. In accordance with its treasury and risk policy, the Company does not hold or issue derivative financial instruments for trading purposes. The Company uses hedge accounting. However, derivatives that do not qualify for hedge accounting are accounted for as trading instruments.

The Company recognizes derivative financial instruments initially at fair value; attributable transaction costs are recognized in profit or loss as incurred. Subsequent to initial recognition, derivative financial instruments are measured at fair value. The gain or loss on remeasurement to fair value is recognized immediately in the Consolidated Statement of Comprehensive Income in financial income (expense). Where derivatives qualify for hedge accounting, recognition of any gain or loss depends on the nature of the item being hedged.

The Company applies the cash flow hedge accounting model. In this hedging model, the effective part of a hedge transaction is reported as a component of other comprehensive income, which is reclassified to earnings in the same period(s) in which the hedged forecasted transaction affects earnings. The ineffective part of the hedge is recognized directly in the Consolidated Statement of Comprehensive Income in financial income (expense).

Financial liabilities

Financial liabilities are classified as measured at amortized cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognized in profit or loss. Other financial liabilities are subsequently measured at amortized cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognized in profit or loss. Any gain or loss on derecognition is also recognized in profit or loss.

Non-derivative financial liabilities are initially measured at fair value and subsequently at amortized cost, using the effective interest method. The Company's financial liabilities include trade and other payables, bank overdrafts, loans and borrowings and compound financial instruments, such as Convertible Notes.

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expired. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognized in the Consolidated Statement of Comprehensive Income.

Compound financial instruments issued by the Company comprise Convertible Notes denominated in euro that can be converted to share capital at the option of the holder, when the number of shares to be issued is fixed and does not vary with changes in fair value. The liability component of a compound financial instrument is recognized initially at the fair value of a similar liability that does not have an equity conversion option. The equity component is recognized initially at the difference between the fair value of the compound financial instrument as a whole and the fair value of the liability component. Any directly attributable transaction costs are allocated to the liability and equity components in proportion to their initial carrying amounts. Subsequent to initial recognition, the liability component of a compound financial instrument is measured at amortized cost using the effective interest method. The equity component of a compound financial instrument is not remeasured. Interest related to the financial liability is recognized in profit or loss. On conversion, the financial liability is reclassified to equity and no gain or loss is recognized.

Provisions

A provision is recognized in the Statement of Financial Position when the Company has a present legal or constructive obligation as a result of a past event, and it is probable that an outflow of economic benefits will be required to settle the obligation. If the effect is material, provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and, where appropriate, the risks specific to the liability.

Warranties

A provision for warranties is recognized when the underlying products or services are sold. The provision is based on historical warranty data and a weighting of all possible outcomes against their associated probabilities.

Restructuring

A provision for restructuring is recognized when the Company has approved a detailed and formal restructuring plan, the restructuring has either commenced or has been announced publicly and is irrevocable. Future operating costs are not provided for.

Revenue recognition

Significant accounting policy revenue

Revenue is measured on the consideration specified in the contract with a customer and excludes amounts collected on behalf of third parties. The Company recognizes revenue when it transfers control over a product of service to a customer.

Nature of goods and services

The following is a description of principal activities - aggregated into a single reporting segment, the semiconductor's back-end segment - from which the Company generates its revenue.

The main portion of our revenue is derived from contractual arrangements that have multiple deliverables. The Company accounts for individual products and services separately if they are a distinct performance obligation – i.e. if a product or service is separately identifiable from other items in the arrangement and if a customer can benefit from it. The consideration is allocated between separate products and services in the arrangement based on their relative stand-alone selling prices. The relative stand-alone selling prices are determined based on the list prices for products and services that are sold separately or based on the expected costs plus a margin approach. For products and services that are not sold separately, the Company estimates relative stand-alone selling prices using the expected costs plus margin approach.

Products and services	Nature and timing of satisfaction of performance obligations and significant payment terms
Machines	After successful internal buy-off, machines are shipped to customers at the following shipping terms:
Conversion kits and upgrades	<ul style="list-style-type: none"> • Ex Works: the customer takes control once the machine leaves the Besi premises and the customer pays for shipping and handling activities. • Free on Board: the customer takes control once the machine is delivered to the carrier (on to the ship in case of sea or to airport in case of air freight) and Besi pays for the shipping and handling activities until the hand-over to the sea or air carrier. • Delivery at Place: the customer takes control once the machine arrives at the customers' premises and Besi pays for the shipping and handling activities. • Revenue is recognized when the customer takes control of the shipped item. • Regular payment terms vary between 30 and 90 days after date of delivery.
Installation, start-up and training services	These services are separate performance obligations and revenue is recognized at the moment of performance of these services. Regular payment terms vary between 30 and 90 days after date of delivery.
Spare parts	Revenue of spare parts is recognized upon shipment to the customer, based on the applicable shipment terms (refer to above). Regular payment terms vary between 30 and 90 days after date of delivery.
Extended warranty	Extended warranty is considered a separate performance obligation under IFRS 15. Revenue for Extended Warranty for a warranty term in excess of the standard warranty term is deferred and recognized over the term of the extended warranty period. Extended warranty, if any, is sold as part of the machine contract.

Contract assets and liabilities

Contract assets are recognized according to the Company's rights to consideration for the fulfilled but not yet invoiced performance obligations at the reported date. Contract liabilities are recognized when advanced consideration is received from a customer or when the Company has outstanding performance obligations relating to warranties and installation.

The Company applies the practical expedient in IFRS 15.121 and does not disclose information about the remaining performance obligations that have original expected durations of one year or less.

Segment reporting

Operating segments

The Company is engaged in one line of business, the development, manufacturing, marketing, sales and service of semiconductor assembly equipment for the global semiconductor and electronics industries. The Company identifies three operating segments (Product Groups). These Product Groups are Die Attach, Packaging and Plating. The chief operating decision maker reviews each Product Group in detail and all operational functions are allocated to these Product Groups: 1) Product Marketing, 2) Research and Development, 3) Product Group management, 4) Customer Project management and 5) Operations. Corporate functions (Finance, Legal, Human Resources and Sales & Service) do not qualify as operating segments. Hence, Besi identifies three operating segments which meet the IFRS 8 criteria.

Reportable segment

IFRS 8 allows for operating segments to be aggregated into reportable segments if the operating segments share similar economic characteristics. The Company deems the three operating segments to meet the aggregation criteria, as the nature of the products and services, production processes, classes of customer and methods used to distribute the products and provide services and gross margins are similar. Hence the three Product Groups are aggregated into a single reporting segment; the development, manufacturing, marketing, sales and service of assembly equipment for the semiconductor's back-end segment. The basis for aggregation is explained directly below and as the Company has only one reporting segment all financial segment information can be found in the Consolidated Financial Statements.

Indicators for aggregation into single reporting segment

The similarity of economic characteristics can be evaluated based on future prospects. Within the semiconductor back-end segment the market information is based on VLSI Research, a leading independent industry analyst, forecasts. Industry trends are captured in these forecasts and always used as a source when referring to the future developments (e.g. press releases). Demand for semiconductor devices and expenditures for the equipment required to assemble semiconductors is cyclical, depending in large part on levels of demand worldwide for computing and peripheral equipment, telecommunications devices and automotive and industrial components as well as the production capacity of global semiconductor manufacturers. All operating segments move up or down in the same response to the same positive and negative factors like general economic upturns and downturns, changes in interest rates and currency exchange rates.

The nature of products and services within the Besi group is very much the same, all captured in the semiconductor back-end industry and served by one service organization, which is designing and supporting that equipment.

Furthermore, all production processes are organized as manufacturing and assembly of projects and are mainly produced in our Asian production facilities in Malaysia and China. This means that the production of the different Product Groups shares the same facilities, employees and processes. Also, similar materials are used to produce the systems.

The evaluation of the type or class of customer for products and services leads to the conclusion that the risk exposure profile of the customers is similar because of the fact that all customers are leading US, European and Asian semiconductor manufacturers and assembly subcontractors which in their turn depend on the global market conditions.

One worldwide responsible person for Sales & Customer Support, indicates the centralization of the Sales organization and the method used to distribute our products. The Besi name is used throughout the global operations and the Besi logo has been adopted to be used by all Product Groups. As from January 1, 2013, legal entity names have been changed, amongst others, to put more emphasis on this uniformed global operating, like Besi Austria GmbH, Besi Switzerland AG and Besi Netherlands B.V.

Furthermore, in order to assess performance and to make resource allocation decisions based on sufficient detailed information, the chief operating decision maker must have financial information which covers all of the Product Groups, including corporate functions, meaning full Consolidated Financial Statements. For example, the total external financing of the Besi group is evaluated on consolidated level and not split into business operations.

Accordingly, all information consolidated is the reportable segment under IFRS 8, reported in the semiconductor back-end industry.

Employee benefits

Pension plans

Obligations for contributions to defined contribution plans are expensed as the related service is provided. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in future payments is available.

The Company's net obligation in respect of defined benefit pension plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value, and the fair value of any plan assets is deducted. The Company determines the net interest expense (income) on the net defined benefit liability (asset) for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period to the net defined benefit liability (asset).

The calculation is performed by a qualified actuary using the projected unit credit method. When the calculation results in a benefit to the Company, the recognized asset is limited to the present value of economic benefits available in the form of any future refund from the plan or reductions in future contributions paid to the plan. In order to calculate the present value of economic benefits, consideration is given to any minimum funding requirements that apply to any plan in the Company. An economic benefit is available to the Company if it is realizable during the life of the plan, or on settlement of the plan liabilities.

Remeasurements arising from defined benefit plans comprise actuarial gains and losses, the return on plan assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest). The Company recognizes them immediately in other comprehensive income and all other expenses related to defined benefit plans in employee benefit expenses in profit or loss. When the benefits of a plan are changed, or when a plan is curtailed, the portion of the changed benefit related to past service by employees, or the gain or loss on curtailment, is recognized immediately in profit or loss when the plan amendment or curtailment occurs.

A majority of the Company's Dutch employees participate in a pension plan operated by an industry-wide pension fund, which classifies as a defined contribution plan under IAS 19.

Severance provisions

A provision for severance obligations is recognized in the Statement of Financial Position if the Company is obligated to severance payments, even if future termination of the contract is initiated by the employee. For some of our subsidiaries this is mandatory by law.

Share-based payments

In 2016, the Company adopted the Remuneration Policy 2017-2019 which is mainly a prolongation of the Remuneration Policy 2011-2016 which contains specific conditions for the performance shares awarded to the Board of Management. The Company established the BE Semiconductor Industries N.V. Long-Term Incentive plan for the Board of Management and other employees (the "2014 and the 2017 Framework Incentive Plan"). For more details, reference is made to [Note 25](#).

The grant date fair value of the performance shares granted to Board Members and key employees is measured taking into account the impact of any market performance conditions and non-vesting conditions, but excludes the impact of any service and non-market performance conditions.

The grant date fair value of the equity-settled share-based payment awards is recognized as an employee expense, with a corresponding increase in equity, over the period between the grant date and the vesting date of the awards. The amount recognized as an expense is adjusted to reflect the number of awards for which the related service condition and any non-market performance conditions are expected to be met, such that the amount ultimately recognized as an expense is based on the number of awards that meet the related service and non-market performance conditions at the vesting date.

Subsidies and other governmental credits

Subsidies and other governmental credits to cover research and development costs relating to approved projects are recorded as research and development credits in the period when the research and development costs to which such subsidy or credit relates occurs. If the related development costs are capitalized, the subsidies and other governmental credits will be offset against capitalization.

Net financing expenses and borrowing costs

Net financing costs comprise interest payable on borrowings calculated using the effective interest rate method, foreign exchange gains and losses and gains and losses on hedging instruments that are recognized in the Consolidated Statement of Comprehensive Income. Interest income is recognized in the Consolidated Statement of Comprehensive Income as it accrues, using the effective interest method. The interest expense component of lease payments is recognized in the Consolidated Statement of Comprehensive Income. Borrowing costs that are not directly attributable to the acquisition or production of a qualifying asset are recognized in the Consolidated Statement of Comprehensive Income using the effective interest method.

Income taxes

The Company applies the liability method of accounting for taxes. Under the liability method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carry forwards. Deferred tax assets and liabilities are measured using substantively enactment tax rates expected to apply to taxable income in the years which these temporary differences are expected to be recovered or settled.

The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the Consolidated Statement of Comprehensive Income in the period that includes the enactment date. A deferred tax asset is recognized only to the extent that it is probable that future taxable profits will be available against which the asset can be utilized. Deferred tax assets are reduced to the extent that it is no longer probable that the related tax benefit will be realized.

Significant accounting judgements, estimates and assumptions

The preparation of the Company's Consolidated Financial Statements requires management to make judgements, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent liabilities, at the reporting date. However, uncertainty about these assumptions and estimates could result in outcomes that could require a material adjustment to the carrying amount of the asset or liability affected in the future.

Judgements

In the process of applying the Company's accounting policies, management has made the following judgements, apart from those involving estimates, that have the most significant effect on the amounts recognized in the Consolidated Financial Statements:

Impairment of non-financial assets

The Company assesses whether there are any indicators of impairment for all non-financial assets at each reporting date. Goodwill and other indefinite life intangibles are tested for impairment annually and at other times when such indicators exist. Other non-financial assets are tested for impairment when there are indicators that the carrying amounts may not be recoverable. When value-in-use calculations are undertaken, management must estimate the expected future cash flows from the asset or cash-generating unit and determine a suitable discount rate in order to calculate the present value of those cash flows. Further details are contained in [Notes 9, 10 and 11](#).

Deferred tax assets

Deferred tax assets are recognized for all unused tax losses to the extent that it is probable that taxable profit will be available against which the losses can be utilized. Significant management judgement is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and level of future taxable profits together with future tax planning strategies. Further details are contained in [Note 29](#).

Pension and other post-employment benefits

The costs of defined benefit pension plans and other post-employment medical benefits are determined using actuarial valuations. The actuarial valuation involves making assumptions about discount rates, future salary increases, mortality rates and future pension increases. Due to the long-term nature of these plans, such estimates are subject to significant uncertainty. Further details are given in [Note 25](#).

Development costs

Development costs are capitalized in accordance with the accounting policy as reflected before. Initial capitalization of costs is based on management judgement that technological and economic feasibility is confirmed, usually when a product development project has reached a defined milestone according to an established project management model. In determining the amounts to be capitalized, management makes assumptions regarding the expected future cash generation of the assets, discount rates to be applied and the expected period of benefits. Further details are contained in [Note 11](#).

Inventory obsolescence

Provisions for obsolete inventories are recognized for inventories which are deemed obsolete. Significant management judgement is required to determine the amount which is considered obsolete. Further details are contained in [Note 6](#).

New IFRS standards and interpretations

A number of new standards, amendments to standards and interpretations are effective for annual periods beginning on or after January 1, 2020. However, the Company expects no material impact on the Consolidated Financial Statements.

3. Cash and cash equivalents

(euro in thousands)	December 31, 2019	December 31, 2018
Cash on hand at banks	248,412	295,539
Money market funds (readily convertible funds)	29,986	-
Total cash and cash equivalents	278,398	295,539

Interest rates are variable. At December 31, 2019 and 2018, no amount in cash and cash equivalents was restricted.

The money market funds as of December 31, 2019 are readily convertible to a known amount of cash and are subject to an insignificant risk of changes in value.

4. Deposits

(euro in thousands)	December 31, 2019	December 31, 2018
Deposits with maturity within 12 months	130,000	130,000
Deposits with maturity after 12 months	-	50,000
Subtotal	130,000	180,000
Less: non-current portion	-	50,000
Total deposits under current assets	130,000	130,000

At December 31, 2019 and 2018, an amount of € 130 million and € 180 million, respectively, was placed on deposit for various periods. At December 31, 2018, an amount of € 50 million has a remaining maturity of more than one year and is presented as non-current. The expected credit loss on deposits is considered immaterial.

5. Trade receivables

Trade receivables, generally with payment terms of 30 to 90 days, with expected credit losses amounting to € 790 and € 821 at December 31, 2019 and 2018, respectively, are shown as follows:

(euro in thousands)	December 31, 2019	December 31, 2018
Trade accounts receivable	82,210	107,168
Allowance for expected credit losses	(790)	(821)
Total trade receivables, net	81,420	106,347

All trade accounts receivable have an estimated maturity shorter than one year. The carrying values of the recorded receivables are a reasonable approximation of their respective fair values, given the short maturities of the positions and the fact that allowances for expected credit losses have been recognized.

The movements in the allowance for expected credit losses are as follows:

(euro in thousands)	2019	2018
Balance at January 1	821	772
Additions (releases)	(53)	41
Usage	(13)	-
Foreign currency translation	35	8
Balance at December 31	790	821

6. Inventories

Inventories consist of the following:

(euro in thousands)	December 31, 2019	December 31, 2018
Raw materials and spare parts	18,858	25,066
Work in progress	26,409	33,645
Finished goods	1,311	1,526
Total inventories, net	46,578	60,237

In 2019, raw materials and changes in work in progress and finished goods included in cost of sales amounted to € 115.6 million (2018: € 182.4 million).

The movements in the provision for obsolescence are as follows:

(euro in thousands)	2019	2018
Balance at January 1	11,271	11,369
Additions	2,242	769
Usage	(783)	(1,153)
Foreign currency translation	330	286
Balance at December 31	13,060	11,271

7. Other receivables

Other receivables consist of the following:

(euro in thousands)	December 31, 2019	December 31, 2018
VAT receivables	2,182	2,415
Deposits	204	220
Forward exchange contracts	1,396	2,143
R&D grants	4,801	2,838
Advances to employees	31	51
Other	518	348
Total other receivables	9,132	8,015

Other receivables do not include any amounts with expected remaining terms of more than one year. Reference is made to Note 31 for additional information with respect to forward foreign currency exchange contracts.

8. Prepayments

Prepayments consist of the following:

(euro in thousands)	December 31, 2019	December 31, 2018
Prepaid rent	12	605
Prepaid pensions and social security	190	361
Prepaid licences	589	613
Prepaid suppliers	1,787	595
Other prepayments	1,030	1,148
Total prepayments	3,608	3,322

Prepayments do not include any amounts with expected remaining terms of more than one year. Other prepayments consist of prepaid insurance, prepaid maintenance, prepaid exhibitions and other prepayments.

9. Property, plant and equipment

Property, plant and equipment, net consist of the following:

(euro in thousands)	Land, buildings and leasehold improvements	Machinery and equipment	Office furniture and equipment	Assets under construction	Total
<i>Balance at January 1, 2019</i>					
Cost	30,241	38,090	10,471	1,348	80,150
Accumulated depreciation and impairment	(16,041)	(26,617)	(8,941)	-	(51,599)
Property, plant and equipment, net	14,200	11,473	1,530	1,348	28,551
Effect of adoption of new accounting standards IFRS 16 (Note 2)	-	-	(75)	-	(75)
Property, plant and equipment, net adjusted	14,200	11,473	1,455	1,348	28,476
<i>Changes in book value in 2019</i>					
Capital expenditures	387	2,115	460	(1,295)	1,667
Transfers from inventory	-	5,669	-	-	5,669
Disposals (cost)	(214)	(890)	(630)	-	(1,734)
Disposals (accumulated depreciation)	55	867	630	-	1,552
Depreciation	(1,361)	(3,472)	(847)	-	(5,680)
Impairment (reversal)	175	-	-	-	175
Foreign currency translation	156	85	17	-	258
Total changes	(802)	4,374	(370)	(1,295)	1,907
<i>Balance at December 31, 2019</i>					
Cost	30,765	44,785	10,336	53	85,939
Accumulated depreciation and impairment	(17,367)	(28,938)	(9,251)	-	(55,556)
Property, plant and equipment, net	13,398	15,847	1,085	53	30,383

(euro in thousands)	Land, buildings and leasehold improvements	Machinery and equipment	Office furniture and equipment	Assets under construction	Total
<i>Balance at January 1, 2018</i>					
Cost	28,577	35,626	11,142	1,419	76,764
Accumulated depreciation	(14,193)	(26,485)	(9,569)	-	(50,247)
Property, plant and equipment, net	14,384	9,141	1,573	1,419	26,517
<i>Changes in book value in 2018</i>					
Capital expenditures	1,460	3,044	868	(55)	5,317
Transfers from inventory	(99)	2,417	(48)	-	2,270
Disposals (cost)	(44)	(3,543)	(1,192)	-	(4,779)
Disposals (accumulated depreciation)	44	3,345	1,187	-	4,576
Depreciation	(1,274)	(2,977)	(860)	-	(5,111)
Impairment	(350)	-	-	-	(350)
Foreign currency translation	79	46	2	(16)	111
Total changes	(184)	2,332	(43)	(71)	2,034
<i>Balance at December 31, 2018</i>					
Cost	30,241	38,090	10,471	1,348	80,150
Accumulated depreciation	(16,041)	(26,617)	(8,941)	-	(51,599)
Property, plant and equipment, net	14,200	11,473	1,530	1,348	28,551

Depreciation and impairment

The depreciation and impairment is recognized in the following line items in the Consolidated Statement of Comprehensive Income:

(euro in thousands)	Year ended December 31, 2019	2018
Cost of sales	1,838	2,092
Selling, general and administrative expenses	3,051	2,911
Research and development expenses	616	458
Total depreciation and impairment	5,505	5,461

10. Goodwill

Goodwill, net consists of the following:

(euro in thousands)	2019	2018
<i>Balance at January 1</i>		
Cost	65,299	64,887
Accumulated impairment	(20,200)	(20,200)
Goodwill, net	45,099	44,687
<i>Changes in book value</i>		
Foreign currency translation	190	412
Total changes	190	412
<i>Balance at December 31</i>		
Cost	65,489	65,299
Accumulated impairment	(20,200)	(20,200)
Goodwill, net	45,289	45,099

Impairment tests for cash-generating units containing goodwill

The Company annually carries out impairment tests on capitalized goodwill, based on the cash-generating units.

The aggregate carrying amounts of goodwill with indefinite lives allocated to each cash-generating unit are as follows:

(euro in thousands)	December 31, 2019	December 31, 2018
Die Attach	43,308	43,118
Plating	1,981	1,981
Total	45,289	45,099

The value-in-use of the cash-generating units subject to impairment testing is calculated based on the discounted cash flow method. The value-in-use calculations use discounted cash flow projections based on the budget for the year 2020 and financial projections per Product Group approved by management for the projection period (2021-2024).

The key assumptions used by management underlying the value-in-use calculation per cash-generating unit are as follows:

Cash flows per cash-generating unit for the five-year projection period are based on:

- The Company's budget for 2020.
- Revenue forecasts for 2021-2024 as per market growth estimates from VLSI Research, a leading independent analyst for the semiconductor and semiconductor equipment industries, and the Company's estimated market shares.
- Bottom-up estimates for gross profit, research and development and selling, general and administrative expenses as per management's strategic planning.
- A pre-tax discount rate of 9.9% (Die Attach) to 10.2% (Plating) representing the pre-tax weighted average cost of capital (WACC) is determined using the Capital Asset Pricing Model (in 2018 a pre-tax discount rate of 10.4% (Die Attach) and 11.4% (Plating)).
- Residual value is based on a 1.0% perpetual growth rate (in 2018: 1.0%).
- The risk free rate of 0.3% (in 2018: 1.0%) and equity risk premium of 5.8% (in 2018: 5.5%).

All assumptions used reflect the current market assessment and are based on published indices and management estimates which are challenged by a third party financial advisor. Based on this analysis, management believes that the value-in-use of the cash-generating units subject to impairment testing substantially exceeded their carrying values and that, therefore, goodwill was not impaired as of December 31, 2019.

The outcome of a sensitivity analysis was that reasonably possible adverse changes in key assumptions of 100 basis points (lower revenue growth rates and higher discount rates respectively) would not result in other conclusions for the impairment test performed.

11. Other intangible assets

Other intangible assets, net consist of the following

(euro in thousands)	Software	Development expenses	Total
<i>Balance at January 1, 2019</i>			
Cost	12,105	59,004	71,109
Accumulated amortization	(10,734)	(22,041)	(32,775)
Other intangible assets, net	1,371	36,963	38,334
<i>Changes in book value in 2019</i>			
Capitalized development expenses	-	13,226	13,226
Capitalized expenditures	844	-	844
Disposals (cost)	(329)	(7,363)	(7,692)
Disposals (accumulated depreciation)	329	7,363	7,692
Amortization	(733)	(10,163)	(10,896)
Foreign currency differences	2	1,083	1,085
Total changes	113	4,146	4,259
<i>Balance at December 31, 2019</i>			
Cost	12,934	67,535	80,469
Accumulated amortization	(11,450)	(26,426)	(37,876)
Other intangible assets, net	1,484	41,109	42,593

(euro in thousands)	Software	Development expenses	Total
<i>Balance at January 1, 2018</i>			
Cost	10,795	45,291	56,086
Accumulated amortization	(10,047)	(11,899)	(21,946)
Other intangible assets, net	748	33,392	34,140
<i>Changes in book value in 2018</i>			
Capitalized development expenses	-	11,449	11,449
Capitalized expenditures	1,256	-	1,256
Amortization	(636)	(8,911)	(9,547)
Foreign currency differences	3	1,033	1,036
Total changes	623	3,571	4,194
<i>Balance at December 31, 2018</i>			
Cost	12,105	59,004	71,109
Accumulated amortization	(10,734)	(22,041)	(32,775)
Other intangible assets, net	1,371	36,963	38,334

At December 31, 2019 an amount of € 20,004 (2018: € 13,248) relates to capitalized development expenses not available for use, which have been tested for impairment. The impairment tests did not indicate any required impairment of capitalized development expenses.

The disposals of software and development expenses relate to intangible assets that have been fully amortized.

Amortization

The amortization charge is recognized in the following line items in the Consolidated Statement of Comprehensive Income:

(euro in thousands)	Year ended December 31, 2019	2018
Cost of sales	16	16
Selling, general and administrative expenses	655	528
Research and development expenses	10,225	9,003
Total amortization	10,896	9,547

12. Other non-current assets

Other non-current assets consist of the following:

(euro in thousands)	December 31, 2019	December 31, 2018
Funds with insurance companies for pension liability	1,132	1,161
Marketable securities for pension liability	571	524
Guarantee deposits	552	632
Total other non-current assets	2,255	2,317

Reference is made to [Note 25](#) for more details.

13. Borrowing facilities

At December 31, 2019, Besi and its subsidiaries had available lines of credit aggregating € 97.8 million (2018: € 17.9 million), under which € 1.7 million (2018: € 3.5 million) was utilized of which € 0.5 million (2018: € 2.8 million) relate to notes payable to banks and € 1.2 million (2018: € 0.7 million) relates to bank guarantees. In general, interest is charged at the banks' base lending rates or Euribor/Libor plus an increment. There were no defaults at December 31, 2019.

A summary of Besi's principal credit lines is as follows:

- A € 80 million committed revolving credit facility ("the Facility") with a consortium of European banks, which matures in 2024. Outstanding amounts under the Facility will bear interest at Euribor/Libor plus a margin that depends on the Company's financial position. The agreement contains an extension option upto 2026 and can be increased to € 136 million. Borrowings under the Facility can be repaid at any time at 100% of principal amount and can be used for working capital and other corporate purposes. The principal covenants associated with the Facility include a maintenance test of consolidated debt to equity and a limitation on the incurrence of additional permitted indebtedness. The Facility is granted without securities.
- An uncommitted overdraft facility of € 10.0 million for the purpose of short-term overdrafts (maximum of 15 days) in current accounts. The facility has no contractual maturity date.

- A credit line of € 1.0 million for bank guarantees is granted without securities. The borrowing facility has no contractual maturity date.
- A credit line of € 0.5 million related to Besi APac Sdn. Bhd. for bank guarantees is granted without securities, however with the requirement that BE Semiconductor Industries N.V. holds, directly or indirectly, an interest of at least 51%. The borrowing facility has no contractual maturity date.
- A credit line of € 2.0 million related to Besi Singapore Pte. Ltd. for bank guarantees is granted without securities, however, with the requirement that BE Semiconductor Industries N.V. holds, directly or indirectly, an interest of at least 51%. The credit facility is secured by a parent company guarantee. The borrowing facility has no contractual maturity date.
- A credit line of € 2.8 million related to Besi Leshan Co., Ltd. is granted without securities, however, with the requirement that BE Semiconductor Industries N.V. holds, directly or indirectly, an interest of at least 51%. The credit facility is secured by a guarantee of BE Semiconductor Industries N.V. The borrowing facility has no contractual maturity date.
- A credit line of € 1.5 million related to Besi Leshan Co., Ltd. The credit facility is secured by a mortgage on land and buildings. The maturity date is November 18, 2020.

14. Trade payables

Trade payables are non-interest bearing and are normally settled on 30-90 day terms.

15. Provisions

(euro in thousands)	December 31, 2019	December 31, 2018
Warranty provision	2,851	5,029
Restructuring provision	17	172
Total provisions	2,868	5,201

Warranty provision

A summary of activity in the warranty provision is as follows:

(euro in thousands)	2019	2018
Balance at January 1	5,029	9,476
Effect of adoption of new accounting standards IFRS 15	-	(2,653)
Balance at January 1 adjusted	5,029	6,823
Additions (releases)	1,351	2,045
Usage	(3,646)	(4,224)
Foreign currency translation	117	385
Balance at December 31	2,851	5,029

A provision for warranty is recognized when the underlying products or services are sold and presented in selling, general and administrative expenses. The provision is based on historical warranty data and a weighting of all possible outcomes against their associated probabilities. The warranty provision encompasses the standard warranty provided to customers only. Extended warranty provided, if any, is considered a separate performance obligation under IFRS 15 and is accounted for as contract liability under the other liabilities. The provision at December 31, 2019 is expected to be fully utilized during 2020.

Restructuring provision

Changes in the restructuring provision were as follows:

(euro in thousands)	2019	2018
Balance at January 1	172	32
Additions	241	994
Usage	(396)	(854)
Balance at December 31	17	172

The provision at December 31, 2019 is expected to be fully utilized during 2020.

The restructuring charges are recognized in the following line items in the Consolidated Statement of Comprehensive Income:

(euro in thousands)	Year ended December 31,	
	2019	2018
Cost of sales	10	368
Selling, general and administrative expenses	231	626
Total	241	994

16. Other payables

(euro in thousands)	December 31, 2019	December 31, 2018
Payroll accruals	11,802	11,882
Accrued audit and consultancy fees	1,500	1,581
Forward exchange contracts	173	138
Invoices to be received	1,036	1,336
Accrued utility costs	133	216
Accrued project costs	1,854	2,168
Accrued maintenance	322	242
Freight and packaging costs	797	306
Accrued interest expenses	626	1,243
Volume rebate	2,161	3,848
Tax payable	335	319
Lease liabilities - short-term portion (Note 19)	3,300	-
Other payables	4,243	3,096
Total other payables	28,282	26,375

Other payables are non-interest bearing and have an average term of three months. Interest payable is normally settled quarterly throughout the year with the exception of the Convertible Notes on which interest is settled semi-annually. Lease liabilities will be paid throughout 2020. Reference is made to Note 31 for additional information with respect to forward foreign currency exchange contracts.

17. Other current liabilities

(euro in thousands)	December 31, 2019	December 31, 2018
Advances from customers	3,839	1,790
Contract liabilities	9,434	12,867
Payroll liabilities	2,855	2,628
Other	1,539	1,383
Total other liabilities	17,667	18,668
Contract liabilities non-current portion	(1,070)	(2,494)
Total other current liabilities	16,597	16,174

Other current liabilities are non-interest bearing and are not expected to be settled in cash.

18. Long-term debt

(euro in thousands)	December 31, 2019	December 31, 2018
<i>Long-term debt</i>		
Convertible Notes	276,540	271,790
Credit line Besi Leshan Co., Ltd. (interest rate at 5.07% at December 31, 2019)	515	1,461
<i>Financial leases</i>	-	75
Research and development loan from Österreichische Forschungsförderungsgesellschaft mbH, Wien, Austria (interest rate at 0.75% at December 31, 2019)	527	-
Subtotal	277,582	273,326
Less: current portion	(515)	(1,502)
Total long-term debt	277,067	271,824

Aggregate required principal payments due on long-term debt for the next five years and thereafter are as follows:

(euro in thousands)	Long-term debt
2020	515
2023 (Convertible Notes assuming no conversion)	125,000
2024 and thereafter (Convertible Notes assuming no conversion)	175,527
Total	301,042
Less: current portion of long-term debt	(515)
Non-current portion of long-term debt	300,527

The Company and its subsidiaries had no defaults for its long-term debt at December 31, 2019.

Convertible Notes

In December 2016, the Company issued € 125 million principal amount of Convertible Notes with a maturity date of December 2, 2023 (the "2016 Convertible Notes"). The 2016 Convertible Notes carry a nominal interest rate of 2.5% per year, payable semi-annually. Bondholders can convert the bonds into ordinary shares at a conversion price of € 19.93 (subject to adjustments). The original exercise price of € 43.51 has been adjusted for the two for one stock split effective May 4, 2018 and dividends paid subsequent to the date of issuance of the 2016 Convertible Notes in accordance with the terms and conditions related thereto. The 2016 Convertible Notes will be repaid at maturity at a price of 100% of their principal amount plus accrued and unpaid interest. If not converted, at any time from December 23, 2020, the Company may redeem the outstanding 2016 Convertible Notes at their principal amount, subject to giving a minimum of 30 days' and maximum of 60 days' prior notice to Bondholders, if the value of the shares underlying the 2016 Convertible Notes equals or exceeds 130% of the then effective conversion price for at least 20 out of 30 consecutive dealing days.

The amount of the 2016 Convertible Notes classified as equity of € 11,310 is net of attributable debt issuance cost of € 215.

In November 2017, the Company issued € 175 million principal amount of Convertible Notes with a maturity date of December 6, 2024 (the "2017 Convertible Notes"). The 2017 Convertible Notes carry a nominal interest rate of 0.5% per year, payable semi-annually. Bondholders can convert the bonds into ordinary shares at a conversion price of € 48.68 (subject to adjustments). The original exercise price of € 99.74 has been adjusted for the two for one stock split effective May 4, 2018 and dividends paid subsequent to the date of issuance of the 2017 Convertible Notes in accordance with the terms and conditions related thereto. The 2017 Convertible Notes will be repaid at maturity at a price of 100% of their principal amount plus accrued and unpaid interest. If not converted, at any time from December 27, 2021, the Company may redeem the outstanding 2017 Convertible Notes at their principal amount, subject to giving a minimum of 30 days' and maximum of 60 days' prior notice to Bondholders, if the value of the shares underlying the 2017 Convertible Notes equals or exceeds 130% of the then effective conversion price for at least 20 out of 30 consecutive dealing days.

The amount of the 2017 Convertible Notes classified as equity of € 18,479 is net of attributable debt issuance cost of € 292.

Reconciliation of liabilities arising from financing activities

The table below details the changes in the Company's liabilities arising from financing activities, including both cash and non-cash changes. Liabilities arising from financing activities are those for which cash flows were, or future cash flows will be, classified in the Company's Consolidated Statement of Cash Flows as cash flows from financing activities.

(euro in thousands)	January 1, 2019	IFRS16 application and non-cash movements ¹	Financing cash flows	Amortization/ accretion of interest	Foreign currency translation	December 31, 2019
Convertible Notes	271,790	-	-	4,750	-	276,540
Government loans	-	-	527	-	-	527
Bank loans	1,461	-	(946)	-	-	515
Other borrowings	2,812	-	(2,336)	-	-	476
Lease liabilities	-	14,300	(3,525)	128	256	11,159
Financial leases	75	(75)	-	-	-	-
Total	276,138	14,225	(6,280)	4,878	256	289,217

¹ Includes initial recognition of lease liabilities of € 14,458 and net decrease of € 158 for additions and changes in extension option assessment.

(euro in thousands)	January 1, 2018	Financing cash flows	Amortization	December 31, 2018
Convertible Notes	267,195	-	4,595	271,790
Government loans	1,187	(1,187)	-	-
Bank loans	10,000	(8,539)	-	1,461
Other borrowings	1,742	1,070	-	2,812
Financial leases	120	(45)	-	75
Total	280,244	(8,701)	4,595	276,138

19. Leases

The Company has lease contracts for various facilities and other equipment used in its operations. Leases of facilities generally have lease terms between 1 and 10 years, while motor vehicles and other equipment generally have lease terms between 1 and 4 years. The Company's obligations under its leases are secured by the lessor's title to the leased assets. There are several lease contracts that include extension options. These options are negotiated by management to provide flexibility in managing the leased-asset portfolio and align with the Company's business needs. Management exercises significant judgement in determining whether these extension options are reasonably certain to be exercised. The Company also has certain leases of machinery and offices with lease terms of 12 months or less and leases of office equipment with low value. The Company applies the 'short-term lease' and 'lease of low-value assets' recognition exemptions for these leases.

Right of use assets

Right of use assets consist of the following:

(euro in thousands)	Land, buildings and leasehold improvements	Office furniture and equipment	Total
Balance at January 1, 2019, adjusted	13,964	494	14,458
Additions	1,235	39	1,274
Depreciation	(3,150)	(274)	(3,424)
Change in extension option assessment	(1,432)	-	(1,432)
Foreign currency translation	253	3	256
Balance at December 31, 2019	10,870	262	11,132

The right of use assets, as described in Note 2, are recognized upon initial application of IFRS 16. Due to the transition method chosen in applying IFRS 16, comparative information has not been restated to reflect the new requirements.

The following amounts were recognized in the Consolidated Statement of Comprehensive Income:

(euro in thousands)	Year ended December 31, 2019
Depreciation expense of right of use assets	3,424
Interest expenses on lease liabilities	128
Expenses related to the short-term leases	335
Expenses related to the leases of low-value assets	263
Total	4,150

Lease liabilities

Lease liabilities consist of the following:

(euro in thousands)	December 31, 2019
Current (included in other payables)	3,300
Non-current	7,859
Total lease liabilities	11,159

Principal payments due on lease liabilities for the next five years and thereafter are as follows:

(euro in thousands)	Lease liabilities
2020	3,386
2021 - 2024	7,512
2025 and thereafter	414
Total payments due on lease liabilities	11,312
Discount	(153)
Lease liabilities	11,159

Extension options

Below schedule provides an overview of the contractually agreed extension options and the Company's assessment and accounting treatment:

(euro in thousands)	Within 5 years	More than 5 years	Total
Extension option expected to be exercised - included in lease liabilities	2,332	793	3,125
Extension option expected not to be exercised - excluded from lease liabilities	1,263	3,669	4,932
Total (undiscounted)	3,595	4,462	8,057

20. Provisions

Provisions consist of the following:

(euro in thousands)	December 31, 2019	December 31, 2018
Pension liabilities Switzerland	9,615	8,514
Pension liabilities Austria	636	519
Severance obligations Austria	4,433	3,636
Severance obligations Korea	1,959	1,964
Other provisions	247	380
Provisions	16,890	15,013

Reference is made to [Note 25](#) for more details.

21. Equity

At the AGM of April 26, 2018, the General Meeting of Shareholders approved a stock split of the Company's shares whereby each issued ordinary share was split into two shares. After the effectuation of this stock split in May 2018, Besi's authorized share capital consists of 160,000,000 ordinary shares, nominal value € 0.01 per share, and 160,000,000 preference shares, nominal value € 0.01 per share.

At December 31, 2019 and December 31, 2018, 72,212,422 and 73,569,611 ordinary shares were outstanding, excluding treasury shares of 7,855,420 and 6,498,231, respectively. No preference shares were outstanding at each of December 31, 2019 and December 31, 2018. All issued shares have been paid in full.

Changes in other reserves during 2019 and 2018 were as follows:

(euro in thousands)	Accumulated other comprehensive income	Legal currency translation adjustment	Legal reserve capitalized R&D expenses	Legal reserve subsidiaries	Total other reserves
Balance at January 1, 2019	(11,227)	22,513	36,963	-	48,249
Total comprehensive income (loss) for the period	(851)	5,878	-	-	5,027
Transfer from retained earnings	-	-	4,146	3,197	7,343
Balance at December 31, 2019	(12,078)	28,391	41,109	3,197	60,619
Balance at January 1, 2018	(10,817)	15,455	33,392	-	38,030
Total comprehensive income (loss) for the period	(410)	7,058	-	-	6,648
Transfer from retained earnings	-	-	3,571	-	3,571
Balance at December 31, 2018	(11,227)	22,513	36,963	-	48,249

Accumulated other comprehensive income (loss) consists of:

(euro in thousands)	December 31, 2019	December 31, 2018
Actuarial gains (losses)	(15,359)	(13,445)
Cash flow hedging reserve	541	13
Deferred taxes	1,977	1,442
Other	763	763
Accumulated other comprehensive income (loss)	(12,078)	(11,227)

Dividends

Proposed for approval at the Annual General Meeting of Shareholders to be held on April 30, 2020 (not recognized as a liability as at December 31, 2019 and December 31, 2018):

(euro in thousands)	Year ended December 31, 2019	2018
€ 1.01 per ordinary share (2018: € 1.67)	72,934	122,861

The Board of Management proposes to allocate the part of the net income for the year 2019 remaining after payment of the dividend to the retained earnings. The Supervisory Board has approved this proposal.

For further notes to the Company's equity, reference is made to the [Notes to the Parent Company Financial Statements](#).

22. Commitments and contingencies

The Company leases certain facilities and equipment under operating leases. The required minimum lease commitments under IAS 17 were as follows:

(euro in thousands)	December 31, 2018
Within one year	3,877
After one year but not more than five years	7,734
After five years	876
Total	12,487

The Company has an unconditional obligation related to the purchase of materials and equipment totalling € 69.7 million and € 73.0 million as of December 31, 2019 and 2018, respectively.

Research and development subsidies and credits available to offset research and development expenses were € 5.2 million in 2019 and € 3.0 million in 2018. R&D grants have been received from the EU, from the Österreichische Forschungsförderungsgesellschaft and from local governments.

23. Revenue

Disaggregation of revenue

The following table disaggregates the geographical distribution of the Company's revenue billed to customers:

(euro in thousands)	Year ended December 31, 2019	2018
China	112,139	144,099
Taiwan	35,242	52,313
Malaysia	30,272	56,647
United States	29,911	34,922
Ireland	20,523	83,373
Other Asia Pacific ¹	79,538	97,557
Other Europe ¹	46,529	49,392
Rest of the World ¹	2,041	6,953
Total revenue	356,195	525,256

¹ Countries with a revenue representing more than 5% of the consolidated revenue in 2019 or 2018 are separately shown. Below 5% are presented in the "other" categories.

The following table disaggregates the Company's revenue of the three different operating segments (Product Groups):

(euro in thousands)	Year ended December 31,	
	2019	2018
Die Attach	269,046	401,119
Packaging	69,908	101,121
Plating	17,241	23,016
Total revenue	356,195	525,256

The Company's revenue is generated by shipments to leading US, European and Asian multinational chip manufacturers, assembly subcontractors and electronics and industrial companies.

Contract balances

The following table provides information about receivables, contract liabilities and other payables from contracts with customers:

(euro in thousands)	December 31, 2019	December 31, 2018
Receivables, which are included in trade receivables and other receivables	81,420	106,347
Contract liabilities	9,434	12,867
Volume rebates	2,161	3,848

The amount of contract liabilities in the table below primarily relates to the advance consideration received from customer and for some customers on extended warranty provided, for which revenue is recognized upon fulfilment of the performance obligation.

Significant changes in the contract liabilities are as follows:

(euro in thousands)	2019	2018
Balance at January 1	12,867	8,213
Effect of adoption of new accounting standards	-	9,649
Balance at January 1 adjusted	12,867	17,862
Revenue recognized that was included in the contract liability balance at the beginning of the period	(9,814)	(12,310)
Increases due to cash received, excluding amounts recognized as revenue during the period	6,216	7,183
Foreign currency translation	165	132
Balance at December 31	9,434	12,867

An amount of € 1,070 in the contract liabilities as per December 31, 2019 is expected to be recognized after more than one year and is presented under other non-current liabilities.

Transaction price allocated to the remaining performance obligations

The following table includes revenue expected to be recognized in the future related to performance obligations that are unsatisfied (or partly unsatisfied) at the reporting date with:

(euro in thousands)	December 31, 2019	December 31, 2018
Within 12 months	23,698	11,829
From 12-24 months	565	463
Total	24,263	12,292

24. Segment, geographic and customer information

Geographical information

The following table summarizes revenue, non-financial assets and total assets of the Company's operations in the Netherlands, Switzerland, Austria, the US and Asia Pacific, the significant geographic areas in which the Company operates. Intra-area revenues are based on the sales prices at arm's length:

(euro in thousands)	The Netherlands	Switzerland	Austria	United States	Asia Pacific	Total
<i>Year ended December 31, 2019</i>						
Total revenue	70,336	276,765	27,326	12,589	385,134	772,150
Intercompany revenue	(55,733)	(219,207)	(7,650)	(412)	(132,953)	(415,955)
External revenue	14,603	57,558	19,676	12,177	252,181	356,195
Non-financial assets	18,664	79,463	9,718	62	21,490	129,397
Capital expenditures	919	104	380	-	1,108	2,511
<i>Year ended December 31, 2018</i>						
Total revenue	105,501	422,477	120,594	33,213	356,373	1,038,158
Intercompany revenue	(43,154)	(270,820)	(5,894)	(147)	(192,887)	(512,902)
External revenue	62,347	151,657	114,700	33,066	163,486	525,256
Non-financial assets	14,364	71,535	9,578	-	16,507	111,984
Capital expenditures	1,081	303	375	-	4,814	6,573

Major customer(s)

For the year ended December 31, 2019, one customer represented more than 10% of the Company's revenue. This customer represented 10.5% of the Company's revenue. For the year ended December 31, 2018, one customer represented 16.1% of the Company's revenue.

25. Employee benefits

Pensions

Pension plan Dutch subsidiaries

Type:	Defined contribution plan.
	Industry-wide pension plan managed by Bedrijfstakpensioenfonds Metalektro.
Company obligations:	No continuing obligations other than the annual payments.
Contributions:	€ 1.0 million in 2019 and € 1.1 million in 2018.
Other:	Excedent plan for certain employees which is a defined contribution plan.

Pension plan parent company

Effective January 1, 2020 the pension arrangement for employees of the parent company has changed to a defined contribution plan. As a result, the Company has no further obligations under the previous plan. The Company recorded a curtailment gain of € 114 upon the plan change.

The total gains from changes in demographic assumptions, financial assumptions and experience adjustments in 2019 and 2018 were € 112 and € 20, respectively, and where recognized prior to change of pension arrangement.

Net benefit liability:

(euro in thousands)	December 31, 2019	December 31, 2018
Defined benefit obligations	2,429	2,408
Fair value of plan assets	(2,429)	(2,245)
Net liability	-	163

Pension plan Switzerland

Type:	Defined benefit plan for guaranteed pension payments. Insured with an independent insurance company.
Company obligations:	The contributions required are based on the agreement with the insurer. The Company does not hold any transferable financial instruments as plan assets.
Duration:	The weighted average duration of the plan is 19 years.
Valuation:	The pension assets related to this defined benefit plan are netted with the pension liability. The cost of providing benefits under the defined benefit plan is calculated using the project unit cost method.
Discount rate:	Remeasurements are reported in accumulated other comprehensive income (loss). The discount rate is based on the available information at November 30, 2019 and determined as follows: Swiss franc bonds with rating AA as included in the Swiss Bond Index. These bonds are used to determine a yield curve for durations up to 10 years. This yield curve is extended based on the government bond rates for longer duration.

Principal actuarial assumptions at the reporting date:

	2019	2018
Discount rate	0.20%	0.95%
Future salary increases	1.50%	1.50%
Future pension increases	0.10%	0.10%

Movement in the present value of the defined benefit obligations:

(euro in thousands)	2019	2018
Liability for defined benefit obligations at January 1	42,969	42,889
Current service cost	1,251	1,350
Interest expense	361	298
Actuarial loss (gain) arising from changes in economic assumptions	5,388	(1,850)
Actuarial loss (gain) arising from experience	131	634
Plan participants' contribution	424	442
Gains on curtailment	(307)	(832)
Benefits paid through pension assets and net transfers	(1,710)	(1,563)
Foreign currency differences	1,765	1,600
Liability for defined benefit obligations at December 31	50,272	42,968

Total defined benefit cost recognized in the Consolidated Statement of Comprehensive Income:

(euro in thousands)	Year ended December 31,	
	2019	2018
Current service costs	1,251	1,350
Interest expense on benefit obligation	361	298
Interest income on plan assets	(294)	(237)
Past service costs including effects of curtailment	(307)	(832)
Administration expenses	39	52
Defined benefit cost recognized in net income	1,050	631
Remeasurement from changes in financial assumptions and experience	5,519	(1,216)
Return on plan assets (excluding amounts in net interest)	(4,812)	420
Defined benefit cost recognized in comprehensive income	1,757	(165)

Movement in the fair value of plan assets:

(euro in thousands)	2019	2018
Fair value of plan assets at January 1	34,454	33,450
Interest income	294	237
Return on plan assets (excluding amounts included in net income)	4,812	(420)
Plan participants' contribution	424	442
Company contributions	1,000	1,087
Benefits paid through pension assets	(1,710)	(1,563)
Administration expenses	(39)	(52)
Foreign currency differences	1,422	1,273
Fair value of plan assets at December 31	40,657	34,454

The major categories of plan assets as a percentage of the fair value of total plan assets are as follows:

	December 31, 2019	December 31, 2018
Qualified insurance policies	42%	100%
Bonds	19%	-
Real estate	16%	-
Equities	13%	-
Others/cash	10%	-
Total	100%	100%

The insurance policies cover in principle the minimum funding requirements. Future contributions can be increased due to changes in the annuity factors. This is subject to decision of the Company.

Net pension liability:

(euro in thousands)	December 31, 2019	December 31, 2018
Defined benefit obligations	50,272	42,968
Fair value of plan assets	(40,657)	(34,454)
Net liability	9,615	8,514
Experience adjustments arising on plan liabilities economic assumptions	5,388	(1,850)
Experience adjustments arising on plan liabilities from experience	131	634
Experience adjustments arising on plan assets ((gains)/losses)	(4,812)	(420)

Total expected payments or contributions to the defined benefit plan for 2019 amount to € 1.0 million.

Sensitivity analysis

The calculation of the defined benefit obligations is sensitive to the assumptions as set out above. The following table summarizes how the defined benefit obligation at the end of the reporting period would have increased (decreased) as a result of a change in the respective assumptions by 0.25%.

(euro in thousands)	Defined benefit obligations	
	0.25% increase	0.25% decrease
Discount rate	(2,317)	2,147
Salary increase	203	(197)
Pension indexation	n/a	n/a
Interest credit rate	519	(548)

The above sensitivities are based on the average duration of the defined benefit obligations determined at the date of the last full actuarial valuation at December 31, 2019 and are applied to adjust the defined benefit obligation at the end of the reporting period of the assumptions concerned.

Pension plan Austria

Type:	Voluntary defined benefit plan for guaranteed pension payments covering certain persons, as well as a defined benefit plan for severance payments in accordance with Austrian Labor Law. Both plans are insured with an independent insurance company.
Company obligations:	The contributions required based on the agreement with the insurer. The Company does not hold any transferable financial instruments as plan assets.
Duration:	The weighted average duration of the pension plan is 8 years and the plan for severance payments is 19 years.
Valuation:	The pension assets related to this defined benefit plan do not qualify as plan assets and are therefore presented separately, not netted with the pension liability. The cost of providing benefits under the defined benefit plans is determined separately for each plan using the project unit cost method. Remeasurements are recognized in accumulated other comprehensive income (loss). There were no gains or losses from changes in demographic and financial assumptions for either pension or severance payment plan.
Discount rate:	The discount rate was derived by reference to appropriate benchmark yields on high quality corporate bonds.

Principal actuarial assumptions at the reporting date:

	2019	2018
Discount rate	0.80%	1.75%
Future salary increases (severance payments)	3.00%	3.00%

Movements in the present value of the defined benefit and severance obligations recognized in the Consolidated Statement of Financial Position are as follows:

(euro in thousands)	Pension liabilities	Severance obligations	2019 Total	Pension liabilities	Severance obligations	2018 Total
Liability for defined benefit and severance obligations at January 1	519	3,636	4,155	753	3,562	4,315
Service cost	18	183	201	23	192	215
Interest expense	9	63	72	13	61	74
Remeasurement losses (gains) recognized	97	639	736	(168)	(40)	(208)
Benefits paid	(7)	(88)	(95)	(102)	(139)	(241)
Liability for defined benefit and severance obligations at December 31	636	4,433	5,069	519	3,636	4,155

The accumulated defined benefit obligation amounts to € 5.1 million at December 31, 2019. Future expected benefit payments to (former) employees regarding pensions and leave over the next 10 years are considered immaterial.

A summary of the components of the defined benefit cost recognized in the Consolidated Statement of Comprehensive Income is as follows:

(euro in thousands)	Year ended December 31,	
	2019	2018
Service cost	201	215
Interest expense	72	74
Defined benefit cost recognized in net income	273	289
Remeasurement losses (gains) recognized	736	(208)
Defined benefit cost recognized in comprehensive income	1,009	81

Changes in assets related to the liability for defined benefit and severance obligations recognized in the Consolidated Statement of Financial Position are as follows:

(euro in thousands)	2019	2018
Fair value of plan assets at January 1	1,685	1,680
Interest income	53	48
Employer contribution/additions to assets	48	57
Benefits paid	(83)	(100)
Fair value of assets at December 31	1,703	1,685

At December 31, 2019, the assets consist of bonds (4%), investment funds (29%) and insurance policies (67%). At December 31, 2018 the assets mix was 4%, 27% and 69%, respectively.

Total expected payments or contributions to the defined benefit plan for 2020 amount to € 0.1 million.

Sensitivity analysis

The calculation of the defined benefit and severance obligations is sensitive to the assumptions as set out earlier. The following table summarizes how the defined benefit and severance obligation at the end of the reporting period would have increased (decreased) as a result of a change in the respective assumptions by 0.25%.

(euro in thousands)	Defined benefit and severance obligations	
	0.25% increase	0.25% decrease
Discount rate	(218)	230
Salary increase	195	(168)

The above sensitivities are based on the average duration of the defined benefit and severance obligations determined at the date of the last full actuarial valuation at December 31, 2019 and are applied to adjust the defined benefit and severance obligations at the end of the reporting period of the assumptions concerned.

Pension plan - other countries

The Company's US, Malaysian, Korean, Chinese and Singapore subsidiaries have defined contribution plans that supplement the governmental benefits provided under local legislation.

Share-based payments

Remuneration Policy 2017-2019

In 2016, the Company adopted the Remuneration Policy 2017-2019, which is mainly a prolongation of the Remuneration Policy 2011-2016. The total number of ordinary shares that will be awarded may not exceed 1.5% of the total number of outstanding shares at December 31 of the year prior to the year in which the award is made.

At the Annual General Meeting in 2018, shareholders approved a proposal whereby each Besi ordinary share is split into two ordinary shares with a simultaneous increase in the number of total ordinary shares authorized from 160 million to 320 million. Shareholders of record at the close of business on May 7, 2018 were eligible for the stock split. For comparative purposes, the award numbers prior to the stock split have been multiplied by two and the share prices and fair values prior to the stock split have been divided by two in this share-based payment note.

Under the Remuneration Policy 2017-2019, the Supervisory Board may, at its own discretion and upon recommendation of the Remuneration and Nomination Committee, award additional shares to a member of the Board of Management as a reward for extraordinary achievements of excellent performance, up to a maximum of 60,000 shares (120,000 shares following the two for one stock split in May 2018). For the performance year 2019, the Supervisory Board at its own discretion and upon recommendation by the Remuneration and Nomination Committee, awarded the member of the Board of Management 120,000 shares on a split-adjusted basis, which vested on January 17, 2019.

2014 and 2017 Framework Incentive Plan

The performance shares awarded as from 2014 to the member of the Board of Management and other employees under the 2014 and the 2017 Framework Incentive Plan will vest at the end of the three-year performance period, depending on the actual performance of the Company. If at target performance is achieved, 100% of the performance shares awarded will vest. The maximum number of shares that can vest amounts to 150% of the target number of performance shares conditionally awarded.

After the three-year performance period the actual number of performance shares that vests, subject to continued employment, will be determined based on:

- Net Income relative to Revenue (NIR) over a three-year performance period (50%).
- The Company's Total Shareholder Return ("TSR") relative to that of the TSR peer group consisting of 19 peer companies operating in the semiconductor industry (50%).

The TSR comparator group consists of the following companies:

TSR comparator group (including Besi)

Aixtron SE	Kulicke & Soffa Industries, Inc.
Applied Materials, Inc.	Lam Research Corporation
ASM International N.V.	Nanometrics, Inc. ¹
ASML Holding N.V.	Nova Measuring Instruments Ltd.
ASM Pacific Technology Ltd.	Shinkawa Ltd.
Axcelis Technologies, Inc.	SÜSS MicroTec SE
Brooks Automation, Inc.	Tokyo Electron Ltd.
Cohu, Inc.	Tokyo Seimitsu Co., Ltd.
Disco Corporation	Veeco Instruments, Inc.
Entegris, Inc.	

¹ Following the completion of the merger between Nanometrics, Inc. and Rudolph Technologies, Inc. on October 25, 2019, Nanometrics, Inc. has been replaced by Onto Innovation, Inc., the successor post-merger entity.

The vesting is determined based on the following schedule:

Ranking of Besi in comparator group based on relative TSR during performance period	Vesting percentage performance shares
Rank 1 – Rank 3	75%
Rank 4 – Rank 6	50% (at target)
Rank 7 – Rank 12	25%
Rank 13 – Rank 20	0%

Summary of outstanding performance shares

Following is a summary of changes in performance shares (award numbers adjusted for the two for one stock split):

	2019	2018
Outstanding at January 1	525,154	793,460
Performance shares granted (at target level)	142,066	142,418
Shares discretionary granted to the Board of Management	120,000	120,000
Shares discretionary granted to key employees	39,400	55,100
Performance adjustments	106,123	157,496
Performance shares settled in equity instruments (re-issued from treasury shares)	(477,769)	(642,792)
Performance shares forfeited	(24,210)	(100,528)
Outstanding at December 31	430,764	525,154

The market price adjusted for the two for one stock split of the Company's ordinary shares at the date of grant of performance shares in 2019 and 2018 was € 27.00 and € 31.25, respectively. At the date of grant of additional shares to the current member of the Board of Management, the market price adjusted for the two for one stock split of the Company's ordinary shares was € 18.92 (2018: € 37.93) and at the date of grant to key employees the price was € 22.91 (2018: € 40.60).

The following table shows the outstanding at target number of performance shares conditionally awarded to selected key employees and the Board of Management, in accordance with the Besi 2017 Framework Incentive Plan (award numbers adjusted for two for one stock split):

Performance shares	Year of grant	Three-year performance period	Number of performance shares
Key employees	2017	2017-2019	167,522
Key employees	2018	2018-2020	124,772
Key employees	2019	2019-2021	138,470
Total			430,764

Fair value measurement performance shares

2017 Framework Incentive Plan (Board of Management and other key employees)

For the awards made in 2019, the grant date fair value of the 50% portion with a TSR performance condition is € 21.67 (2018: € 19.50 adjusted for the two for one stock split) and has been derived using a Monte Carlo Simulation model. The significant inputs into the model were:

	2019	2018
Market price of the Company's ordinary shares (in euro)	27.00	31.25
Expected volatility	36.4%	42%
Expected dividend yield	6.00%	7.16%
Vesting period (in years)	3	3
Risk-free interest rate	(0.58%)	(0.38%)

For the 2019 awards, the grant date fair value of the 50% portion with a NIR performance condition is € 22.55 (2018: € 25.21 adjusted for the two for one stock split). This fair value has been derived from the market price of the Company's ordinary shares at the grant date, adjusted based on the present value for expected dividends over the three-year vesting period.

The expenses related to share-based payment plans recognized in the Statement of Comprehensive Income are as follows:

(euro in thousands)	Year ended December 31,	2019	2018
Performance shares granted and delivered to the Board of Management	2,270	4,551	
Performance shares granted and delivered to key employees	903	2,237	
Conditional performance shares Board of Management	792	787	
Conditional performance shares key employees	3,324	2,416	
Total expense recognized as personnel expenses	7,289	9,991	

26. Related-party transactions

BE Semiconductor Industries N.V. and all its subsidiaries are consolidated and all transactions between these entities have been eliminated in these financial statements. There are no non-consolidated companies considered as related parties.

The Board of Management and the Supervisory Board are considered "Key Management Personnel" in accordance with IAS 24. The remuneration of the Board of Management and the Supervisory Board is as follows.

Remuneration of the Board of Management

The remuneration of the member of the Board of Management is determined by the Supervisory Board, all with due observance of the Remuneration Policy adopted by the General Meeting of Shareholders. The Supervisory Board is required to present any scheme providing for the remuneration of the member of the Board of Management in the form of shares or options to the General Meeting of Shareholders for adoption.

The total cash remuneration and related costs of the member of the Board of Management for the years ended December 31, 2019 and 2018, were as follows:

(in euros)	Year ended December 31,	
	2019	2018
Salaries and other short-term employee benefits ¹	1,439,475	1,431,766
Post-employment benefits ²	33,159	38,912
Equity compensation benefits: Incentive Plan	791,569	786,782
Equity compensation benefits: Discretionary grant	2,270,400	4,551,000
Total	4,534,603	6,808,460

¹ Salaries include a bonus earned over the applicable year, which will be payable in the second quarter of the year thereafter. Furthermore, other benefits include expense compensation, medical insurance and social security premiums.

² The pension arrangements for the member of the Board of Management are defined contribution plans. The Company does not have further pension obligations beyond an annual contribution.

Remuneration of the Supervisory Board

The aggregate remuneration paid to current members of the Supervisory Board was € 373 in 2019 and € 359 in 2018. The remuneration of the Supervisory Board is determined by the General Meeting of Shareholders.

For further details for the remuneration of the Board of Management and the Supervisory Board reference is made to the Remuneration Report in this Annual Report.

Ordinary shares, options and performance shares held by the member of the Board of Management

The aggregate number of ordinary shares held by the current member of the Board of Management as of December 31, 2019 and 2018 (adjusted for the two for one stock split), was as follows:

Ordinary number of shares	December 31, 2019	December 31, 2018
Board of Management	1,728,628	1,623,956
Performance shares	Year of grant	Three-year performance period
Board of Management	2017	2017-2019
	2018	2018-2020
	2019	2019-2021
Total		86,987

The performance shares awarded will vest at the end of the three-year performance period, depending on the actual performance of the Company.

Ordinary shares held by members of the Supervisory Board

The aggregate number of ordinary shares held by one former member of the Supervisory Board as of December 31, 2018, was 49,220.

27. Selected operating expenses and additional information

Personnel expenses for all employees were as follows:

(euro in thousands)	Year ended December 31,	
	2019	2018
Wages and salaries	83,636	86,582
Social security expenses	8,024	7,703
Pension and retirement expenses defined contribution	4,209	4,543
Pension and retirement expenses defined benefit	1,724	1,865
Curtailment gain	(421)	(832)
Share-based compensation plans	7,289	9,991
Total personnel expenses	104,461	109,852

The average number of fulltime equivalent employees during 2019 and 2018 was 1,599 and 1,737, respectively. For pension and retirement expenses, reference is made to Note 25.

The total number of fulltime equivalent employees per department was:

	December 31,	December 31,
	2019	2018
Sales and Marketing	393	439
Manufacturing and Assembly	654	742
Research and Development	347	349
General and Administrative	140	162
Total number of personnel	1,534	1,692

As of December 31, 2019 and 2018, a total of 160 and 163 fulltime equivalent employees, respectively, were employed in the Netherlands.

28. Financial income and expense

The components of financial income and expense were as follows:

(euro in thousands)	Year ended December 31,	
	2019	2018
Interest income	200	23
Subtotal financial income	200	23
Interest expense	(10,179)	(9,770)
Hedging results	(3,422)	(7,495)
Net foreign currency results	(383)	(542)
Subtotal financial expense	(13,984)	(17,807)
Financial income (expense), net	(13,784)	(17,784)

Hedging results have decreased due to decreased volume and interest differences between Swiss franc and euro on the one hand and US dollar on the other hand.

29. Income taxes

Deferred tax assets (liabilities) consist of the following:

(euro in thousands)	December 31,	December 31,
	2019	2018
Deferred tax assets	14,978	4,769
Deferred tax liabilities	(8,858)	(10,244)
Total deferred tax assets (liabilities), net	6,120	(5,475)

The items giving rise to the deferred tax assets (liabilities), net were as follows:

(euro in thousands)	December 31, 2019	December 31, 2018
<i>Deferred tax assets (liabilities)</i>		
Swiss tax credits	11,641	-
Operating losses carry forward	3,317	5,016
Provision for pensions	2,797	1,917
Lease liabilities	1,811	-
Inventories	905	571
Interest	651	-
Foreign currency differences	590	599
Right of use assets	(1,813)	-
Convertible Notes	(4,530)	(5,318)
Intangible assets	(9,748)	(9,317)
Contract liability	-	511
Other items	499	546
Total deferred tax assets (liabilities), net	6,120	(5,475)

(euro in thousands)	January 1, 2019	Profit & loss 2019	OCI	Equity	Foreign currency	Initial recogna- tion IFRS 16	December 31, 2019
<i>Deferred tax assets (liabilities), net</i>							
Swiss tax credits	-	11,561	-	-	80	-	11,641
Operating losses carry forward	5,016	(2,359)	590	-	70	-	3,317
Provision for pensions	1,917	247	595	-	38	-	2,797
Lease liabilities	-	(506)	-	-	27	2,290	1,811
Inventories	571	327	-	-	7	-	905
Interest	-	651	-	-	-	-	651
Foreign currency differences	599	(40)	-	-	31	-	590
Right of use assets	-	504	-	-	(27)	(2,290)	(1,813)
Convertible Notes	(5,318)	1,007	-	(219)	-	-	(4,530)
Intangible assets	(9,317)	(414)	-	-	(17)	-	(9,748)
Contract liability	511	(511)	-	-	-	-	-
Other items	546	3	(65)	-	15	-	499
Total	(5,475)	10,470	1,120	(219)	224	-	6,120

(euro in thousands)	January 1, 2018	Profit & loss 2018	OCI	Equity	Foreign currency	December 31, 2018
<i>Deferred tax assets (liabilities), net</i>						
Operating losses carry forward	7,636	(2,223)	(590)	-	193	5,016
Intangible assets	(8,694)	(583)	-	-	(40)	(9,317)
Inventories	614	(43)	-	-	-	571
Provision for pensions	2,019	47	(182)	-	33	1,917
Convertible Notes	(7,174)	1,022	-	834	-	(5,318)
Foreign currency differences	227	368	-	-	4	599
Contract liability	-	(605)	-	1,116	-	511
Other items	(18)	821	120	(308)	(69)	546
Total	(5,390)	(1,196)	(652)	1,642	121	(5,475)

Upto and including 2019, Besi's Swiss operations had a mixed company status on Cantonal and Communal level. Effective January 1, 2020, the Federal Act on Tax Reform and AHV Financial ("Swiss Tax Reform") becomes effective, abolishing the current privileged corporate tax regimes. Upon transition, the Company has decided to use the current law step up method, which creates tax free reserves. These tax free reserves can be depreciated against taxable income on Cantonal and Communal level for a period of five years (years 2020 upto 2024) and to a maximum of 70% of the taxable income. Based on the available tax free reserves and the profit projections for the Company's Swiss operations, the Company recorded a net deferred tax asset of € 11.6 million in 2019. In addition, an amount of € 20.8 million related to the Swiss Tax Reform is not recognized, as the Company does not expect to utilize these tax credits within five years.

The deferred tax assets for operating losses carry forward are related to the US, Dutch and Austrian operations of the Company. In assessing the recoverability of deferred tax assets, the Company considers whether it is probable that sufficient taxable profits will be available to realize some portion or all of the deferred tax assets. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. The Company considers the scheduled reversal of deferred tax liabilities and projected future taxable income in making this assessment.

The US carry forwards amount to € 13.4 million as of December 31, 2019 and expire during the period of 2022 and thereafter. Based on actual results realized in 2019 and projection for the US operations, a valuation allowance of € 1.5 million has been recorded in 2019. The net deferred tax asset related to the US carry forward amounts to € 1.2 million and is expected to be fully recovered.

The Dutch carry forwards relating to operating losses amount to € 7.0 million and expire during the periods of 2020 and 2021. In 2019, the Dutch Government revised the statutory tax rate as follows: for 2020 a tax rate of 25% still applies, from 2021 onwards the tax rate is reduced to 21.7%.

Under the Dutch innovation box regime, qualifying income that results from endeavours in the field of R&D is taxed at an effective Dutch corporation tax rate of 7%. In 2019, the Company has been granted the Dutch innovation box regime, effective January 1, 2015. Upon final agreement, the Company recognized a tax benefit of € 5.1 million, of which € 4.8 million was reported in 2018 and the remainder of € 0.3 million in 2019.

The distinction in recognized and unrecognized tax losses carry forward and tax credits is as follows:

(euro in millions)	2019		2018	
	Recognized	Unrecognized	Recognized	Unrecognized
Netherlands	1.7	-	1.8	-
USA	1.2	1.5	3.2	-
Austria	0.4	-	-	-
Total tax losses carried forward	3.3	1.5	5.0	-
Switzerland tax free reserves	11.6	20.8	-	-
Total	14.9	22.3	5.0	-

The aggregate deferred tax related to items recognized outside of profit and loss amounts to € 1.0 million.

The Dutch domestic statutory tax rate is 25.0% for the years ended December 31, 2019 and 2018. The reconciliation between the actual income tax shown in the Consolidated Statement of Comprehensive Income and the expense (benefit) that would be expected based on the application of the domestic tax rate to income before income tax is as follows:

(euro in thousands)	Year ended December 31, 2019		Year ended December 31, 2018	
	in % of income before taxes			
"Expected" income tax expense based on domestic rate	19,534	25.0%	38,736	25.0%
Foreign tax rate differential ¹	(10,659)	(13.6%)	(19,154)	(12.4%)
Recognition of Swiss tax credit	(11,564)	(14.8%)	-	-
Non-deductible expenses	1,877	2.4%	2,976	1.9%
Tax incentive	(1,985)	(2.5%)	(5,333)	(3.4%)
Tax exempt income	(997)	(1.3%)	(360)	(0.2%)
Valuation allowance on net operating losses US operations	1,591	2.0%	-	-
Changes in enacted tax rates	127	0.1%	-	-
Adjustments prior years	(1,237)	(1.6%)	1,064	0.7%
Other	130	0.2%	759	0.5%
Income tax expense shown in Consolidated Statement of Comprehensive Income	(3,183)	(4.1%)	18,688	12.1%

¹ Mainly due to nominal Swiss tax rates.

The income tax expense shown in the Consolidated Statement of Comprehensive Income consisted of the following:

(euro in thousands)	Year ended December 31, 2019	2018
Current	7,287	17,492
Deferred	(10,470)	1,196
Total	(3,183)	18,688

There are no income tax consequences attached to the proposed payment of dividends by the Company to its shareholders.

Tax risk

Given the international business structure of the Company and the increasing number and amounts of intercompany transactions and the internationally growing attention for tax Base Erosion and Profit Shifting ("BEPS"), certain tax risks hereto may exist. The Company does not pay taxes or make use of tax structures in countries where the Company has no economic activities.

Description of uncertain tax positions

Following a tax audit in Malaysia, the Company was by law obliged to pay additional income taxes of € 0.4 million relating to transfer pricing adjustments. However, based on the relevant facts and circumstances whereas the Company has followed OECD practices and guidelines for the transfer pricing, management has assessed that it is probable that the claim will be reversed or refused by court. Hence, no provision to reflect this uncertainty is recorded in the financial statements.

30. Earnings per share

The following table reconciles ordinary shares outstanding at the beginning of the year to average shares outstanding used to compute income per share. The share and per share data have been retroactively adjusted for the two for one stock split effected in May 2018.

	2019	2018
Shares outstanding at beginning of the year	73,569,611	74,551,078
Shares re-issued from treasury shares for the vesting of performance stock awards (LTI)	318,369	467,692
Shares re-issued from treasury shares for the vesting of shares discretionary granted	159,400	175,100
Shares bought under the share repurchase program	(1,834,958)	(1,624,259)
Shares outstanding at end of the year	72,212,422	73,569,611
Average shares outstanding - basic	72,796,679	74,440,864
Dilutive effect of outstanding performance shares	486,919	670,776
Dilutive effect of 2016 and 2017 Convertible Notes	9,866,242	9,642,429
Average shares outstanding - diluted	83,149,840	84,754,069

Net income in 2019 used in calculating dilutive earnings per share amounts to € 87.9 million (2018: € 142.7 million) and is adjusted for the after tax effects of interest charged related to the 2016 and 2017 Convertible Notes.

31. Financial instruments, financial risk management objectives and policies

Fair value of financial instruments

The Company assumes that the book value of the Company's financial instruments, which consist of cash and cash equivalents, deposits, trade receivables and accounts payable, does not significantly differ from their fair value due to the short maturity of those instruments and to the fact that interest rates are floating or approximate the rates currently available to the Company. For the valuation of the Convertible Notes reference is made to [Note 18](#).

The Company uses the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique:

- Level 1: Quoted (unadjusted) prices in active markets for identical assets or liabilities.
- Level 2: Other techniques for which all inputs which have a significant effect on the recorded fair value are observable, either directly or indirectly.
- Level 3: Techniques which use inputs which have a significant effect on the recorded fair value that are not based on observable market data.

The fair values of financial assets and financial liabilities, together with the carrying amounts in the Consolidated Statements of Financial Position, are as follows:

(euro in thousands)	Note	Carrying amount	Level	December 31, 2019 Fair value
<i>Financial assets</i>				
Forward exchange contracts	7	1,396	2	1,396
Marketable securities for pension liability	12	571	1	571
Total		1,967		1,967
<i>Financial liabilities</i>				
Forward exchange contracts	16	173	2	173
Long-term debt	18	277,067	1	403,077
Total		277,240		403,250

(euro in thousands)				December 31, 2018
	Note	Carrying amount	Level	Fair value
<i>Financial assets</i>				
Forward exchange contracts	7	2,143	2	2,143
Marketable securities for pension liability	12	524	1	524
Total		2,667		2,667
<i>Financial liabilities</i>				
Forward exchange contracts	16	138	2	138
Long-term debt and financial leases	18	271,824	1	276,757
Total		271,962		276,895

There were no transfers between levels during the years ended December 31, 2019 and December 31, 2018.

The only recurring fair value measurement is the valuation of forward exchange contracts for hedging purposes. According to IFRS 13 this measurement is categorized as Level 2. Money market funds are part of our cash and cash equivalents and therefore categorized as level 1. Non-recurring fair value measurements were not applicable in the reporting period.

Financial risk management objectives and policies

Risk management framework

The Company is exposed to a variety of financial risks, such as foreign currency risk, interest rate risk, credit risk, market risk, liquidity risk and capital risk. These risks are inherent to the way the Company operates as a multinational with a number of local operating companies.

The Company's overall risk management policy is established to identify and analyze the risks faced by the Company, to set appropriate risk limits and controls, and to monitor risks and adherence to risk limits. Risk management policies and systems are managed at central level and reviewed regularly to reflect changes in market conditions and the Company's activities.

All material findings that result from the use of the Company's risk management policy are discussed with our Audit Committee and Supervisory Board.

The Company, through its training, management standards and procedures, such as guidelines and instructions governing hedging of financial risks, developed a disciplined and constructive control environment in which all employees understand their roles and obligations. In addition, the Company performs several reviews at all significant operating companies, such as reviews of the foreign currency positions. The Company's policies, specifically regarding to foreign currency hedging, interest rate, credit, market and liquidity risks, are further described in the remainder of this Note.

Foreign exchange

Due to the international scope of the Company's operations, the Company is exposed to the risk of adverse movements in foreign currency exchange rates. The Company is primarily exposed to fluctuations in the value of the euro, Swiss franc, Singapore dollar, Malaysian ringgit and Chinese yuan against the US dollar and US dollar-linked currencies, since approximately 68% of its sales in 2019 (2018: approximately 67%) are denominated in US dollar. Furthermore, due to the Company's ongoing transfer of the supply chain to Asia, the Company is increasingly exposed to fluctuations of the Malaysian ringgit, Chinese yuan and Singapore dollar against the euro and US dollar.

130 The Company seeks to protect itself from adverse movements in foreign currency exchange rates by hedging firmly committed sales contracts, which are denominated in foreign currencies through the use of forward foreign currency exchange contracts. In addition, the Company also uses forward foreign currency exchange contracts to hedge balance sheet positions that are denominated in a foreign currency. During 2019 and 2018, the Company did not have any derivative financial instruments that were held for trading or speculative purposes. Furthermore, the Company does not use financial instruments to hedge the translation risk related to equity, intercompany loans of a permanent nature and earnings of foreign subsidiaries. The Company has adopted the cash flow hedge model in line with IFRS 9. In this hedging model, the effective part of a hedge transaction is reported as a component of other comprehensive income, which is reclassified to earnings in the same period(s) in which the hedged forecasted transaction affects earnings.

Due to cash flow hedge transactions, € 541 was reported as other comprehensive income at December 31, 2019. The amount in 2019 released from equity in revenue in the Consolidated Statement of Comprehensive Income was € 238. The cash flow hedging reserve included in equity comprises the effective portion of the cumulative net change in the fair value of cash flow hedges related to hedged transactions that have not yet occurred. The ineffective part of the hedges recognized, directly in the Consolidated Statement of Comprehensive Income was a loss of € 488 in 2019 and a loss of € 1,082 in 2018.

The movement of the cash flow hedging reserve is as follows:

(euro in thousands)	2019	2018
Balance at January 1	13	884
Amount recognized in equity	(198)	(3,286)
Amount recycled in Consolidated Statement of Comprehensive Income	238	1,333
Amount reclassified to Consolidated Statement of Comprehensive Income due to ineffectiveness	488	1,082
Balance at December 31	541	13

The Company has exposure to credit risk to the extent that the counterparty to the transaction fails to perform according to the term of the contract. The amount of such credit risk, measured as the fair value of all forward foreign currency exchange contracts that have a positive fair value position, was € 1,396 and € 2,143 at December 31, 2019 and 2018, respectively. The Company believes that the risk of significant loss from credit risk is remote, because it deals with credit-worthy financial institutions. The Company does not, in the normal course of business, demand collateral from the counterparties.

Following is a summary of the Company's forward foreign currency exchange contracts at foreign currency contract rate:

(euro in thousands)	December 31, 2019	December 31, 2018
To sell Chinese yuan for euros	3,340	3,316
To sell euros for Chinese yuan	461	-
To sell euros for Malaysian ringgits	3,778	4,273
To sell euros for Singapore dollars	1,977	1,243
To sell euros for Swiss francs	51,737	71,835
To sell euros for US dollars	-	13,044
To sell Malaysian ringgits for US dollars	4,391	4,812
To sell Malaysian ringgits for euros	1,717	464
To sell Malaysian ringgits for Swiss francs	435	675
To sell Swiss francs for Chinese yuan	923	-
To sell Swiss francs for euros	1,579	-
To sell Swiss francs for Malaysian ringgits	6,064	-
To sell Swiss francs for US dollars	-	2,183
To sell US dollars for Chinese yuan	2,422	-
To sell US dollars for euros	10,521	14,066
To sell US dollars for Korean won	2,853	-
To sell US dollars for Malaysian ringgits	3,299	9,367
To sell US dollars for Philippine peso	785	-
To sell US dollars for Swiss francs	66,247	122,325
Total	162,529	247,603

The contracts to sell US dollars for euros and Swiss francs predominantly apply for hedge accounting. All other forward foreign currency exchange contracts are economic hedges.

At December 31, 2019 and 2018, the unrealized gain on forward foreign currency exchange contracts that were designated as a hedge of firmly committed transactions amounted to € 1,223 and € 2,005, respectively.

The fair value of the Company's forward foreign currency exchange contracts, which are categorized as Level 2 is as follows:

(euro in thousands)	2019		2018	
	Positive	Negative	Positive	Negative
<i>Forward foreign currency exchange contracts</i>				
Fair value	1,396	173	2,143	138

The fair value of the forward foreign currency exchange contracts is included in the Company's other receivables and the other payables. The Company recorded no changes in the fair value of the financial instruments that were attributable to changes in the credit risk of the forward exchange contracts. Cash flows related to foreign currency contracts are expected to occur as follows:

(euro in thousands)	December 31, 2019	December 31, 2018
Within 0-3 months	162,529	245,694
From 3-6 months	-	-
From 6-9 months	-	1,909
Total	162,529	247,603

The Company's principal financial liabilities, other than derivatives, comprise of bank loans and overdrafts, Convertible Notes, financial leases and trade payables. The main purpose of these financial liabilities is to finance the Company's operations. The Company has various financial assets such as trade receivables and cash and short-term deposits, which arise directly from its operations.

The Company enters into derivative transactions exclusively with forward currency contracts. The purpose of these transactions is to manage the currency risks arising from the Company's operations.

The Company's policy is, and has been throughout 2019 and 2018, that no trading in derivatives shall be undertaken. The main risks arising from the Company's financial instruments are foreign currency risk, interest rate risk, credit risk and liquidity risk.

Foreign currency risk

As a consequence of the global nature of Besi's businesses, its operations, reported financial results and cash flows are exposed to the risks associated with fluctuations in exchange rates between the euro and other major world currencies. Currency exchange rate movements typically also affect economic growth, inflation, interest rates, government actions and other factors. These changes can cause the Company to adjust its financing and operating strategies.

The discussion below of changes in currency exchange rates does not incorporate these other economic factors. For example, the sensitivity analysis presented in the foreign exchange rate risk discussion below does not take into account the possibility that rates can move in opposite directions and that gains from one category may or may not be offset by losses from another category. As currency exchange rates change, translation of the statements of operations of Besi's international business into euro affects year-over-year comparability.

Besi's currency risk exposure primarily occurs because the Company generates a portion of its revenue in currencies other than the euro while the major share of the corresponding cost of sales is incurred in euro, Swiss franc, Malaysian ringgit and Chinese yuan. The percentage of its consolidated net revenue which is presented by US dollar or US dollar-linked currencies amounted to approximately 68% and 67% of total revenue in the years ended December 31, 2019 and 2018, respectively, whereas revenue denominated in euro amounted to approximately 32% in 2019. Approximately 33% of its costs and expenses were denominated in euro, 10% in Swiss franc, 25% in Malaysian ringgit, 11% in Chinese yuan and the remaining 21% in various currencies. In order to mitigate the impact of currency exchange rate fluctuations, Besi continually assesses its remaining exposure to currency risks and hedges such risks through the use of derivative financial instruments. The principal derivative financial instruments currently used by the Company to cover foreign currency exposures are forward foreign currency exchange contracts that qualify for hedge accounting.

132 The following table presents a sensitivity analysis of the Company's profit before tax (due to changes in the fair value of monetary assets and liabilities) and the Company's equity (due to changes in the fair value of forward exchange contracts) related to reasonable potential changes in the US dollar exchange rate compared to the euro, Swiss franc and Malaysian ringgit, with all other variables held constant. This comparison is done as most transactions are in US dollar and are hedged against the local currencies of the main operations in the Netherlands, Switzerland and Malaysia. The analysis includes the effects of fair value changes of the financial instruments used to hedge the currency exposures and focuses only on balance sheet positions.

(euro in thousands)	Effect on profit before tax	2019		2018	
		Effect on equity	Effect on profit before tax	Effect on equity	Effect on equity
Increase/decrease in US dollar rate compared to euro	+10%	-	(1,000)	-	(1,000)
	-10%	-	1,000	-	1,000
Increase/decrease in US dollar rate compared to Swiss franc	+10%	-	(3,000)	-	(5,000)
	-10%	-	3,000	-	5,000

The current outstanding forward exchange contracts have been included in this calculation.

Interest rate risk

The Company has interest-bearing assets and liabilities exposing it to fluctuations in market interest rates. The Company is hardly exposed to the risk of changes in market interest rates through borrowing activities due to very limited debt with floating interest rates. Given the Company's cash position, fluctuations in market interest rates are affecting the Company's results. An increase of interest rates will have a positive effect, while a decrease of market interest rates will negatively impact the Company's results. No derivative interest rate related swaps have been entered into for trading or speculative purposes or to manage interest exposures.

Credit risk

Credit risk is the risk that the counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss. The Company is exposed to credit risk from its operating activities (primarily for trade receivables) and from its financing activities for cash and cash equivalents and derivative financial instruments. With its treasury and cash investment policies the Company manages exposure to credit risks on an ongoing basis including monitoring of the creditworthiness of counterparties. The Company does not anticipate non-performance by counterparties given their high creditworthiness expressed in good credit rates.

The Company's maximum exposure to credit risk for financial instruments are the carrying amounts of financial assets as illustrated in the table at the beginning of [Note 31](#). The Company does not hold collateral as security.

Cash and cash equivalents

The Company is managing the credit risk from balances with banks and cash equivalents in accordance with the Company's cash investment policy. In addition to preserving the principal amount main objectives of this policy are maintaining appropriate liquidity for business operations, diversifying cash investments to minimize risk from inappropriate investments and concentrating the Company's cash at the highest level, i.e. BE Semiconductor Industries N.V. Diversification is aimed by distributing the cash and cash equivalents over at least five counterparties including money market funds. Cash pool arrangements based on zero-balancing are in place to concentrate cash enabling BE Semiconductor Industries N.V. to fulfil the role of internal bank.

The Company invests cash and cash equivalents in (short-term) deposits with financial institutions that have good credit ratings and in triple A money market funds that invest in highly rated short-term debt securities of governments, financial institutions and corporates. These investments are readily convertible to a known amount in cash and are subject to an insignificant risk of change in value.

Trade receivables and other receivables

The Company has established a credit policy under which credit evaluations are performed on all customers requiring credit over specified thresholds. The Company's exposure to credit risk is influenced mainly by the individual characteristics of each customer. However, management also considers the demographics of the Company's customer base, including the default risk of the industry and country in which customers operate, as these factors may have an influence on credit risk. As the Company's revenue is generated by shipments to Asian manufacturing operations of leading US, European and Asian semiconductor manufacturers and subcontractors, an industry and geographical concentration of credit risk exists, however, this risk is reduced through the long-term relationships with its customers.

Ageing of trade receivables and other receivables:

(euro in thousands)	Total	Impaired	Current	Past due				
				< 30 days	30-60 days	60-90 days	90-120 days	> 120 days
2019	90,552	(790)	70,419	10,400	4,817	1,519	1,158	3,029
2018	114,362	(821)	66,570	13,770	8,684	11,088	4,765	10,306

Expected credit loss assessment

The Company recognizes an allowance for expected credit losses ("ECLs"). ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that the Company expects to receive, discounted at an approximation of the original effective interest rate. For trade receivables and contract assets, the Company applies a simplified approach in calculating ECLs. Therefore, the Company does not track changes in credit risk, but instead recognizes a loss allowance based on lifetime ECLs at each reporting date. The Company has established a provision matrix that is based on its historical credit loss experience, adjusted for forward-looking factors specific to the debtors and the economic environment. In addition, the Company has, as an addition (sensitivity) analysis compared the outcome based on historical losses with the credit ratings of its largest individual customers.

Based on the above, an amount of € 100 of impairment has been recognized on trade receivables and contract assets as per December 31, 2019.

Forward exchange contracts

The forward exchange contracts are with multiple counterparties that have high credit ratings. Currently, the Company does not expect any counterparty to fail to meet its obligations.

Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates, interest rates and equity prices, will affect the Company's income or the value of its holdings of financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return. The Company buys and sells derivatives, and also incurs financial liabilities, in order to manage market risks. All such transactions are carried out within the guidelines set by the Company.

Liquidity risk

Liquidity risk is the risk that the Company will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled by delivering cash or another financial asset. The Company's liquidity needs are affected by many factors including uncertainties of the global economy and the semiconductor industry resulting in fluctuating cash requirements. The Company believes that it will have sufficient liquidity to meet its current liabilities including expected capital expenditures and repayment obligations in 2019. The Company monitors its risk to a shortage of funds by reviewing cash flows of all entities throughout the year. The Company intends to return cash to the shareholders on a regular basis in the form of dividend payments and, subject to actual and anticipated liquidity requirements and other relevant factors, share buybacks.

The table below summarizes the maturity profile of the Company's financial liabilities at December 31, 2019 and 2018, based on contractual undiscounted payments:

(euro in thousands)	On demand	Less than 3 months	3 to 12 months	1 to 5 years	> 5 years	Total
<i>Year ended December 31, 2019</i>						
Convertible Notes (assuming no conversion)	-	-	-	300,000	-	300,000
Other long-term debt	-	-	515	527	-	1,042
Lease liabilities (Note 19)	-	846	2,540	7,512	414	11,312
Interest payable convertible	-	-	4,000	12,875	-	16,875
Accounts payable	384	29,413	481	-	-	30,278
Other payables	1,042	13,356	10,124	152	-	24,674
Total	1,426	43,615	17,660	321,066	414	384,181

(euro in thousands)	On demand	Less than 3 months	3 to 12 months	1 to 5 years	> 5 years	Total
<i>Year ended December 31, 2018</i>						
Convertible Notes (assuming no conversion)	-	-	-	125,000	175,000	300,000
Other long-term debt and financial leases	-	-	1,502	-	-	1,502
Interest payable convertible	-	-	4,000	16,000	875	20,875
Other interest payable long-term debt and financial leases	7	1,236	-	-	-	1,243
Accounts payable	881	32,070	207	-	-	33,158
Other payables	860	10,520	13,452	-	-	24,832
Total	1,748	43,826	19,161	141,000	175,875	381,610

It is not expected that the cash flows included in the maturity profile could occur significantly earlier, or at significantly different amounts.

Capital management

The primary objective of the Company's capital management is to ensure healthy capital ratios, with focus on liquidity and financial stability throughout the industry cycles, in order to support its business and maximize shareholder value.

The Company manages its capital structure and makes adjustments to it, in light of changes in economic conditions. To maintain or adjust the capital structure, the Company may make a dividend payment to shareholders, return capital to shareholders or issue new shares. No changes were made in the objectives, policies or processes during the years ended December 31, 2019 and December 31, 2018. The Company only regards equity as capital. This capital is managed using solvency ratio (excluding intangible assets) and return on investment.

(euro in thousands, except for percentages)	2019	2018
Equity	298,508	372,188
Solvency ratio	42.8%	48.2%
Solvency ratio (excluding intangible fixed assets)	34.6%	41.9%
Return on average investment	24.2%	33.8%

The return on average investment is calculated using the opening and closing balance of equity and the net income of 2019.

The total number of ordinary shares that will be awarded under the 2017 Framework Incentive Plan may not exceed 1.5% of the total number of outstanding shares at December 31 of the year prior to the year in which the award is made.

32. Events after the balance sheet date

Subsequent events were evaluated up to February 19, 2020, which is the date the Financial Statements included in this Annual Report were approved. There are no events to report.

Parent Company Balance Sheet

(Before appropriation of the result)

(euro in thousands)	Note	December 31, 2019	December 31, 2018
<i>Assets</i>			
Intangible fixed assets	2	1,074	808
Tangible fixed assets	3	62	-
Investments in subsidiaries	4	293,517	307,308
Loans due from subsidiaries	4	16,095	20,351
Deposits		-	50,000
Financial fixed assets		309,612	377,659
Total fixed assets		310,748	378,467
Amounts due from subsidiaries		13,227	6,605
Other receivables		1,663	1,297
Receivables		14,890	7,902
Deposits		130,000	130,000
Cash and cash equivalents		292,746	295,368
Total current assets		437,636	433,270
Total assets		748,384	811,737
<i>Shareholders' equity, provisions and liabilities</i>			
Share capital	5	800	800
Share premium	5	159,672	197,280
Retained earnings	5	(3,903)	(10,397)
Legal reserves	5	72,697	59,476
Other comprehensive income	5	(12,078)	(11,227)
Undistributed result	5	81,320	136,256
Shareholders' equity		298,508	372,188
Provisions		1,362	2,892
Provisions		1,362	2,892
Convertible Notes	7	276,540	271,790
Non-current liabilities		276,540	271,790
Trade payables		1,409	4,932
Amounts due to subsidiaries		168,674	158,233
Other payables		1,891	1,702
Current liabilities		171,974	164,867
Total shareholders' equity, provisions and liabilities		748,384	811,737

Parent Company Statement of Income and Expense

(euro in thousands)	Note	Year ended December 31, 2019	2018
General and administrative expenses		6,935	7,640
Total operating expenses		6,935	7,640
Operating loss		(6,935)	(7,640)
Financial income	9	1,576	1,801
Financial expense	9	(10,382)	(10,116)
Financial income (expense), net		(8,806)	(8,315)
Income (loss) before income tax		(15,741)	(15,955)
Income tax expense (income)		(2,591)	(6,140)
Income from subsidiaries, after taxes	4	94,470	146,071
Net income		81,320	136,256

Notes to the Parent Company Financial Statements

1. Summary of significant accounting policies

The Financial Statements of the parent company have been prepared using the option of article 362.8 of Book 2 of the Netherlands Civil Code, meaning that the accounting principles used are the same as for the Consolidated Financial Statements.

Foreign currency amounts have been translated, assets and liabilities have been valued, and net income has been determined, in accordance with the principles of valuation and determination of income presented in the summary of significant accounting policies included in the Notes to the Consolidated Financial Statements. Subsidiaries of the parent company are accounted for using the net equity value. The net equity value is determined on the basis of IFRS accounting principles applied in the Consolidated Financial Statements. In case of a negative net equity value of a subsidiary, the negative value is deducted from the loan due from the respective subsidiary.

In addition, the Company will apply the option provided under RJ 100.107a to eliminate the impact of IFRS 9 on intercompany receivables and payables in the parent company financial statements against their book value of these receivables and payables in order to have no impact on the reconciliation between the consolidated equity and company equity position.

The remuneration paragraph is included in Note 25 of the Consolidated Financial Statements and reference is also made to the Remuneration Report included in this Annual Report.

2. Intangible fixed assets

Intangible assets, net consist of the following:

(euro in thousands)	Software
<i>Balance at January 1, 2019</i>	
Cost	2,673
Accumulated amortization	(1,865)
Other intangible assets, net	808
<i>Changes in book value in 2019</i>	
Capital expenditures	714
Disposals (cost)	(160)
Disposals (accumulated amortization)	160
Amortization	(448)
Total changes	266
<i>Balance at December 31, 2019</i>	
Cost	3,227
Accumulated amortization	(2,153)
Other intangible assets, net	1,074

The intangible fixed assets consist of capitalized licenses and are amortized in three to five years.

3. Tangible fixed assets

The tangible fixed assets include right of use assets for leased cars.

4. Financial fixed assets

Investments in subsidiaries

The movement was as follows:

(euro in thousands)	Investment in subsidiaries	Loans due from subsidiaries	Total
Balance at January 1, 2019	307,308	20,351	327,659
Income for the period	94,470	-	94,470
Negative equity adjustments	(358)	358	-
Loans	-	(5,178)	(5,178)
Dividend payments	(111,928)	-	(111,928)
Changes in accumulated other comprehensive income	(974)	-	(974)
Currency translation adjustment	4,999	564	5,563
Balance at December 31, 2019	293,517	16,095	309,612

(euro in thousands)	Investment in subsidiaries	Loans due from subsidiaries	Total
Balance at January 1, 2018	306,126	14,437	320,563
Effect of adoption of new accounting standards (Note 2 Consolidated Financial Statements)	(6,188)	-	(6,188)
Balance at January 1, 2018 adjusted	299,938	14,437	314,375
Income for the period	146,071	-	146,071
Negative equity adjustments	(1,515)	1,515	-
Loans	-	3,288	3,288
Transfer to amounts due from subsidiaries (short-term)	-	(13)	(13)
Dividend payments	(143,284)	-	(143,284)
Changes in accumulated other comprehensive income	(426)	-	(426)
Currency translation adjustment	6,524	1,124	7,648
Balance at December 31, 2018	307,308	20,351	327,659

The negative equity adjustments in the movement schedule are adjustments of the income for the period related to the net income of the subsidiaries with a negative equity value.

Loans due from/to subsidiaries

Interest on loans from/to subsidiaries is calculated based on monthly base rates plus a market-conform mark-up. An amount of € 20.2 million relates to loans granted by BE Semiconductor Industries N.V. to its US subsidiaries. These loans are repaid upon lenders' demand for repayment. Therefore, no interest is calculated on these loans.

For an overview of all subsidiaries, reference is made to "Principals of consolidation" in the [Notes to the Consolidated Financial Statements](#).

5. Shareholder's equity

At the AGM of April 26, 2018, the General Meeting of Shareholders approved a stock split of the Company's shares whereby each issued ordinary share was split into two shares. After the effectuation of this stock split in May 2018, Besi's authorized share capital consists of 160,000,000 ordinary shares, nominal value € 0.01 per share, and 160,000,000 preference shares, nominal value € 0.01 per share.

(euro in thousands, except for share data)	Number of ordinary shares outstanding	Share capital	Share premium	Retained earnings	Legal reserves	Other compre- hensive income	Undistri- buted result	Total share- holders' equity
Balance at January 1, 2019	80,067,842	800	197,280	(10,397)	59,476	(11,227)	136,256	372,188
Total comprehensive income for the period	-	-	-	-	5,878	(851)	81,320	86,347
Dividend paid to owners of the Company	-	-	-	-	-	-	(122,419)	(122,419)
Legal reserve	-	-	-	(7,343)	7,343	-	-	-
Appropriation of the result	-	-	-	13,837	-	-	(13,837)	-
Equity-settled share-based payments expense	-	-	7,289	-	-	-	-	7,289
Purchase of treasury shares	-	-	(44,678)	-	-	-	-	(44,678)
Deferred tax convertible	-	-	(219)	-	-	-	-	(219)
Balance at December 31, 2019	80,067,842	800	159,672	(3,903)	72,697	(12,078)	81,320	298,508

(euro in thousands, except for share data)	Number of ordinary shares outstanding	Share capital	Share premium	Retained earnings	Legal reserves	Other compre- hensive income	Undistri- buted result	Total share- holders' equity
Balance at January 1, 2018	40,033,921	400	222,322	389	48,847	(10,817)	172,991	434,132
Effect of adoption of new accounting standards (Note 2 Consolidated Financial Statements)	-	-	-	(6,188)	-	-	-	(6,188)
Balance at January 1, 2018 adjusted	40,033,821	400	222,322	(5,799)	48,847	(10,817)	172,991	427,944
Total comprehensive income for the period	-	-	-	-	7,058	(410)	136,256	142,904
Dividend paid to owners of the Company	-	-	-	-	-	-	(174,018)	(174,018)
Legal reserve	-	-	-	(3,571)	3,571	-	-	-
Appropriation of the result	-	-	-	(1,027)	-	-	1,027	-
Equity-settled share-based payments expense	-	-	9,991	-	-	-	-	9,991
Purchase of treasury shares	-	-	(35,467)	-	-	-	-	(35,467)
Deferred tax convertible	-	-	834	-	-	-	-	834
Stock split ²	40,033,921	400	(400)	-	-	-	-	-
Balance at December 31, 2018	80,067,842	800	197,280	(10,397)	59,476	(11,227)	136,256	372,188

¹ The outstanding number of ordinary shares includes 7,855,420 and 6,498,231 treasury shares at December 31, 2019 and December 31, 2018, respectively.

² At the AGM of April 26, 2018, the General Meeting of Shareholders approved a stock split of the Company's shares whereby each issued ordinary share was split into two shares.

Changes in legal reserves during 2019 and 2018 were as follows:

(euro in thousands)	Legal currency translation adjustment	Legal reserve capitalized R&D expenses	Legal reserves for subsidiaries	Total legal reserves
Balance at January 1, 2019	22,513	36,963	-	59,476
Total comprehensive income (loss) for the period	5,878	-	-	5,878
Transfer from retained earnings	-	4,146	3,197	7,343
Balance at December 31, 2019	28,391	41,109	3,197	72,697
Balance at January 1, 2018	15,455	33,392	-	48,847
Total comprehensive income (loss) for the period	7,058	-	-	7,058
Transfer from retained earnings	-	3,571	-	3,571
Balance at December 31, 2018	22,513	36,963	-	59,476

Preference shares

At the AGM of April 26, 2018, the General Meeting of Shareholders approved a stock split of the Company's shares whereby each issued ordinary share was split into two shares. After the effectuation of this stock split in May 2018, Besi's authorized share capital consists of 160,000,000 ordinary shares, nominal value € 0.01 per share, and 160,000,000 preference shares, nominal value € 0.01 per share.

No preference shares were outstanding at December 31, 2019 and December 31, 2018.

In April 2000, the foundation "Stichting Continuiteit BE Semiconductor Industries" (the "Foundation") was established. The Foundation is an independent legal entity and is not owned or controlled by any other legal person. The purpose of the Foundation is to safeguard the interests of the Company, the enterprise connected therewith and all the parties having an interest therein and to exclude as much as possible influences which could threaten, among other things, the continuity, independence and identity of the Company contrary to such interests. The aim of the preference shares is, among other things, to provide a protective measure against unfriendly take-over bids and other possible unsolicited influences which could threaten the Company's continuity, independence and identity. The issue of preference shares would enable the Company to consider its position in the then-existing circumstances.

By agreement of May 19, 2008, between the Company and the Foundation, which replaces a similar agreement dated April 19, 2002, the Foundation has been granted a call option pursuant to which it may purchase a number of preference shares up to a maximum of the number of ordinary shares issued and outstanding at the time of exercise of this option, minus one.

The Company has also granted to the Foundation the right to file an application for an inquiry into the policy and conduct of business of the Company with the Enterprise Chamber of the Amsterdam Court of Appeal (Ondernemingskamer). The Company believes that this may be a useful option in the period before the issuance of preference shares, without causing a dilution of the rights of other shareholders at that stage.

Foreign currency translation adjustment

The foreign currency translation adjustment comprises all foreign currency differences arising from the translation of the financial statements of foreign operations.

Accumulated other comprehensive income (loss)

Accumulated other comprehensive income (loss) consists of:

(euro in thousands)	December 31, 2019	December 31, 2018
Actuarial gains (losses)	(15,359)	(13,445)
Cash flow hedging reserve	541	13
Deferred taxes	1,977	1,442
Others	763	763
Accumulated other comprehensive income (loss)	(12,078)	(11,227)

Actuarial gains (losses)

The reserve for actuarial gains and losses arises from the actuarial calculations for the defined benefit pension plans.

Cash flow hedging reserve

The cash flow hedging reserve comprises the effective portion of the cumulative net change in the fair value of cash flow hedges related to hedged transactions that have not yet occurred.

Deferred taxes

The deferred taxes in accumulated other comprehensive income primarily relate to the deferred tax on the recognized actuarial gains and losses on the Austrian and Swiss pension plans.

Dividends

Proposed for approval at the Annual General Meeting of Shareholders to be held on April 30, 2020 (not recognized as a liability as at December 31, 2019 and December 31, 2018):

(euro in thousands)	Year ended December 31, 2019	2018
€ 1.01 per ordinary share (2018: € 1.67)	72,934	122,861

The Board of Management proposes to allocate the part of the net income for the year 2019 remaining after payment of the dividend to the retained earnings. The Supervisory Board has approved this proposal.

6. Borrowing facilities

A summary of Besi's principal credit lines is as follows:

- A € 80 million committed revolving credit facility with a consortium of European banks, which matures in 2024. Outstanding amounts under this credit facility will bear interest at Euribor/Libor plus a margin that depends on the Company's financial position. The agreement contains an extension option upto 2026 and can be increased to € 136 million. Borrowings under the Facility can be repaid at any time at 100% of principal amount and can be used for working capital and other corporate purposes. The principal covenants associated with the Facility include a maintenance test of Consolidated Debt to Equity and a limitation on the incurrence of additional permitted indebtedness. The Facility is granted without securities.
- An uncommitted overdraft facility of € 10.0 million for the purpose of short-term overdrafts (maximum of 15 days) in current accounts. The facility has no contractual maturity date.
- A credit line of € 1.0 million for bank guarantees is granted without securities. The borrowing facility has no contractual maturity date.

No borrowings were utilized.

7. Convertible Notes

In December 2016, the Company issued € 125 million principal amount of Convertible Notes with a maturity date of December 2, 2023 (the "2016 Convertible Notes"). The 2016 Convertible Notes carry a nominal interest rate of 2.5% per year, payable semi-annually. Bondholders can convert the bonds into ordinary shares at a conversion price of € 19.93 (subject to adjustments). The original exercise price of € 43.51 has been adjusted for the two for one stock split effective May 4, 2018 and dividends paid subsequent to the date of issuance of the 2016 Convertible Notes in accordance with the terms and conditions related thereto. The 2016 Convertible Notes will be repaid at maturity at a price of 100% of their principal amount plus accrued and unpaid interest. If not converted, at any time from December 23, 2020, the Company may redeem the outstanding 2016 Convertible Notes at their principal amount, subject to giving a minimum of 30 days' and maximum of 60 days' prior notice to Bondholders, if the value of the Shares underlying the 2016 Convertible Notes equals or exceeds 130% of the then effective conversion price for at least 20 out of 30 consecutive dealing days.

The amount of the 2016 Convertible Notes classified as equity of € 11,310 is net of attributable debt issuance cost of € 215.

In November 2017, the Company issued € 175 million principal amount of Convertible Notes with a maturity date of December 6, 2024 (the "2017 Convertible Notes"). The 2017 Convertible Notes carry a nominal interest rate of 0.5% per year, payable semi-annually. Bondholders can convert the bonds into ordinary shares at a conversion price of € 48.68 (subject to adjustments). The original exercise price of € 99.74 has been adjusted for the two for one stock split effective May 4, 2018 and dividends paid subsequent to the date of issuance of the 2017 Convertible Notes in accordance with the terms and conditions related thereto. The 2017 Convertible Notes will be repaid at maturity at a price of 100% of their principal amount plus accrued and unpaid interest. If not converted, at any time from December 27, 2021, the Company may redeem the outstanding 2017 Convertible Notes at their principal amount, subject to giving a minimum of 30 days' and maximum of 60 days' prior notice to Bondholders, if the value of the shares underlying the 2017 Convertible Notes equals or exceeds 130% of the then effective conversion price for at least 20 out of 30 consecutive dealing days.

The amount of the 2017 Convertible Notes classified as equity of € 18,479 is net of attributable debt issuance cost of € 292.

8. Commitments and contingencies

The Company leases certain equipment under operating leases. Upon the implementation of IFRS 16 on January 1, 2019, the lease liabilities are recognized on balance.

BE Semiconductor Industries N.V. has assumed joint and several liabilities in accordance with article 403 Part 9 of Book 2 of The Dutch Civil Code with respect to its Dutch subsidiaries.

BE Semiconductor Industries N.V. is parent of the fiscal unity BE Semiconductor Industries N.V. and is therefore liable for the liabilities of the fiscal unit as a whole. The credit facilities of Besi Leshan Co. Ltd. and Besi Singapore Pte. Ltd. are secured by a parent company guarantee.

9. Financial income and expense

The components of financial income and expense were as follows:

(euro in thousands)	Year ended December 31,	
	2019	2018
Interest income	1,576	1,801
Subtotal financial income	1,576	1,801
Interest expense	(10,326)	(9,768)
Hedging results	(121)	(190)
Net foreign currency results	65	(158)
Subtotal financial expense	(10,382)	(10,116)
Financial income (expense), net	(8,806)	(8,315)

10. Selected operating expenses and additional information

Personnel expenses for all employees were as follows:

(euro in thousands)	Year ended December 31,	
	2019	2018
Wages and salaries	1,733	2,134
Social security expenses	104	141
Pension and retirement expenses	268	389
Share-based compensation plans	7,289	9,991
Other personnel costs	535	650
Total personnel expenses	9,929	13,305

Certain selected operating expenses are recharged to subsidiaries.

The average number of full time equivalent employees during 2019 and 2018 was 7 and 8, respectively.

11. Additional information

Cost of services provided by external auditor

Ernst & Young Accountants LLP has served as our independent registered public accounting firm for the year 2019 and 2018. The following table sets out the aggregated fees for professional audit services and other services rendered Ernst & Young Accountants LLP and its member firms and/or affiliates in 2019 and 2018.

(euro in thousands)	Ernst & Young Accountants LLP	E&Y Network	Year ended December 31, 2019	Ernst & Young Accountants LLP	E&Y Network	Year ended December 31, 2018
Audit services	305	229	534	279	221	500
Other assurance services ¹	-	1	1	-	-	-
Other non-audit services ¹	-	28	28	-	66	66
Total costs	305	258	563	279	287	566

¹ The other services relate to tax related non-audit services, such as corporate income tax compliance and assistance with transfer pricing documentation in Malaysia and Taiwan. Ernst & Young has not provided prohibited non-audit services as referred to in Article 5(1) of the EU Audit Regulation 537/2014 and applicable Dutch laws and regulations relating to auditor independence.

Total number of personnel

The Company employed 8 employees at December 31, 2019 (December 31, 2018: 10).

Events after the balance sheet date

Subsequent events were evaluated up to February 19, 2020, which is the date the Financial Statements included in this Annual Report were approved. There are no events to report.

Duiven, February 19, 2020

Board of Management

Richard W. Blickman

Supervisory Board

Lodewijk Hijmans van den Bergh
Carlo Bozotti
Douglas J. Dunn
Mona ElNaggar
Niek Hoek

Other Information



Jürgen Hermann Mayer (1965–present)

A German architect and artist, Mayer focuses on designing works at the intersection of architecture, communication and leading edge technology. In his urban planning and building schemes, Mayer explores the relationship between the human body, technology and natural forms. Mayer designed the Metropol Parasol (Seville, Spain).

Corporate Office

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For addresses of Besi's offices and manufacturing facilities worldwide, please visit Besi's website:
www.besi.com

Transfer Agent

Ordinary shares (euro)
ABN AMRO Bank N.V., Amsterdam,
the Netherlands

Independent Auditors

Ernst & Young Accountants LLP,
Eindhoven, the Netherlands

Legal Counsels

Freshfields Bruckhaus Deringer,
Amsterdam, the Netherlands

Rutgers Posch Visée Endedijk N.V.,
Amsterdam, the Netherlands

Trade Register

Chamber of Commerce,
Arnhem, the Netherlands
Number 09092395

Statutory Financial Statements

The statutory financial statements of BE Semiconductor Industries N.V. will be filed with the Chamber of Commerce, Arnhem, the Netherlands.

Annual General Meeting

The Annual General Meeting of Shareholders will be held on April 30, 2020, 10.30 a.m. at Besi in Duiven, the Netherlands.

Board of Management**Richard W. Blickman (1954)**

Chief Executive Officer,
Chairman of the Board of
Management

Management Team Members**Ruurd Boomsma (1956)**

CTO

Christoph Scheiring (1970)

SVP Die Attach

Jeroen Kleijburg (1974)

SVP Packaging

Ruben Tibben (1978)

VP Plating

Henk Jan Jonge Poerink (1970)

SVP Global Operations

J.K. Park (1965)

SVP Sales & Customer Service APac

René Hendriks (1961)

SVP Sales Europe/North America

Cor te Hennepe (1958)

SVP Finance

Other Members of Management**K.M. Kok (1980)**

VP Die Attach Mainstream Asia

Danilo Gerletti (1967)

VP Spares & Tooling

Michael Leu (1962)

VP Strategic Supply Management

Andrea Kopp-Battaglia (1978)

SVP Finance Asia and SVP Finance
Die Attach

Independent Auditor's Report

To: the shareholders and Supervisory Board of BE Semiconductor Industries N.V.

Report on the audit of the financial statements 2019 included in the Annual Report

Our opinion

We have audited the financial statements 2019 of BE Semiconductor Industries N.V. (the "Company") based in Amsterdam. The financial statements include the Consolidated Financial Statements and the Parent Company Financial Statements.

In our opinion:

- The accompanying Consolidated Financial Statements give a true and fair view of the financial position of BE Semiconductor Industries N.V., as at December 31, 2019 and of its result and its cash flows for 2019 in accordance with International Financial Reporting Standards as adopted by the European Union (EU-IFRS) and with Part 9 of Book 2 of the Dutch Civil Code.
- The accompanying Parent Company Financial Statements give a true and fair view of the financial position of BE Semiconductor Industries N.V. as at December 31, 2019 and of its result for 2019 in accordance with Part 9 of Book 2 of the Dutch Civil Code.

The Consolidated Financial Statements comprise:

- The Consolidated Statement of Financial Position as at December 31, 2019.
- The following statements for 2019: the Consolidated Statement of Comprehensive Income, the Consolidated Statement of Changes in Equity and the Consolidated Statement of Cash Flows.
- The notes comprising a summary of the significant accounting policies and other explanatory information.

The Parent Company Financial Statements comprise:

- The Parent Company Balance Sheet as at December 31, 2019.
- The Parent Company Statement of Income and Expense for 2019.
- The notes comprising a summary of the accounting policies and other explanatory information.

Basis for our opinion

We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing. Our responsibilities under those standards are further described in the "Our responsibilities for the audit of the financial statements section of our report".

We are independent of BE Semiconductor Industries N.V. in accordance with the EU Regulation on specific requirements regarding statutory audit of public-interest entities, the "Wet toezicht accountantsorganisaties" (Wta, Audit firms supervision act), the "Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten" (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence regulations in the Netherlands. Furthermore we have complied with the "Verordening gedrags- en beroepsregels accountants" (VGBA, Dutch Code of Ethics).

We believe the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our audit approach

Our understanding of the business

BE Semiconductor Industries N.V. is the holding company for a worldwide business engaged in the development, production, marketing and sales of back-end equipment for the semiconductor industry. The group is structured in components and we tailored our group audit approach accordingly. We paid specific attention in our audit to a number of areas driven by the operations of the group and our risk assessment.

We start by determining materiality and identifying and assessing the risks of material misstatement of the financial statements, whether due to fraud, non-compliance with laws and regulations or error in order to design audit procedures responsive to those risks, and to obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

Materiality

Materiality	€ 5,600,000 (2018: € 7,500,000)
Benchmark applied	Around 7% of profit before tax
Explanation	Based on our professional judgement we have considered an earnings-based measure as the appropriate basis to determine materiality. We consider profit before tax to be the most relevant measure given the nature of the business and the users of the financial statements. Due to the cyclicity in the semiconductor industry and subsequent lower results in 2019 compared to 2018, we have used a higher percentage (2019: 7%, 2018: 5%) to determine our materiality.

We have also taken into account misstatements and/or possible misstatements that in our opinion are material for the users of the financial statements for qualitative reasons.

We agreed with the Supervisory Board that misstatements in excess of € 280,000, which are identified during the audit, would be reported to them, as well as smaller misstatements that in our view must be reported on qualitative grounds.

Our focus on fraud and non-compliance with laws and regulations

Our responsibility

Although we are not responsible for preventing fraud or non-compliance and cannot be expected to detect non-compliance with all laws and regulations, it is our responsibility to obtain reasonable assurance that the financial statements, taken as a whole, are free from material misstatement, whether caused by fraud or error. Non-compliance with laws and regulations may result in fines, litigation or other consequences for the Company that may have a material effect on the financial statements.

Our audit response related to fraud risks

In order to identify and assess the risks of material misstatements of the financial statements due to fraud, we obtained an understanding of the entity and its environment, including the entity's internal control relevant to the audit and in order to design audit procedures that are appropriate in the circumstances. As in all of our audits, we addressed the risk of management override of internal control. We do not audit internal control per se for the purpose of expressing an opinion on the effectiveness of the Company's internal control.

We considered available information and made enquiries of relevant executives, directors and the Supervisory Board. As part of our process of identifying fraud risks, we evaluated fraud risk factors with respect to financial reporting fraud, misappropriation of assets and bribery and corruption.

We evaluated the design and the implementation of internal controls that mitigate fraud risks. In addition, we performed procedures to evaluate key accounting estimates for management bias in particular relating to important judgement areas and significant accounting estimates as disclosed in [Note 2](#) in the financial statements. We have also used data analysis to identify and address high-risk journal entries.

We incorporated elements of unpredictability in our audit. We considered the outcome of our other audit procedures and evaluated whether any findings were indicative of fraud or non-compliance. If so, we reevaluate our assessment of fraud risk and its resulting impact on our audit procedures.

Our audit response related to risks of non-compliance with laws and regulations

We assessed factors related to the risks of non-compliance with laws and regulations that could reasonably be expected to have a material effect on the financial statements from our general industry experience, through discussions with the Board of Management, reading minutes, inspection of internal compliance reports, and performing substantive tests of details of classes of transactions, account balances or disclosures.

We also inspected lawyers' letters and correspondence with regulatory authorities and remained alert to any indication of (suspected) non-compliance throughout the audit. Finally we obtained written representations that all known instances of non-compliance with laws and regulations have been disclosed to us.

Going concern

In order to identify and assess the risks of going concern and to conclude on the appropriateness of management's use of the going concern basis of accounting, we consider based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause a company to cease to continue as a going concern.

Scope of the group audit

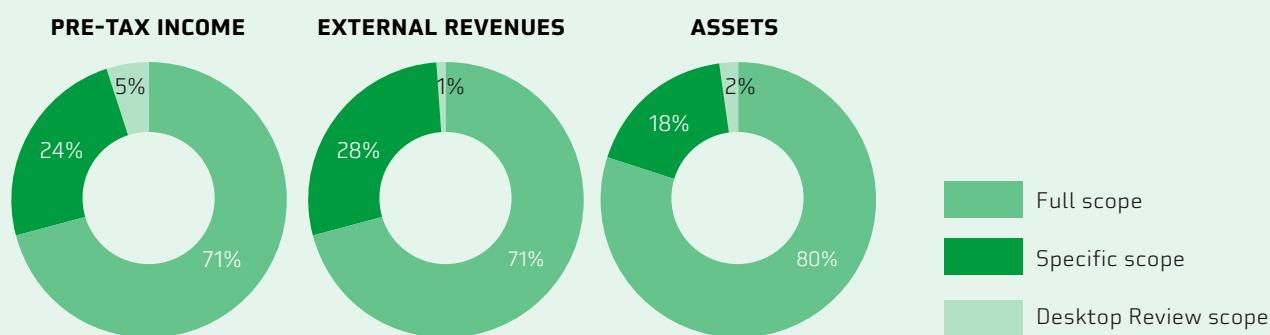
BE Semiconductor Industries N.V. is at the head of a group of entities. The financial information of this group is included in the Consolidated Financial Statements of BE Semiconductor Industries N.V.

Because we are ultimately responsible for the opinion, we are also responsible for directing, supervising and performing the group audit. In this respect we have determined the nature and extent of the audit procedures to be carried out for group entities. Decisive were the size and/or the risk profile of the group entities or operations. On this basis, we selected group entities for which an audit or review had to be carried out on the complete set of financial information or specific items.

Our group audit mainly focused on significant group entities in Austria, China, the Netherlands, Malaysia, Singapore and Switzerland. We have:

- Performed audit procedures ourselves at the group entities located in the Netherlands, on the key audit matters revenue recognition and valuation of goodwill and certain centralized accounts.
- Used the work of other EY auditors when auditing the group entities in Europe and Asia.
- Performed review procedures or specific audit procedures at other group entities.

In total these procedures resulted in the following coverage:



By performing the procedures mentioned above at group entities, together with additional procedures at group level, we have been able to obtain sufficient and appropriate audit evidence about the group's financial information to provide an opinion about the Consolidated Financial Statements.

Teaming and use of specialists

We ensured that the audit teams both at group and at component levels included the appropriate skills and competences which are needed for the audit of a listed client in the semiconductor industry. We included specialists in the areas of valuation, IT audit, share based payments, income tax and corruption and bribery.

General audit procedures

Our audit further included among others:

- Performing audit procedures responsive to the risks identified, and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion.
- Evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Evaluating the overall presentation, structure and content of the financial statements, including the disclosures.
- Evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Our key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements. We have communicated the key audit matters to the Supervisory Board. The key audit matters are not a comprehensive reflection of all matters discussed.

Following the changes in tax legislation in Switzerland, a new key audit matter has been defined related to the valuation of the related deferred tax asset.

These matters were addressed in the context of our audit of the financial statements as a whole and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Revenue recognition

Risk	Our audit response	Observations
<p>Due to the nature of the Company's industry the Company enters into various customer contracts and revenue arrangements which may include a combination of multiple performance obligations and can include different shipping terms.</p> <p>We identified the following risks related to improper revenue recognition and management override for the Company:</p> <ol style="list-style-type: none"> 1. Machines sales revenue could be recorded in the incorrect year (cut-off). 2. Recognition of other performance obligations (e.g. extended warranty) not in accordance with IFRS 15 (revenue from customer contracts). 3. Posting of manual journal entries in external revenues on management instructions. 4. Issuance of invoices for fictitious revenue transactions. <p>Reference is made to Note 2 and 23 to the Consolidated Financial Statements for the significant accounting policies on revenue recognition.</p>	<p>We have assessed the appropriateness of the Company's revenue recognition accounting policies and assessed compliance with EU-IFRS accounting policies (IFRS 15).</p> <p>Our audit procedures included, amongst others, testing individual sales orders and transactions to assess proper identification of the identifiable performance obligations in the contracts and correct allocation of the transaction price to these performance obligations and recognition hereof. We used data analytics to correlate revenues to cash receipts. Furthermore, we tested manual journal entries with supporting evidence. We also selected sales transactions before and after year-end to assess whether revenue was recognized in the correct period by, amongst others, inspection of sales contracts, internal acceptance tests, client acceptance documents and shipping documents.</p> <p>We also evaluated the adequacy of the disclosures provided by the Company in Note 2 and 23.</p>	<p>We assessed that the Company's revenue recognition accounting policies were appropriately applied and disclosed in Note 2 and 23 in the Consolidated Financial Statements. Furthermore, we assessed that the revenues were recorded in the correct year (cut-off) and that no invoices were issued for fictitious sales transactions.</p>

Valuation of goodwill

Risk	Our audit response	Observations
<p>The Company's goodwill of € 45.3 million is allocated to two cash generating units, Die Attach (€ 43.3 million) and Plating (€ 2.0 million) at December 31, 2019. The annual goodwill impairment test for the Die Attach cash generating unit is a key audit matter because the amount is material and the assessment process is judgemental and is based on assumptions that are affected by expected future market and economic conditions.</p> <p>Considering the downturn of the semiconductor industry and the declined performance of the Company during 2019, we considered the valuation of goodwill as a key audit matter.</p> <p>Reference is made to Note 10 for the disclosure related to goodwill.</p>	<p>We assessed and challenged management's assumptions used in the impairment model as outlined in Note 10 to the Consolidated Financial Statements, amongst others, the discount rate used, relevant allocations, forecasted cash flows and growth rates.</p> <p>For the financial forecast after 2020, the Company used assumptions in respect of market growth estimates from semiconductor equipment industry reports.</p> <p>We have evaluated the historical accuracy of management's estimates that drive the assessment, such as business plans and expected growth rates. In our audit we were assisted by our valuation experts.</p> <p>We also evaluated the adequacy of the disclosures provided by the Company in Note 10 in relation to its impairment assessment.</p>	<p>We assessed that the Company's goodwill impairment analysis was performed in accordance with EU-IFRS accounting policies (IAS 36) and adequately disclosed in Note 10 in the Consolidated Financial Statements.</p>

Valuation of deferred tax asset (Swiss tax reform)

Risk	Our audit response	Observations
<p>Effective January 1, 2020, the Federal Act on Tax Reform and AHV Financial (Swiss Tax Reform) becomes effective in Switzerland, abolishing the current privileged corporate tax regimes. Upon transition, the Company has decided to use the current law step up method, which creates tax free reserves. The amortization of these tax free reserves can be offset against future taxable income on Cantonal and Communal level for a period of five years (years 2020 up to and including 2024) and to a maximum of 70% of the taxable income. Based on the available tax free reserves and the profit projections for the Company's Swiss operations, the Company recorded a net deferred tax asset of € 11.6 million in 2019. Comprising of a gross amount of € 32.4 million and a recorded valuation allowance of € 20.8 million, as the Company does not expect to utilize the full tax credits within the coming five years. The recognition of this deferred tax asset is considered a key audit matter as the amount is material and the recoverability of the deferred tax asset is based on forward looking assumptions that may be affected by future market and economic conditions.</p> <p>Reference is made to Note 29 for the disclosure related to income taxes.</p>	<p>Our audit procedures included the use of tax specialists in Switzerland to assess the new tax legislation and evaluating the underlying tax calculations of the Company. We have evaluated the Company's assumptions and estimates in relation to the likelihood of generating sufficient future taxable income based on budgets and strategic business plans, principally by performing sensitivity analyses and evaluating and testing the key assumptions used to determine the amounts recognized.</p> <p>We also evaluated the adequacy of the disclosures provided by the Company in Note 29 in relation to income taxes.</p>	<p>We assessed that the Company's tax accounting policies were appropriately applied in accordance with the EU-IFRS accounting policies (IAS 12 and IFRIC 23) and adequate disclosed in Note 29 in the Consolidated Financial Statements. We concur with management that it is probable that sufficient future taxable profits will be available to use.</p>

Report on other information included in the Annual Report

In addition to the financial statements and our auditor's report thereon, the Annual Report contains other information that consists of:

- Report of the Board of Management.
- Remuneration Report.
- Report of the Supervisory Board.
- Other information as required by Part 9 of Book 2 of the Dutch Civil Code.

Based on the following procedures performed, we conclude that the other information:

- Is consistent with the financial statements and does not contain material misstatements.
- Contains the information as required by Part 9 of Book 2 and Section 2:135b of the Dutch Civil Code.

We have read the other information. Based on our knowledge and understanding obtained through our audit of the financial statements or otherwise, we have considered whether the other information contains material misstatements. By performing these procedures, we comply with the requirements of Part 9 of Book 2 and Section 2:135b sub-Section 7 of the Dutch Civil Code and the Dutch Standard 720. The scope of the procedures performed is substantially less than the scope of those performed in our audit of the financial statements.

Management is responsible for the preparation of the other information, including the Report of the Board of Management in accordance with Part 9 of Book 2 of the Dutch Civil Code, other information required by Part 9 of Book 2 of the Dutch Civil Code and the Remuneration Report in accordance with Section 2:135b of the Dutch Civil Code.

Report on other legal and regulatory requirements

Engagement

We were engaged as auditor of BE Semiconductor Industries N.V. as of the audit for the year 2018 and have operated as statutory auditor since the appointment in the AGM of 26 April 2018.

No prohibited non-audit services

We have not provided prohibited non-audit services as referred to in Article 5(1) of the EU Regulation on specific requirements regarding statutory audit of public-interest entities.

Description of responsibilities for the financial statements

Responsibilities of management and the Supervisory Board for the financial statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with EU-IFRS and Part 9 of Book 2 of the Dutch Civil Code. Furthermore, management is responsible for such internal control as management determines is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to fraud or error.

As part of the preparation of the financial statements, management is responsible for assessing the Company's ability to continue as a going concern. Based on the financial reporting frameworks mentioned, management should prepare the financial statements using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so. Management should disclose events and circumstances that may cast significant doubt on the Company's ability to continue as a going concern in the financial statements.

The Supervisory Board is responsible for overseeing the Company's financial reporting process.

Our responsibilities for the audit of the financial statements

Our objective is to plan and perform the audit engagement in a manner that allows us to obtain sufficient and appropriate audit evidence for our opinion.

Our audit has been performed with a high, but not absolute, level of assurance, which means we may not detect all material errors and fraud during our audit.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements. The materiality affects the nature, timing and extent of our audit procedures and the evaluation of the effect of identified misstatements on our opinion.

We have exercised professional judgement and have maintained professional skepticism throughout the audit, in accordance with Dutch Standards on Auditing, ethical requirements and independence requirements. Our audit approach section above includes an informative summary of our responsibilities and the work performed as the basis for our opinion.

Communication

We communicate with the Supervisory Board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant findings in internal control that we identify during our audit.

In this respect we also submit an additional report to the Audit Committee in accordance with Article 11 of the EU Regulation on specific requirements regarding statutory audit of public-interest entities. The information included in this additional report is consistent with our audit opinion in this auditor's report.

We provide the Supervisory Board with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Supervisory Board, we determine the key audit matters: those matters that were of most significance in the audit of the financial statements. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, not communicating the matter is in the public interest.

Eindhoven, February 19, 2020

Ernst & Young Accountants LLP

M. Moolenaar

Other Information

Preference shares

At December 31, 2019, the Company's authorized capital consisted of 160,000,000 ordinary shares, nominal value € 0.01 per share, and 160,000,000 preference shares, nominal value € 0.01 per share.

No preference shares were outstanding at December 31, 2019.

In April 2000, the foundation "Stichting Continuiteit BE Semiconductor Industries" (the "Foundation") was established. The Foundation is an independent legal entity and is not owned or controlled by any other legal person. The purpose of the Foundation is to safeguard the interests of the Company, the enterprise connected therewith and all the parties having an interest therein and to exclude as much as possible influences which could threaten, among other things, the continuity, independence and identity of the Company. The aim of the preference shares is, among other things, to provide a protective measure against unfriendly take-over bids and other possible unsolicited influences which could threaten the Company's continuity, independence and identity, including, but not limited to, a proposed resolution to dismiss the Supervisory Board or the Board of Management. The issue of preference shares would enable the Company to consider its position in the then-existing circumstances.

By agreement of May 19, 2008 between the Company and the Foundation, which replaced a similar agreement dated April 19, 2002, the Foundation has been granted a call option pursuant to which it may purchase a number of preference shares up to a maximum of the number of ordinary shares issued and outstanding at the time of exercise of this option, minus one.

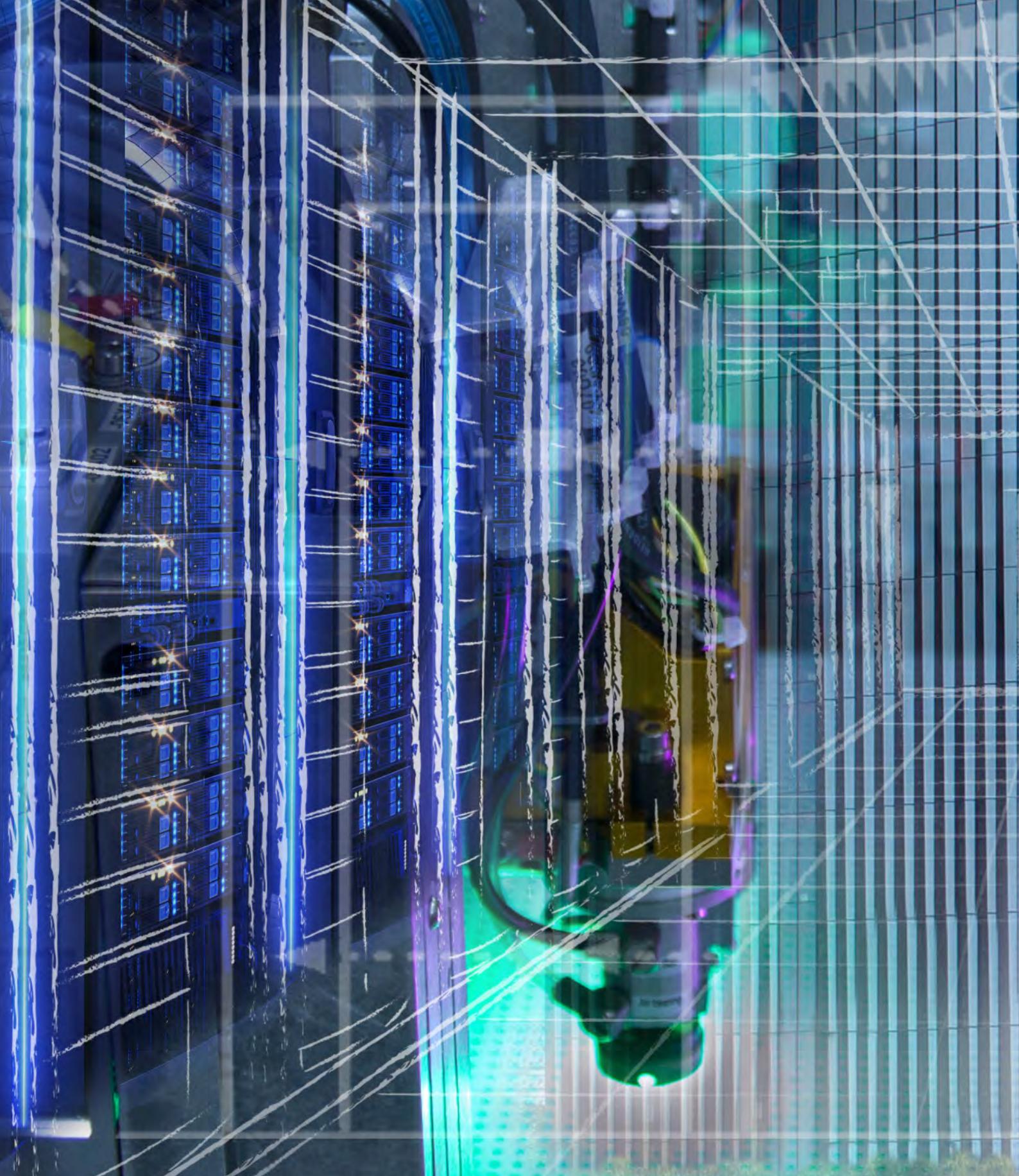
The Company has also granted to the Foundation the right to file an application for an inquiry into the policy and conduct of the business of the Company with the Enterprise Chamber of the Amsterdam Court of Appeal (Ondernemingskamer). The Company believes that this may be a useful option in the period before the issuance of preference shares, without causing a dilution of the rights of other shareholders at that stage.

The members of the board of the Foundation are W.L.J. Bröcker (Chairman), J.N. de Blécourt, F. van Hout and T. de Waard. Except for Mr De Waard who is a former Supervisory Board member, none of the members of the board of the Foundation are connected to the Company. The Foundation therefore qualifies as an independent legal entity within the meaning of section 5:71 paragraph 1 sub c of the Dutch Financial Supervision Act (Wet op het financieel toezicht).

Appropriation of the result

The Articles of Association provide that the Company can only distribute profits from its free distributable reserves. The Board of Management, with the approval of the Supervisory Board, will propose to the Annual General Meeting of Shareholders to determine the total dividend over 2019 at € 1.01 per ordinary share, amounting to a total of € 72.9 million. The Board of Management proposes to allocate the part of the net income for the year 2019 remaining after payment of the dividend to the retained earnings. The Supervisory Board has approved this proposal.

The General Meeting of Shareholders approved the 2018 statutory financial statements on April 26, 2019.



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