ASM INTERNATIONAL

ANNUAL REPORT 2018

TAKING THE NEXT LEAP FORWARD

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ABOUT

The demand for smaller, faster and cheaper semiconductor chips continues to rise, driven by advancements in cloud computing, artificial intelligence, smartphones and the Internet of Things.

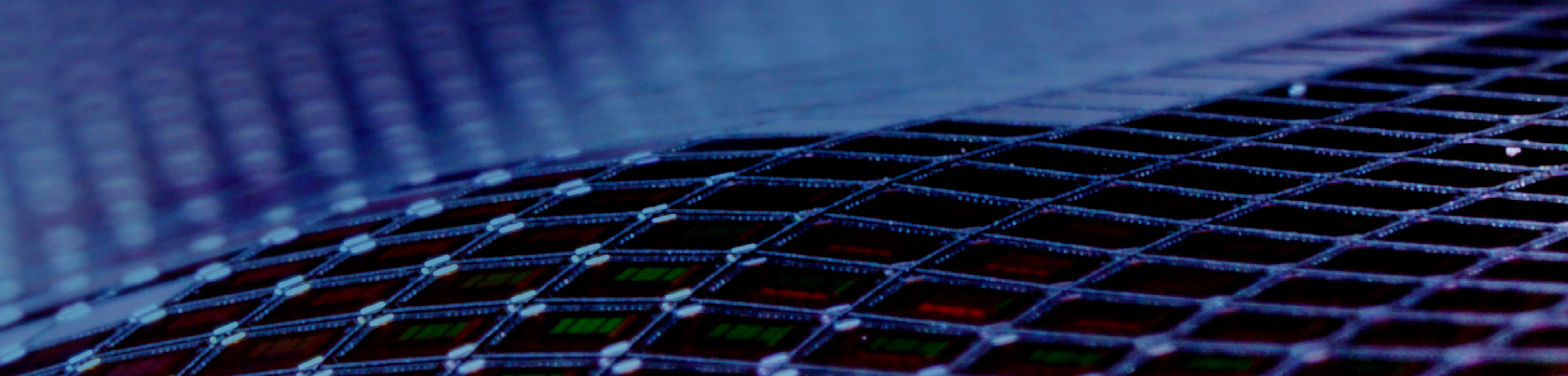
MEETING DEMAND

Our technology is the first step towards making it all possible, as our R&D investment in new materials, new products and new processes means we can help our customers develop their technology roadmap, and further extend Moore's Law.

CREATING RESULTS

In 2018, this led to the introduction of the Synergis ALD tool, which leverages the core technologies from our Pulsar and EmerALD ALD products for high productivity thermal ALD applications. The new Synergis tool allows us to address more ALD applications and therefore increases our served market. Together with our other products and services, this contributed to our strong financial results, which included:

- net sales of €818 million;
- bookings of €942 million;
- operating result of €124 million; and
- operating cash flow of €137 million.



MESSAGE FROM THE CEO

Charles D. (Chuck) del Prado
Chairman of the Management Board, President and Chief Executive Officer

2018 has been a successful year for ASMI. With sales growth of 17% on a US$ basis (based on comparable 2017 revenues restated for IFRS15) we outperformed the wafer fab equipment market. We progressed well towards our strategic targets as we further expanded our addressable market in ALD and we strengthened our position in the other product lines. We stepped up our investments – to prepare our company for the next stage of growth – and, at the same time, we returned more than €600 million to our shareholders in 2018.

In the second half of the year the memory segment started to slow down. Still, ASMI finished the year with record sales and bookings in the fourth quarter as our strong position in logic and foundry more than offset the slowdown in memory spending. Supported by a record high backlog we have entered 2019 on a solid footing.

This was all done while being mindful of our commitment to being a responsible corporate citizen. First and foremost, injury rates in our operations reached an all-time low, demonstrating the value of our continued focus on Safety Leadership. Our Phoenix site water reuse system went on-line, reducing our global water consumption by almost 28% in 2018, and we achieved 100% adoption by our key suppliers of the Responsible Business Alliance (RBA) Code of Conduct.

THE WFE MARKET WAS UP IN 2018 BUT WEAKENED IN THE SECOND HALF

Our industry recorded another year of growth in 2018. Worldwide semiconductor industry sales increased by 14%. In the latter part of the year, however, semiconductor growth started to decelerate, particularly in the memory segments, as economic uncertainties increased amidst international trade frictions and as end market segments such as smartphones were impacted by inventory corrections.

Estimated growth in the market for wafer fab equipment (WFE) was around 10% in 2018. While the first half of the year was still strong, overall WFE spending in the second half started to slow down, due to a substantial weakening of the memory segment. Investments in the NAND flash segment weakened in the course of 2018 and were particularly lower in the second half of the year. This was not unexpected as customers made strong investments in both new capacity and 3D-NAND conversions over the last few years, for which they now need some time to digest. In the DRAM segment, WFE spending was up for the full year, but also started to slow down in the second half.

Advanced Logic WFE was up for the full year and even accelerated in the second half, driven by investments in the advanced nodes. Foundry spending decreased for the year but accelerated in the second half, as the mix of spending started to shift towards early investments in the 5nm technology generation.

ASMI'S STRENGTH IN LOGIC/FOUNDRY OFFSETS WEAKNESS IN MEMORY

While WFE spending started to slow down in the second half, ASMI clearly ended the year on a strong note. Our second half year sales increased 22% compared to the first half, in line with the guidance we issued earlier in 2018. While we incurred a decrease in our memory sales in the second half, mainly in 3D-NAND, this was more than offset by robust traction in the logic and foundry segments. This is explained by our strong exposure to the logic/foundry space. As we indicated earlier, our total non-memory businesses accounted for clearly more than half of our equipment sales in 2018. We therefore strongly benefited as logic and foundry customers stepped up investments in the second half. Apart from an overall increase in spending, the mix in logic and foundry shifted in the second half towards the most advanced nodes of 10 and 5 nanometers, respectively. Compared to the previous logic/foundry nodes, our share of wallet in these newest nodes has increased in a meaningful way as we are engaged in a substantially higher number of layers. This also contributed to our strong performance in the second half of 2018.

"OUR STRENGTH IN LOGIC, FOUNDRY AND ANALOG MORE THAN OFFSET THE SLOWDOWN IN MEMORY SPENDING."

MULTIPLE DRIVERS BEHIND OUR GROWTH IN 2018

Our total company's sales increased by 17% in 2018 on a US$ basis (based on restated 2017 revenues). As such, we believe we outperformed the broader WFE market last year. We had record high sales in the logic segment, with strong growth driven by demand for advanced nodes solutions, including the 10 nanometer node. In foundry sales decreased somewhat in 2018 but picked up meaningfully in the second half, driven by early investments in 5 nanometer. In line with the industry, our sales in NAND dropped in 2018, due to the overall slowdown in this segment, and following a strong performance in 2017. In DRAM, we booked very strong sales growth compared to a lower base in 2017 as investments in new DRAM fabs drove higher demand for ALD patterning tools.

Our business in the analog segment also showed a strong performance in 2018. While this segment is smaller than the logic or foundry segment, it made a meaningful impact to our sales growth last year. Demand in this segment was driven by a broad base of customers across the globe for products such as power devices and IoT-related semiconductors.

In terms of product lines, ALD continued to be the key driver for our business and again accounted for more than half of equipment sales. The other product lines, also showed strong momentum in 2018, with solid sales increase in the vertical furnace, epitaxy and PECVD product lines, driven by increasing demand in logic and analog, where we traditionally are strongly positioned with a broader part of our portfolio of deposition products.

Our spares & service business, which is a solid and consistent contributor to our growth, increased in 2018 by 14% (based on comparable 2017 revenues restated for IFRS15).

Last but not least, during the year we achieved our target to more than double our sales in the Chinese market compared to a limited base level in 2017. The investments we made to step up our presence in this market started to bear fruit as we strongly expanded the number of engagements with domestic customers in China during the year.

FINANCIAL PERFORMANCE

With solid momentum in broad parts of our portfolio our sales increased in 2018 by 12% on a reported basis, and by 17% on a US$ basis, (both percentages based on comparable 2017 revenues restated for IFRS15) to a new record high. Gross margin showed a moderate decrease from 41.5% to 40.9% due to the impact from investments in new products and growth initiatives. With operating expenses under control operating profit increased 14%. Free cash flow in 2018 decreased slightly to €23 million which is explained by the investments we made in the two new facilities. In view of our long term growth projections we are stepping up our investments, as we announced last year. In October of last year, we completed our new facility in Dongtan, South Korea. This new facility includes an expanded state-of-the-art R&D lab and is much closer located to our key customers in South Korea. In addition, we made the first investments in the construction of a new manufacturing facility in Singapore which investments will continue in 2019.

ASMI's financial position continues to be healthy. While the cash balances decreased from €817 million to €286 million, this is fully caused by the more than €600 million in cash that we returned to our shareholders in 2018. Using the proceeds of the ASMPT stake sales in 2017, we executed more than €350 million in share buybacks in 2018 and we distributed €4 per share to our shareholders in the form of a tax efficient capital return. In 2019, underlining our confidence in the prospects for ASMI, we will propose to the Annual General Meeting of Shareholders an ordinary dividend of €1.00 per share, which is an increase of 25% compared to the dividend paid in 2018.

ASMPT GROWING SALES IN 2018 IN FACE OF A SLOWING MARKET

In 2018, normalized result from investments, which includes the contribution from ASMPT, decreased from €112 million to €61 million. In part, this reflects the full year impact from the stake reduction in 2017 when we lowered our shareholding in ASMPT in two steps from 39% to 25%.

Despite the slowdown in the back-end equipment market towards the end of the year, ASMPT increased its sales by 12% in 2018. Its SMT solutions activity had a notably strong year, growing sales by 19%. In its Back-end equipment activity, ASMPT strongly improved its position in the key growth market of Advanced Packaging, which accounted for more than 10% of divisional sales in the fourth quarter.

50 YEARS OF INNOVATION

2018 marked ASMI's 50th anniversary. Our company made important contributions to many of the breakthrough innovations that have shaped our industry over this period. We can be proud of the leading position that ASMI has achieved. Our leading principle during all these years has been to support our customers with differentiated and cost effective solutions that enable them to transition to the next technology nodes. The opportunities ahead of us to further build our key role in the semiconductor industry remain strong.

“EXPANDING OUR ADDRESSABLE MARKET IN SINGLE-WAFER ALD IS A KEY PILLAR OF OUR GROWTH STRATEGY.”

PROGRESSING WELL AGAINST STRATEGIC TARGETS

ALD continues to be a key driver for ASMI. With an expanding number of applications, we remain confident that the single-wafer ALD market will over time grow as a percentage of the total deposition market. An important pillar of our growth strategy is to increase our addressable market within the single-wafer ALD space. To this end we have committed, and continue to commit, significant resources in further enhancing our leading platforms and to grow the pipeline of new ALD applications. An important milestone during the year was in this respect the launch of the Synergis last July. This newest addition to our family of leading ALD platforms offers excellent film uniformity and chamber repeatability in a lower cost of ownership configuration. Furthermore, Synergis supports a wide range of films, film properties and material compositions and as such will enable a meaningful expansion of our served available market. Customer reception has been strong and revenues as well as the order backlog at the end of 2018 already include multiple Synergis tools.

Furthermore, in January 2019, we announced the formal launch of the XP8 QCM tool for high-productivity plasma enhanced atomic layer deposition (PEALD) applications. This newest addition to our portfolio of leading ALD platforms allows for the integration of up to 4 modules each containing four process reactors, on a single platform. The XP8 QCM is already in HVM at multiple customers.

In terms of applications, during 2018, we were selected for multiple new applications for the 5 nanometer foundry node. In DRAM we continued our focus on developing new ALD applications beyond traditional patterning. In NAND, we made further progress in the number of applications in which we are engaged, which we expect to contribute, step by step, once the 3D-NAND industry moves to the next generation higher stack devices.

“A HIGHLIGHT DURING THE YEAR WAS THE INTRODUCTION OF OUR NEW SYNERGIS ALD TOOL.”

Next to ALD, as part of our growth strategy, we are also focused on driving structurally higher sales in our other product lines. Epitaxy is a key growth area for ASMI and delivered again a solid performance in 2018. After we started shipping our Intrepid ES system in 2017 we focused in 2018 on supporting the HVM ramp of this leading foundry customer. In addition we improved our position going from 7 to 5nm. In vertical furnaces and PECVD we are making targeted investments to enhance our niche positioning in these markets.

OPERATIONAL EXCELLENCE

We continue our relentless drive to Deliver Excellence through focused annual structural improvement in our business operations that improve ASMI's performance and benefit our customers. Our 2018 objective again focused on a set of 10 key improvement projects, of which selected examples include further strengthening the safety of our global R&D labs, strengthening our global software engineering team and processes, implementation of a leading-edge global product development environment, constructing our new R&D and manufacturing facility in South Korea, and further deployment of Process Control Systems in our supply chain to improve quality. Many of these projects are multi-year efforts and are key to enable our further growth and results.

Our overall progress in operational excellence is increasingly recognized by our customers. Last December, we were honored to receive, for the third time, an Excellent Performance Award from TSMC.

WELL POSITIONED FOR OUTPERFORMANCE IN 2019

As we enter 2019, supported by a record high order backlog at the end of 2018, we expect sales to remain at solid levels in the first and second quarter of 2019, based on the guidance that we provided with our fourth quarter results. Looking at 2019, average expectations are for WFE spending to show a year over year decrease of a mid-to-high teens percentage. This is expected to be the balance of a substantial decline in memory spending and a more resilient outlook for logic/foundry. With the 3D NAND market still in oversupply, spending in this segment is likely to further drop in 2019. DRAM investments are also likely to drop in 2019 compared to the strong level in 2018. WFE spending in the combined logic/foundry segment is expected to be healthy in 2019, driven by spending on the most advanced nodes. We expect our strong position in logic/foundry to support our sales performance in 2019.

We would like to thank our employees for their continued dedication and hard work that contributed to the successful results in 2018. We also want to express our appreciation towards our customers for their trust and our shareholders for their continued support. Our focus remains the creation of sustainable value for our all our stakeholders.

March 5, 2019

Charles D. (Chuck) del Prado
President and Chief Executive Officer

AT A GLANCE

ASM International N.V. (ASMI) is a leading supplier of semiconductor wafer processing equipment and process solutions. Our customers include all of the top semiconductor device manufacturers in the world. Semiconductor chips sit at the heart of almost every electronic device we use today.

They run programs, apps, and operating systems. They connect your devices to your wireless internet. Without them, today's society would simply disconnect. Advanced semiconductor chips enable high speed computing for artificial intelligence, sensors for autonomous driving, graphics processors for virtual reality and high density memory for smartphones. And our technology is the first step towards making it all possible. Our semiconductor process tools enable chip manufacturers to make higher capacity, more powerful, and faster logic processor and memory chips. Our R&D investments lead to new device architectures, new materials, and new processes, together advancing nanotechnology that help us all make connections.

ORGANIZATIONAL STRUCTURE

ASMI organizes its activities in two operating segments, Front-end (wafer processing) and Back-end (assembly and packaging). As per December 31, 2018, the structure was as follows:

ASM INTERNATIONAL N.V.
Headquarters: Almere, the Netherlands

FRONT-END
Wafer processing

BACK-END
Assembly & Packaging / 25.33% ownership
ASM Pacific Technology Ltd

FINANCIAL

BOOKINGS	EUR million	942
NET SALES	EUR million	818
OPERATING RESULT	EUR million	124
RESULT FROM INVESTMENT	EUR million	48
OPERATING CASH FLOW	EUR million	137
CASH	EUR million	286
EARNINGS PER SHARE	(Diluted) EUR	2.96
NET EARNINGS	EUR million	157

NON-FINANCIAL

STAFF	Employees	2,181
EMPLOYEES IN R&D		25%
PATENT FILINGS		143
PATENTS IN FORCE		1,692
GLOBAL INJURY RATE	Per 100 employees	0.59
GHG EMISSIONS	$mtCO_2e$ per million R&D investment	156
WATER CONSUMPTION	m^3 per million R&D investment	1,030
LANDFILL DIVERSION RATE		78%

KEY FIGURES

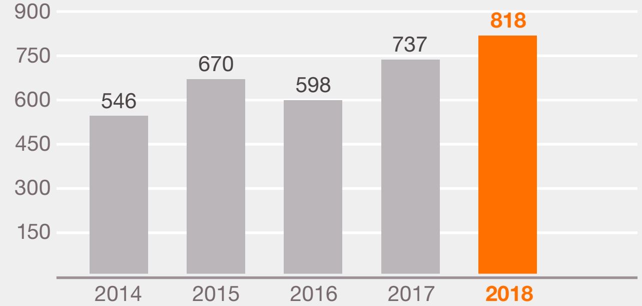
EUR (million, except per share data and employees)	2014	2015	2016	2017	2018
Operations:					
Bookings					
Front-end	602	608	622	774	**942**
Net sales					
Front-end	546	670	598	737	**818**
Result from operations:					
Front-end	93	111	82	113	**124**
Net earnings (loss) from continuing operations	138	157	135	452	**157**
Net earnings (loss) from discontinued operations	3	–	–	–	**–**
NET EARNINGS (LOSS) FROM OPERATIONS	**141**	**157**	**135**	**452**	**157**
Balance sheet:					
Net working capital [1]	108	114	157	180	**203**
Total assets	1,889	2,076	2,131	2,177	**1,848**
Net cash [2]	386	447	378	836	**286**
Backlog:					
Front-end	176	128	157	176	**302**
Number of staff:					
Employees					
Front-end	1,635	1,597	1,670	1,900	**2,181**
Per share data:					
Net earnings (loss) on operations per share					
Basic net earnings (loss)	2.23	2.53	2.23	7.72	**3.00**
Diluted net earnings (loss)	2.20	2.50	2.21	7.63	**2.96**
Weighted average number of shares used in computing per share amounts (in thousands):					
Basic	63,558	62,114	60,616	58,573	**52,432**
Diluted	64,707	62,928	61,253	59,325	**53,110**

[1] Net working capital includes accounts receivable, inventories, other current assets, accounts payable, provision for warranty and accrued expenses and other payables.
[2] Net cash includes cash and cash equivalents less long-term debt and notes payable to banks.

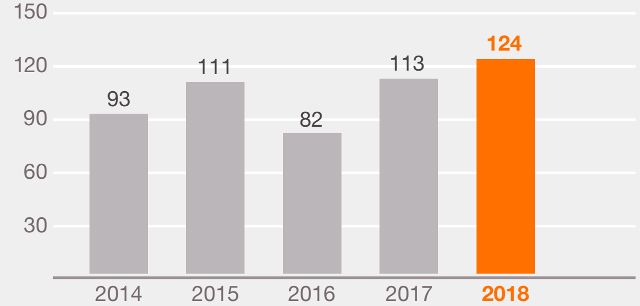
KEY FIGURES

In 2018 we continued to make great progress in important areas.

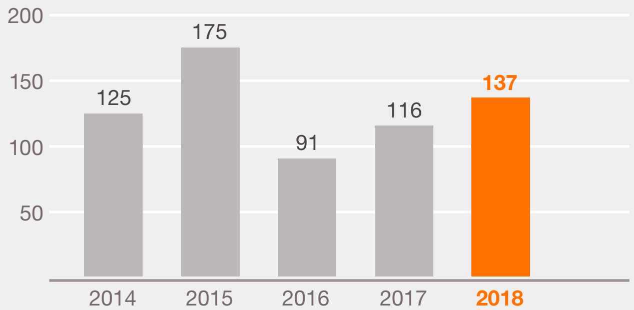
NET SALES EUR million



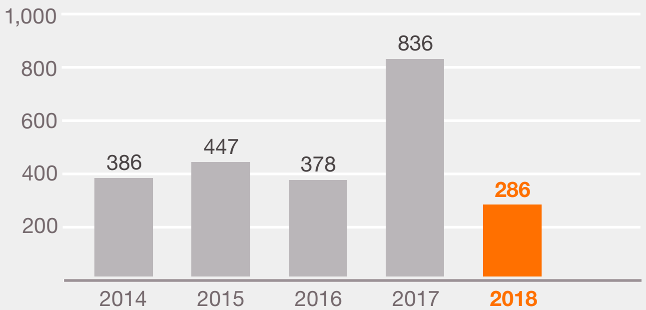
OPERATING RESULT EUR million



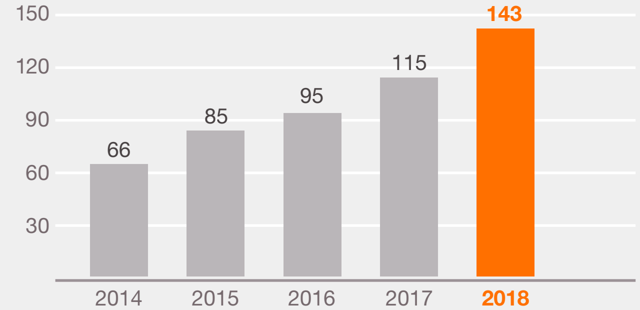
OPERATING CASH FLOW EUR million



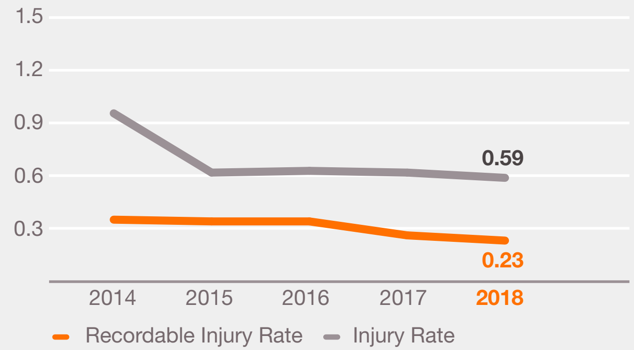
CASH EUR million



PATENT FILINGS

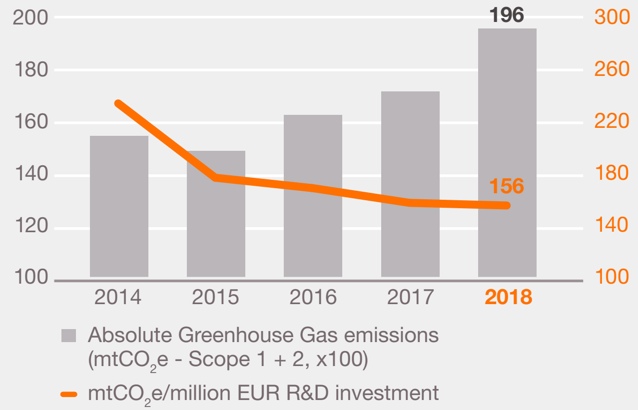


GLOBAL INJURY AND RECORDABLE RATES



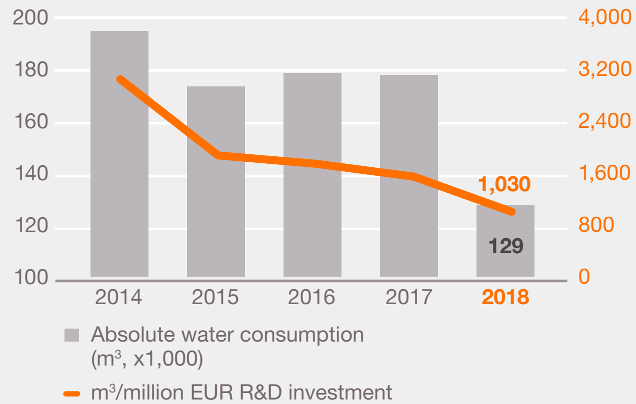
GREENHOUSE GAS (GHG) EMISSIONS

(Absolute and normalized per R&D investment)



WATER CONSUMPTION

(Absolute and normalized per R&D investment)



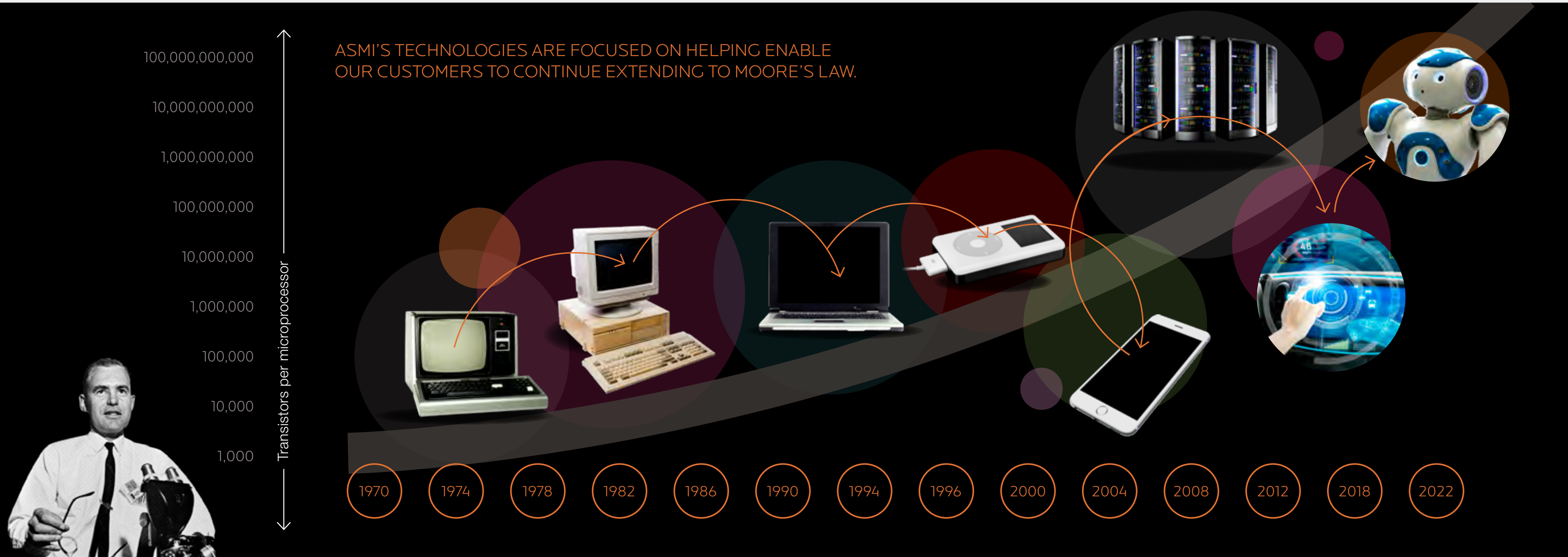
THE WORLD IN WHICH WE OPERATE

The world around us is changing rapidly, as society becomes increasingly automated and connected. We rely on a broad range of electronic devices, often connected, to control our homes, offices, vehicles, and communications, whereby mobile devices are evolving in many forms. We operate in a fast changing world, wherein semiconductors are becoming more and more part of everyone's life.

Over time these devices have become smarter, for example enabling office building environments and public transportation to be optimized in real time, without human interaction. They also allow individuals to speak to their electronic personal assistants for guidance, carry out information searches, or to execute tasks. Another example is artificial intelligence, where advanced processors and computing networks are used to automate decision making and action taking. Smart cars and trucks are driving autonomously. This connected and automated world is creating the demand for massive amounts of data, requiring ever-greater computer processing power and storage, capable of analyzing and acting on the data quickly and effectively. Making this possible requires the constantly increasing processing power of semiconductor chips. And it is our technology that is playing a vital part in making it all possible.

MOORE'S LAW AS ENABLER

A key driver in the semiconductor industry is the continuous demand for smaller, faster, and cheaper semiconductor components. Through technology advances in the manufacturing process, semiconductor manufacturers are continuously scaling chips to smaller dimensions. This enables more transistors to fit in the same physical space, thereby reducing the costs and increasing the speed and performance of a device. Moore's Law states that the number of transistors in an integrated circuit will double approximately every two years, and the cost per transistor will reduce by half over the same time frame. The industry's relentless push to follow Moore's Law and the continuous demand for smaller, faster, and cheaper semiconductor components drives the technology advances in the semiconductor manufacturing process.



OUR MARKET

We serve the wafer processing equipment segment, which is part of the capital equipment segment. Demand for semiconductor capital equipment is driven both by growth in the market for semiconductor devices and the new technology needed to realize the next generation of devices.

LOGIC, FOUNDRY AND MEMORY MARKETS

- ASMI supplies equipment to the leading semiconductor manufacturers in the logic, foundry, and memory markets, primarily for the deposition of thin films;
- The logic market is made up of manufacturers who create chips that are used to process data. Known as the central processing unit (CPU), this microprocessor is the 'brains' of a computer system, and can be found in smartphones, laptops, and computers;
- The foundry market consists of businesses that operate semiconductor fabrication plants to manufacture the designs of other so-called fabless semiconductor companies, and
- The memory market covers manufacturers who make chips that store information either temporarily, such as Random Access Memory (RAM), or permanently, such as NAND non-volatile memory. The NAND memory market has evolved to include 3D-NAND chips, which are designed for the vertical stacking of memory cells to increase bit density.

ANALOG DEVICE MARKETS

We also supply equipment to leading manufacturers of analog semiconductor devices, which are important for enabling the growing semiconductor content used in most products worldwide.

The analog market includes a wide array of chip types, including:

- power management;
- signal processing;
- MEMS;
- sensors;
- discretes; and others.

A few years ago, the industry adopted the phrase 'More than Moore', to identify and acknowledge a strongly-growing market of various types of analog chips which are not driven by the same Moore's Law technology scaling inflections of mainstream logic and memory chips. But these 'More than Moore' devices often have their own technology challenges. For example power devices typically require relatively thick layers of epitaxial silicon, which is challenging for epi chamber performance in volume production.

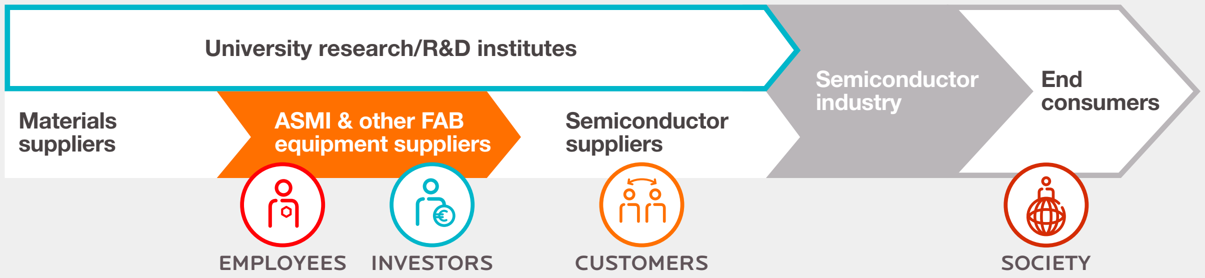
OUR ROLE

We design, manufacture, and sell wafer process equipment and services to our customers for the production of semiconductor devices, or integrated circuits (ICs). Semiconductor ICs, often called chips, are a key technology that enable the advanced electronic products used by consumers and businesses everywhere. Our innovative technologies are used by the most advanced semiconductor manufacturers in their wafer fabrication plants.

Our customers' goal is to build faster, cheaper, and more powerful semiconductors. We work closely with them to make this a reality, forging mutually beneficial partnerships that enable us to help them develop their technology roadmap. At the same time, our customers become expert users of our equipment, and their insights help us to continuously improve our systems, resulting in greater productivity and lower operating costs per wafer, benefiting us, them, and the end consumer. The result is value creation not only for our customers, but for all of our stakeholders. Furthermore we provide an overall benefit to society by helping our customers produce the chips needed for advanced electronics that deliver a world of improvements and opportunities.

Creating this stakeholder value requires a strong, well-educated workforce, enabling us to develop and maintain technologies at the edge of what is technologically possible. But we cannot achieve this on our own. This is why collaboration is such a vital part of our success, and why we have developed close ties with many of our stakeholders. For example, we maintain partnerships with technical institutions and universities to carry out cutting-edge research and development (R&D). At the same time, working closely with our suppliers helps us manufacture, service, and sustain our products efficiently.

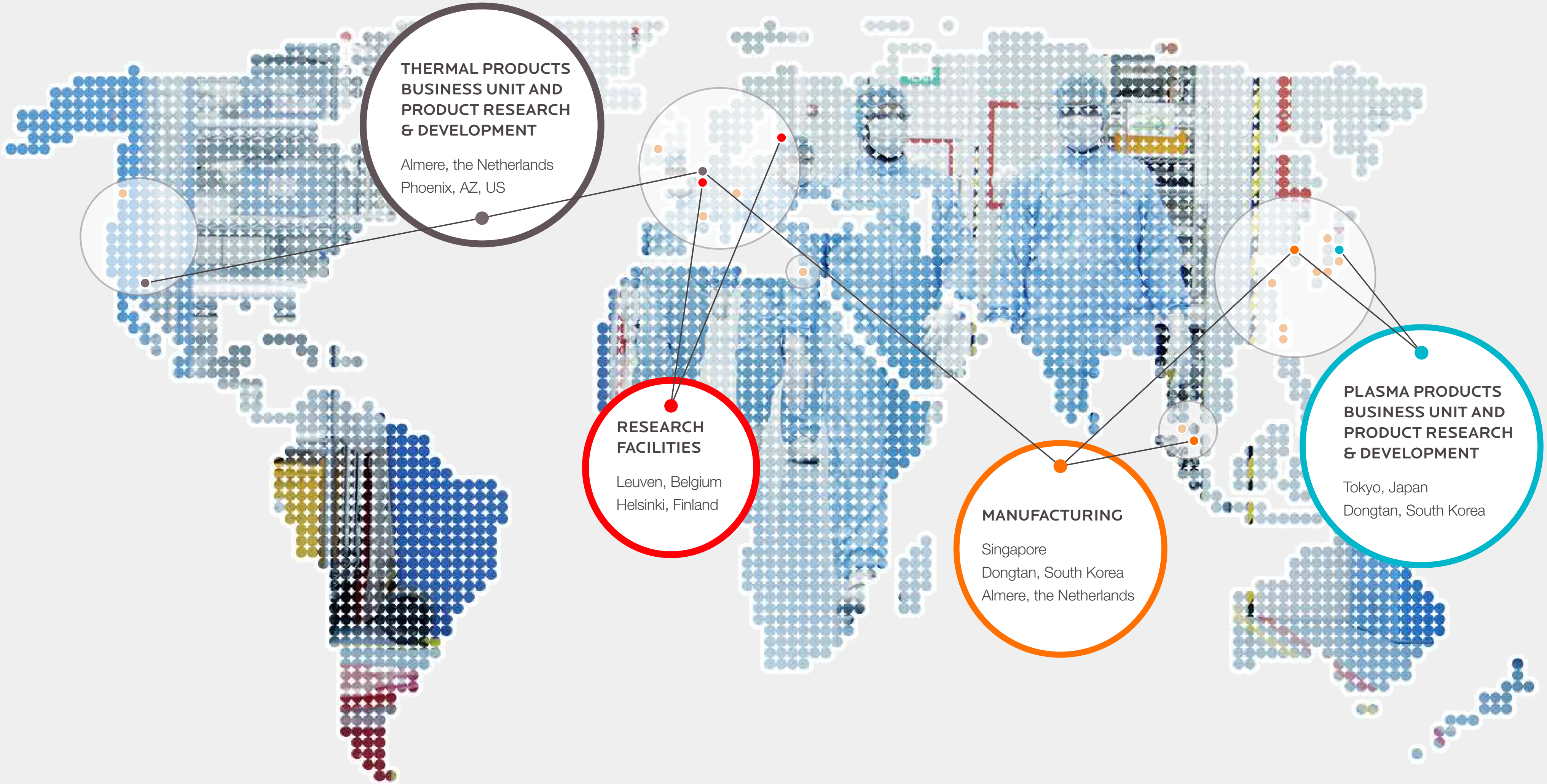
OUR POSITION IN THE INDUSTRY



COMPLEX PROCESSES

The process of making semiconductor chips at our customers' premises is both highly complex and very costly. Semiconductor fabrication plants, called fabs, house a large set of wafer-processing equipment which perform a series of process steps on round silicon wafers, which are typically 300mm in diameter. The equipment is operated in cleanrooms, which filter the air to avoid contamination from small particles that could negatively affect the circuitry on the chips. The dimensions of the features within each chip continue to get smaller, as the demand for performance continues to expand. Certain chips are also getting taller, such as 3D-NAND memories, where density is increased by stacking layers vertically.

Many individual steps are performed using various types of wafer process equipment to create a semiconductor chip, including photolithographic patterning, depositing thin-film layers, etching to remove material, thermal treatments, and other steps. Our systems are designed for deposition processes when thin films, or layers, of various materials are grown or deposited onto the wafer. Many different thin-film layers are deposited to complete the full sequence of process steps necessary to manufacture a chip. After testing the individual circuits for correct performance, the chips on the wafer are separated and then packaged in a protective housing before ultimately becoming part of a set of semiconductor chips on circuit boards within an electronic product.



CHIP MAKING

Semiconductor chips are used in virtually all electronic products, even expanding into products such as appliances, garage door openers, and factory tools. From microprocessors, memories, and power devices, to image sensors, and analog devices, chips are critical to the global economy. Their use has revolutionized how we live, work, and play, enabling us to understand, create, and share information faster and more easily. Behind this lies the hugely complex manufacturing process that makes semiconductor chips a reality, and which gets increasingly complex every year.

SEMICONDUCTOR DEVICE MANUFACTURING

The process of manufacturing semiconductor devices on a silicon wafer can be divided into three distinct parts:

- silicon wafer manufacturing;
- transistor formation (known as the Front-end of the line (FEOL) process steps); and
- interconnect formation (known as the Back-end of the line (BEOL) process steps).

At ASMI, we develop, manufacture and sell equipment, and provide services used by semiconductor device manufacturers, for each of these three stages of wafer processing.

WAFER MANUFACTURING

In the wafer manufacturing process, a large single crystal of very pure silicon is grown from molten silicon. The crystal is then sliced into a large number of thin slices, or wafers, of single crystalline silicon. These slices are polished to an atomic-level flatness before the next steps are executed. For advanced applications, some layers are deposited on the wafer for later use, by either epitaxy or diffusion/oxidation. Epitaxial wafers are even flatter and contain fewer surface defects than polished wafers.

FROM WAFER TO DEVICES

During FEOL and BEOL wafer processing, multiple thin films of either electrically-insulating material, also called dielectrics, or conductive material are modified, grown, or deposited on a silicon wafer. This involves the following steps:

- first, several material processing cycles are used in the FEOL to build the basic transistor and other components such as capacitors and resistors; and
- second, several processing cycles are used in the BEOL to electrically connect the large number of transistors and components, and to build additional passive components such as capacitors, inductors, and resistors. Patterning of deposited layers with lithography and etching creates the transistors, passive components, and connecting wires, which together make up the integrated circuit. Each integrated circuit is a single chip or a die on the wafer.

A finished wafer may contain several dozen to several thousand individual dies. Wafer processing is performed either one wafer at a time in single-wafer processing systems or many wafers at a time in batch processing systems. Some single-wafer systems have multiple processing chambers on the same system platform for increased productivity. Multiple deposition and patterning processes are performed on the same wafer to complete a device.

PROCESS STEPS

The number and precise order of the process steps varies depending upon the complexity and design of the integrated circuit. The performance of the circuit is determined in part by the various electrical characteristics of the materials used in the layers of the circuit and the wafer. Simple circuits may have as few as ten layers, while complex circuits may have more than one hundred layers. The device manufacturing process is capital-intensive, requiring multiple units of several different production systems. Many different but complementary methods are used to modify, grow, or deposit materials on the wafers. The device manufacturing process on the wafer is complete when all of the layers have been deposited and patterned on the wafer.

CLEANROOMS

The introduction of even trace levels of unwanted foreign particles or material can make a circuit, or even an entire wafer, unusable. To reduce the level of foreign particles or material, wafer processing is performed in cleanrooms with ultra-low particle and contamination levels. The correct electrical functioning of the integrated circuits on each die is confirmed by probing. Non-functioning circuits are marked so they can later be discarded before money is spent on packaging the chip. The yield – or the percentage of known good die for a mature process – is usually well above 95%. For a process in development, the yield can be substantially lower, and it is important to improve this as quickly as possible as it determines, to a large extent, the profitability of our customers.

FRONT-END WAFER PROCESSING AND BACK-END ASSEMBLY & PACKAGING

There are two basic segments of chip manufacturing to complete a final packaged chip product. We refer to them as wafer processing (Front-end), and assembly and packaging (Back-end), which are usually in different manufacturing facilities. We are an equipment supplier for the Front-end wafer processing part.

During wafer processing – the start of the manufacturing line – manufacturers process wafers made of silicon, on which the electrical components are formed. During assembly and packaging – the end of the manufacturing line – the wafers are divided up into individual chips and tested before being assembled and packaged.

1. FROM SAND TO PURE SILICON

It all starts with one simple, common substance: sand. The silicon found in sand is in the form of silicon dioxide. To make chips, manufacturers need pure silicon, which means the first step in the process is to separate the silicon from the oxygen molecules. The pure silicon needed to make silicon chips can have only one foreign atom for every billion silicon atoms. It must also be in monocrystalline form. The way atoms are organized in this form of silicon is essential to some of the later processes.

2. WAFER BLANKS

The silicon is then extracted, or pulled, from liquid silicon in the form of long cylindrical ingots at around 1,400 degrees Celsius.

3. WAFERS ARE CUT

Wafers are then cut from the ingots before being polished to produce a smooth surface. They are then sent to chip manufacturers for processing. The next steps in wafer processing are then repeated many times to create the finished wafer that contains chips.

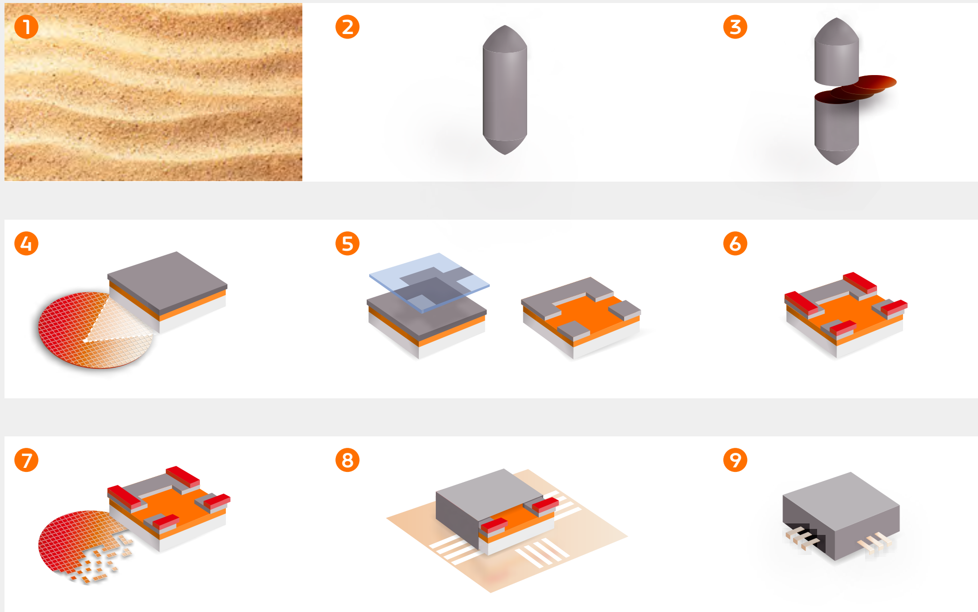
4. COATING A WAFER

The wafer is put into a high-temperature furnace and exposed to oxygen, forming a layer of silicon dioxide on the surface. Then chemical vapor deposition (CVD) is used to add a layer or film of nitride.

5. CREATING MASKS

Once the circuit layout of the chips has been designed, glass plates or masks are created which help copy the design onto the surface of the wafer. Several masks are used in sequence to add more complexity to the chips.

CHIP MAKING PROCESS



6. ADDING A PATTERN

Now comes the time to begin creating the design on the surface of the wafer using the masks as a guide. Photolithography, a type of optical printing, is used. The wafer is first coated with photoresist, which changes when exposed to ultraviolet (UV) light. The mask is placed above the wafer and precisely aligned with it. UV light shining above the mask reacts with the exposed parts of the photoresist, creating a pattern. The wafer is covered with a developing solution to develop these patterns, which are then etched, leaving the parts not exposed to UV light intact. The surface now contains 'trenches' or other features that run across the surface.

DEPOSITION

A dielectric or insulating film is deposited in the trenches by one of a number of deposition technologies such as CVD or ALD or PEALD. Gates are formed between the trenches, creating parts of the many millions of transistors that may be created on a single chip. Gates can be switched to allow charge carriers, such as electrons, to flow or to prevent them from flowing. Contacts are formed by each gate to create a source and drain. Ion implantation is used to implant special elements into the wafer for the source and drain. The charge carrier enters a gate channel at the source contact and exits at the drain contact.

CONNECT

Once the basic chip components have been created, they need to be connected. The same processes of lithography, etching, and deposition are used to form trenches filled with metal connections. These connections between components are created not just on one level, but on many. The finished wafer will contain up to several thousand individual chips in a space of 200mm to 300mm diameter wafers, and some chips can hold billions of transistors.

7. WAFERS SEPARATED INTO INDIVIDUAL CHIPS

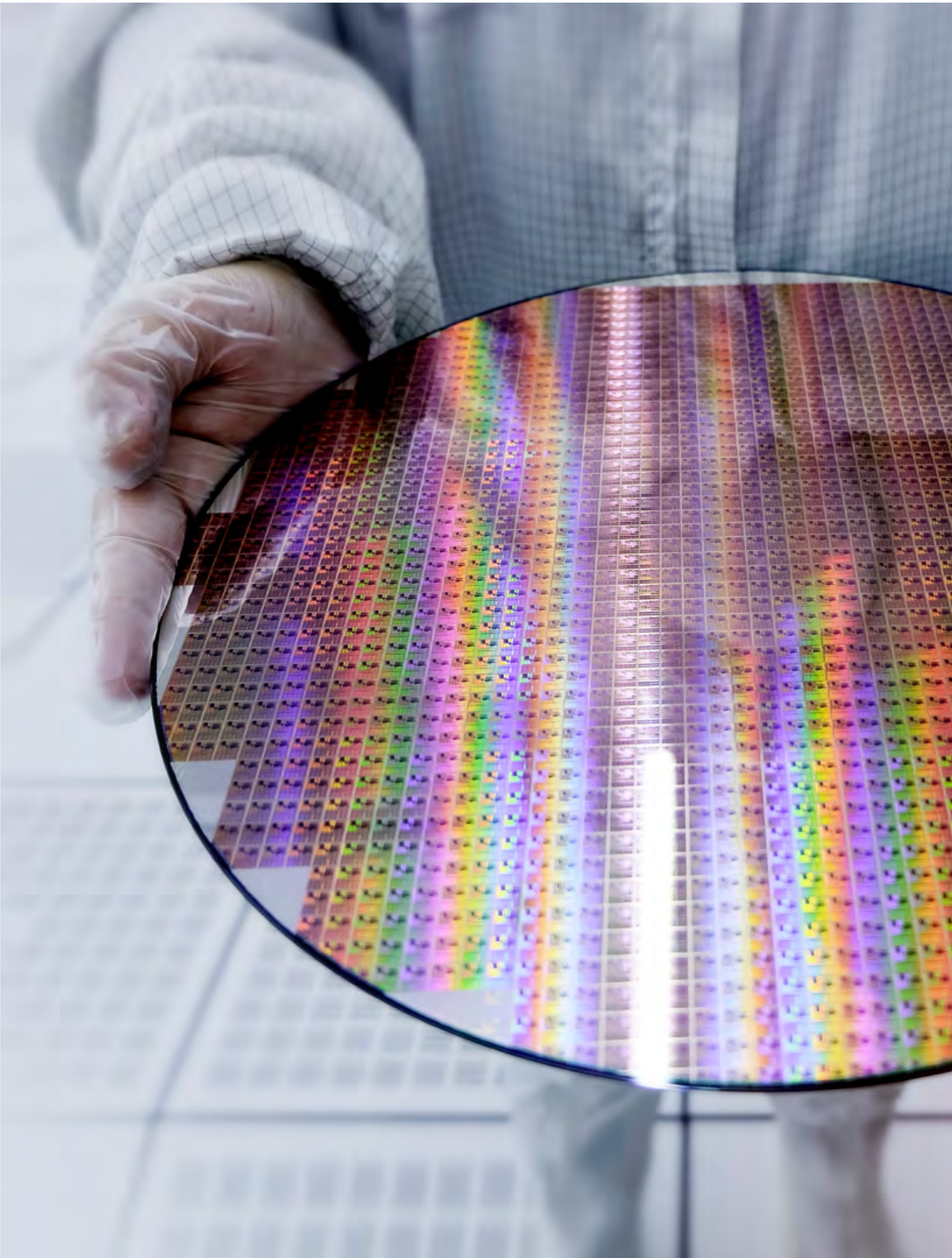
Once wafer processing has been completed, the finished wafers are transported to another plant for cutting, assembly, and packaging. The individual wafers are cut into separate chips.

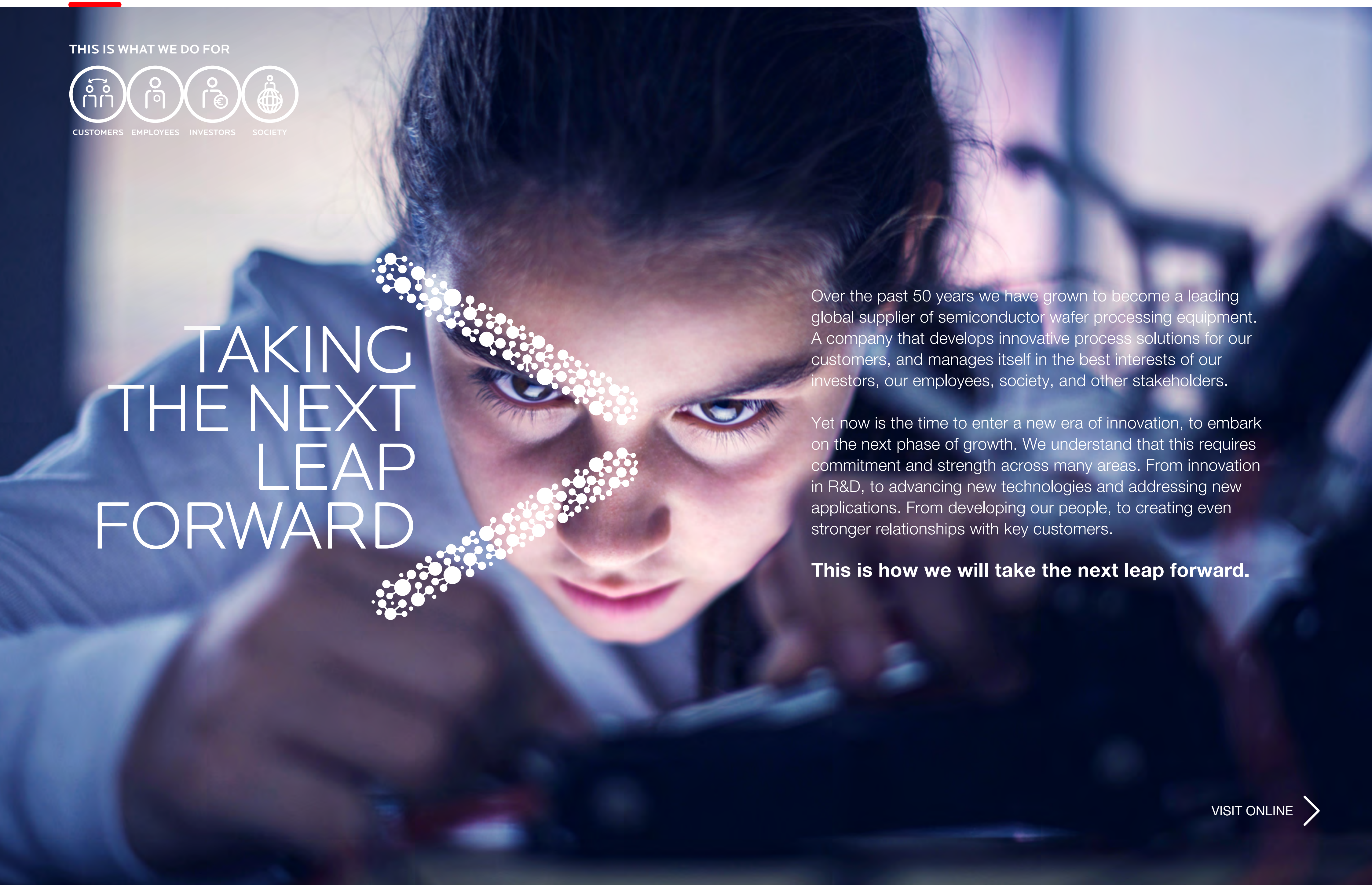
8. LEAD FRAMES

The chips are then placed on a lead frame carrier.

9. TESTING & PACKAGING

Each chip is then tested before being packaged to be sent for placement on circuit boards.





THIS IS WHAT WE DO FOR

CUSTOMERS EMPLOYEES INVESTORS SOCIETY

TAKING THE NEXT LEAP FORWARD

Over the past 50 years we have grown to become a leading global supplier of semiconductor wafer processing equipment. A company that develops innovative process solutions for our customers, and manages itself in the best interests of our investors, our employees, society, and other stakeholders.

Yet now is the time to enter a new era of innovation, to embark on the next phase of growth. We understand that this requires commitment and strength across many areas. From innovation in R&D, to advancing new technologies and addressing new applications. From developing our people, to creating even stronger relationships with key customers.

This is how we will take the next leap forward.

VISIT ONLINE

THIS IS WHAT WE DO FOR

CUSTOMERS

THE RISE OF NEW MATERIALS

ROADMAP TO THE FUTURE

Our roadmap to the future will enable us to not only achieve our next phase of growth, it will ensure we can continue to help our customers achieve their technology roadmaps for next-generation devices.

INNOVATION

Our technology helps drive innovation, increasing the number of scientific breakthroughs, many of which are achieved from our advanced process equipment that deposits new materials with precision and productivity, positively benefiting society in sectors from healthcare and education, to transport and energy.

EFFICIENCY

Striving for efficiency ensures that our customers get the products, services, and results they expect. Intensifying our focus on efficiency will make us a stronger company, ready to take the next leap forward.

SCALING

For semiconductor manufacturers, scaling chips to smaller dimensions is an ongoing challenge. Our innovations and equipment are vital in helping make many of these transitions happen.

VISIT ONLINE

THIS IS WHAT WE DO FOR

EMPLOYEES

THE MIX THAT MATTERS

INTELLIGENCE

Achieving our ambitions takes intelligence, knowledge, skill, determination, and dedication. And it is this combination of qualities that we nurture in our people.

MULTINATIONAL

We are a multinational company that embraces diversity in every sense of the word. With 29 different nationalities working across the company, we combine our talents to drive innovation.

XTRAORDINARY

Our goal is to impact tomorrow's generation as positively as we've impacted today's. Making this happen takes the xtraordinary talent of our people, who work together to drive innovation and deliver excellence.

VISIT ONLINE

THIS IS WHAT WE DO FOR

INVESTORS

EXPANDING THE CORE

EXTENDING

By extending our technological scope with a more diverse product portfolio, we can help our customers continue to advance their business while growing our own in new market segments.

COLLABORATION

Collaboration is fundamental to our continued success; from working with our customers to optimize our equipment and processes to enable their technology roadmaps, to creating partnerships on cutting-edge research and development.

R&D

R&D is central to our development, leading to new device architectures, new materials, and new processes that strengthen our competitive positioning and enable our customers to deliver the next-generation chips.

OPERATIONAL EXCELLENCE

Operational excellence is one of the essential pillars of our strategy, which enables us to provide our customers with the high-quality, leading-edge products and services they demand.

VISIT ONLINE

THIS IS WHAT WE DO FOR

SOCIETY

MOORE WITH LESS

ENVIRONMENT
We are committed to positively contributing to society and reducing our impact on the environment. Only then can we truly say we are helping create more with less.

SAFETY
Safety is a front-line requirement, which is why our ZERO HARM! policy outlines our vision on product safety, and our CR policy lays out our commitment and expectations towards health and safety.

LONG-TERM VALUE
We create long-term value for our stakeholders in a variety of ways. From working with our customers to develop innovative solutions, to ensuring value creation growth and positive investor returns.

SUSTAINABILITY
We believe sustainability takes many forms. From developing sustainable technology roadmaps for our customers, to creating a sustainable living environment for all.

VISIT ONLINE

STRATEGY & BUSINESS

OUR STRATEGY

OUR INNOVATION AT WORK

RISK MANAGEMENT

We operate in a fast-paced industry that continues to reshape the world, and our innovative technology enables the semiconductor industry to achieve advancements in computing, communications, energy, transportation, medicine and beyond.

To ensure that we can continue to make a difference to our customers, employees, and company stakeholders, in 2018 we concentrated on the following three key elements of our strategy.

INNOVATIVE STRENGTH

In addition to our fundamental R&D efforts, we continuously expand and deepen our strategic cooperation with key customers, suppliers, chemical manufacturers, and research institutes. This approach enables us to remain innovative and swiftly meet the changing demands of our customers.

LEADERSHIP IN DEPOSITION

We are a key player in the deposition equipment segments for ALD and epitaxy, and a focused niche player for PECVD and vertical furnaces. As a leader in the segment, ALD has turned into a key growth driver for our business, from which we support virtually all of the leading customers in the semiconductor industry. Our newest ALD tool, Synergis, is designed to address a wide range of existing and new ALD applications, effectively increasing the market we serve.

OPERATIONAL EXCELLENCE

In addition to our internal optimization programs, we are working with our suppliers to improve fundamental quality through statistical methods and process controls. In addition to addressing the technology needs of our customers, we also focus on further increasing equipment throughput and equipment reliability, thereby lowering the cost per wafer of our wafer processing systems.

MISSION, VISION, STRATEGY AND FOCUS AREAS

We are an experienced innovation leader. This is the result of our focus on key issues and challenges within the semiconductor industry, enabling us to make a difference to our customers, employees, and company stakeholders. While challenges and opportunities may change over time, we will continue to bring our breakthrough technologies into volume manufacturing, benefiting our customers.

MISSION

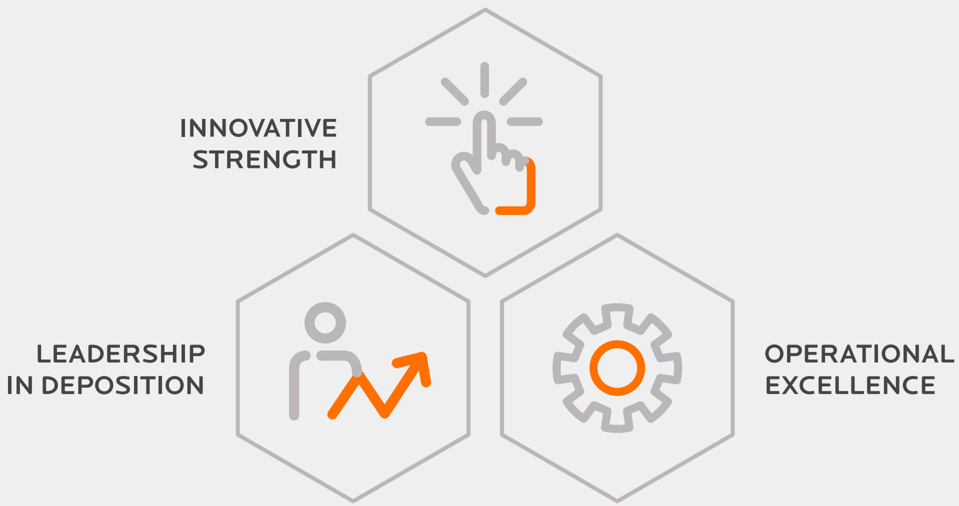
Our mission is to provide our customers with the most advanced, cost-effective, and reliable products, service, and global support network in the semiconductor industry and beyond. We advance the adoption of our deposition technology platforms by developing new materials and process applications that support our customers' long-term technology roadmaps.

VISION

We aim to delight our customers, employees, shareholders, and society by driving innovation with new technologies, and delivering excellence with dependable products. By doing this, we will create new possibilities for everyone to learn, create, and share more of what they are passionate about.

STRATEGY

Our strategic objective is to realize profitable, sustainable growth by capitalizing on our innovative strength in deposition technologies and our strong relationships with key customers. We act thereby as a responsible citizen.



We are part of a fast-paced industry that continues to reshape the world. Our technology enables the semiconductor industry to drive innovation in communications, energy, transport, medicine and beyond. For example, our wafer process systems are used to manufacture smartphone microprocessors, memory chips used for cloud computing, and sensors for commercial building controls and in automated vehicles. We are committed to making positive contributions to society and striving to prevent harm to people and reduce our impact on the environment. This is the foundation of our commitment to improve the industry and communities we operate in.

We are committed to the Responsible Business Alliance (RBA) Code of Conduct and will strive to meet its goals as best we can on a global basis. We are engaging our supply chain to do the same. We have a certified global environmental management system to drive continuous improvement in environmental performance across all of our operations. We continue to focus on, and enable the achievement of, smaller device geometries, which will lead to even greater advances and opportunities in communications, energy, medicine and the positive advances of humanity. For example, our ALD technology for depositing high-k gate dielectrics enables advanced transistors to operate at lower power, reducing electricity use and extending battery life in mobile products.

At ASMI we know that meeting the needs of today cannot mean compromising the future. This is why we encourage our employees to make positive contributions to our customers and suppliers, our industry, environment, communities in which we operate, and society, reflecting our ambition to drive innovation and deliver excellence.

THE KEY ELEMENTS OF OUR STRATEGY ARE:

INNOVATIVE STRENGTH

We provide leading thin-film deposition technologies that support our customers in staying on the curve of Moore's Law. Our innovative strength is what differentiates us in the marketplace, creates growth opportunities for our stakeholders, and continues to be the cornerstone of our strategy. Apart from our internal R&D efforts, we are continuously expanding and deepening our strategic cooperation with key customers, suppliers, chemical manufacturers, and research institutes. Our suppliers manufacture advanced components and assemblies to the tightest of tolerances and are required to adhere to our stringent design specifications, quality systems, and corporate responsibility requirements. This approach enables us to remain innovative and swiftly meet the changing demands of our customers.

LEADERSHIP IN DEPOSITION

We create value through our advanced thin-film deposition technologies, which help leading semiconductor manufacturers to deliver the world of tomorrow through advanced chips. We are a key player in the deposition equipment segments for ALD and epitaxy, and a focused niche player for PECVD and vertical furnaces.

As a leader in the segment, ALD has turned into a key growth driver for our business, from which we support virtually all of the leading customers in the semiconductor industry. We expect that the trends of continued scaling and evolution towards 3D device structures will further expand the number of applications for ALD. Our newest ALD tool, Synergis, is designed to address a wide range of existing and new ALD applications, effectively increasing the market we serve. We aim to maintain our leading position in ALD by leveraging our strong expertise and established customer relationships to address an increasing number of ALD applications, and by developing new applications in deposition technologies to support our customers with increasingly complex device node transitions.

We are also expanding the applications that we address in epitaxy, by focusing on advanced-node applications in logic/foundry and memory. For example, our Intrepid ES epitaxy tool has an innovative closed-loop reactor temperature control system enabling precise process control, high productivity, and low cost per wafer.

OPERATIONAL EXCELLENCE

While technology leadership remains crucial, we have a responsibility to our stakeholders to continue to focus on further improving the effectiveness and efficiency of our organization. We aim to provide our customers with dependable, leading-edge products and services at a consistent performance level, while providing the best total cost of ownership. To help achieve this, we continue to optimize our manufacturing and global sourcing processes, including the migration to common product platforms. We are working with our suppliers to improve fundamental quality through statistical methods and process controls. Our employees are engaged in an improved product life cycle process and our Product Safety Council is focused on further improving product safety through fundamental design.

In addition to addressing the technology needs of our customers, we also focus on further increasing equipment throughput and equipment reliability, thereby lowering the cost per wafer of our wafer processing systems. Combined with our commitment to quality, we continuously strive to achieve industry-leading productivity. In addition, to enable further efficiencies in our manufacturing process and the maintenance process of our customers, we put significant efforts into improving the level of standardization in our equipment portfolio by migrating to common platforms, subassemblies and components. One example is our XP8 platform, which is used as a common platform architecture on our newest products for ALD, PEALD, epitaxy and PECVD.

FOCUS AREAS

Within wafer processing, we focus primarily on equipment and process solutions for the deposition of thin films. We are a key player in the deposition equipment segments for ALD and epitaxy, and a focused niche player for PECVD and vertical furnaces. With our broad portfolio of technologies, we are addressing many of the key deposition applications on the semiconductor industry roadmap.

We focus on serving the top companies that produce logic chips and memory devices, which includes addressing the needs of leading foundries. By serving the leading chipmakers, we maintain an understanding of the important requirements of the next generation of device roadmaps, enabling us to develop value-added solutions to the industry's critical issues. In many cases, new films developed for one device type can be utilized for other device types with relatively little additional development.

LONG-TERM VALUE CREATION

We create value through our technologies by enabling leading semiconductor and technology industry partners to deliver the world of tomorrow through our innovative processing solutions and equipment. We partner with our customers and stakeholders to develop new materials, processes, and technologies that support their technology roadmaps. Advancements that benefit society are increasingly dependent on capabilities derived from new semiconductor technologies. The process solutions delivered on our equipment enable more powerful microprocessors, higher density memory devices, all operating at lower power.

GREATER PERFORMANCE, REDUCED ENERGY CONSUMPTION

Our advanced deposition technologies support cost-effective products enabling the electronic devices of the future. This leads to electronic devices that deliver ever-greater performance while reducing their energy consumption. Higher performance translates into more processing power, while a lower energy requirement means smaller, longer-lasting, more efficient products. This enables electronics manufacturers to further integrate smart technology into a wider range of their products.

The result is value creation not only for our customers, but for all of our stakeholders. For example, our employees enjoy the challenge of developing cutting-edge technology solutions, and achieving successful results offers the opportunity for career advancement. Our suppliers, in addition to a higher activity level, also benefit from improved quality resulting from our supplier process control program.

SMALLER DEVICES

The industry's relentless push to follow Moore's Law leads to the continuous demand for smaller, faster, and cheaper semiconductor components.

Today, our customers manufacture semiconductor devices as small as 7 nanometers (one nanometer, or nm, is one billionth of a meter), sometimes in a vertical 3D transistor or FinFET architecture. Our customers are already qualifying and testing new critical processes to generate devices with line widths at 5nm. Simultaneously, in our customers' laboratories and several collaborative research environments, advanced 3nm design rule devices and related materials are being developed. These next-generation technology nodes are increasing the demand for new materials and more complex process integration methods.

In developing faster and smaller devices, our customers' major technology requirements are:

- introduction of new thin-film materials and device designs needed for continued scaling;
- reliable manufacturing of taller and narrower 3D structures in devices;
- lithography of ever-smaller feature sizes, now much smaller than the wavelength of visible light; and
- new manufacturing processes that reduce device variability and increase yield.

DEVELOPING NEW MATERIALS

In order to meet our customers' needs, we are developing many new materials, along with the deposition equipment capable of achieving performance specifications in volume manufacturing. For example, ALD technology is used to create ultra-thin films of exceptional quality and flatness. ALD of high-k dielectrics and novel metal gate electrodes can improve the performance and reduce the power consumption of a device, thereby enhancing battery life. This same class of materials can also lead to larger charge storage in a smaller capacitor, critical for memories and RF circuits.

In addition to the development of the high-k dielectric, there is also a great deal of focus on new technologies and materials for the metal gate electrode, the gate sidewall passivation, and many other applications. Plasma enhanced ALD (PEALD) is an important technology that enables precise deposition at very low temperatures. One application of PEALD is spacer defined multi-patterning, whereby the deposition of a highly conformal oxide spacer enables the extension of existing optical lithography technology beyond its basic resolution limits.

EPITAXY

Another example of new materials is from epitaxy deposition. Epitaxy is a process for depositing highly controlled silicon-based crystalline films. Many epitaxy steps are used to create the transistor channel and for channel engineering to improve transistor performance. Our silicon-germanium (SiGe) and silicon-carbon-phosphorous (SiCP) epitaxial materials can increase the switching speed of the transistors and the circuit in which they are embedded by so-called strain engineering. Strained silicon is a layer in which the atoms are stretched beyond their normal interatomic distance, allowing higher electron mobility. This results in faster transistor switching at lower power. In 2017, we introduced the Intrepid ES, for advanced-node CMOS logic and memory applications, which offers an innovative closed-loop reactor temperature control system enabling precise process control, high productivity, and low cost per wafer. Many Intrepid ES tools are now running in volume production for Si and SiGe transistor channel formation.

LOW-K MATERIAL SUITE

For interconnect processes, a continued demand to improve the speed at which signals travel through thin copper wires has led to the development of a full suite of low-k materials. These low-k materials can decrease the amount of delay in signal propagation, resulting in, for example, faster microprocessors. Simultaneously, these low-k materials can reduce the amount of power loss in the interconnections. We have been one of the leaders in successfully introducing these low-k materials in the market, and we are continuing to develop improvements to this low-k technology to enable faster interconnect circuits.

HIGH PRODUCTIVITY

In addition to addressing the technology needs of our customers, the relentless drive of the industry to reduce cost corresponds to significant spending on development programs that further increase throughput, equipment reliability, and yield in our customers' manufacturing line, and further lower the cost per wafer of the wafer processing systems.

An excellent example of high productivity is our XP8 platform, on which we offer ALD, PEALD and PECVD processes. The XP8 incorporates eight process chambers in a compact configuration around one central handling platform. Two wafers are moved simultaneously into dual chamber modules (DCM), which generally doubles the throughput compared to single-wafer movements. Eagle XP8 PEALD tools and Dragon XP8 PECVD tools are in volume manufacturing at logic and memory fabs worldwide, and demonstrate reliable advanced performance with high productivity. In 2018 ASMI introduced the Synergis ALD tool, which also uses the proven XP8 platform, and leverages the core technologies from our Pulsar and EmerALD ALD products for high productivity thermal ALD applications. The new Synergis tool allows us to address more ALD applications and therefore increases our served market.

ALD AT ASMI

ALD is a leading edge technology capable of depositing ultra-thin films of exceptional flatness and uniformity. This technology was brought into ASMI in 1999 with the acquisition of Microchemistry, who first developed thermal ALD technology. Plasma Enhanced ALD (PEALD) is an extension of this original ALD technology that uses plasma, and which was brought into ASMI in 2001 through a partnership with Genitech, and a subsequent acquisition in 2004 and formation of ASM Korea.

The use of plasma enables us to deposit high-quality films at very low temperatures. ALD is a very versatile technology that can be used to deposit high-k insulating materials, conductors, silicon oxide, silicon nitride, and other materials. We expect the trends of continued scaling, and evolution towards 3D device structures for both logic and memory devices, to play into the strength of our ALD position. We offer ALD/PEALD processes on several of our product platforms, including single-wafer and batch systems, and for multiple wafer sizes. A key focus for our ALD product platforms is productivity, which includes designing our reactors to integrate with our XP8 platform architecture.

OUR BUSINESS MODEL

Our business model is to create value for the company and all of our stakeholders. Our technology enables precision deposition of thin films in various steps in the fabrication of semiconductor chips, helping our customers build the most advanced chips used in the electronics systems throughout society. For this we are working with our customers to develop innovative solutions, while constantly looking at what is best for our investors, our employees, society, and other stakeholders. Fundamental to our model is R&D investment, including basic chemical, materials, and feasibility research, followed by process and product developments. We aim to continuously recruit world class technologists in the semiconductor process and equipment technology fields. We cooperate with research institutes and our customers to understand the technology roadmap challenges and to develop the appropriate process and equipment solutions required. Our manufacturing facilities allow us to deliver high-quality systems on schedule so that our customers can ramp their fabrication plants. We support our customers globally with process and equipment services and spare parts.

HOW WE CREATE VALUE

INPUTS

HUMAN CAPITAL
Employees
2,181

INTELLECTUAL CAPITAL
R&D investment
(EUR million)
125

FINANCIAL CAPITAL
Market capital
(EUR million)
1,785

MANUFACTURING & SUPPLY CHAIN CAPITAL
Manufacturing supply
chain spending (EUR million)
366

NATURAL CAPITAL
Electric usage (KwH)
35,878,759

OUTPUTS

HUMAN CAPITAL
Revenue per employee (EUR thousand)
375

INTELLECTUAL CAPITAL
Patent filings
143

FINANCIAL CAPITAL
Earnings attributable to shareholders per share
2.96

MANUFACTURING & SUPPLY CHAIN CAPITAL
Bookings (EUR million)
942

NATURAL CAPITAL
GHG emission scope 1&2 ($mtCO_2e$)
19,562

CORPORATE RESPONSIBILITY

For over 50 years we have helped the industry create smaller and more powerful microchips. Our focus is on continuing to help our customers achieve critical technology and productivity improvements responsibly by striving to reduce our impact on the environment and positively contributing to society.

ASMI MISSION

Our mission is to provide our customers with the most advanced, cost-effective, and reliable products, services and global support network in the semiconductor industry, and beyond.

CR VISION

As a truly global citizen, our vision of ZERO HARM! means we strive to reduce our impact on the environment, and positively contribute to society.

CR STRATEGY

- Continue our strong focus on R&D and innovation to create value for society through technology.
- Manage all aspects of our business responsibly to meet or exceed stakeholder expectations.
- Hold our critical suppliers to the same standards that we hold ourselves to.

ASMI has been at the forefront of delivering innovative solutions within the deposition segment that deliver some of the highest productivity per unit fab space.

For example ASMI's production-proven XP8 architecture allows us to configure as many as 16 reactors within a single tool, resulting in superior wafer processing per unit fab space. Optimizing reactor volume allows superb control of the deposition process, resulting in superior film properties, while also reducing chemical and energy consumption. Another example of ASMI's commitment to optimizing reactor volume, with a focus on reducing energy consumption and effluent emissions, is our Intrepid EPI product which provides significantly reduced reactor volume and fab footprint. These advances are evidence of ASMI's commitment to sustainable innovation.

Our research and development (R&D) investments are critical to creating value for our stakeholders and shareholders. We partner with our customers, as well as leading universities, industry groups, and our key suppliers to deliver new materials and process technologies to market safely and responsibly. These partnerships are also integral to our Corporate Responsibility (CR) strategy.

The United Nations' Sustainable Development Goals (SDGs) reflect the priorities of global society, and our CR strategy aligns with and makes significant contributions to a number of these important goals:

OUR RELEVANT SDGS

We contribute to five Sustainable Development Goals (SDGs) that we have identified as being most relevant for us.
Below we provide examples of where in this report you can read about the steps we took in 2018 to contribute to these goals.

ACHIEVE GENDER EQUALITY

In 2018, we undertook a gender equality study that analyzed compensation differences between our female and male employees. You can read the results on **page 43**.

FOSTER INNOVATION

Our innovations drive growth, and benefit consumers and businesses by enabling more powerful technologies. You can find examples of how we contribute to SDG 9 in our Mission, Vision, Strategy and Focus Areas chapter on **page 22**.

COMBAT CLIMATE CHANGE

Greenhouse gas emissions can directly affect our impact on the environment and the climate. More information on the steps we are taking in this area can be found in the Environment chapter on **page 74**.

PROMOTE SUSTAINABLE GROWTH

Our focus is on growing sustainably, which is why our new facility in South Korea aimed to exceed energy efficiency requirements whenever possible. More details can be found in the Environment chapter, on **page 45** and on **page 74**.

ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION

Our aim is to identify ways to preserve natural capital. In 2018 we continued to look for opportunities to reduce our water use, including at our Phoenix operations. More information can be found in the Corporate Responsibility chapter on **page 28**, and the Environment chapter on **page 74**.

SAFETY FIRST!

No matter what we do, we put safety first, to improve the safety of ASMI's global operations as well as the operational safety of the ASMI equipment in our own and our customer's work environments. We closely partner with customers and other stakeholders to ensure that their work environment and manufacturing operations are as safe as we can collectively make them. From our innovative Safety Leadership Collaborations with customers, to our focus on delivering safe products, we are always striving for a Safety First! approach in what we do.

STRENGTHEN R&D AND INNOVATION

Our investments in R&D and our breakthroughs in bringing technological advances to the marketplace enable us to make substantial contributions to several aspects of SDG 9: Industries, Innovation and Infrastructure; as our innovations deliver high performance computing and communications to people around the world. For example, ASMI's ALD technology for depositing high-k gate dielectrics is a critical capability for advanced transistors to operate at lower power. This capability allows mobile devices to operate at lower voltages with extended battery life.

MANAGE ALL ASPECTS OF OUR BUSINESS RESPONSIBLY

Our key corporate responsibility philosophy is ZERO HARM! We strive to prevent harm to people, reduce our impact on the environment, and make positive contributions to society.

Our CR policy lays out our commitment to and expectations with regard to, health and safety, the environment, labor, ethics, and supply chain management. Each of these areas is further supported by policies, programs, systems, and metrics to ensure that we meet our long-term objectives. The full text of our CR policy is available on our website.

The Responsible Business Alliance (RBA) Code of Conduct (the Code) has been adopted by ASMI and many of our customers and suppliers. The Code evolves constantly to cover the most recent developments in responsible business practices. Currently, the Code references and follows multiple international expectations and standards, including:

- The OECD Guidelines for Multinational Enterprises;
- The Universal Declaration of Human Rights; and
- The ILO International Labor Standards and International Organization for Standardization (ISO).

We use the Code, its supporting documentation, and engagement with the RBA and member customers to drive continuous improvement within the company and our supply chain. We routinely assess and maintain alignment with the Code through self-assessments and audits.

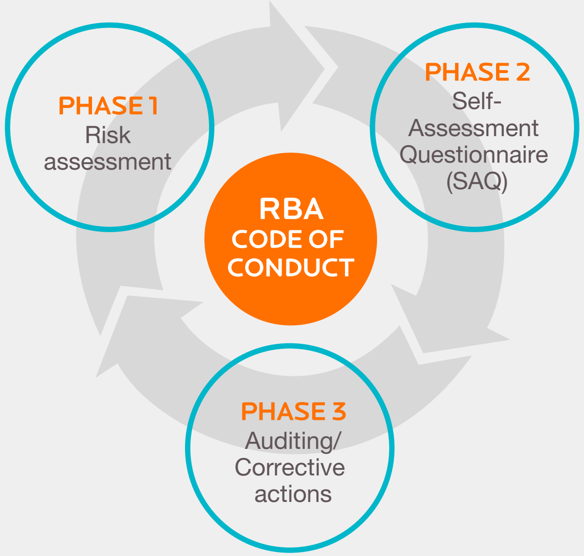
However, responsibility is more than codes and standards. Responsibility is also about understanding stakeholder priorities, our material aspects, and integrating responsible business practices into our objectives, strategies, and processes. It is about finding new ways to develop, manufacture, and support our products with less risk to people and the environment. Employees are encouraged to contribute to this at ASMI, helping to strengthen our ZERO HARM! vision.

HOLD CRITICAL SUPPLIERS TO THE SAME STANDARDS

We require our critical and strategic suppliers to follow the RBA Code of Conduct to ensure alignment with the policies and expectations of ASMI.

We conduct an assurance process for our critical and strategic suppliers and set objectives for Code acknowledgment, self-assessment, auditing, and corrective action processes that are consistent with RBA requirements.

CRITICAL SUPPLIER CR STRATEGY



We also go beyond the Code to partner with customers to map our contract manufacturer labor sourcing process to prevent forced and bonded labor (FLBL) and encourage diversity in supply.

By focusing on responsible business practices in our supply chain, we expand our impact and our contribution to relevant SDGs.

CR STRATEGY AND GOVERNANCE

Our CR management system is embedded in our corporate governance framework.

The Corporate Vice President of Human Resources, who is also Chairperson of the ASMI Ethics Committee, and the Corporate Vice President of Operational Excellence, who is directly responsible for Environmental, Health, Safety, and Corporate Responsibility are key CR leaders for the company and are integral to CR governance. These leaders and their respective organizations define ASMI's objectives and strategy for labor and ethics, environmental performance, and employee health and safety, which are subject to approval by the Management Board. The implementation and control of economic and financial aspects is overseen with reviews conducted quarterly, by the Management Board.

STAKEHOLDER ENGAGEMENT METHODS

We regularly engage with appropriate stakeholders to improve and mature as a business. Their feedback helps us shape objectives, strategy, and policy making in relevant areas of corporate responsibility.

CORPORATE GOVERNANCE FRAMEWORK

KEY STAKEHOLDER ENGAGEMENT METHODS AND BENEFITS

STAKEHOLDER	ENGAGEMENT METHOD	FEEDBACK	OUTCOME
Customers	Direct customer meetings (recurring) Attending customer supplier development sessions (recurring)	Engagement with our key customers has provided systematic inputs to improve the structural maturity and operational performance of the company	ASMI continues to score higher on supplier process maturity scales with key customers, and strengthens its related policies, procedures, and activities
Employees	Bi-annual survey	Survey conducted of all worldwide employees in labs, Manufacturing, and Service, with feedback on areas to improve safety and satisfaction	Focused lab, manufacturing, and service safety improvement plans with targets tied directly to the employee feedback, including improvements in communication of safety project improvements, and improvements in routine manager and employee safety audits
Industry consortium and partners	Renewed R&D partnership with imec Extended University of Helsinki partnership	Cooperation and bilateral research activities	Additional ALD, PEALD, epitaxy, and CVD capability

The above table lists only a few examples of how we consider stakeholder input and feedback, which we use to further improve our strategies, targets, and ultimately our performance.

We also engage with sustainable development organizations such as the CDP (formerly the Carbon Disclosure Product) a not-for profit charity that help companies and cities document and disclose their environmental impacts. We also engage with the Vereniging van Beleggers voor Duurzame Ontwikkeling (Dutch Association of Investors for Sustainable Development, VDBO). We participate in the Transparency Benchmark, a biennial assessment on the content and quality of corporate social responsibility reports of Dutch companies, which is used by the Dutch Ministry of Economic Affairs to assess and drive adoption of sustainable investment best practices. In 2017, when the last assessment took place, ASMI placed in the top-third of this benchmark.

MATERIALITY

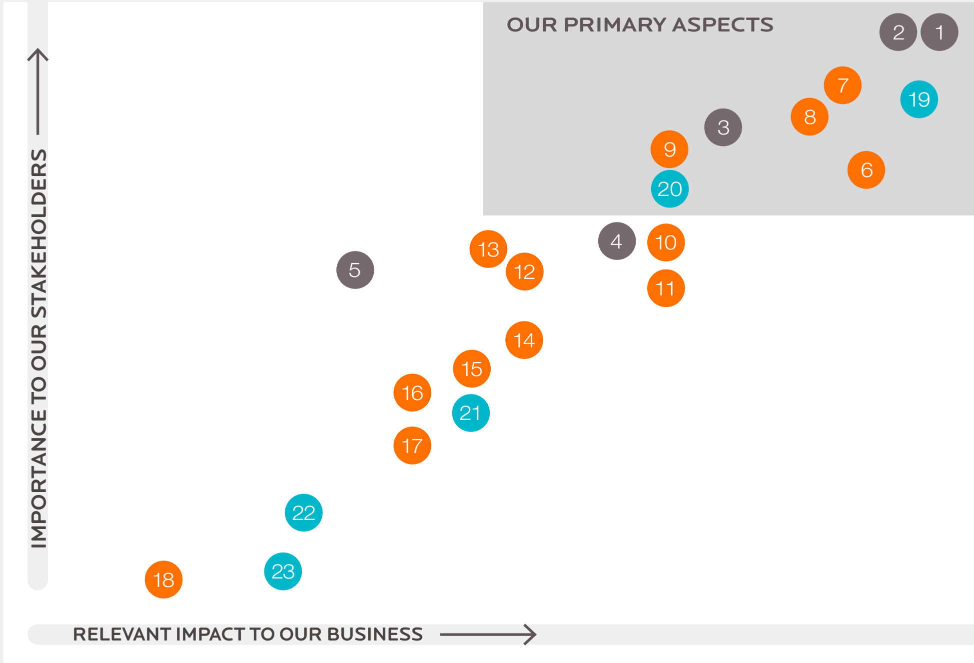
In 2015, we introduced our materiality assessment process. The process provides us with the opportunity to continually assess if our strategic objectives, actions, and initiatives are aligned with our stakeholders and overall importance to our business. The process has remained constant since then, following the sustainability materiality steps and matrix based on the Global Reporting Initiative's (GRI) G4 Sustainability Reporting Framework, and represents the internal and external stakeholders we have identified.

The aspects in the top-right segment of the above chart are referred to as 'primary aspects' in this report. Primary aspects are considered strategic to our business.

Resource priority decisions are made regularly, with priority given to those which are of high importance to ASMI and our stakeholders.

R&D investment, which results in patents and intellectual property, are assets protected by legal agreements and information security systems. Protecting these investments helps drive company financial health through product development and customer confidence.

All aspects in the materiality assessment are rated with respect to current and future risks and global trends. For example, we recognize that climate change, resource conservation, and water management are critical aspects of preserving Natural Capital. Their inclusion means that we continue to strive for improvements with a positive environmental impact. In parts of the world where natural resources such as water are in limited supply, conservation efforts to preserve such resources are vital. One example of this is the implementation of a water reuse system at our Phoenix facility, which in 2018 reduced on-site water consumption by 35% compared to 2017.



Note: Those aspects in the top-right segment of the chart are referred to as 'primary aspects' in this report.

ECONOMIC

1 Company financial health
2 Innovation and R&D investment
3 Protecting and using intellectual property
4 Business risk and business continuity (BCP)
5 Product life cycle management

SOCIAL

6 Worker health and safety
7 Information security
8 Attracting, developing and retaining talent
9 Ethics and code conformance
10 Training and education
11 Employee relations and workplace vitality
12 Stakeholder engagement and communication
13 Trusted partner for customers via code conformance
14 Supply Chain EHS
15 Human rights/ conflict minerals
16 Supplier Labor Standards
17 Diversity
18 Community engagement

ENVIRONMENTAL

19 Product safety and environmental compliance
20 Hazardous substance management
21 Energy use/greenhouse gas (GHG) reduction
22 Water usage/recycling
23 Recycling/reuse

PRIMARY ASPECTS	OUR STRATEGIES	SETTING STRATEGIES, STEERING AND CONTROLS	NEW IN 2018	RESULT/STAKEHOLDERS' IMPACT
ECONOMIC				
1 **Company financial health** 2 **Innovation and R&D investment** 3 **Protecting and using intellectual property**	› Realize profitable, sustainable growth through innovation › Maintain technology leadership in deposition › Invest in and develop new applications to support our customers with increasing technology requirements › Leverage our strong technology expertise to enhance customer/stakeholder relationships › Create the company culture and environment for innovation and patent creation with strong IP protection programs	› Management meetings › Market assessments › Business unit/operational reviews › Technical steering meetings › Legal reviews	› Renewed partnership with University of Helsinki › Continued implementation of software, training and agreements protecting IP	› Technology leadership recognition with sustainable profitability and business growth › IP creation/Patent creation
SOCIAL				
6 **Worker health and safety** 7 **Information security** 8 **Attracting, developing and retaining talent** 9 **Ethics and code conformance**	› We use performance evaluation, succession planning, and employee learning and development programs › Establish leadership academy to ensure our leadership pipeline and stay competitive in labor markets › We partner closely with select top universities globally for technology development and recruitment › Conducts business according to ethical and professional standards › Implement Ethics Code of Conduct, CR policy, and commitment to RBA Code of Conduct › Secure IT systems	› Global EHS and Product Safety Leader teams › Global Human Resources › Global EHS › Global IT › Ethics Committee	› Lab gas system improvements › Customer safety leadership engagements › Management safety audit leadership › Globally harmonized new employee onboarding process › Interactive platform for developing managerial skills › Piloting technical career ladder for engineers › Gifts and entertainment policy and reporting improvements	› Safer work environment and processes › Closer engagement with customers to improve collective safety › Stable workforce with suitable technology and leadership capability › Employee professional development › Employment creation and employee satisfaction › Compliance and responsible business practices › Secure innovation and personnel data
ENVIRONMENTAL				
19 **Product safety and environmental compliance** 20 **Hazardous substance management**	› Reduce overall risk of exposure with focus on high risk activities and functions, including Labs, Manufacturing and Service › Contribute to and protect the communities in which we operate, and continuously strive to reduce the environmental impact	› Product safety steering committee › Business unit engineering › Global EHS and facilities	› Continue to strengthen product compliance team › Improved standardization of global design standards › Lab gas system enhancements › Improvements in chemical storage infrastructure	› Compliant and safe products › Customer satisfaction and safety › Minimize environmental impact and protect communities in which we operate

The table above provides an overview of the primary aspects and their related strategies.

For more information on each aspect, please refer to the following sections of this report:

PRIMARY ASPECT	MORE INFORMATION IN
1 **Company financial health**	Financial statements
2 **Innovation and R&D Investment**	Research and development
3 **Protecting and using intellectual property**	Research and development
6 **Worker health and safety**	People and society
7 **Information security**	Risk management
8 **Attracting, developing and retaining talent**	People and society
9 **Ethics and code conformance**	People and society
19 **Product safety and environmental compliance**	Markets and products
20 **Hazardous substance management**	Environment

CIRCULAR ECONOMY

We recognize the inherent value of a circular economic framework for product stewardship. We partner with customers in the deployment, operation, and ongoing maintenance of our equipment and processes in their facilities. We develop system improvements and offer upgrades to improve deposition performance, yield, and productivity, and refurbishment services to extend the useful working life of the equipment. We refurbish and redeploy products such as the A400 and are piloting a process to recover and reuse product shipment packaging materials. A pilot reuse of shipment packaging was implemented on two product platforms in 2018, and we plan to expand this to five platforms in 2019. Such processes and practices are consistent with a circular economic product model to increase the value, performance, and the working life of ASMI's products and services.

TAX PRINCIPLE

Taxes are determined and paid in accordance with all relevant rules and regulations in the countries in which we operate. We do not use artificial tax structures aimed at tax avoidance. We aim to follow both the letter as well as the spirit of the law.

We apply the arm's length principle to determine transfer prices in accordance with domestic and international rules and standards, such as the OECD Guidelines for Multinational Enterprises. Our disclosures are made in accordance with the relevant local and/or international regulations.

MARKETS AND PRODUCTS

Within the semiconductor capital equipment market we operate in the semiconductor wafer processing equipment market segment, primarily for deposition equipment.

MARKETS

In 2018, the semiconductor industry was driven by a US$2.2 trillion global electronics industry (VLSI Research Chip Insider, February 11, 2019) that required approximately US$409 billion of semiconductors, which was up by around 15% compared to 2017, driven mostly by higher prices in memory devices. In turn, the semiconductor industry supported approximately US$80 billion semiconductor capital equipment industry (up around 14% compared to 2017), which supplies the required production systems and services. The equipment segment was driven mostly by capacity expansion in 3D-NAND memory fabs, technology conversion investments in DRAM memory fabs, and new technology generation investments in logic and foundry fabs.

The semiconductor capital equipment market is composed of three major market segments:

- wafer processing equipment;
- assembly and packaging equipment; and
- test equipment.

We are active in the wafer processing segment. Within wafer processing equipment, the major segments are:

- lithography;
- CMP;
- ion implant;
- deposition;
- etch & clean; and
- process diagnostics.

The principal market segment in which we participate is deposition and related tools. Within the deposition market, the major equipment technology segments are:

- chemical vapor deposition (CVD);
- physical vapor deposition (PVD);
- atomic layer deposition (ALD);
- rapid thermal processing (RTP);
- epitaxy; and
- diffusion/furnace.

OUR PRODUCTS

Our products include wafer processing deposition systems for CVD, ALD, epitaxy, and diffusion/furnace. We make two types of process tools: single-wafer and batch. The majority of our business comes from single-wafer tools, which are designed to process an individual wafer in each processing chamber on the tool.

In contrast, a batch tool is designed such that a large number of wafers are processed simultaneously in a larger processing chamber. Batch tools typically achieve a higher throughput compared to single-wafer tools.

Single-wafer tools typically achieve a higher level of process performance and control, especially for complex, critical applications. We work closely with our customers to meet their demands, and in recent years we have developed single-wafer tools with multiple chambers configured together in a compact way on a single platform. This approach offers the best of both worlds, combining high productivity and a high level of performance.

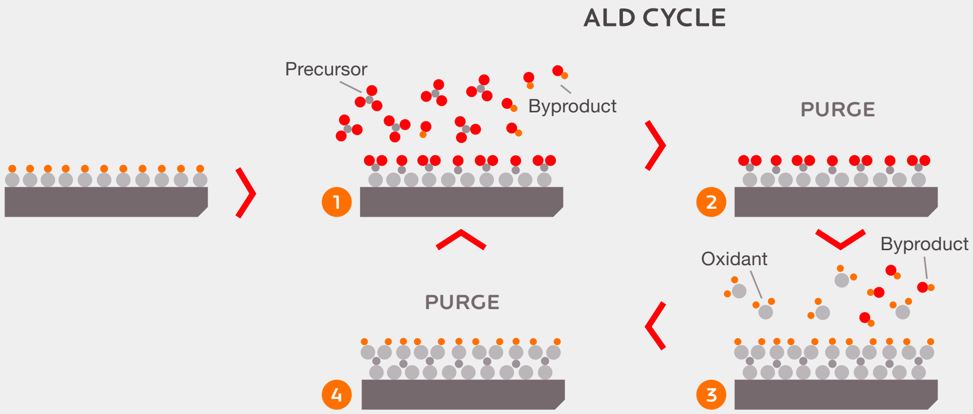
Our XP platform is a high-productivity, common 300mm single-wafer platform that can be configured with up to four process modules. The XP platform enables high-volume multi-chamber parallel processing or integration of sequential process steps on one platform. The XP common platform benefits our customers through reduced operating costs, as many of our products use the same parts and consumables, and a common control architecture improves ease of use.

Our XP8 platform follows the basic architectural standards of the XP, but provides even higher productivity with up to eight chambers integrated on a single-wafer platform with a small footprint.

BREAKTHROUGH TECHNOLOGIES

We are a leading supplier of ALD equipment and process solutions for the semiconductor industry. Today, our ALD process technology delivers the highest performance available to support the next generation of semiconductor devices. Our epitaxy products have also demonstrated solutions for our customers to achieve transistor channel performance at the most advanced technology nodes.

ATOMIC LAYER DEPOSITION



INCREDIBLE PRECISION

ALD allows us to deposit thin films atom-by-atom on silicon wafers, meaning we can deliver atomic-scale thickness control, high-quality deposition film properties, and large area uniformity.

With such precision, we can use materials that previously could not be considered, and develop 3D structures that are vital to the future of electronics. 3D technology provides a number of real benefits, including saving space while delivering chips with higher performance that consume less power.

ALD IN VOLUME MANUFACTURING

Our ALD technology is being used to build ICs for a wide range of leading-edge products, including high-performance computers and smartphones. The results of ALD are visible everywhere in the world around us.

ALD is also our basic platform for the development of a wide range of new materials. Our research centers across the globe are working on ALD, and we are conducting joint research projects with

Europe's largest independent research institute, imec. Taken together, this helps make ALD one of the principal drivers for future growth in microelectronics.

ALD – A DRIVER OF FUTURE GROWTH

Using ALD, we can deposit new materials several atoms thick on semiconductor wafers, producing ultra-thin films of exceptional quality and uniformity.

In PEALD, plasma is used to provide the reaction energy for the process, enabling us to use lower temperatures for low-thermal budget applications. This technology was introduced in DRAM and planar NAND flash manufacturing, for spacer-defined double patterning (SDDP), a technique that can reduce device dimensions, postponing the need for new lithography technologies.

Using ALD technology, we can scale devices to smaller dimensions while reducing the power consumption of transistors, all of which helps the industry follow Moore's Law and create smaller, more powerful semiconductors. For advanced 3D memory applications, where devices are stacked vertically in high densities, ALD is critical for uniformly depositing films in deep trenches and over complicated features. Many new applications are emerging where ALD is the technology of choice, and in a number of cases the only solution that meets the challenging technology requirements.

We expect ALD to be one of the principal drivers of growth in microelectronics over the coming decade. In addition, we expect growth in other deposition technologies, including epitaxy for advanced transistors and PECVD for creating improved interconnects. Looking ahead, we will continue to develop the huge potential of our deposition technologies in support of the semiconductor industry, enabling the industry to support the future demands of consumers and businesses.

EPITAXY

Epitaxy is a critical process technology for creating advanced transistors and memories. The epitaxy process is used for depositing precisely controlled crystalline silicon-based layers that are important for semiconductor device electrical properties. In some cases, the epitaxy films incorporate dopant atoms to achieve specific material properties.

Epitaxy process temperature control is of the utmost importance. We have developed new methods of temperature control in our Intrepid ES epitaxy tool that enable improved film performance and repeatability in volume production. Furthermore, Intrepid's closed-loop reactor temperature control enables enhanced stability in production.

PRODUCT STEWARDSHIP AND PRODUCT LIFE CYCLE MANAGEMENT

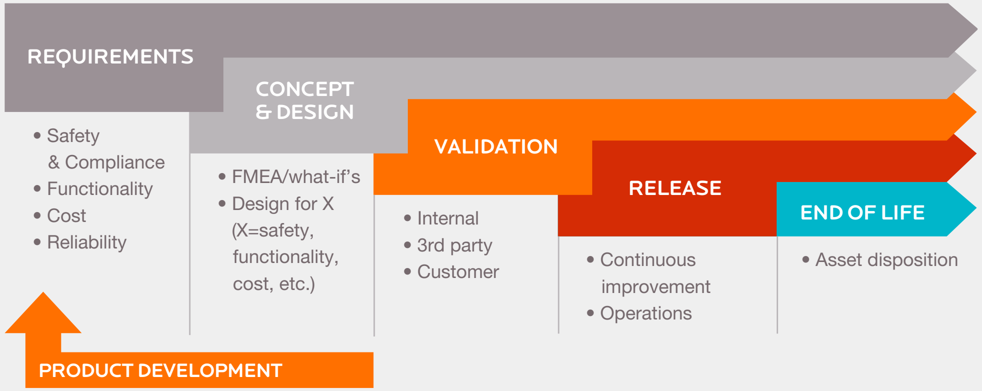
Focusing on product stewardship and product life cycle (PLC) management involves taking responsibility to reduce the product's environmental impact along its entire life cycle, so from cradle-to-grave. Ultimately, this approach enables us to make products more efficiently and productively for our customers, while extending the products' useful life.

Our product life cycle process follows the well-established construct of phase-gate product development guided by several key inputs:

- our collective industry knowledge/experience and subject matter experts;
- industry/customer requirements and frameworks (such as, customer purchase specs and business requirements); and
- industry regulations, standards, and guidelines.

Product-specific requirements realized from these inputs are documented in market requirement specifications (MRS), which are held as the objectives we need to meet through the product development process. The MRS are updated continually to capture changes to market conditions, regulations and standards, and related specifications.

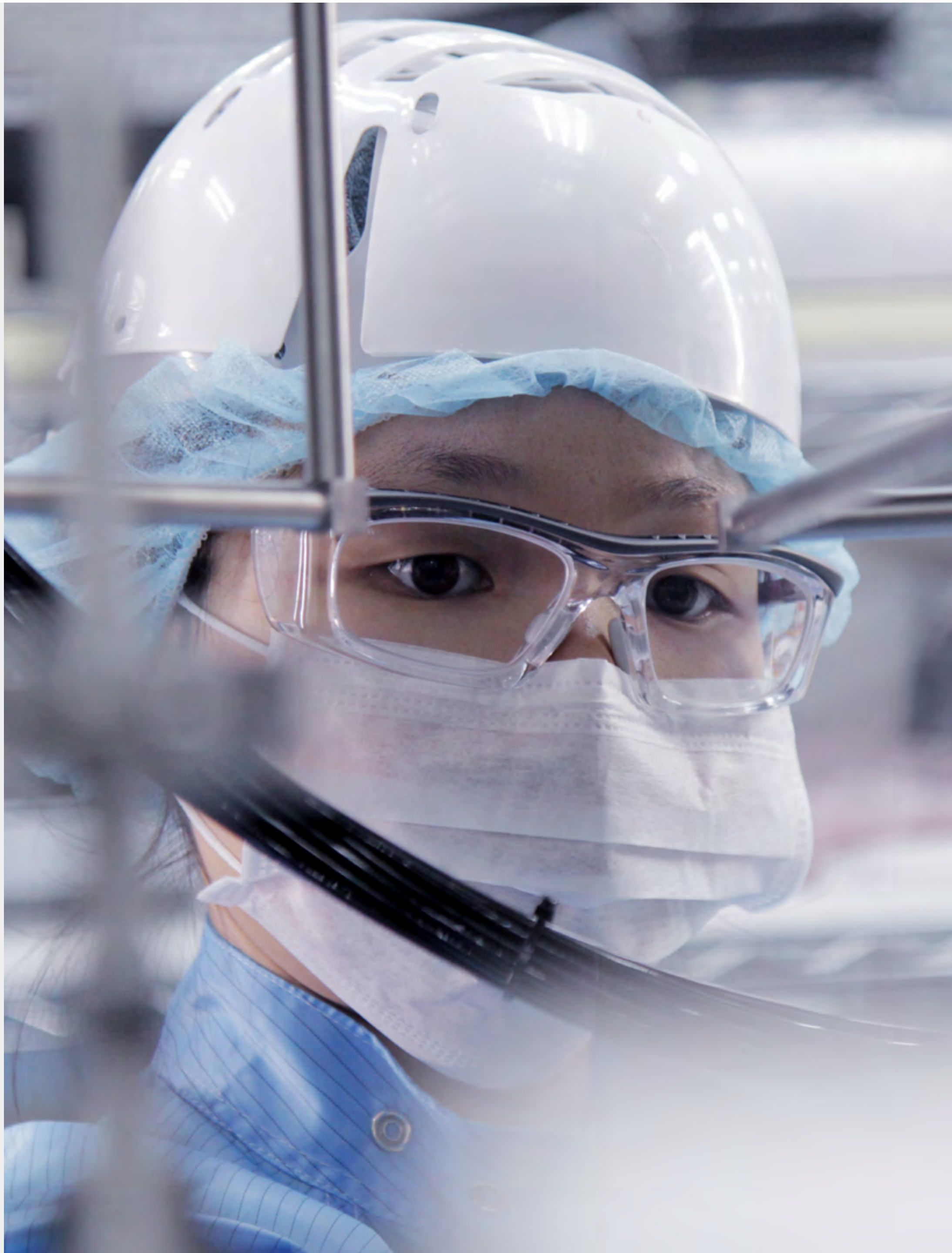
Governance is provided through key technical meetings (architecture reviews, design reviews and validation reviews) and phase exit meetings through the various life cycle stages of the product.



PRODUCT SAFETY AND GOVERNANCE

Product safety is a core element of ASMI's innovation process, and it is realized through the design, manufacturing, and ongoing support of our products. The requirements are defined and championed by the Product Safety Council which includes engineers representing each of our design centers. These requirements are established in the PLC during the requirements phase, and include legislation and standards from the semiconductor industry and customers. We verify that safety requirements are met during the concept and design phase as part of safety risk assessments, and through independent third-party validations during the product validation phase. In addition, we integrate the identification of opportunities for safety design improvements into our global safety reporting system. This system enables our engineers and technicians who work with our equipment on a daily basis to report incidents, areas of concern, or opportunities for improvement. Corrective actions and lessons learned are captured, providing an invaluable link between the end user and the design process.

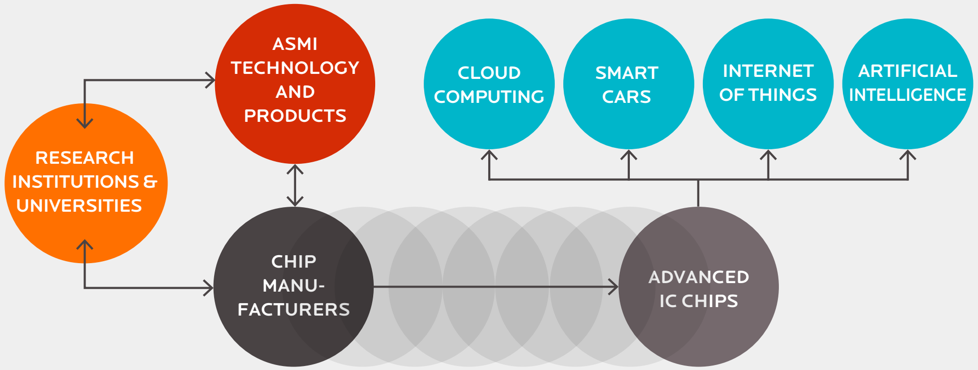
Our stakeholders working with our equipment rely on this process of continual assessment, integration, and improvement, to make sure they can safely work with our products.



RESEARCH AND DEVELOPMENT

We have helped shape the industry by driving innovation through our collaborative research and development (R&D) models. Our success is largely dependent on our ability to develop new products and new materials, and to continuously improve existing products and materials. Achieving this requires a large commitment to R&D. In 2018 and 2017, our R&D investments were €125 million and €114 million respectively. As of year-end 2018, 544 employees were employed in R&D, representing 25% of our total staff.

DRIVING INNOVATIONS



GLOBAL RESEARCH

As a global company, we carry out research and development (R&D) on different continents, giving us access to the smartest professionals working in the semiconductor sector today, and bringing our R&D closer to our customers. In our research centers in Belgium, Finland, Japan, the Netherlands, South Korea, and the United States we are active at all stages of our innovations' life cycle, from developing the basic chemistry and materials to implementing improvements on our equipment at our customers' production sites. We also work with specialists across a wide array of disciplines to develop our future products, including scientists from research institutes, universities, and suppliers.

REGIONAL EXPERTISE

With our R&D activities chiefly conducted in the principal semiconductor markets of the world, we are able to draw on innovative and technical capabilities internationally. Each geographical center provides expertise for specific products or technologies, and interacts with customers on a global scale. This approach, combined with structured and managed interactions between the individual centers, enables the efficient allocation of resources during development and new product introductions.

Under the umbrella of our global product development policies, our local activities are directed both towards expanding and improving existing product lines to incorporate technology improvements and reduce product cost and total cost of ownership, as well as developing new products for existing and new markets. These activities require the application of physics, chemistry, materials science, electrical engineering, precision mechanical engineering, software engineering, and systems engineering.

GLOBAL PLATFORM ENGINEERING GROUP AND CORPORATE R&D

A global platform engineering group addresses the needs for common platforms and software for the various products in our product portfolio. This helps us drive standardization of hardware and software through the organization. A corporate R&D group consisting mainly of resources in Leuven, Belgium and Helsinki, Finland addresses common needs for advanced process and materials development, and process integration work for the 5nm, 3nm and 2nm nodes, and even beyond.

LOCATION	NUMBER OF R&D EMPLOYEES AS OF DECEMBER 31, 2018, EXCLUSIVE OF TEMPORARY WORKERS
Almere, the Netherlands	36
Leuven, Belgium	33
Helsinki, Finland	31
Phoenix, Arizona, United States	180
Dongtan, South Korea	132
Singapore	2
Tokyo, Japan	130
TOTAL	**544**

INITIATIVES WITH CUSTOMERS, INSTITUTES AND UNIVERSITIES

With our customers, we co-create and jointly develop technology roadmaps, to timely develop the new processes and materials our customers need for their next generation products. The diversity in collaborations, ranging from early research to pilot production, helps us reduce risk as early as possible in the innovation life cycle.

As part of our R&D activities, we are engaged in various formal and informal arrangements with customers, suppliers, research institutes and universities.

We have specific bilateral research activities with several key academic groups at universities in Asia, Europe, and North America, typically centric to our core R&D focus on new equipment, material and process developments.

We contribute to several process and equipment development projects at the major Dutch technical universities through the Dutch NWO[1] (Netherlands Organization for Scientific Research) funding organization in the domain TTW[2] (covering Applied and Engineering Sciences), and in Belgium we participate in the industrial users group for several projects supported by the Flemish funding organization VLAIO[3] (Agency for Innovation and Entrepreneurship).

We participate in select publicly-funded programs to research and develop technology for semiconductor devices with line widths of 5nm and below, and in 'More than Moore' technologies. We are also involved in several cluster development programs in the Eureka initiative, as a member of the AENEAS (Association for European NanoElectronics Activities) as mentor or reviewer, and in road-mapping activities.

And finally, we occasionally cooperate with other semiconductor capital equipment suppliers in complementary fields, in order to gain knowledge on the performance of our own deposition processes, in cooperation with other processes, either in bilateral or consortia projects.

[1] NWO: Nederlandse Organisatie voor Wetenschappelijk Onderzoek
[2] TTW: Toegepaste en Technische Wetenschappen
[3] VLAIO: Vlaams Agentschap Innoveren & Ondernemen

PATENTS & TRADEMARKS

CAPTURING IDEAS EFFICIENTLY

We expect new deposition technologies and chemistries to be a major driver for new intellectual property (IP) in the future. Patents give us a right to protect our products or aspects thereof, and enable us to speak more openly about our inventions and share ideas in the marketplace that benefit our customers.

We understand that a failure to adequately protect our IP and/or leakage of our IP could result in the loss of our competitive advantage and adversely impact our financial performance.

We have implemented a program that protects IP for us, our customers, our suppliers and our partners. We train all employees not only on the importance of IP protection, but also on how to recognize and report possible IP infractions. This training is provided to all new hires, and employees are given regular refresher training.

Our patents are usually registered in the principal countries where semiconductor devices or equipment are manufactured and/or sold. Our vision is to increase our value to our customers and shareholders by using our IP in a way that differentiates our products, influences the market, and provides additional monetization opportunities.

INFORMATION SECURITY

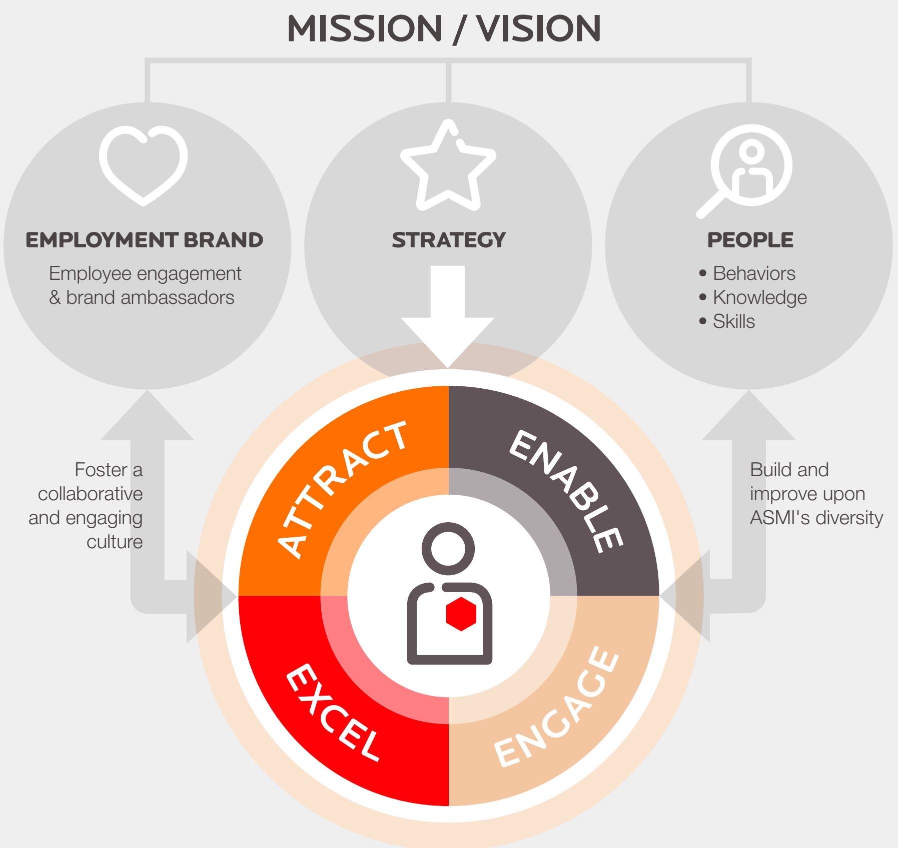
Our technologies, innovations, IP, products and process data, as well as the sensitive information about our customers, suppliers, and employees, are valuable assets. Any breach of our information systems could adversely affect our finances and operating results, as well as our reputation. Information security is a material aspect to us and our stakeholders, and requires the proper controls to protect it.

Our approach to information security management includes developing and sustaining a proper global IT security management framework with a policy, processes, and controls to protect against unauthorized system access and loss of valuable information, regardless of location.

In 2018, we continued to assess our position on network security and took steps to enhance the security posture of our global network, improved employee education, and awareness on cyber security/safety, and made infrastructure modernization enhancements.

PEOPLE AND SOCIETY

Key to our mission is the ability to attract, develop and retain a highly skilled and diverse workforce. Recruiting and developing a diverse workforce gives us a wide range of perspectives, allows us to explore and adopt new technological ideas and innovations, and enables us to continuously strive to deliver excellent products and service to our clients.



We want to be recognized as an employer of choice in the semiconductor equipment industry. To achieve this, we focus on four specific areas: being able to attract the right talented people; enable our people to perform to the best of their abilities; engage our people by fostering a collaborative and appealing culture; and supporting our people to excel in their continued professional development.

ATTRACTING A DIVERSE WORKFORCE

Highly skilled professionals, particularly those with a technical background, are scarce in all 16 countries in which we operate. Despite this, in 2018 we managed to realize our highest recruitment results in history leading to significant growth in our workforce.

We are an equal opportunity employer and welcome and value diversity. We recognize and respect the differences between individuals, including gender, ethnicity, religious beliefs, sexual orientation, knowledge and experience, work background, age, skills, etc..

In 2018 we introduced a new Recruitment Process Outsourcing (RPO) partner for Asia and Europe to support the company in strengthening our global recruitment capabilities. For 2019, we aim to work together with both RPO partners to create an enhanced global talent acquisition model that supports our ability to attract the skilled people needed to develop the company's future.

ENABLE OUR PEOPLE

PAY FOR PERFORMANCE

In positioning ASMI as an employer of choice and contributing to our mission to Drive Innovation and Deliver Excellence, we deploy a philosophy of differentiating rewards for performance. Following the adjustment of our global levelling system for determining job grades and titles, in 2018, we further improved our short-term incentive program that creates a stronger link between company results and personal performance.

By doing so, we aim to create greater involvement with and influence of company and unit results, while stimulating people to develop and use the best of their abilities within ASMI. In return, our people will receive greater rewards when the company is doing well, further accelerated if they are productive and performing well. In addition to our compensation programs, we also offer employees a range of competitive benefits.

FAIR REMUNERATION

ASMI is an equal opportunity employer. Our compensation policy, is based on market data, skills and education and is further differentiated for performance. Compensation is not based on such criteria as gender, nationality, and age.

ASMI is committed to complying with all applicable laws, regulations and collective labor agreements, including those relating to minimum wages, to wages and hourly pay. In 2018, in every situation our people were paid above the local minimum wage.

As part of our effort to be transparent about the impact of our compensation programs, we have assessed the difference in compensation between our female and male employees. We looked at the compensation ratio at management and non-management levels. The analysis was done by comparing the median compensation as a function of gender per job grade and per country, excluding the impact of job scope and country-specific compensation levels.

Based on our assessment in 2018, we found no significant disparity between female and male compensation at the different levels in our organization.

GENDER PAY RATIO

	FEMALE VERSUS MALE
Senior management / executives	107%
Middle management	98%
Non-management	102%
Total	101%

TALENT MANAGEMENT AND LEADERSHIP DEVELOPMENT

Both our annual succession and talent review process and our performance management and development process are crucial elements in our Talent Management philosophy.

We conduct structural succession and talent reviews for all critical organizational areas. For those positions identified as pivotal to developing our capabilities, we define the required talent-related actions to ensure timely succession and support. Our Succession and Talent Review (S&TR) process supports management and employees in discussing key objectives and competencies on a regular basis, and helps ensure there is open dialog between them.

The ASMI New College Graduate (NCG) program focuses on top graduates with advanced degrees in physics, chemistry, materials science, and engineering. Working with a select group of universities that focus on the education and training that fit our technology needs, we participate in career events, partnerships, and projects that give us the opportunity to showcase the company and attract new talent.

During the first few years of their careers, new talent are based at one of our innovation centers in Helsinki, Finland, or Leuven, Belgium, before being given the opportunity to apply their knowledge in different product areas at one of our global product development facilities.

As part of our leadership development programs, we ran three programs for managers in 2018. The Leadership Academy programs helps managers and leaders from all levels of the organization to foster a collaborative and engaging culture and build upon the diversity of their teams. In 2018, after three global editions, we reviewed the Mobilize Organization program for directors and up. In 2019, based on the evaluation outcomes, we aim to implement a renewed program.

CORPORATE RESPONSIBILITY

As part of our commitment to corporate responsibility, ASMI is exploring ways to increase opportunities for people with a distance to the labor market, and who have limited job prospects due to their health, mental or physical condition.

ETHICS

The company has adopted a Code of Ethics that sets out clear standards in different areas of business life. Its purpose is to promote a clear, strong, and consistent culture of ethics that applies to our Supervisory Board and Management Board, and to all our employees, consultants, contractors, temporary employees, and critical/strategic suppliers. The full Code of Ethics can be found on our website.

We continuously promote ethical behavior and ensure all employees are actively exposed to our Code of Ethics in multiple ways. New hires are trained in the Code and associated policies within their first weeks of employment; refresher training on ethics topics is conducted annually; articles from Executives and members of the Ethics Committee are published through our global employee newsletter; we post visual awareness reminders at ASMI sites; and a dedicated ethics website is directly accessible via ASMI's Intranet home page.

SPEAKING UP

Potential violations of our Code of Ethics can be reported through the SpeakUp! process, or directly to management, HR, or the Compliance Officer. When we receive complaints, these are investigated under the supervision of the Ethics Committee.

The SpeakUp! program enables employees, suppliers, customers, and any other stakeholder to report ethics issues, concerns or complaints anonymously and in their own language. Independent of the way of reporting, our Code of Ethics includes a non-retaliation policy that applies to any person making use of this process. We encourage our employees to speak up when they feel ASMI's actions or behavior are (potentially) in conflict with the Code of Ethics.

GLOBAL EMPLOYMENT STANDARDS

Our Global Employment Standards (GES) also summarize our approach to respecting human rights throughout our global operations and supply chain. They are written with everyone in our value chain in mind. The GES reflect the principles laid out by the United Nations in the Guiding Principles on Business and Human Rights, and support the RBA Code of Conduct framework, including the following:

- prohibit the use of forced or involuntary labor, including fees of any type to secure employment;
- prohibit the employment of child labor; ASMI policy specifically does not allow anyone under the age of 18 to be employed at ASMI; and
- prohibit corporal punishment, threats of violence or other forms of physical or verbal coercion or harassment. We believe that everyone deserves to work in an environment free of any threats to their human rights.

HEALTH & SAFETY

When everyone acts as a safety leader, we can achieve ZERO HARM! We believe that focusing on the key elements of safety leadership within the company helps everyone become a safety leader. Together, we work to eliminate the risks and hazards that can lead to safety and health incidents. We model this through our BeSafe – The 6Es of Safety Leadership framework, which empowers everyone to lead by example through taking action.

The framework emphasizes eliminating hazards and evaluates performance through surveys and incident rates. In 2018, we recognized four employees for their achievements in demonstrating the attributes of safety leadership via a quarterly global safety leadership award. We also recognize to be successful in reducing incidents at customer sites in our service organization; we have to also model this with our customers.

We expanded our Safety Leadership Collaboration meetings to include more customers in 2018. These are innovative collaborations to identify risks in the shared work environment, and using our safety observations to inform and address areas of shared improvement. These sessions are driving improved safety for our people, our customers, as well as our industry overall.

PRIVACY

The data (person identifiable information) about our employees is data we protect with care. We do so in all countries in which we operate with the absolute aim to comply with the local legal requirements. In this respect we have adopted and rolled out policies and privacy codes, and entered into agreements (also with third party processors) in our effort to protect the integrity and confidentiality of the data of our employees. The same is applicable with respect to the privacy of our customers and suppliers.

ENVIRONMENT

Our innovations enable our customers to provide consumers and businesses with more powerful technologies, while lowering global energy demands. We align our strategies across the industry, including with customers and industry standards, to focus on key areas, including reducing greenhouse gases and water consumption, improving our recycling and reuse of raw materials, and focusing on responsibly designed and operated facilities.

Our ZERO HARM! philosophy drives us to continually improve our environmental performance both in our own operations and in our products, with the aim of reducing our environmental footprint and that of our customers.

Our Environmental policy is a key element of our Corporate Responsibility policy. It establishes our commitment to reduce our environmental impact by continuously improving our management systems and setting the right objectives. We continuously assess the range of aspects we need to identify, and set improvement targets on the most important impacts.

TARGETS

In 2016, we initiated a five-year target cycle for reducing our environmental footprint in key areas that are applicable to our business and aligned with industry standards, including the Sustainability Accounting Standards Board (SASB) standards for the semiconductor industry. In reference to science-based targets, we have normalized our greenhouse gas (GHG) emission reduction and our water consumption reduction objectives to our research and development (R&D) spend. Our R&D operations are responsible for a majority of the utility consumption through equipment installations and supporting facility infrastructure, accounting for more than 75% of electrical consumption and almost 80% of water consumption. In 2018 we significantly surpassed our 2020 water consumption objective, and are resetting that objective to further challenge ourselves.

Our environmental targets for 2016-2020 are now:

- reduce greenhouse gas emissions by 5% per euro of research and development (R&D) investment below 2015 levels by 2020;
- reduce water consumption by 45% (up from 10%) per euro of R&D investment below 2015 levels by 2020;
- divert more than 90% of all waste from landfill through recycle or reuse by 2020; and
- all new construction projects to exceed the energy efficiency standards of local jurisdictions.

These targets are aligned with key initiatives across our business, and is consistent with and managed within our environmental management system which is certified to the ISO 14001 standard.

Over 95% of our realized greenhouse gas emissions are a direct result of Scope 2 purchased electricity. We strive to find ways to reduce our electrical consumption and source power responsibly at our engineering and manufacturing sites. In 2018, we commissioned a third-party energy audit at one of our engineering sites, and are addressing key opportunities identified while evaluating other sites for the same opportunities. We report progress through annual participation in the CDP Report.

Our primary use of water is in the treatment and abatement of R&D process gases. Our efforts to reduce our water consumption needs to balance with the efficiency to abate potential air emissions and compliant with the statutory air emissions limits in the areas in which we operate. In this way, we have taken and continue to look for more measures at our R&D sites to reuse water, with reuse systems and initiatives in place to maximize the efficiency of the systems we have implemented.

We focused our efforts to reduce the landfill of solid waste through the implementation of a crate reuse program. Given the size of the equipment we produce, transporting it safely during the manufacturing cycle means using robust packaging, such as crates. By implementing a reuse program between ASMI and suppliers, we are able to reduce the one-time use of packaging. This program continues to grow as we add products and parts and has the potential to significantly help us reach our objective.

Our new South Korea facility meets all local energy efficiency requirements, and exceeded requirements in areas such as lighting and lab infrastructure control systems. We are in the process of designing a new building for our Singapore manufacturing operations, and are aiming for a top-tier energy rating.

In 2018, there were no material changes to our current operations that alter the way we interface with the ecosystem or manage our on-site surface water at our existing sites. We conduct an impact assessment for every new project, and strive to minimize identified potential impacts, such as through erosion protection, surface water containment, abatement technologies, and water resource management. Our focus and data collection for environmental measures is ongoing, and we maintain a process with individual site accountability for data accuracy. This means employees who are close to the operations and understand the inputs and outputs are also responsible for maintaining the data on a monthly basis. This helps ensure not only accuracy, but the ability to quickly identify opportunities and risks.

SUPPLY CHAIN

ASMI is engaged in manufacturing products of increasing complexity in a challenging business environment, which requires quick responses to customized solutions. A robust supply chain management system, with a diverse scope and global footprint, is necessary to meet our business ambitions. This requires our global supply chain organization to continuously drive operational excellence by employing policies, initiatives, and tools to proactively engage our suppliers to ensure business compliance and continuity. These include regular supply and financial risk monitoring, performance management, and commitment to the tenets of the Responsible Business Alliance (RBA) from our key business partners. ASMI's global supply chain organization is committed to maintaining a supply portfolio that is value creating, sustainable, and ethical.

A DIVERSE GLOBAL SUPPLY CHAIN

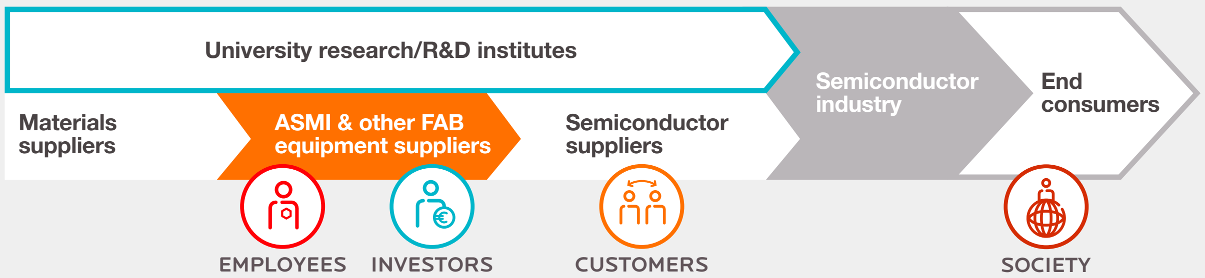
Our mission at ASMI is to build a world-class supply chain that provides our customers with the most technologically advanced products, services, and global support network, at a competitive cost of ownership. We partner with hundreds of suppliers who provide goods and services used to manufacture our products and serve our customers. They play a critical role in enabling us to achieve our mission, covering a broad spectrum of commodities across more than 20 countries and regions worldwide. The main categories include contract manufacturers, precision machining, gas systems, robotics, electronics, and high-tech chemistries. These suppliers manufacture advanced materials to stringent tolerances and performance attributes, as required to achieve our design specifications and requirements. This approach enables us to remain innovative and swiftly meet the challenging demands of our customers.

MANAGEMENT APPROACH

Our supply chain is a critical part of our end-to-end value chain, with our customers and other stakeholders increasingly expecting greater transparency along the entire supply. This includes how our products are manufactured, whether labor standards are upheld, assurance that workers are treated fairly, and reducing the impact our supply chain has on the environment among other requirements.

As part of our supplier management process, we have developed a critical and strategic supplier risk assessment process based upon a multitude of criteria, including the key aspects of Corporate Responsibility. We assess our supply chain annually, and identify our critical and strategic suppliers based on key elements such as, the amount we spend with them, how many similar or alternative suppliers exist, and the amount of time we would need to switch suppliers if we had to.

OUR POSITION IN THE INDUSTRY



THE DIVERSE NATURE AND COMPLEXITY OF ASMI'S SUPPLY CHAIN SYNERGIS ALD (EXAMPLE):

REPRESENTATIVE COMMODITIES

Complex modules, robots, gas assemblies, valves & fittings, electrical parts, precision machining parts, fasteners, framing/paneling

These critical and strategic suppliers are proactively managed with a comprehensive initiatives program, aimed at driving business compliance, risk management, supply continuity, and performance among other requirements. The best performing suppliers are recognized in our Supplier Day forum which is held annually to communicate and align supply chain goals and objectives.

We use the RBA Code of Conduct as our Supplier Code of Conduct, enabling us to extend our commitment and approach to corporate responsibility, and we have established management systems for our critical and strategic suppliers that match the industry-standard supplier assessment process. Having integrated corporate responsibility into our supply chain management process, we believe that we can create long-term business value and further mitigate supply risk.

SUPPLIER EXPECTATIONS

We communicate our expectations and measure conformance to our expectations with our critical and strategic suppliers. This approach manages our supply chain risks by focusing on the areas where a majority of our materials come from and spending occurs.

Our critical and strategic supplier requirements include their commitment to:

- the RBA Code of Conduct;
- ASMI's Corporate Responsibility policy;
- ASMI's Environmental Health and Safety policy;
- ASMI's Code of Ethics;
- ASMI's Intellectual Property policies;
- hazardous materials identification regulations;
- conflict materials identification and disclosure; and
- global trade compliance and export controls.

These requirements are outlined on our public supplier management web page.

INTEGRATED SUPPLIER MANAGEMENT

We believe that building a sustainable supply chain begins with solid business partnerships. Our goal is to find the most capable suppliers in the industry, treat each supplier with respect, and conduct business fairly across all facets of our operations.

By adhering to these principles, we believe we can forge lasting partnerships that will provide long-term benefits to ASMI, our suppliers, our customers, and our stakeholders.

Suppliers who share our vision for an integrated supply chain model routinely demonstrate a commitment to solving our customers' challenges. They understand industry dynamics and recognize the need to partner in developing solutions that improve the overall strength of ASMI.

When faced with a particular opportunity, they will quickly use their industry expertise to highlight opportunities and share recommendations, whether technical, commercial, or environmental. In many cases, these suppliers can call on a wide variety of global industries and disciplines from which to share best practices. By building a strong relationship with our suppliers, we are able to build upon a foundation of experience and rapidly respond to the challenges of our business environment.

RISK ASSESSMENT AND MANAGEMENT

We operate globally and have partnerships with suppliers from more than 20 countries across Asia, North America, and Europe. We place high expectations on our supply chain when it comes to operational flexibility and responsiveness, and together we must be prepared to respond quickly to a wide range of unplanned events. This requires working proactively with our supply chain partners to ensure they are able to assess and manage risks.

Our supply chain risk management process consists of a combination of critical and strategic supplier risk assessments, supplier self-assessments, RBA audits, and training and capability-building activities to help our supply chain be both resilient and responsible.

In addition to the aforementioned RBA Code and SAQ compliance, we actively engage our critical and strategic suppliers to drive:

- business continuity planning;
- financial risk monitoring; and
- strategic business reviews.

Consideration is also given to other suppliers that we are actively developing or that have key capabilities.

SUPPLIER DEVELOPMENT AND PERFORMANCE MANAGEMENT

Keeping pace with Moore's Law means the semiconductor industry is advancing at an impressive rate and placing increasing demands on our products. This means we need to make advances across a number of areas simultaneously, including in material properties, operational capability, manufacturing processes, and capacity management.

These advances and demands are quickly shared with our supply chain, which means we need to continually evaluate our supplier landscape to partner with those suppliers who have demonstrated the right level of business commitment.

We continue to invest in our own ability to meet these increasing challenges, which includes growing our capabilities and resources in our global procurement organization, inclusive of our supplier development teams. These investments are consistent with our commitment to continuous improvement. As part of our supplier selection and recertification process, our supplier development team performed comprehensive audits, evaluating supplier compliance across a multitude of business elements. In 2018, these audit areas included supplier's employee health and safety, quality management system, ISO compliance, and intellectual property management. During these audits, we had a 93% closure rate on corrective actions.

We are committed to working with each of our suppliers in developing the right technology, operational capability, or investment in capacity. In addition, we are also committed to helping them adhere to our corporate responsibility expectations. For our critical and strategic suppliers, we not only communicate our expectations, we also offer free hosted webinars to help them to understand the code requirements and the measurement methods, and to gradually build up their knowledge to enhance their management systems.

Our supply chain organization has continued the proliferation of our supplier scorecard to evaluate each of our critical and strategic suppliers against a wide range of performance and compliance criteria. Elements such as business compliance, cost, quality, and delivery, are tabulated, analyzed and distributed quarterly. Each supplier's performance is reviewed quarterly between the commodity managers and their key supplier counterparts. In addition to this, semi-annual executive business reviews are held to put action plans together to monitor and address any gaps or key opportunities.

CONFLICT MINERALS AND HUMAN RIGHTS

Conflict minerals are those minerals mined in the Democratic Republic of Congo (DRC) or adjoining countries. Profits from the sale of these minerals may directly or indirectly benefit those involved in rebel conflicts and human rights violations. These minerals and the metals created from them – tin, tantalum, tungsten, and gold – can make their way into the supply chains of products used around the world, including the semiconductor industry. As a member of the global community, we have a strong commitment to preventing human-rights violations.

OUR APPROACH

Our Conflict Minerals Policy communicates our commitment to responsible sourcing. To enforce this policy, we developed, and have been executing our supply chain Conflict Minerals due diligence process annually since 2014 (ASMI conflict minerals policy).

We joined and participate in the widely-recognized Responsible Minerals Initiative (RMI). The RMI brings together the electronics, automotive, and other industries to jointly improve conditions in the extractives industry (www.conflictfreesourcing.org).

Our programs focus on communicating our policy, training and surveying our critical suppliers, and collecting supply chain sourcing information on the sources of tin, tantalum, tungsten and gold (3TG) using the industry-standard RMI template, known as the Conflict Minerals Reporting Template (CMRT). We actively engage with critical suppliers and conduct due diligence based on OECD guidance.

OUR PERFORMANCE MANAGEMENT AND GOAL

We encourage all of our suppliers to source 3TGs responsibly, and to use certified conflict-free smelters using recognized certification organizations. Our goal is to trace all of our critical and strategic suppliers and ensure they are using only certified conflict-free smelters, and that our sourcing funds do not finance conflict in the covered countries.

After we complete our due diligence survey, we carry out detailed data verification and analysis with identified smelters, from whom our suppliers source. This process establishes traceability to the smelters and confirms that the smelters identified are on the validated conflict-free smelters (CFS) list published by the RMI. This helps us ensure that the products and components we source are DRC mineral conflict-free.

COMPLIANCE

We are committed to the RBA Code of Conduct, including its commitment to conflict-free sourcing, and will continue our active participation and contribution to the RMI and our engagement with other relevant stakeholders. These include the European Parliament and other international NGOs through our engagement with CFSI. Current information on the due diligence process and our policy can be found on our website in the supply chain section under corporate responsibility. In 2021, the European Union will introduce a regulation establishing supply chain due diligence obligations for importers, based in the EU, of tin, tantalum and tungsten, their ores, and gold originating from conflict-affected and high-risk areas.

MOVING FORWARD

In 2018, we have completed our search and evaluation of the potential solutions for a supplier portal tool that will tightly integrate all supply chain activities from supplier search, qualification & onboarding, sourcing, procure-to-pay, forecasting, quality, supplier performance as well as communications of supply chain initiatives and business requirements. The supplier portal solution is expected to be implemented in phases from 2019 to 2020.

Going forward, we will continue to invest in human resources and solutions in data analytics to exploit opportunities for improvement in all areas of the supply chain pertaining to compliance, risk management, supply continuity, and performance.

RISK MANAGEMENT

Effective risk management is a key success factor for realizing our strategic objectives. ASMI has implemented an internal risk management and control framework to identify risks and opportunities that may impact us and to take appropriate mitigation initiatives.

CORPORATE GOVERNANCE FRAMEWORK

ASMI's risk management and control framework is based on the COSO reference model and is an integral part of our Corporate Governance Framework. The Corporate Governance Framework describes how ASMI's strategy, mission, vision, and objectives are embedded across the organization.

Our Code of Ethics sets clear standards in different areas of business life. Its purpose is to provide a clear, strong, and consistent culture of ethics that apply to all who work at ASMI. ASMI's policies and regulatory framework guide how we work. Key components are our financial, IT, product safety, EHS, compliance, and business continuity frameworks which are supported by transparency and accountability through our monthly business review cycle and our internal control framework.

The objective of the risk management and control framework is to identify and manage the strategic, operational, financial, and compliance risks to which ASMI is exposed. In addition, the framework enables us to improve effectiveness and efficiency in our operations and it promotes reliable financial reporting, and compliance with laws and regulations.

Our risk management and internal control activities are organized through the three lines of defense model; the Management Board is ultimately responsible for risk management and compliance in line with the risk appetite and is supported by:

- **First line of defense**: Business and operations management owns and manages risk, which includes identifying, assessing, controlling, and mitigating risks;
- **Second line of defense**: Oversight functions support business and operations management and help ensure that the risk and control procedures are operating as intended; and
- **Third line of defense**: Internal Audit provides independent objective assurance on the effectiveness of governance, risk management, and internal controls, including the manner in which business and operations management and the oversight functions manage and control risk. Internal Audit brings a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control and governance processes.

CORPORATE GOVERNANCE FRAMEWORK

RISK CULTURE

ASMI strives for a culture of openness and transparency in which identified risks are disclosed proactively and unexpected events are reported as soon as they occur. We aim to continually increase risk awareness and to make it an integral part of the company culture. Our Code of Ethics applies to all ASMI employees and temporary staff and describes how we work in an open, transparent, honest, and socially responsible way. The effectiveness of, and compliance with, the Code is enabled through annual online training and assessed by actively detecting and investigating any alleged misconduct and taking appropriate disciplinary action if misconduct is substantiated.

RISK APPETITE

Undertaking business activity inevitably leads to taking risks. Each type of risk encountered is dealt with in a manner that matches the risk appetite established by the Management Board. Risk appetite is the level of risk we deem acceptable to achieve our objectives. ASMI's risk appetite is primarily determined based on the defined and agreed strategy and the individual objectives within this strategy. Risk appetite is further guided by our Code of Ethics as well as detailed policies and procedures. The risk appetite is the total residual impact of the risks that ASMI is willing to accept in the pursuit of its (strategic) objectives. The risk appetite per objective or risk area is determined annually by the Management Board. Overall, ASMI's risk appetite in 2018 did not change significantly compared to 2017.

The nature of the risk is a key determinant of our risk appetite:

STRATEGIC RISKS	RISK APPETITE
Strategic risks and opportunities may affect ASMI's strategic objectives. Strategic risks include economic and political developments and the need to anticipate and respond in a timely manner to market circumstances.	We are willing to accept reasonable risks in a responsible way to achieve our strategic ambitions and priorities. Innovation will drive future growth, and as a result we are willing to take a higher risk in our longer-term growth areas, such as ALD and epitaxy products.

OPERATIONAL RISKS	RISK APPETITE
Operational risks cover adverse developments resulting from internal processes, people, and systems, or from external events related to our business.	We avoid risks that can negatively impact our operational goals while ensuring that our sustainability commitments are met. ASMI has a very low tolerance related to risk associated with people safety, and product safety, and associated compliance risks. We strive for ZERO HARM!

FINANCIAL RISKS	RISK APPETITE
Financial risks include risks related to accounting and reporting, tax, and other elements that impact our financial position.	We avoid risks that could jeopardize the integrity of our reporting, and/or financial sustainability of the company as investor commitment depends on it.

COMPLIANCE RISKS	RISK APPETITE
Compliance risks consist of unanticipated failures to implement or comply with relevant laws and regulations.	We strive for full compliance with our Code and national and international laws and regulations of the markets in which we operate. We have a zero-tolerance approach to bribery and corruption, fraud, and all other forms of (illegal) misconduct.

RISK MANAGEMENT APPROACH

Every year we assess the risks that could impact achievement of our strategic objectives at a consolidated level (top-down approach) and on a segment level (bottom-up approach). If necessary, we implement countermeasures to mitigate the risks within the defined risk appetite, and integrate these countermeasures in our risk management and control framework, which contains all mandatory corporate policies and operating procedures.

Business management provides the Management Board with a quarterly assurance letter regarding the reliability of their financial reporting, the effectiveness of their internal controls, risk management, and compliance with internal policies and laws and regulations.

RISK MANAGEMENT APPROACH

CONTROL EFFECTIVENESS STATEMENT

The Management Board is responsible for ASMI's internal risk management and control framework. This system is designed to manage the main risks that may prevent ASMI from achieving its objectives. The internal risk management and control framework, and the evaluation of the effectiveness of our internal controls and areas for improvement, are regularly discussed with the Audit Committee and KPMG Accountants, our external auditor. The Audit Committee reports on these matters to the Supervisory Board.

The Management Board conducted an assessment of the design and operating effectiveness of the internal risk management and control framework. Based on this assessment and the current state of affairs, to the best of its knowledge and belief, the Management Board confirms that:

- the internal risk management and control framework provides reasonable assurance for the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with Generally Accepted Accounting Principles;
- the management report includes a fair review of the development and performance of the business, and the position of the company and the undertakings, included in the consolidation as a whole, as well as a description of the principal risks and uncertainties that the company faces;
- there are no material risks or uncertainties that could reasonably be expected to have a material adverse effect on the continuity of ASMI's operations in the coming twelve months; and
- there is a reasonable expectation that ASMI will be able to continue its operations and meet its liabilities for at least twelve months, therefore it is appropriate to adopt the going concern basis in preparing the financial reporting.

All internal control systems, no matter how well designed and implemented, have inherent limitations. Even systems determined to be effective may not prevent or detect misstatements or fraud, and can only provide reasonable assurance with respect to disclosure and financial statement presentation and reporting. Additionally, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate due to changed conditions and that the degree of compliance with the policies or procedures may deteriorate.

In view of all of the above, the Management Board believes that it complies with the requirements of best practice provision 1.2 and 1.4 of the Dutch Corporate Governance Code.

RISK CATEGORIES AND FACTORS

In conducting our business, we face a number of risks that may interfere with our ability to achieve our business objectives. Some of these risks relate to our operational processes, while others relate to our business environment. It is important to understand the nature of these risks and the impact they may have on our business, financial condition, and results of operations. These risks are not the only ones we face. Some risks may not yet be known to us, and certain risks that we do not currently believe to be material could become material in the future.

The significant risks currently considered relevant, potential consequences, and applicable mitigating measures can be outlined as follows:

STRATEGIC RISKS	MITIGATING MEASURES
Inability to respond to changes in product demand and technology change could result in decreased orders and financial loss and/or reputation damage.	In addition to our continued focus on new product launches, we continue to invest in R&D and we are strengthening our internal R&D processes and procedures to ensure optimal return on investment.
Cyclical nature of the semiconductor market which leads to abrupt changes in demand resulting in fixed overheads during downturns or insufficient production capacity during upturns.	We are investing in new production facilities. In addition, we outsource generic manufacturing, and our financial structure including cash and a standby credit facility is set up to further mitigate this risk.
Inability to attract and retain qualified management, technical, sales and support personnel could result in delayed product development, production and diversion of management resources.	To remain competitive we continuously benchmark our compensation & benefit packages. In addition, we have robust talent management and succession planning programs and tools in place. This consists of leadership academy and talent succession reviews up to board level and help our managers to strengthen the leadership pipeline.

OPERATIONAL RISKS	MITIGATING MEASURES
Failure to deliver product of sufficient quality or on time resulting in financial loss due to penalties, rework and/or reduced future demand.	We are continuously improving our already robust quality assurance processes and controls to ensure consistent quality. We are committed to further improving our internal procedures and processes based on clear objective setting and the identification of potential controls in order to proactively meet or exceed (future) customer needs and requests.
Dependence on a small number of large customers. Loss of a customer or significant reduction in demand could result in significant downturn of our financial results.	We work proactively with our customers to respond in a timely manner to requests and meet expectations. We are striving to diversify our customer base by investing in the More than Moore and China markets.

Continuation

OPERATIONAL RISKS	MITIGATING MEASURES
IT security breaches including cyber attacks resulting in loss of data, downtime or disruption of critical business operations. Our software development & production processes may introduce viruses in our tools.	An IT risk management framework is in place. As part of the IT risk management framework key IT projects and activities are prioritized using a risk-based approach. We prioritize responding to tool-related and data-related incidents, tasking our key personnel in implementing sustainable solutions. In addition, a comprehensive IT recovery plan is in place based on detailed business impact analysis.
Failure of suppliers to deliver resulting in financial loss due to penalties, rework and/or reduced future demand.	We have effective recovery plans in place. In addition we are further improving our Sales & Operations Planning process as well as our supplier portal.
Incidents and accidents threatening our license to operate.	An effective EHS organization is in place which is responsible for preventive and corrective action processes and implementation of structural controls. EHS is discussed in all key meetings. Safety leadership collaborations have been set up with key customers.

FINANCIAL RISKS	MITIGATING MEASURES
Financial reporting and/or the disclosures are not complete, inaccurate or not in accordance with laws & regulations resulting in reputational damage and/or financial loss.	A financial control framework is in place and we perform an annual fraud risk assessment and take follow up actions based on the outcome.
Changes in taxation affecting our future financial position.	A tax control framework is in place, and as part of this we continuously monitor our tax positions and tax developments. As part of ASMI's tax strategy, the tax department recommends a balanced approach in the interest of all stakeholders, while adhering to ASMI's tax policy and complying with all relevant tax laws and regulations. In line with our tax principles we do not use artificial tax structures solely aimed at tax avoidance. ASMI proactively engages with tax authorities, and tax exposures (if any) are contained and under control.

COMPLIANCE RISKS	MITIGATING MEASURES
Non-adherence to laws and regulations resulting in reputation damage and/or financial loss.	The organization prepares, rolls out and makes available relevant policies and procedures which are regularly reviewed and audited.
Failure to adequately protect our intellectual property and/or leakage of our IP.	We regularly monitor the market and take steps, when appropriate, to ensure compliance with our intellectual property rights which may include various intellectual property related audits. In addition, control and governance frameworks are in place to establish, maintain and protect our intellectual property rights and minimize the risk of data leakage as far as possible.

UPDATE RELATED TO ONGOING LEGAL PROCEEDINGS

In 2007, ASMI licensed Hitachi Kokusai Electric Inc (now called Kokusai Electric Company and hereafter referred to (including its affiliates) as Kokusai) under certain of its patents in the field of Atomic Layer Deposition. The license agreement was renewed in 2012. On August 30, 2017, ASMI initiated an arbitration with the American Arbitration Association against Kokusai for breach of the license agreement between the parties. At this point of time it is unpredictable when the arbitration will be completed but the current expectation is in the first half of 2019. Following the expiration of the parties' patent license agreement, ASMI filed, on December 1, 2017, a suit for patent infringement against Kokusai and its US subsidiary in the US District Court for the Northern District of California. ASMI has asserted infringement of three of its patents and is seeking both an injunction and monetary damages. Kokusai filed suit on December 1, 2017 for alleged patent infringement against ASMI in the US District Court for the Northern District of California. Kokusai has asserted seven patents and also seeks an injunction and monetary damages. No specific monetary amount has been requested to date. On December 5, 2018, ASMI asserted in the same proceeding counterclaims which included infringement of three additional patents by Kokusai. On February 20, 2018, Kokusai initiated litigation in the District of Oregon asserting four patents against ASMI. Both parties have filed for Inter Partes Reviews (IPR) at the U.S. Patent and Trademark Office on the U.S. Patents asserted in the various jurisdictions. The outcomes of those IPRs are currently unknown but are anticipated to be completed in twelve to eighteen months. On September 21, 2018 ASMI filed two lawsuits in Tokyo District Court against Kokusai asserting infringement of two patents and requesting a preliminary injunction to prevent the continued infringement of our patents in Japan. On February 8, 2019 Kokusai filed seven lawsuits in Tokyo District Court against ASMI asserting infringement of nine patents in total and requesting a preliminary injunction to prevent the alleged continued infringement of their patents in Japan. ASMI will vigorously defend its position in each suit asserted by or against Kokusai. Litigation concerning intellectual property rights is complex and usually takes a protracted period of time. Therefore in connection with these lawsuits ASMI may incur substantial legal fees and costs, and it is not certain that ASMI will prevail in the suits. If ASMI would not be successful in its suits as plaintiff or as defendant, then the potential outcomes may include, without limitation, payment of significant monetary damages, injunctive relief prohibiting sales in the USA or Japan, and/or settlement involving significant costs. At this stage it is not possible to predict the outcome of the above mentioned suits, or whether other suits will be started by Kokusai. The final outcome could potentially have a material adverse effect on our business, results and financial condition.

RISKS RELATED TO OUR INVESTMENT IN ASM PACIFIC TECHNOLOGY

A significant portion of our total assets is composed of our interest in ASMPT. Prior to March 2013, we owned approximately 52% of the outstanding equity of ASMPT, and the assets and operating results of ASMPT were reported by us on a consolidated basis. On March 15, 2013, we disposed of a 12% stake in ASMPT, which reduced our ownership to approximately 40% of the outstanding equity. As a result of this, ASMPT ceased to be a consolidated subsidiary as of that date and our pro rata interest in the net earnings of ASMPT is reported in our consolidated statement of profit or loss. During 2017, we disposed a stake of approximately 14% in ASMPT. As per December 31, 2018, our interest in ASMPT is 25.33%. Although ASMPT operates in the same industry as ASMI, ASMPT addresses a different segment of the industry, which may involve different market dynamics and competitive factors from time to time, as well as different business risks unique to their operations. ASMPT is a public company traded on the Hong Kong Stock Exchange.

PERFORMANCE REVIEW

OUR RESULTS

In 2018, we achieved revenue growth of 11% reaching a record high revenue of €818 million, with sales increasing mainly in the logic, DRAM and analog segments. By industry segment, our 2018 revenue stream was led by memory, closely followed by the logic and foundry segments.

MULTIPLE PRODUCT LINES

While our ALD product lines continued to be our key sales driver in 2018, accounting for more than half of total equipment revenue, our other product lines also contributed strongly. In our epitaxy product line we increased sales, following the strong growth we achieved in 2017, and we saw additional sales increases in PECVD and vertical furnaces.

MARKET GROWTH

Our industry experienced continued growth in 2018, with worldwide semiconductor industry sales increasing by around 14%. This was driven by high memory prices and broad-based electronics demand for cloud services, mobile devices, automotive and industrial applications. These drivers helped the wafer fab equipment market grow by around 10% in 2018.

FINANCIAL PERFORMANCE

We are an equipment supplier mainly to the semiconductor manufacturing industry. We design, manufacture, and sell equipment and services to our customers for the production of semiconductor devices, or integrated circuits. The semiconductor capital equipment market is composed of three major market segments: wafer-processing equipment, assembly and packaging equipment, and test equipment. Through our Front-end business, we are active in the wafer processing segment. Additionally, as per December 31, 2018, we had a 25.33% stake in ASM Pacific Technology (ASMPT), which is a leading supplier of assembly and packaging equipment to the semiconductor, LED, and electronics markets.

FRONT-END OPERATIONS

We conduct our Front-end business through wholly-owned subsidiaries, the most significant being ASM Front-End Manufacturing Singapore Pte Ltd (FEMS), located in Singapore, ASM Europe BV (ASM Europe), located in the Netherlands, ASM America Inc (ASM America), located in the United States, ASM Japan KK (ASM Japan), located in Japan, and ASM Korea Ltd (ASM Korea), located in South Korea. The locations of our facilities allow us to interact closely with customers in the world's major geographical market segments: Europe, the United States, and Asia.

Our wafer processing business supplies equipment to the leading semiconductor manufacturers in the logic, foundry and memory markets, primarily for the deposition of thin films. The logic market is made up of manufacturers who create chips that are used to process data; the foundry market consists of businesses that operate semiconductor fabrication plants to manufacture the designs of other semiconductor companies; and the memory market covers manufacturers who make chips that store information either temporarily or permanently, such as random access memory (RAM). We also supply equipment to leading manufacturers of analog semiconductor devices.

The principal markets that we address in wafer processing are selected segments of the deposition equipment market. The total deposition equipment market was estimated to be US$15.2 billion in 2018 (VLSI Research, January 2019). Within this market we focus on the following segments: vertical furnaces, epitaxy, PECVD, and ALD. ALD is an advanced technology that deposits atomic layers one at a time on wafers. This process is used to create ultra-thin films of exceptional quality and flatness. Plasma is sometimes used to enhance the process further (Plasma Enhanced ALD, or PEALD) and enables the deposition at reduced process temperature.

BACK-END OPERATIONS

Our investment in ASM Pacific Technology (ASMPT) represents the Back-end business. The Back-end operations are conducted through facilities in Hong Kong, the People's Republic of China, Singapore, Malaysia, and Germany. On March 15, 2013, we reduced our shareholding in ASMPT from 52% to around 40%. The sale of the 12% stake in ASMPT caused and required the deconsolidation of ASMPT. Since that date, our share of the net result of ASMPT is reported on the line share in income of investments in associates. In April 2017, we sold a stake of 4.9% and in November 2017 we sold a stake of 9.1% in ASMPT. Our current shareholding in ASMPT is 25.33%.

MARKET DEVELOPMENT

Estimated growth in the market for wafer fab equipment (WFE) was around 10% year-over-year in 2018. While the first half of the year was still strong, overall WFE spending in the second half started to slow down, due to a substantial weakening of the memory segment. Investments in the NAND flash segment weakened in 2018 and were particularly lower in the second half of the year. This was not unexpected as customers made strong investments in both new capacity and 3D-NAND conversions over the last few years, for which they now need some time to digest. In the DRAM segment, WFE spending was up for the full year, but also started to slow down in the second half. Advanced Logic WFE was up for the full year and even accelerated in the second half, driven by investments in the advanced nodes. Foundry spending decreased for the year but accelerated in the second half, as the mix of spending started to shift towards early investments in the 5nm technology generation.

FINANCIAL RESULTS

The following table shows the operating performance for 2017, versus 2018:

(EUR million)	2017[1]	2018	CHANGE
New orders	773.6	**942.1**	22%
Backlog	176.3	**301.5**	71%
Book-to-bill	1.0	**1.2**	
Revenue	737.4	**818.1**	11%
Gross profit	305.9	**334.3**	9%
Gross profit margin %	41.5%	**40.9%**	
Selling, general and administrative expenses	(99.9)	**(121.4)**	22%
Research and development expenses	(92.8)	**(88.6)**	(5%)
Operating result	113.2	**124.3**	10%
Operating margin %	15.3%	**15.2%**	
Financing income / (expense)	(30.7)	**(0.1)**	30.5
Income taxes	(4.6)	**(15.4)**	(10.8)
Net earnings before share in income of investments in associates	77.9	**108.7**	30.8
Share in income of investments in associates	89.6	**48.4**	(41.2)
Result from sale ASMPT shares	284.9	**–**	n/a
Net earnings	452.4	**157.1**	(295.3)
Net earnings per share, diluted	€7.63	**€2.96**	€(4.67)
Net earnings per share excluding effects from the sale of ASMPT shares	€3.21	**€3.19**	€(0.02)

[1] 2017 based on IAS 18, 2018 based on IFRS 15. See Note 1 for more information.

The following table shows certain consolidated statement of profit or loss data as a percentage of net sales for our operations for 2017 and 2018:

	2017	2018
Revenue	100.0%	**100.0%**
Cost of sales	(58.5%)	**(59.1%)**
GROSS PROFIT	**41.5%**	**40.9%**
Selling, general and administrative expenses	(13.6%)	**(14.8%)**
Research and development expenses	(12.6%)	**(10.8%)**
OPERATING RESULT	**15.3%**	**15.2%**
Net interest income (expense)	(0.0%)	**(0.2%)**
Foreign currency exchange gains (losses)	(4.1%)	**0.2%**
Share in income of investments in associates	12.2%	**5.9%**
Result from sale ASMPT shares	38.6%	**–**
EARNINGS BEFORE INCOME TAXES	**62.0%**	**21.1%**
Income taxes	(0.6%)	**(1.9%)**
NET EARNINGS FROM OPERATIONS	**61.4%**	**19.2%**

REVENUE

The sales cycle from quotation to shipment for our Front-end equipment generally takes several months, depending on capacity utilization and the urgency of the order. Usually, acceptance is within four months after shipment. The sales cycle is longer for equipment that is installed at the customer's site for evaluation prior to sale. The typical trial period ranges from six months to two years after installation.

Our revenues are concentrated in the United States, Europe and Asia. The following table shows the geographic distribution of our revenue for 2017 and 2018:

	YEAR ENDED DECEMBER 31,			
(EUR million)	2017		2018	
United States	€199.5	27.1%	**€175.9**	**21.5%**
Europe	106.7	14.5%	**165.6**	**20.2%**
Asia	431.2	58.5%	**476.6**	**58.3%**
	€737.4	**100.0%**	**€818.1**	**100.0%**

A substantial portion of our revenue is for equipping new or upgraded fabrication plants where device manufacturers are installing complete fabrication equipment. As a result, our revenue in this segment tend to be uneven across customers and financial periods. Revenue from our ten largest customers accounted for 83.1% and 79.2% of revenue in 2017 and 2018, respectively. The composition of our ten largest customers changes from year to year. The largest customer accounted for more than 10% of revenue in 2017 and 2018.

Currency changes led to a 3% decrease in revenue compared to 2017.

Revenue growth driven by advanced node investments

Our revenue increased by 11% in 2018 to a new record high of €818 million. The impact of currency changes resulted in a decrease of 3%. Sales increased primarily in the logic, DRAM and analog segments. By sales per product line, ALD continued to be the key driver, although the other product lines also made a strong contribution in 2018. We benefited from a further increase in wafer fab equipment spending following the very strong market growth in 2017. In the second half of 2018, the WFE market started to slow down, due to a weakening of memory investments, particularly in the NAND segment. ASMI sales remained strong in the second half of the year, thanks to a relatively strong exposure to the logic and foundry markets where investments picked up in the latter part of 2018.

By industry segment, our 2018 revenue stream was led by memory, closely followed by the logic and foundry segments. In 2017, revenue was led by foundry, followed by memory then logic.

Within memory, the majority of revenue was related to the DRAM segment. In the DRAM segment we recorded strong growth as we benefited from industry-wide investments in new capacity, as well as conversions of existing capacity to the most advanced nodes. Revenue in the 3D-NAND memory segment decreased in 2018 as demand slowed, particularly in the second half of the year. In 2017 the segment was still our key driver.

Revenue in the logic segment increased strongly in 2018, reaching a record high, compared to a relatively stable 2017. Investments in leading-edge technologies were markedly higher, as the mix shifted more towards the most advanced 10nm node during the course of the year. While sales from foundry customers decreased in 2018, they remained at a healthy level and picked up meaningfully in the second half, driven by early investments in 5 nanometer. It is also worth noting that we booked growth in the analog segment. While smaller than our other segments, analog saw a strong increase in demand across a broad base in 2018, resulting in a meaningful contribution to our overall annual revenue growth.

Multiple product lines had a strong contribution in 2018

The ALD product lines continued to be our key sales driver in 2018, and again accounted for more than half of total equipment revenue. We recorded increased demand for advanced ALD applications in primarily the DRAM and logic/foundry segments.

Our other product lines also contributed strongly. In our epitaxy product line we increased sales, following the strong growth we achieved in 2017. We continued to ship our Intrepid ES systems for an advanced CMOS application in high volume manufacturing. These shipments were primarily part of the tool win from a leading foundry customer that we announced in April 2017.

In addition, we saw a strong increase in demand for our epitaxy tools in the power analog segment. In PECVD we recorded additional sales increase, supported by spending on advanced device manufacturing in the NAND and logic segments. Our vertical furnaces product line also performed well, as we experienced strong increases in the analog and logic markets.

In 2018, we achieved strong revenue growth of 13% from our spares and services business, following solid double-digit growth in 2017. This business line accounted for 23% of our total revenue in 2018, up from 22% in 2017. We have started in 2018 to disclose sales breakdown between spares and services, and equipment sales.

ALD is now firmly established as a key enabling technology. In logic, foundry, and memory, our leading customers have already ramped several technology generations based on our ALD equipment. In 2018, we again made further progress, in cooperation with our customers, to expand the number of ALD process steps and applications for the most advanced technology nodes.

An important step was the introduction of the Synergis. This is our newest ALD tool which is designed to address a wide range of existing and new ALD applications, effectively increasing the market we serve. Our ALD equipment is an enabling technology for spacer-defined multiple patterning, which is used by leading customers in DRAM memory and the logic and foundry market. In addition, ALD is a core technology for high-k metal gate and advanced FinFET applications in the logic and foundry sectors. In the memory market, ALD is also increasingly being used for critical process steps in next-generation 3D-NAND devices.

In recent years, we have further broadened our customer base and strengthened relationships with key customers. Following several years of steady growth in customer deployment and the development of new applications, ALD continues to be a key growth driver for our company. At the same time, the other product lines also showed strong momentum in 2018, driven by the expansion in the epitaxy market, focused investments in the other product lines, and a healthy market in analog during the year.

BOOKINGS

The following table shows new orders levels for 2018 and the backlog for 2017:

	YEAR ENDED DECEMBER 31,		
(EUR million)	2017	2018	% CHANGE
BACKLOG AT THE BEGINNING OF THE YEAR	**156.7**	**176.3**	**13%**
New orders	773.6	**942.1**	22%
Revenue	(737.4)	**(818.1)**	11%
FX-effect	(16.6)	**6.3**	
Adjustment IFRS 15	–	**(5.1)**	
BACKLOG AS PER REPORTING DATE	**176.3**	**301.5**	**71%**
BOOK-TO-BILL RATIO (NEW ORDERS DIVIDED BY NET SALES)	**1.0**	**1.2**	

The backlog includes orders for which purchase orders or letters of intent have been accepted, typically for up to one year. Historically, orders have been subject to cancellation or rescheduling by customers. In addition, orders have been subject to price negotiations and changes in specifications as a result of changes in customers' requirements. Due to possible customer changes in delivery schedules and requirements, and to cancellations of orders, our backlog at any particular date is not necessarily indicative of actual sales for any subsequent period.

For the year in total, our new bookings increased by 22% in 2018 to €942 million. The book-to-bill, as measured by orders divided by revenue, increased from 1.0 in 2017 to 1.2 in 2018. Equipment bookings in 2018 for ASMI as a whole were led by the logic, followed by foundry and then memory.

Bookings in the first half of 2018 were at levels comparable to 2017, €206 million in the first quarter and €176 million in the second quarter. Bookings increased to record highs in the second half of 2018. The third quarter increased to €258 million and the fourth quarter showed a record high of €302 million.

We finished the year with an order backlog of €302 million, an increase of 71% compared to the end of 2017.

GROSS PROFIT MARGIN

Total gross profit developed as follows:

	YEAR ENDED DECEMBER 31,				
	GROSS PROFIT		GROSS PROFIT MARGIN		INCREASE (DECREASE) PERCENTAGE POINTS
(EUR million)	2017	2018	2017	2018	
Front-end	305.9	**334.3**	41.5%	**40.9%**	(0.7) ppt

The gross profit margin decreased to 40.9% in 2018 compared to 41.5% in 2017.

The gross margin decreased slightly in 2018 from 41.5% to 40.9%. This decrease was entirely due to initially lower margins on newly introduced products, a substantial increase in evaluation tools shipped to customers and new growth initiatives such as investments in the expansion of our service organization. The impact was especially visible in the first half of the year with a gross margin of 40.3%, while gross margins improved in the second half to 41.2%.

Currency changes led to a 3% decrease in gross profit compared to 2017.

SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

Total selling, general and administrative expenses developed as follows:

	YEAR ENDED DECEMBER 31,		
(EUR million)	2017	2018	% CHANGE
Front-end	99.9	**121.4**	22%

Selling, general and administrative (SG&A) expenses increased by 22% in 2018 compared to the previous year. As a percentage of sales, SG&A expenses were 15% in 2018 and 14% in 2017. SG&A included legal costs related to a patent disputes and restructuring expenses of €0.2 million in 2018.

The impact of currency changes on SG&A expenses resulted in a decrease of 2% year-over-year.

RESEARCH AND DEVELOPMENT EXPENSES

Total research and development (R&D) expenses, excluding impairment charges, decreased by 1% in 2018 compared to the previous year, mainly as a result of higher capitalization of development expenses. As a percentage of sales, R&D expenses decreased to 11% compared to 13% in 2017. Currency changes resulted in a 3% decrease in R&D expenses year-over-year.

Total research and development expenses developed as follows:

	YEAR ENDED DECEMBER 31,		
(EUR million)	2017	2018	% CHANGE
Front-end:			
Research and development expenses	114.1	**125.3**	10%
Capitalization of development expenses	(38.6)	**(49.7)**	29%
Research and development grants and credits	(0.3)	**(0.3)**	(2%)
Amortization of capitalized development expenses	13.3	**12.0**	(9%)
	88.5	**87.3**	**(1%)**
Impairment capitalized development expenses	4.3	**1.3**	(70%)
TOTAL	**92.8**	**88.6**	**(5%)**

Impairment of capitalized development expenses related primarily to the development of new technology that is now no longer in-demand from customers.

We continue to invest strongly in R&D. As part of our R&D activities, we are engaged in various development programs with customers and research institutes. These allow us to develop products that meet customer requirements and obtain access to new technology and expertise. The costs relating to prototypes and experimental models, which we may subsequently sell to customers, are charged to the cost of sales.

Our R&D operations in the Netherlands, Belgium, and the United States receive research and development grants and credits from various sources.

OPERATING RESULT

The operating result developed as follows:

	YEAR ENDED DECEMBER 31,		
(EUR million)	2017	2018	% CHANGE
Front-end:			
BEFORE SPECIAL ITEMS	**118.3**	**125.8**	**6%**
Impairment charges	(4.3)	**(1.3)**	(70%)
Restructuring expenses	(0.8)	**(0.2)**	n/a
INCLUDING SPECIAL ITEMS	**113.2**	**124.3**	**10%**

Operating profit increased to €124.3 million from €113.2 million in 2017, and the operating profit margin remained stable.

Impairment charges in 2018 and 2017 related to capitalized development expenditures and assets.

FINANCING COSTS

Financing costs mainly reflect translation results. A substantial part of our cash position is denominated in US dollars.

RESULTS FROM INVESTMENTS

Results from investments, which primarily reflects our shareholding in ASMPT, decreased to €60.8 million from €112.4 million in 2017. These exclude the amortization of intangible assets related to ASMPT. During the year, our stake in ASMPT increased slightly to 25.33%.

Total sales as reported by ASMPT increased by 12% to US$2.5 billion in 2018. Sales of the Back-end equipment business increased 7% in 2018. The growth was led by the IC/discrete market. ASMPT performed very well in segments such as automotive, internet of things, power management, radio frequency filters and advanced packaging. Sales of SMT Solutions increased by a strong 19% for the full year driven by automotive, industrial electronics and the internet of things.

ASMPT decreased gross margins from 40.2% to 38.0% in 2018. On a 100% basis ASMPT decreased net profits by 21%. For further information on ASMPT, please visit the website www.asmpacific.com.

INCOME TAX

The income tax expense of €15.4 million (2017: €4.6 million) reflects an effective tax rate of 9.0% (2017: 1.0%). For further information on tax, see Note 22 to the consolidated financial statements.

NET EARNINGS

Net earnings developed as follows:

	YEAR ENDED DECEMBER 31,		
(EUR million)	2017	2018	CHANGE
Front-end:			
BEFORE SPECIAL ITEMS	**83.0**	**110.2**	**27.2**
Impairment charges	(4.3)	**(1.3)**	3.0
Restructuring expenses	(0.8)	**(0.2)**	0.6
TOTAL	**77.9**	**108.7**	**30.8**
Back-end:			
Investment in ASMPT	112.4	**60.8**	(51.6)
Amortization other intangible assets from purchase price allocation	(22.8)	**(12.3)**	10.5
Result from sale of ASMPT stake	284.9	**–**	(284.9)
TOTAL	**374.5**	**48.4**	**(326.0)**
NET RESULT FROM OPERATIONS	**452.4**	**157.1**	**(295.3)**

CASH FLOW

The following table shows the cash flow statement:

(EUR million)	2017	2018
NET EARNINGS FROM OPERATIONS	**452.4**	**157.1**
Adjustments to cash from operating activities:		
Depreciation, amortization and impairments	52.1	**55.4**
Income tax	4.6	**15.4**
Share in income of investments in associates	(89.6)	**(48.4)**
Gain on sale of ASMPT shares	(284.9)	**–**
Share-based compensation	7.8	**8.2**
Non-cash financing costs	29.6	**(0.1)**
Changes in other assets and liabilities:		
Accounts receivable	(37.9)	**(9.2)**
Inventories	(40.3)	**(23.0)**
Evaluation tools	(4.9)	**(23.0)**
Accounts payable and accrued expenses	28.4	**48.8**
Other assets	2.5	**(25.0)**
Income tax paid	(3.9)	**(19.5)**
NET CASH FROM OPERATING ACTIVITIES	**116.1**	**136.8**
Capital expenditures (net)	(43.3)	**(63.3)**
Capitalized development expenditure	(38.6)	**(49.7)**
Purchase of intangible assets	(2.4)	**(1.1)**
Dividend received from associates	36.5	**29.1**
Proceeds from sales of ASMPT shares	690.7	**–**
NET CASH FROM / (USED IN) INVESTING ACTIVITIES	**642.8**	**(84.9)**
Purchase treasury shares	(239.6)	**(355.0)**
Debt issuance fees paid	(0.1)	**–**
Proceeds from issuance of treasury shares	13.3	**4.8**
Dividend paid to shareholders ASMI	(41.5)	**(43.6)**
Capital repayment	–	**(208.8)**
NET CASH USED IN FINANCING ACTIVITIES	**(267.9)**	**(602.6)**
Foreign currency translation effect	(32.7)	**0.1**
TOTAL NET CASH PROVIDED / (USED)	**458.3**	**(550.6)**

STATEMENT OF FINANCIAL POSITION

Working capital at December 31, 2018 was €202.7 million (2017: €180.2 million). Working capital consists of: inventories, accounts receivable, other current assets, accounts payable, provision for warranty and accrued expenses and other payables. The number of outstanding days of working capital, measured against quarterly sales, decreased from 77 days at December 31, 2017 to 72 days at December 31, 2018.

EMPLOYEES

The following table lists the total number of employees, exclusive of temporary external workers:

	DECEMBER 31,	
GEOGRAPHICAL LOCATION	2017	2018
Europe:		
- the Netherlands	143	151
- EMEA	171	189
United States	555	576
Japan	228	248
South Korea	221	273
Singapore	395	463
Asia, other	187	281
TOTAL	1,900	2,181

We had 2,181 employees as per December 31, 2018. The following table lists the number of employees per function:

	DECEMBER 31,	
FUNCTION	2017	2018
Research and development	497	544
Manufacturing	361	456
Marketing and sales	268	277
Customer service	597	716
Finance and administration	177	188
TOTAL	1,900	2,181

Our Dutch operations, which employed 151 staff as per December 31, 2018, is subject to standardized industry bargaining under Dutch law, and is required to pay wages and meet conditions established as a result of negotiations between all Dutch employers in their industry and unions representing employees of those employers. As required by Dutch law, management in our Dutch facilities meet with a works council consisting of elected employee representatives to discuss working conditions and personnel policies, as well as to explain major corporate decisions and to solicit their advice on major issues.

The assembly and packaging segment, ASMPT, had 14,800 employees as per December 31, 2018 (December 31, 2017: 16,400).

SUBSEQUENT EVENTS

Subsequent events were evaluated up to March 5, 2019, which is the issuance date of this Annual Report 2018. There are no subsequent events to report.

LIQUIDITY AND CAPITAL RESOURCES

LIQUIDITY

Our liquidity is affected by many factors, some of which are related to our ongoing operations while others are related to the semiconductor and semiconductor equipment industries, and to the economies of the countries in which we operate. Although our cash requirements fluctuate based on the timing and extent of these factors, we believe that cash generated by operations, together with the liquidity provided by our existing cash resources and our financing arrangements, will be sufficient to fund working capital, capital expenditures and other ongoing business requirements for at least the next twelve months.

On December 31, 2018, our principal sources of liquidity consisted of €286 million in cash and cash equivalents and €150 million in undrawn bank lines.

For the most part, our cash and cash equivalents are not guaranteed by any governmental agency. We place our cash and cash equivalents with high-quality financial institutions to limit our credit risk exposure.

CASH FLOW

We generated cash from operating activities of €136.8 million in 2018 (2017: €116.1 million). We used cash €84.9 million in investing activities (2017: €642.8 million generated) and €602.6 million (2017: €267.9 million) in financing activities.

DEBT

We were debt-free as of December 31, 2018.

The original maturity date of the credit commitment was December 16, 2021 and in 2018 we exercised the option to extend the date by one year. This means that the maturity date of the credit commitment of €150 million is now December 16, 2022 with an extension option for one year. As per December 31, 2018, this facility was undrawn.

The credit facility of €150 million includes two financial covenants:

- minimum consolidated tangible net worth; and
- consolidated total net debt/total equity ratio.

These financial covenants are measured twice each year, on June 30 and December 31. We were in compliance with these financial covenants as per December 31, 2018.

See Notes 11, 16, and 17 to the consolidated financial statements for more on our funding, treasury policies and our long-term debt.

ASMPT

The assembly and packaging segment of our business is organized in ASM Pacific Technology Ltd (ASMPT). Net cash of our 25.33%-owned associate was €249.8 million on December 31, 2018. The cash resources and borrowing capacity of ASMPT are not available to our wafer processing equipment segment.

Although two directors of ASMPT are directors of ASMI, ASMPT is under no obligation to declare dividends to shareholders or enter into transactions that are beneficial to us. As a substantial shareholder, we can participate in the shareholders' approval of the payment of dividends, but cannot compel their payment or size. Cash dividends received from ASMPT during 2018 and 2017 were €29.1 million and €36.5 million, respectively.

The market value of our 25.33% investment in ASMPT was approximately €867 million as per December 31, 2018.

FINANCIAL RISK FACTORS

We are exposed to market risks (including foreign exchange rate risk), credit risk, liquidity risk, and equity price risk. We may use forward exchange contracts to hedge foreign exchange risk. We do not enter into financial instrument transactions for trading or speculative purposes. See note 17 to the consolidated financial statements for financial risk factors.

OUTLOOK

We have developed forecasts and projections of cash flows and liquidity needs for the upcoming year. These take into account the current market conditions, reasonable possible changes in trading performance based on such conditions, and our ability to modify our cost structure as a result of changing economic conditions and sales levels. In the forecasts, we have also taken into account: the total cash balances amounting to €286 million on December 31, 2018; the ability to renew debt arrangements and to access additional indebtedness; and whether or not we will comply with our financial covenants. Based on this, we believe that our cash on hand at the end of 2018 is adequate to fund our operations, and our investments in capital expenditures and to fulfill our existing contractual obligations for the next twelve months.

MARKETS AND PRODUCTS

2018 was a year of continued growth for our industry, following the strong growth in 2017. Worldwide semiconductor industry sales increased by around 14% driven by high memory prices and broad-based electronics demand for cloud services, mobile devices, automotive and industrial applications. The market for wafer fab equipment (WFE) grew by approximately 10% in 2018, primarily driven by memory customers, although some slowing in memory segments began in the second half of the year.

MARKETS

Wafer fab equipment spending was up about 10% in 2018, however it was strongest in the first half of the year as memory spending slowed in the second half, particularly for 3D-NAND. Spending for advanced logic was up for the year and even accelerated in the second half, while foundry spending decreased for the year, but also accelerated in the second half. Our total company's sales increased by 17% in 2018 on a US$ basis. As such, we believe we outperformed the broader WFE market last year.

ALD continued to be the key driver for our business and again accounted for more than half of equipment sales in 2018. The other product lines, also showed strong momentum in 2018, with solid sales increases in the vertical furnace, epitaxy and PECVD product lines, driven by increasing demand in logic and analog, where we traditionally are strongly positioned with our broad range of deposition products.

PRODUCTS

NEW PRODUCT INTRODUCTIONS

We launched our new Synergis ALD tool in 2018 for advanced node logic and memory volume production applications. Synergis leverages the core capabilities of our existing Pulsar and EmerALD tools to address a wide range of thermal ALD applications, and uses our proven high productivity XP8 platform enabling 8 ALD chambers in a compact footprint. Synergis allows our customers to extend existing films to new applications requiring high throughput and allows us to address many new films for a broad array of logic and memory applications. With the successful launch of Synergis, we are further increasing our addressable market in single-wafer ALD, especially for applications requiring both high performance and high throughput.

Furthermore, in early 2019, we announced the formal launch of the XP8 QCM tool for high-productivity plasma enhanced atomic layer deposition applications. This newest addition to our portfolio of leading ALD platforms allows for the integration of up to 4 modules each containing four process reactors, on a single platform.

PRODUCT STEWARDSHIP

A key tenet of our product stewardship effort is to increase the productivity of our equipment. With the introduction of the Synergis tool in 2018 we are able to address more applications that are capable of running on the XP8 platform. The XP8 platform architecture improves productivity by integrating up to 8 process chambers in a compact footprint. The result is improved efficiency as more wafers are processed in less area of the fab cleanroom, compared to two 4 chamber tools. Furthermore we continue to make progress working with customers to increase the throughput of various processes running on their ASMI tools. Increasing throughput is a direct improvement in efficiency.

CUSTOMER FEEDBACK

In December 2018, we received a Supplier Excellence Award from TSMC for the performance and support of our equipment and technology during 2018. This is the third year in a row that we have received an excellence award from TSMC. During the presentation of the award, TSMC explained the three key points that contributed to us receiving the award:

- close engagement with TSMC and precursor suppliers to innovate process solutions;
- continued effort on cost and productivity improvement; and
- exceptional manpower arrangement for delivery.

RESEARCH AND DEVELOPMENT

ARRANGEMENTS WITH CUSTOMERS, INSTITUTES AND UNIVERSITIES

As of December 31, 2018, we were engaged in several formal joint-development programs with customers for 300mm applications of our products. We also were active in evaluations of our most advanced technologies with selected customers.

We also enter into research projects with universities and research institutes. In 2017, we renewed our strategic R&D partnership with the Interuniversity Micro-Electronics Center (imec) in Leuven, Belgium, extending into 2022. Essentially all of our 300mm products, and some of our 200mm products, are involved in this partnership. From 2013 through 2018, we significantly expanded our partnership with additional ALD, PEALD, epitaxy, and LPCVD capability. This gives us the opportunity to investigate, both jointly and independently, the integration of individual process steps in process modules and electrically active devices. We have partnered with imec since 1990, with significant on-site representation since 1994.

In December 2003, we commenced a five-year partnership with the University of Helsinki that aims to further develop atomic layer deposition processes and chemistries. This partnership was extended in 2018 for a fourth five-year period extending into 2023.

PATENTS AND TRADEMARKS

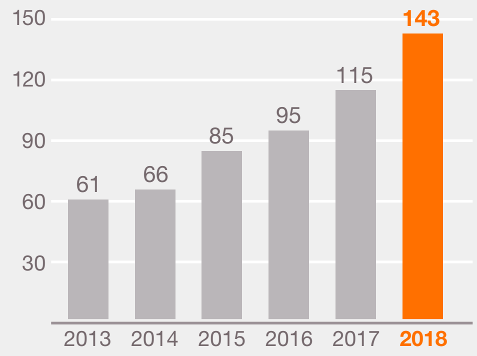
Intellectual property (IP) managers work at all of our major global R&D sites, where they capture patentable material resulting from our R&D activities. We now have over 1,600 patents in force worldwide, with many hundreds of those relating specifically to the ALD process technology platform.

TRADEMARK LIST AS OF DECEMBER 31, 2018

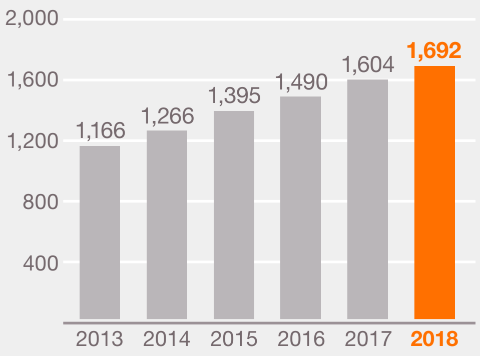
We have registered a number of trademarks covering our product portfolio in the principal countries.

ASM, the ASM International logo, Advance, Aurora, Axis, Dragon, Eagle, EmerALD, Epsilon, Horizon, Intrepid, Medallion, Polygon, Previum, Pulsar, Silcore and Synergis are registered trademarks of ASM International N.V.. The ASM Qualified Licensed Supplier logo, A400, A412, DCM, Loadstar, NCP, QCM, XP, and XP8 are our trademarks. 'Drive Innovation. Deliver Excellence.' is our service mark.

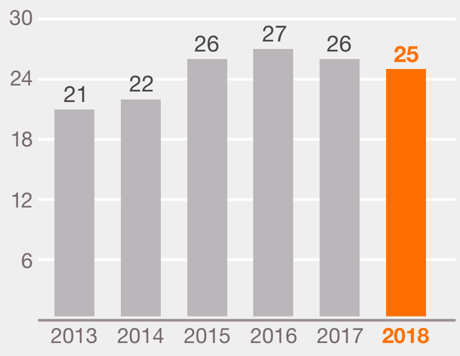
INITIAL PATENT FILINGS



PATENTS IN FORCE



EMPLOYEES IN R&D in %



PEOPLE AND SOCIETY

WORKFORCE

	2015	2016	2017	2018
Employees	1,597	1,670	1,900	**2,181**
Including external	1,741	1,770	2,043	**2,327**
Nationalities	29	28	29	**29**
Male	86%	85%	85%	**85%**
Female	14%	15%	15%	**15%**
Voluntary turnover rate	6.4%	7.1%	10.4%	**9.9%**

In 2018 we were successful in recruiting the people we needed to support our company's growth, ranging from technicians building our products, to service engineers delivering high-quality support to our clients and people in R&D driving our innovations.

Our total workforce grew from 2,043 persons to 2,327 persons which includes 2,181 employees, a total increase of 14%. This required hiring 659 people, an increase of 5% compared to 2017.

The number of employees within R&D positions increased by 9% to 544, which reflects 25% of ASMI's total workforce.

The voluntary attrition rate of ASMI is the total number of permanent employees that voluntarily left the company. Over 2018 our voluntary attrition rate was 9.9%. At the end of 2018, as part of our continuous monitoring of ASMI's workforce trends, we conducted a deep-dive analysis, focusing on short-term voluntary attrition (leavers with < 3 years tenure).

In 2018, we completed the assessment of 271 critical positions as part of our Succession and Talent review process.

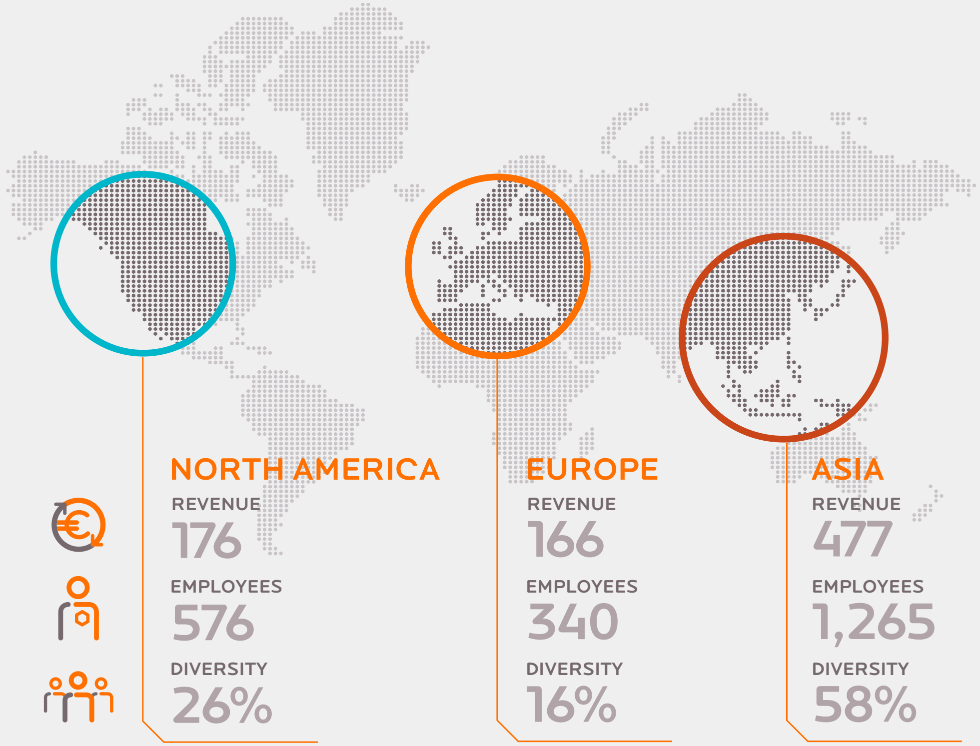
Through our exit interview process, we investigate and analyze reasons for turnover, to help improve our HR processes and policies. The feedback received from exit interviews is also used to drive improvements and help retain talent going forward.

DIVERSITY

ASMI is an equal opportunity employer. We recognize and respect the differences between individuals and we understand that these differences can include ethnicity, religious beliefs, nationality, age, gender, sexual orientation, family status, physical ability, experience, and perspective.

While operating in 16 countries, in 2018 we continued to employ a workforce consisting of 29 nationalities, In terms of gender, 15% of our workforce is female, which is comparable to peers in our industry.

Our diversity is reflected in the international spread of our workforce, which for 2018 was 58% in Asia, 26% in America and 16% in Europe.



ETHICS

ANNUAL ETHICS SCORECARD

CRITERIA	SCOPE	PERFORMANCE CRITERIA	2018 RESULT
TRAINING	NEW HIRES	Mandatory sign-off on having received, read, understood and agreed to the Code of Ethics	100%
TRAINING	ALL EMPLOYEES	Employees completion of bi-annual refresher training	99.9%
COMPLIANCE	ALL EMPLOYEES	Reported concerns from anonymous global reporting program SpeakUp!	1
COMPLIANCE	ALL EMPLOYEES	Reported concerns from other channels	4

Our Code of Ethics applies to our Supervisory Board and Management Board, and to all our employees, consultants, contractors, temporary employees and critical suppliers. The Code of Ethics promotes honest and ethical conduct throughout our global operations. The full Code of Ethics can be found on our website.

TRAINING

For new employees, training starts on the day they begin working with ASMI. They are required to familiarize themselves with the Code of Ethics and associated policies and processes within the first week of employment and complete all the required training. In 2018, 100% of our new hires signed off on having read, understood and agreed to the Code of Ethics and completed the required training. In addition to the initial training, we also require all our employees to take refresher training every two years. In 2018, 99.9% of all our employees completed the bi-annual Code of Ethics courses.

COMPLIANCE

Under the governance of our Ethics Committee, which reports to the Management Board, we continually track our performance against our goals and improve our ethics management system and performance. We continue to strive for zero ethics violations.

In 2018, one concern was reported through our SpeakUp! system, while four cases were reported via other channels to the Ethics Committee. All incidents were fully investigated and, in those cases involving violations to our Code of Ethics, appropriate actions were taken according to internal policies. The Ethics Committee reviewed all cases and approved the measures taken.

AWARENESS

We work continuously to both increase awareness of and promote ethical behavior. In 2018, we issued two publications to all employees through our global CONNECT! internal newsletter. The articles highlighted relevant topics, such as ethics in product development and giving or receiving gifts and entertainment.

GIFTS AND ENTERTAINMENT

In 2018, we improved our gifts and entertainment protocol. We implemented a corresponding system that enables ASMI to monitor the use of giving and receiving gifts and entertainment.

GLOBAL EMPLOYMENT STANDARDS

In 2018, we had no reports or evidence of any human rights violations or abuses within our global hiring or employment practices.

HEALTH & SAFETY

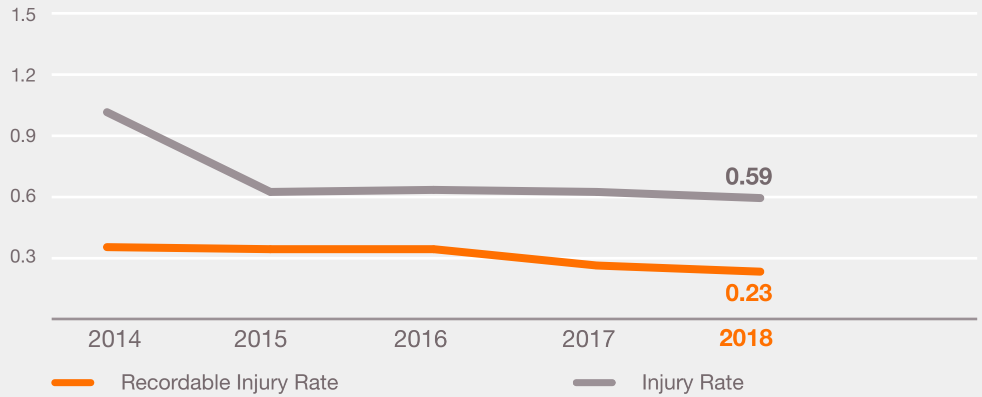
Our safety goal is ZERO HARM! Any incident or injury inspires us to push ourselves further to identify the risk and prevent the exposure. We continue to set an annual target that strives for achievement of our ultimate goal, ZERO HARM!

Our key performance measures are aligned with our industry and peers, and allow us to benchmark our performance year-on-year. The key measures include an overall injury rate indicator and a recordable injury rate indicator, which is an indicator of serious injuries requiring medical attention or days away from work.

In 2018, our total injury rate showed a 4.8% improvement from 2018, while our recordable injury rate improved over 11%. Both indicators are at a record low since we started measuring 12 years ago.

GLOBAL INJURY AND RECORDABLE RATES

(Case Rate per 100 employees)



OUTLOOK

To ensure ASMI's business growth strategy and to support the company's future, it's our mission to continue to attract, develop and retain the required workforce.

COMMUNITY CONNECTION AND WELL-BEING

One of the most important connections we make is with the communities in which we operate. As a global company, we have roots in local communities in Europe, North America and across Asia. In 2018, we participated in a number of new community efforts. In all cases, we are proud to provide support for programs that are important to our employees and that address important community needs.

CONTRIBUTING TO ZERO HUNGER

In 2018, teams at our Singapore locations, volunteered to help stamp out hunger. The Singapore team collaborated with the Food Bank Singapore, a charity that aims to fight hunger and reduce food wastage in Singapore. They acquire donated food, and make it available to those in need through a network of member beneficiaries. Employees in Singapore were asked to bring non-perishable food items to the company. In August, 341kg of food was packed and delivered to the Singapore Food Bank.

CONTRIBUTING TO ZERO THIRST

In the summer, temperatures in Phoenix, Arizona can reach extremely high levels. Under such conditions, people need clean, cool drinking water to stabilize their core body temperature and reduce the risk of dehydration and heat stroke. However, not everyone has access to such an important commodity. So ASM Phoenix employees worked together in the month of July to collect and donate 321 cases of water to members of the elderly and homeless communities in Phoenix. The water drive provided over 14,000 recyclable bottles of water for underserved and at risk persons in our community.

CONNECTING TEENS AND TECHNOLOGY

JetNet aims to inspire children and teenagers to learn more about technology and to stimulate them to consider a technical education and career. ASMI actively supports JetNet as partner organization. We joined the platform in 2015, by developing a close relationship with Almere High School to promote Technology classes.

In 2018, we engaged on four different occasions with students from Almere High School. In March, ASMI participated in the EU program 'Something4nothing'. ASMI presented a marketing related business case to the project team with students from Denmark, Germany, Italy, Turkey and the Netherlands. The student teams delivered a proposed solution after a week.

During the summer period, ASMI hosted a Girls and Boys day with an introduction to students of "the world of ASMI" and challenges in the form of technical experiments and games. In September, we organized a mathematics class during a project week in which students had to apply their mathematical skills to a complex calculation related to a wafer handler in a Vertical Furnace.

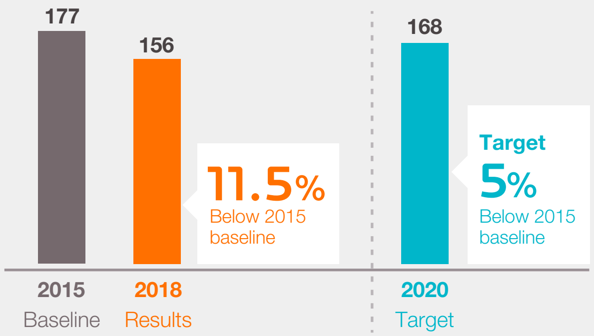
SUPPORTING PEOPLE WITH LIMITED JOB PROSPECTS

As part of ASMI's commitment to corporate responsibility, ASMI is exploring how to support people with limited job prospects due to their health, mental or physical condition. This initiative is part of the Dutch Prestatieladder Socialer Ondernemen (PSO) program, the Dutch scheme for social entrepreneurship, to encourage employers to make a sustainable contribution to the job market.

In 2018, we implemented the findings based on the results of an internal analysis conducted in 2017. In November as part of the application for the PSO certification, we were audited by certified external experts. The audit outcome provided ASMI with the certificate at 'Aspirant status'. In cooperation with an external advisor, we are now focused on obtaining the Level 1 certificate in the coming two years, confirming our commitments to corporate responsibility.

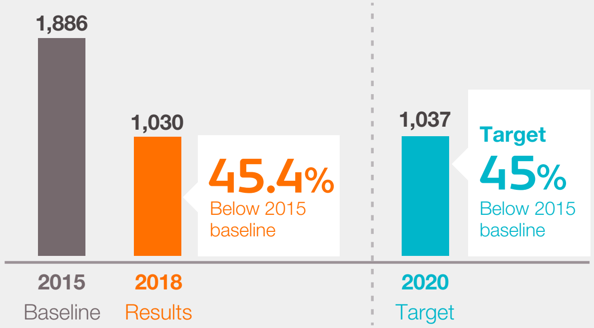
ENVIRONMENT

GREENHOUSE GAS (GHG) EMISSIONS (per R&D investment)



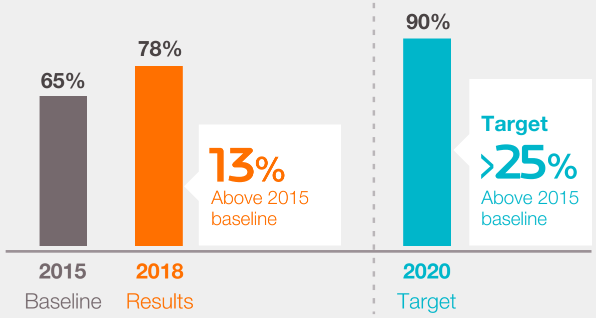
Figures are $mtCO_2e$/R&D investment EUR millions

WATER CONSUMPTION (per R&D investment)



Figures are m^3/R&D investment EUR millions

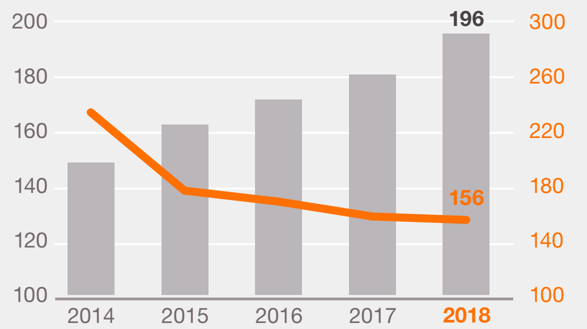
LANDFILL DIVERSION RATE



Figures are percent solid waste landfill diversion

GREENHOUSE GAS (GHG) EMISSIONS

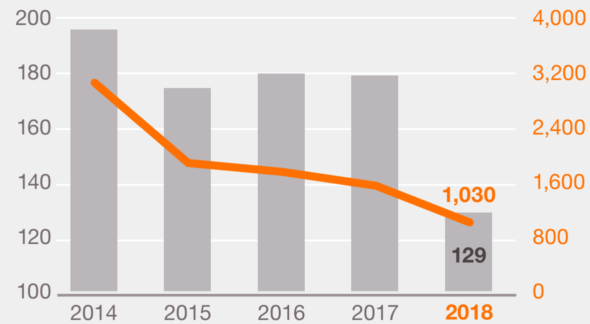
(Absolute and normalized per R&D investment)



Absolute Greenhouse Gas emissions ($mtCO_2e$ - Scope 1 + 2, x100)
$mtCO_2e$/million EUR R&D investment

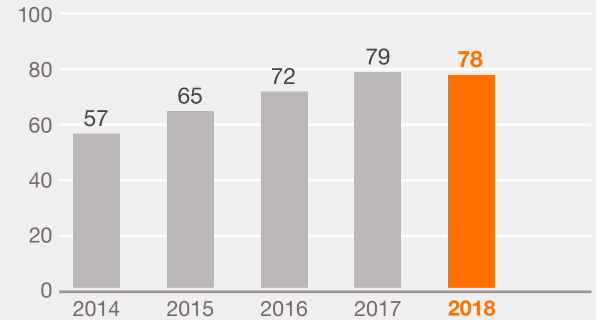
WATER CONSUMPTION

(Absolute and normalized per R&D investment)



Absolute water consumption (m^3, x1,000)
m^3/million EUR R&D investment

LANDFILL DIVERSION RATE



In %

2018 is year three in our five-year environmental performance improvement cycle (from 2016-2020). We have sustained and continue to improve on the progress from 2017, exceeding the five-year objectives in both normalized greenhouse gas (GHG) emissions and water consumption. We strive to sustain the progress through 2020 with our new, larger facilities in South Korea (opening early 2019, for R&D and Manufacturing) and Singapore (opening 2020, for Manufacturing) coming on-line.

As we grow our R&D operations, our absolute electrical consumption has increased. However, we reduced our absolute water consumption significantly after the successful implementation of a water reuse plant in Phoenix, leading to a 35% absolute reduction in Phoenix. In addition to reducing our environmental impact, this project positively impact to ASMI fiscally, with a return on investment of two years. Although ASMI continues to grow, we have chosen to reset our water target to 45% reduction globally by 2020 from the 2015 baseline. We achieved 45.4% reduction by 2018, however with further growth and expansion at multiple sites, we foresee it will be a challenge to sustain this through 2020 and thus feel it is the right objective to set. GHG emission and water consumption values reported are based on utility receipts for ASM Environmental Management System sites. The uncertainty in the reported information is less than 10% due to shared utility arrangements at some of our leased sites.

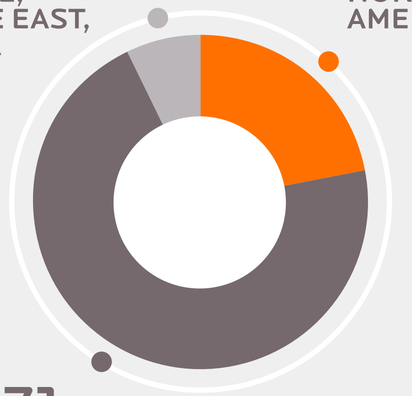
Some initiatives that contributed to the progress toward the normalized objectives in 2018 include:
- Water – Implementation of Phoenix water reuse plant;
- GHG – Replacement of aging and inefficient air conditioning units at multiple locations;
- GHG – Improved insulation of district heating pipes in Almere; and
- GHG – Continued conversion to LED lighting globally.

Our 2019 and 2020 plans include initiatives in both GHG and water consumption reduction, including the construction of our planned new facility in Singapore to the BCA Gold Plus Standard, and replacing aging chillers supporting R&D equipment to more efficient (electrical and water consumption) units.

Our landfill diversion did not improve in 2018 (relative to 2017). In 2018, the product shipping container reuse program was implemented on two product lines. The program targets the reuse of product shipping containers approximately 10 times before needing to dispose of the shipping container. Our goal is to expand this to five product platforms in 2019 to help reduce the consumption of raw materials towards our 2020 goal. We believe it is still possible to achieve the 2020 objective to divert 90% of our materials to recycle or reuse.

SUPPLY CHAIN

SUPPLY CHAIN SPEND BY REGION



In 2018, 100% of our key suppliers acknowledged our Supplier Code of Conduct.

Our supplier risk assessment process and self-assessments help us identify and measure social, environmental, and ethical risks in our supply chain. This helps us better understand how our key suppliers are performing against the code and standards. We work closely with our key suppliers to influence corrective actions to ensure continuous improvement. In 2018, we achieved 100% for RBA Code of Conduct adoption for key suppliers. We grew the number of suppliers participating in responsible sourcing program by 40% and we are starting to work with new suppliers on the self-assessment process.

PERFORMANCE MANAGEMENT

In 2018 we expanded our supplier scorecard program to include all key suppliers and evaluated them against a wide range of performance and compliance criteria. Elements such as cost, quality, and delivery, as well as scoring criteria for compliance are tabulated, analyzed and distributed quarterly. Each supplier's performance is reviewed quarterly between the commodity managers and their key supplier counterparts. In addition to this, semi-annual executive business reviews are held to put action plans together to monitor and address any gaps.

ASMI held its second-ever global supplier day, inviting over 50 of our critical and strategic suppliers to the event to deliver industry updates, business unit product insights, and share the overall direction of our company. Using our performance scoring criteria as a baseline for results, we publicly recognized our top suppliers for their outstanding contribution to ASMI's success in the prior year. Suppliers who routinely under-perform in any area, or who continually demonstrate a risk to our continuity of supply or corporate responsibility, are assessed for removal from our portfolio.

MOVING FORWARD

In 2019, we will continue to identify opportunities to improve supply chain operational efficiency, supplier communication, and supplier training, and embed these in our supplier management system and procedures. We are therefore preparing to revamp our supplier portal and improve our procure-to-pay process, supplier communications related to supply chain initiatives, business requirements, and supplier performance.

We thereby progressively consolidate our spend with key suppliers that are supportive of ASMI compliance policies and business needs. Overall spend with this group of suppliers has increased from 67% in 2017 to 73% in 2018.

GOVERNANCE

CORPORATE GOVERNANCE

Sound corporate governance is a key component of our culture, behavior and management and is consistent with our core values.

Our corporate governance is supported by a strong focus on integrity, transparency and clear and timely communication. At the same time, we endeavor to ensure that our policies and procedures comply with both applicable Dutch corporate governance requirements, and the relevant laws.

TRANSPARENT PROCESSES

Our corporate governance framework supports our business and meets the needs of our stakeholders. We achieve this by setting up transparent processes and following internal policies and procedures that comply with applicable Dutch corporate governance requirements.

CORPORATE GOVERNANCE PRINCIPLES

Good corporate governance is about applying sound business practices. At ASMI we do business in an ethical and transparent manner. We achieve this by setting up transparent processes and following internal policies and procedures that enable us to operate in the best interests of all our stakeholders, and which comply with applicable Dutch corporate governance requirements.

HIGH STANDARD OF CORPORATE GOVERNANCE

ASMI aspires to high standards of corporate governance and ethics practices. Sound corporate governance is a key component of ASMI's culture, behavior, and management and is consistent with our core values. Our corporate governance is supported by a strong focus on integrity, transparency and clear and timely communication. We endeavor to ensure that our policies and procedures comply with both applicable Dutch corporate governance requirements, and the relevant laws. Furthermore, our corporate governance structure supports our business and meets the needs of our stakeholders.

COMPANY STRUCTURE

ASMI is a publicly listed company established under Dutch law. The Company's management and supervision structure is organized in a two-tier system, comprising a Management Board, composed of executive directors, and a Supervisory Board, composed of non-executive directors. The Company's Management Board has ultimate responsibility for the overall management of ASMI. The Management Board is supervised and advised by an independent Supervisory Board. The Management Board and the Supervisory Board are accountable to ASMI's shareholders.

ASMI's common stock trades on the Euronext Amsterdam Stock Exchange (symbol ASM) and ASMI is required to comply with the Dutch Corporate Governance Code (the Code). The ASMI common shares, which are held in the US as New York Registry Shares, are eligible for trading on the OTC Market under the symbol ASMIY.

Corporate governance-related documents are available on our website, and include, amongst others:
- Supervisory Board profile;
- Supervisory Board rules;
- Management Board rules;
- Audit Committee charter;
- Nomination, Selection and Remuneration Committee charter;
- Remuneration policy;
- Code of Ethics;
- Whistleblower policy;
- Anti-fraud policy; and
- Rules concerning insider trading.

CORPORATE GOVERNANCE FRAMEWORK

MANAGEMENT BOARD

The Management Board, supervised and advised by the Supervisory Board, manages ASMI's strategic, commercial, financial, and organizational matters, and appoints senior managers. The Supervisory Board supervises and advises the Management Board in the execution of its tasks and responsibilities and establishes their individual remuneration within the boundaries of the remuneration policies approved by the Annual General Meeting of Shareholders and the recommendations by the Nomination, Selection and Remuneration Committee.

From left to right: **Charles D. (Chuck) del Prado, Peter A.M. van Bommel**

COMPOSITION OF THE MANAGEMENT BOARD

CHARLES D. (CHUCK) DEL PRADO – CEO

Mr. del Prado was appointed as a member of the Management Board in May 2006 and President and Chief Executive Officer on March 1, 2008. Mr. del Prado was reappointed on May 28, 2018 for a period of four years. Between 1989 and 1996, Mr. del Prado held several marketing and sales positions at IBM Nederland N.V. From 1996 to 2001, he worked in various management positions at ASML, in manufacturing and sales in Taiwan and the Netherlands. He was appointed as Director Marketing, Sales & Service of ASM Europe in March 2001. From 2003 to 2007, he was President and General Manager of ASM America. From January 1, 2008 to February 29, 2008, he acted as Executive Vice President Front-end Operations at ASM America. He holds a Master's of Science degree in Industrial Engineering and Technology Management from the University of Twente, the Netherlands. Mr. del Prado is a Dutch national.

PETER A.M. VAN BOMMEL – CFO

Mr. van Bommel was appointed as a member of the Management Board on July 1, 2010 and became Chief Financial Officer on September 1, 2010. Mr. van Bommel was reappointed on May 28, 2018 for a period of four years. Mr. van Bommel has more than twenty years of experience in the electronics and semiconductor industry. He spent most of his career at Philips, which he joined in 1979. From the mid-1990s until 2005, he acted as CFO of several business units of the Philips Group. Between 2006 and 2008, he was CFO at NXP, formerly Philips Semiconductors. He was CFO of Odersun AG, a manufacturer of thin-film solar cells and modules until August 31, 2010. He holds a Master's degree in Economics from the Erasmus University Rotterdam, the Netherlands. Mr. van Bommel is a Dutch national.

On April 13, 2016, Mr. van Bommel was reappointed for a period of four years as a member of the Supervisory Board of Royal KPN N.V. He also became the Chairman of the Audit Committee as per that day. On April 16, 2015, Mr. van Bommel was appointed as a member of the Supervisory Board of Neways Electronics International N.V. Since May 2017, Mr. van Bommel is Executive Director of Stichting Bernhoven.

RESPONSIBILITIES

In addition to the duties of the Management Board stipulated by law and our Articles of Association, the Management Board has the following responsibilities:

- achieving the aims, strategy, policy and results of the Company;
- managing the risks associated with the activities of the Company;
- ensuring proper financing of the Company;
- establishing and maintaining disclosure controls and procedures that ensure that all major financial information is known to the Management Board in order to ensure that the external financial reporting is achieved in a timely, complete and accurate manner; and
- determining relevant aspects and achieving aims relating to corporate social responsibility and sustainability.

The Management Board is guided by the interests of the Company, taking the interests of all stakeholders into consideration.

The members of the Management Board are collectively responsible for managing the Company. They are collectively and individually accountable to the Supervisory Board and the Annual General Meeting of Shareholders for executing the Management Board's responsibilities. The Management Board has the general authority to enter into binding agreements with third parties.

The Management Board held various meetings throughout the year 2018. At least once a month, the Management Board meets to discuss and review the performance of the company.

RISK MANAGEMENT AND CONTROL FRAMEWORK

The Management Board ensures that the Company has an adequately functioning internal risk management and control framework. A comprehensive risk management and control framework, based on the "three lines of defense model", has been established that allows the Audit Committee and the Management Board a clear overview of the effectiveness of internal controls and risk management. This is explained in more detail in the risk management chapter on page 52.

The Management Board periodically discusses the internal risk management and control systems with the Supervisory Board and the Audit Committee. The Management Board provides the Supervisory Board with all information required for the fulfillment of their obligations and the exercise of their powers.

The Management Board provides the Annual General Meeting of Shareholders with all information required for the fulfillment of its obligations and the exercise of its powers in a timely fashion. The Management Board is responsible for the quality and completeness of financial and other reports that are publicly disclosed by or on behalf of the Company, including all reports and documents the Company is required to file.

CONFLICTS OF INTEREST

Each Management Board member shall immediately report any potential conflict of interest to the Chairman of the Supervisory Board and to the other Management Board members. In such cases, a Management Board member shall provide the Chairman of the Supervisory Board and the other Management Board members with all information relevant to the conflict and follow the procedures as set out in the Management Board rules.

APPOINTMENT, SUSPENSION, AND DISMISSAL

The Annual General Meeting of Shareholders (AGM) appoints a Management Board member based on a binding nomination drawn up by the Supervisory Board. The AGM may set aside a binding nomination by a resolution taken with an absolute majority of the votes cast, representing at least one third of the share capital. If such a binding nomination is set aside, a new binding nomination will be drawn up by the Supervisory Board and submitted to a newly called General Meeting of Shareholders. If this binding nomination is set aside, the General Meeting of Shareholders is free to appoint a Management Board member, but only with an absolute majority of the votes cast representing at least one third of our issued capital.

A Management Board member may be suspended at any time by the Supervisory Board. A Management Board member may, in accordance with a proposal by the Supervisory Board, be dismissed by the AGM through a majority vote. A resolution to suspend or to dismiss a member of the Management Board, other than in accordance with a proposal of the Supervisory Board, shall require the affirmative vote of a majority of the votes cast at a meeting. The affirmative votes must represent at least one third of the issued capital.

REMUNERATION

For information regarding the remuneration of the Management Board, please see the remuneration policy which is posted on our website, the remuneration report, which is included in this report, and Note 25 to the consolidated financial statements.

SUPERVISORY BOARD

The Supervisory Board oversees strategic and commercial policymaking by the Management Board and the way in which it manages and directs ASMI's operations and affiliated/associated companies. Members of the Supervisory Board are appointed by the Annual General Meeting of Shareholders upon binding nomination by the Supervisory Board.

COMPOSITION

NAME	POSITION	NATION-ALITY	YEAR OF BIRTH	INITIAL APPOINTMENT	TERM EXPIRES
Jan C. Lobbezoo [1) 2)]	Chairman of the Supervisory Board	Dutch	1946	2009	2021
Marc J.C. de Jong [1)]	Member of the Supervisory Board	Dutch	1961	2018	2022
Stefanie Kahle-Galonske [1)]	Member of the Supervisory Board	German	1969	2017	2021
Martin C.J. van Pernis [2)]	Member of the Supervisory Board	Dutch	1945	2010	2020
Ulrich H.R. Schumacher [2)]	Member of the Supervisory Board	German	1958	2008	2020

[1] Member of Audit Committee.
[2] Member of Nomination, Selection and Remuneration Committee.

JAN C. LOBBEZOO

Mr. Lobbezoo was initially elected as a member of the Supervisory Board in May 2009. He became Chairman of the Supervisory Board in July 2013 and was reappointed as member and Chairman on May 22, 2017 for a period of four years. Mr. Lobbezoo was Executive Vice President and Chief Financial Officer of the semiconductor division of Royal Philips Electronics from 1994 to 2005. He was a member of the Board of Taiwan Semiconductor Manufacturing Company (TSMC) for 12 years until 2007 and remains its adviser, specifically in the areas of US corporate governance, international reporting, and financial review. Currently, Mr. Lobbezoo is a non-executive member of the one-tier Board of Time Acquisition, the holding company of the TMC Group. He is also on the Supervisory Board of a small start-up company called VPI, which is active in development of medical software for surgery. He is Chairman of the Supervisory Board of Point One Innovation Investment Fund. He holds a Master's degree in Business Economics from the Erasmus University Rotterdam, the Netherlands, and is a Dutch Registered Accountant (RA) and a member of the Dutch NBA. Mr. Lobbezoo is a Dutch national.

MARC J.C. DE JONG

Mr. de Jong was elected as a member of the Supervisory Board on May 28, 2018 for a period of four years. Mr. de Jong started his career with Philips Electron Optics in 1986. In 1994 he joined Philips Automotive Lighting and in 2000 he became an executive manager of Philips Lighting responsible for the business unit Special Lighting & UHP. From 2003 until 2005 he was the executive general manager of the business unit Lamps Europe. After which he became a member of the Executive Management Team of NXP Semiconductors N.V. until 2009, responsible for the business unit Automotive and Identification. From then on until 2013 he was the executive responsible for the Professional Lighting Solutions business group of Philips Lighting and was also a member of the Group Management Committee of Royal Philips. From 2013 onwards Mr. de Jong has been Executive General Manager of InnoMarket B.V. From 2015 till April 2018 he was CEO of LM Wind Power A/S. Mr. de Jong holds a Master's degree in Physics and Mathematics from the University of Amsterdam, the Netherlands, and a Master's degree in Business Administration (executive program) from the Erasmus University Rotterdam, the Netherlands and Rochester, USA. Mr. de Jong is currently member of the Supervisory Boards of Nissens A/S based in Denmark, First Sensor AG, based in Germany and Sioux B.V., based in the Netherlands. Mr. de Jong is a Dutch national.

STEFANIE KAHLE-GALONSKE

Mrs. Kahle-Galonske was elected as a member of the Supervisory Board on May 22, 2017 for a period of four years. Since April 2016 Mrs. Kahle-Galonske is CFO of Egon Zehnder International in Zurich, Switzerland. From March 2013 till March 2016, she was CFO of Markem-Imaje at Dover Corporation, based in Geneva, Switzerland. Between January 2007 and February 2012, she held various senior finance positions at NXP Semiconductors in France and the Netherlands. She started her career in 1997 at Philips Electronics in Hamburg, Germany, and held various finance positions till December 2006 at Philips Electronics and Semiconductors in Germany and the US. Mrs. Kahle-Galonske graduated in Economics at Ruhr-University of Bochum, Germany and is a CPA since 2002. Mrs. Kahle-Galonske is a German national.

MARTIN C.J. VAN PERNIS

Mr. van Pernis was initially elected as member of the Supervisory Board in May 2010 and was reappointed on May 28, 2018 for a period of two years. Mr. van Pernis joined Siemens in 1971 and retired from the Siemens Group at the end of 2009 as Chairman of the Management Board of Siemens Nederland NV. Mr. van Pernis is Chairman of the Supervisory Boards of Aalberts Industries NV, CM Payments, Sacon Architects and the Rotterdams Philharmonic Orchestra, and he is a member of the Supervisory Board of Optixolar BV and is a member of the Advisory Board of G4S Netherlands. Mr. Van Pernis was until May 2018 also Chairman of the Supervisory Board of Batenburg Techniek NV. Mr. van Pernis studied Electrical Engineering at the Technical University Delft and Technical High School The Hague, the Netherlands, and Law and Economics at the Erasmus University Rotterdam, the Netherlands. Mr. van Pernis is a Dutch national.

ULRICH H.R. SCHUMACHER

Mr. Schumacher was initially elected as member of the Supervisory Board in May 2008 and was reappointed on May 25, 2016 for a period of four years. From 1986 to 1999, he held various engineering and management positions at Siemens AG. Between 1996 and 1999, he was CEO and President of Siemens Semiconductor Group, and became President and CEO of Infineon Technologies AG after the spin-off from Siemens Semiconductor Group in 1999. From 2004 to 2007, Mr. Schumacher was a partner at Francisco Partners, a private equity investment company based in the US. Between 2007 and 2011, he was the CEO and President of Grace Semiconductor Manufacturing Corporation. More recently he was Managing Director of CGS DS. From 2012 until the end of 2015, he was Chairman of the Supervisory Board of PACT XPP Technologies AG. From 2013 till February 2018, Mr. Schumacher was the Chairman of the Executive Board and CEO of Zumtobel Group AG. Mr. Schumacher holds a PhD in Electrical Engineering from the University of Aachen, Germany and has completed further education in Business Administration. Mr. Schumacher is a German national.

THE IMPORTANCE OF DIVERSITY

The Supervisory Board recognizes the value of diversity amongst the members of the Supervisory Board and the members of the Management Board. Diversity is considered in any event to consist of gender, specific knowledge, work background, nationality, age and ethnic diversity, (technical) experience, and skills.

With respect to gender, we strive to have a composition of both the Supervisory Board and Management Board, representing at least 30% of the seats held by either gender at the same time.

RESPONSIBILITIES

The supervision over the policies of our Management Board and the general course of our business, and the related management actions, is entrusted to the Supervisory Board. In our two-tier structure under applicable Dutch law, the Supervisory Board is a separate body independent from the Management Board.

The Supervisory Board supervises and advises the Management Board in executing its responsibilities, particularly regarding:

- achievement of the Company's objectives;
- corporate strategy and the risks inherent in the business activities;
- structure and operation of the internal risk management and control systems;
- financial reporting process;
- compliance with legislation and regulations;
- relation of the Company to its shareholders; and
- relevant aspects of corporate social responsibility.

The Supervisory Board is responsible for monitoring and assessing its own performance.

CONFLICTS OF INTEREST

A Supervisory Board member facing a conflict of interest shall, in accordance with Article 13 of our Supervisory Board rules, inform the Chairman of the Supervisory Board immediately. The Chairman shall, if possible in consultation with the other members of the Supervisory Board, determine the course of action to be taken.

APPOINTMENT

In accordance with Dutch law and the Corporate Governance Code, the Supervisory Board has drawn up a profile for its own composition. This Supervisory Board Profile is available on our website. For the selection of future members of the Supervisory Board, we will actively seek for candidates that support the realization of diversity on the earlier mentioned criteria. Any appointment or reappointment to the Supervisory Board shall be based on the candidate's match with the Supervisory Board Profile. For reappointment, the candidate's performance during the previous period shall be taken into account. A Supervisory Board member who is available for reappointment must be interviewed by the Chairman of the Supervisory Board and the Chairman of the Nomination, Selection and Remuneration Committee. The Chairman of the Nomination, Selection and Remuneration Committee must be interviewed by the Chairman of the Supervisory Board. All members of the Supervisory Board follow an introduction program after their first appointment, in which financial and legal aspects as well as financial reporting and specific features of ASMI are discussed.

The Supervisory Board shall consist of at least three members. The members should operate independently of each other and within a good relationship of mutual trust. They should be experienced in the management of an international, publicly listed company, and have sufficient time available to fulfill the function of a Supervisory Board member. The Supervisory Board members appoint a Chairman from among themselves.

The Supervisory Board is composed of five members. In May 2018 Mr. Kreutzer stepped down at the end of his final term and Mr. de Jong has been newly appointed.

All members of the Supervisory Board meet the required profile. Supervisory Board members serve in principle a four-year term and may be re-elected in line with article 2.2 of the Corporate Governance Code.

REMUNERATION

For information regarding the remuneration of the Supervisory Board, please see the remuneration report, which is included in our Annual Report 2018, and Note 25 to the consolidated financial statements.

COMMITTEES

In order to more efficiently fulfill its role and in compliance with the Code, the Supervisory Board has created two committees: the Audit Committee and the Nomination, Selection and Remuneration Committee (NSR).

AUDIT COMMITTEE

The Audit Committee assists the Supervisory Board in its responsibility to oversee ASMI's financing, financial statements, financial reporting process, and system of internal business controls and risk management. The Audit Committee advises the Supervisory Board for the nomination of the external auditor of the Company.

The Audit Committee consists of:

- Stefanie Kahle-Galonske (Chairwoman);
- Jan Lobbezoo; and
- Marc de Jong.

The Audit Committee supervises the activities of the Management Board with respect to:

- the structure and operation of the internal risk management and control systems, including supervision of the enforcement of the relevant legislation and regulations;
- the role and functioning of internal audit;
- policy on tax structure;
- the applications of information and communication technology;
- financing of the Company;
- compliance with recommendations and observations of internal and external auditors;
- release of financial information; and
- relations with the external auditor, including, in particular, its independence, remuneration, and any non-audit services performed for the Company.

The Audit Committee meets periodically to:

- consider the adequacy of the internal control procedures;
- review the operating results with management and the independent auditors;
- review the scope and results of the audit with the independent auditors;
- review the scope and results of internal audits with internal audit;
- review performance evaluations relating to the auditor's independence;
- review performance and services of the external auditor; and
- review adequateness of the financing structure and tax structure of the Company.

The Chief Executive Officer, Chief Financial Officer, Director Internal Audit, Corporate Director Group Control, and representatives of the external auditor are invited to, and also attend, the Audit Committee meetings.

Mr. Lobbezoo, Chairman of the Supervisory Board, and Mrs. Kahle-Galonske, member of the Supervisory Board, are both members of the Audit Committee and are the Supervisory Board's financial experts, taking into consideration their extensive financial background and experience.

NOMINATION, SELECTION AND REMUNERATION COMMITTEE

The Nomination, Selection and Remuneration Committee (NSR) advises the Supervisory Board on matters relating to the selection and nomination of the members of the Management Board and Supervisory Board. The NSR Committee further monitors and evaluates the Remuneration Policy for the Management Board.

The NSR Committee consists of:

- Martin van Pernis (Chairman);
- Jan Lobbezoo; and
- Ulrich Schumacher.

The NSR Committee ensures that a competitive remuneration structure is provided by benchmarking with other multinational companies of comparable size and complexity operating in comparable geographical and industrial markets. The NSR Committee evaluates the achievement of performance criteria specified per Management Board member. After the evaluation, it recommends the level of remuneration to the Supervisory Board.

On an annual basis, the NSR Committee reports to the Supervisory Board on the application of the remuneration policy in the previous year and recommends the remuneration policy for the following years.

The Chief Executive Officer and the Corporate Vice President Global Human Resource are invited to, and also attend, the NSR Committee meetings.

SUPERVISORY BOARD REPORT

During the year under review, the Supervisory Board performed its duties in accordance with applicable legislation and the Articles of Association of ASM International N.V. and supervised and advised the Management Board on an ongoing basis.

FINANCIAL STATEMENTS

We present the ASMI 2018 Annual Report in accordance with IFRS, as prepared by the Management Board and reviewed by the Supervisory Board. Our independent auditors, KPMG Accountants N.V., have audited these financial statements and issued an unqualified opinion. Their report appears on pages 155 to 161.

All of the members of the Supervisory Board have signed the financial statements in respect of the financial year 2018.

SUPERVISION

Supervision of the Management Board, its policy decisions and actions are entrusted to the Supervisory Board. In accordance with Dutch law, the Supervisory Board is a separate body, independent of the Management Board. The Supervisory Board supervises and advises the Management Board in executing its responsibilities. The profile of the Supervisory Board describes the range of expertise that should be represented within the Board. The procedures of the Supervisory Board and the division of its duties are laid down in the Supervisory Board rules. Both documents are available on our website www.asm.com.

MEETINGS OF THE SUPERVISORY BOARD

During 2018, the Supervisory Board met with the Management Board on seven occasions, and in one conference call. Jan Lobbezoo, Stefanie Kahle-Galonske, Heinrich Kreutzer, and Ulrich Schumacher attended all Supervisory Board meetings with the Management Board, while Martin van Pernis and Marc de Jong attended all meetings except one.

	SUPERVISORY BOARD	AUDIT COMMITTEE	NOMINATION, SELECTION AND REMUNERATION COMMITTEE (NSR)
Committee			
Jan C. Lobbezoo	8/8	4/4	3/3
Marc J.C. de Jong	3/4	0/2	–
Stefanie Kahle-Galonske	8/8	4/4	–
Heinrich W. Kreutzer	4/4	2/2	–
Martin C.J. van Pernis	7/8	–	3/3
Ulrich H.R. Schumacher	8/8	–	3/3

Attendance is expressed as the number of meetings attended out of the number eligible to be attended.

In these meetings, the Boards discussed the strategy and the progress of implementation thereof, operations, business risks, product and market developments, the Company's organization, management and financial structure, and performance, including further profitability improvements. Other topics addressed by the Supervisory Board were the annual budget, the review of quarterly financial results and the preparation of the quarterly earnings press releases. The Supervisory Board also approved the dividend proposal as prepared by the Management Board and proposed (and approved) at the AGM in 2018. Furthermore the Supervisory Board approved the extraordinary capital distribution of €4.00 per common share to the holders of common shares, which was also approved during the AGM.

One of the meetings was specifically earmarked to discuss with the Management Board the long-term strategy of the company, the planned implementation of it, and the risks attached to its realization. In the long-term strategy meeting the Board discussed the semiconductor and semiconductor equipment market and outlook, the development of ASMI's market share, the development of the competitive environment, technology and market trends, the progress with ASMI's strategic priorities and ASMI's long-term revenue and profit or loss forecasts. Also, strategic initiatives to be considered to improve the Company's long-term value creation strategy were discussed. Certain topics discussed during the long-term strategy discussion will be followed up in subsequent meetings of the Board during 2019.

In addition, the Supervisory Board reviewed and discussed the functioning of the Supervisory Board, its committees, and its individual members through an internal assessment as conducted by the members of the Supervisory Board. The composition, competencies and functioning of the Supervisory Board, as also described in the Supervisory Board profile, and its committees were part of the assessment, as well as the composition of the Management Board, their performance, and the performance of its individual members, and the relationship between the Supervisory Board and the Management Board. The conclusion of the assessment was that both the Supervisory Board as the Management Board function properly and effectively, in addition some suggestions came up for future Supervisory Board meetings.

CORPORATE GOVERNANCE

Included in the responsibilities of the Supervisory Board is to oversee the Company's compliance with corporate governance standards and best practices. The Supervisory Board is of the opinion that the Company complies with the Dutch Corporate Governance Code.

SHAREHOLDERS

On March 29, 2018, ASMI completed the €250 million share buyback program 2017-2018. This program was funded with the proceeds of approximately €248 million of the partial secondary placement of shares of ASMPT that was executed on April 24, 2017.

On June 5, 2018, ASMI announced the start of a share buyback program of ASMI's common shares up to €250 million. This program followed on ASMI's announcement on February 28, 2018, that it intended to use €250 million of the proceeds of the partial sale of a stake of approximately 9% in ASMPT that was executed on November 2, 2017, for a new share buyback program. On October 11, 2018 the program was completed.

In the same month, on June 7, 2018, a dividend of €0.80 per common share was paid, as approved by the 2018 AGM on May 28, 2018.

On August 1, 2018, the cancellation of 6 million treasury shares became effective following earlier approval by the 2018 AGM.

Then on August 10, 2018, ASMI distributed €4.00 per common share to its shareholders through a tax efficient repayment of capital, using part of the proceeds of the partial sale of a stake of approximately 9% in ASMPT in 2017. The proposal for this capital repayment was initially announced on February 28, 2018, and approved by the 2018 AGM.

SUPERVISORY BOARD COMPOSITION

The Supervisory Board is composed of five members. During the AGM on May 28, 2018 Mr. Kreutzer stepped down at the end of his final term and Mr. de Jong was newly appointed. All five members are independent, in line with the Corporate Governance Code.

MANAGEMENT BOARD COMPOSITION

The Management Board remains composed of two members. During 2018, no changes took place in its composition. In the AGM 2018 both members were reappointed for a period of four years.

DIVERSITY

The Supervisory Board recognizes the value of diversity amongst the members of the Supervisory Board and the members of the Management Board as stated in the ASMI diversity policy. Diversity is considered in any event to consist of gender, specific knowledge, work background, nationality, age and ethnic diversity, (technical) experience, and skills.

We strive to have a composition with at least 30% of the seats in the Management Board and Supervisory Board held by either gender. At the same time we aim for the best candidate taking into account the realization on the diversity criteria and match with the Supervisory Board profile. Currently we have a 20% female representation in the Supervisory Board.

In case of open positions in the Supervisory Board or Management Board, the Supervisory Board prepares a profile based on the required educational and professional background and in the search will actively seek for candidates that support the realization of diversity on the earlier mentioned criteria.

INDEPENDENCE

The Supervisory Board is of the opinion that its current members are all independent as defined by the Dutch Corporate Governance Code. Neither the Chairman nor any other member of the Supervisory Board is a former member of ASMI's Management Board, or has another relationship with ASMI which can be judged 'not independent' of ASMI.

SUPERVISORY BOARD COMMITTEES

Audit Committee

The role of the Audit Committee is described in its charter, which is available on the Company's website (www.asm.com). The composition of the Audit Committee changed in May 2018 with the retirement from the Supervisory Board of Mr. Kreutzer and the appointment of Mr. de Jong who replaced Mr. Kreutzer in the Audit Committee. Mrs. Kahle-Galonkse (Chairwoman) then assumed the chairmanship of the Audit Committee. During the year, the Audit Committee met with the Management Board and KPMG Accountants, the Company's independent auditors, on four occasions. Audit Committee discussions included: the Company's financial reporting including the application of accounting principles; the Company's financial position and financing programs, and tax structure; the Company's internal risk management systems; effectiveness of internal controls; the audit performed and its findings, the Annual Report and financial statements; and the budget and the quarterly progress reports prepared by the Management Board. The internal auditor participated in all four Audit Committee meetings, presenting her own actions and findings.

On several occasions, the Audit Committee met with KPMG Accountants, without the members of the Management Board present, to discuss several audit related topics. Furthermore, the Audit Committee discussed the auditor's performance with the Management Board without KPMG Accountants present.

Nomination, Selection and Remuneration Committee

The role of the Nomination, Selection and Remuneration Committee (NSR) is described in its charter, which is available on the Company's website, www.asm.com. In general, the NSR Committee advises the Supervisory Board on matters relating to the selection and nomination of new Management Board members, as well as the remuneration of the members of the Management Board. This Committee consists of Messrs. van Pernis (Chairman), Lobbezoo and Schumacher.

In 2018, the NSR Committee held three meetings. The topics discussed included the remuneration of the individual members of the Management Board. During the meetings of the Committee, the Chief Executive Officer was present, except when his own remuneration was discussed.

The remuneration of the members of the Management Board is disclosed in Note 25 to the consolidated financial statements of the Annual Report. The remuneration of the members of the Management Board during 2018 is fully in accordance with the remuneration policy.

WORD OF THANKS

We extend gratitude and appreciation to ASMI employees worldwide for their many contributions and enduring commitment to the Company. It is their commitment and determination that enabled us to make substantial progress in 2018. We recognize that the cumulative efforts of our workforce are truly creating real value for all of our stakeholders.

SUPERVISORY BOARD

J.C. Lobbezoo, Chairman
M.J.C. de Jong
S. Kahle-Galonske
M.C.J. van Pernis
U.H.R. Schumacher

Almere, the Netherlands
March 5, 2019

REMUNERATION REPORT

This remuneration report is based on the remuneration policy of ASM International N.V. (ASMI), dated May 21, 2014. The remuneration policy was adopted by the 2014 Annual General Meeting of Shareholders.

REMUNERATION POLICY MANAGEMENT BOARD

The remuneration policy was reviewed by the Supervisory Board in 2014 and is applicable to members of the Management Board of ASMI. An analysis of different scenarios was included in this review.

The objective of the remuneration policy is twofold:

- to create a remuneration structure that will allow ASMI to attract, reward and retain qualified executives in our global competitive industry; and
- to provide and motivate executives with a balanced and competitive remuneration that is focused on sustainable results, aligned with the long term strategy of ASMI.

The remuneration structure includes four components:

- a fixed (base) salary component;
- a variable component (annual performance based bonus or short-term incentive);
- a long term component (performance based long-term incentive) in the form of stock options and performance shares; and
- pension provisions and fringe benefits.

The remuneration peer group currently consists of the following companies:

Aalberts Industries N.V.	ASML Holding N.V.	Lam Research Corporation	Spirent Communications
Aixtron SE	BE Semiconductor N.V.	Microchip Technology Inc.	Teradyne Inc.
Amkor Technology Inc.	Freescale Semiconductor Ltd [1]	ON Semiconductor Corp.	TomTom N.V.
Arcadis N.V.	KLA-Tencor Corporation	Renishaw Plc	Veeco Instruments Inc.

[1] Freescale Semiconductor Ltd has been acquired by NXP Semiconductor N.V. and is therefore excluded from the peer group for future reviews.

BASE SALARY MANAGEMENT BOARD

The amounts paid as base salaries to the members of the Management Board in 2018 were as follows:

C.D. del Prado	**€668,725**
P.A.M. van Bommel	**€426,243**

ANNUAL SHORT-TERM INCENTIVE (CASH BONUS) MANAGEMENT BOARD

Each year, a short-term incentive can be earned, based on the achievement of specific challenging targets. These targets are for 75% based on company financial targets, being sales, EBIT and free cash flow, and for 25% based on non-financial targets. These non-financial targets are derived from ASMI's strategic and organizational priorities and include qualitative targets that are relevant to the responsibilities of the individual Management Board member.

The on-target bonus percentage for the CEO is 100% of base salary, with a maximum pay-out of 150% of base salary. The on-target bonus percentage for the other members of the Management Board is 75% of base salary, with a maximum pay-out of 125% of base salary.

For the year 2018 the Management Board partially met the financial targets and met the non-financial targets.

Based on the results in 2018, the following bonuses shall be paid:

C.D. del Prado	**€510,681**
P.A.M. van Bommel	**€257,450**

LONG-TERM INCENTIVE (STOCK OPTIONS/PERFORMANCE SHARES) MANAGEMENT BOARD

The long-term incentive scheme for the members of the Management Board, which was approved in the 2014 Annual General Meeting of Shareholders, consists of stock options and performance shares.

The long-term incentive scheme has the following main features:

STOCK OPTIONS

- the options will be unconditional;
- 100% of the options which have been granted will become exercisable after three years;
- the options will have a term of seven years;
- the exercise price will be equal to the average closing price on Euronext of ASMI shares during the five trading days preceding the granting of the option and including the date of granting; and
- the number of options to be granted will be based on a fair value approach.

PERFORMANCE SHARES

- the number of the performance shares for on target performance to be awarded will be determined by the Supervisory Board depending on the value of performance shares as part of the mix between stock options and performance shares;
- the shares will become unconditional after three years depending on the achievement of predetermined targets;
- the financial targets to be achieved are measured over a three year performance period. The first target is sales growth compared to market, which is measured as the average own sales growth during the measurement period compared to the average market growth during the measurement period. The second target is the average EBIT percentage, which is measured as the average EBIT over the measurement period as a percentage of the average sales;
- the maximum number of shares that can be achieved in case of meeting stretch target is 150% of the target number of performance shares. The minimum number of shares is zero, in case none of the targets are met; and
- the Management Board members will hold the unconditional shares for at least an additional two years, however they are allowed to sell a part of the unconditional shares after three years for tax purposes.

The mix between stock options and performance shares will be determined annually by the Supervisory Board, taking into account the objectives of the remuneration policy.

The Supervisory Board decided to grant the following value to:

C.D. del Prado:

Performance shares	**€936,215**

P.A.M. van Bommel:

Performance shares	**€441,162**

The grant date is April 25, 2019.

VESTING PERFORMANCE SHARES

In 2018, the three year performance period of the performance shares granted to the members of the Management Board in April 2016 has been completed.

Based on the achievement of the performance criteria, the realization percentage is 64.3% This leads to the following vesting of the performance shares awarded.

	PERFORMANCE SHARES AWARDED APRIL 22, 2016 [1]	PERFORMANCE SHARES VESTED APRIL 22, 2019
C.D. del Prado	12,056	7,752
P.A.M. van Bommel	6,078	3,908

[1] The number of shares were adjusted in 2018, to reflect the capital repayment to shareholders.

PENSION MANAGEMENT BOARD

The pension contributions paid in 2018 were as follows:

C.D. del Prado	**€119,450**
P.A.M. van Bommel	**€88,848**

As of 2015, the members of the Management Board no longer participate in the industry wide pension fund. They are offered participation in a defined contribution plan for their salary up to € 105,075 (2018). For their salary above €105,075, the members of the Management Board are compensated with an amount equal to the employer pension contribution. The members of the Management Board have the option to participate in a net pension plan offered by the company or to have the compensation paid out in cash.

The pension contributions vary from 7.2% to 28.4% of the pensionable salary depending on age. The members of the Management Board contribute 4.6% of the pensionable salary and ASMI pays the remaining part.

There are no arrangements regarding early retirement.

OTHER ARRANGEMENTS MANAGEMENT BOARD

A number of other arrangements are offered to members of the Management Board, such as expense and representation allowance, disability insurance, accident insurance and a company car.

ASMI's policy does not allow personal loans to members of the Management Board.

CONTRACTS OF EMPLOYMENT MANAGEMENT BOARD

All members of the Management Board have a written contract of employment with ASMI or one of its related subsidiaries. The members of the Management Board have been appointed to the Management Board for a four year period:

- C.D. del Prado, started May 18, 2006; in May 2018 Mr. del Prado was reappointed for a new term of 4 years; and
- P.A.M. van Bommel, started July 1, 2010; in May 2018 Mr. van Bommel was reappointed for a new term of 4 years.

For future new appointments to the Management Board, the term of the appointment will also be set at four years.

As is mentioned in the employment agreements of the members of the Management Board, in case of termination of the employment on behalf of the company, the members of the Management Board are eligible for a severance payment of maximum one year base salary.

PAY RATIO

The ratio of the CEO remuneration and the average remuneration of all other employees (the pay ratio) is calculated by dividing the remuneration of the CEO by the average remuneration of all employees. The remuneration of the CEO is the total of base salary, bonus and share based payments, as published in Note 25 to the consolidated financial statements of this report. The average remuneration of all employees is calculated by dividing the total personnel costs (wage and salaries and share based payments) as published in Note 23 to the consolidated financial statements minus the remuneration of the Management Board, by the total number of employees.

The 2017 CEO pay ratio is 25.
The 2018 CEO pay ratio is 27.

REMUNERATION SUPERVISORY BOARD

The remuneration of the members of the Supervisory Board is not dependent on our financial results. No member of the Supervisory Board personally maintains a business relationship with ASMI other than as a member of the Supervisory Board. The Nomination, Selection and Remuneration Committee (NSR) is responsible for reviewing and, if appropriate, recommending changes to the remuneration of the Supervisory Board. Any recommended changes to the remuneration of the members of the Supervisory Board must be submitted to the Annual General Meeting of Shareholders (AGM) for approval.

The remuneration of the Supervisory Board was approved by the shareholders in the 2018 AGM. The Supervisory Board's annual remuneration has been fixed as follows:

	YEAR ENDED DECEMBER 31,
(Amount in euros)	2018
Base remuneration:	
Chairman of the Supervisory Board	70,000
Member of the Supervisory Board (other than the Chairman)	50,000
Additional remuneration:	
Chairman of the Audit Committee	10,000
Member of the Audit Committee (other than the Chairman)	7,500
Chairman of the Nomination, Selection and Remuneration Committee	8,500
Member of the Nomination, Selection and Remuneration Committee (other than the Chairman)	6,000

EXTERNAL AUDITOR

In accordance with Dutch law, ASMI's external auditor is appointed by the Annual General Meeting of Shareholders and is nominated for appointment by the Supervisory Board upon advice from the Audit Committee and the Management Board. Our current external auditor, KPMG, was reappointed as external auditor by the 2018 Annual General Meeting of Shareholders (AGM) for the reporting year 2018.

The external auditor is present at our AGM to respond to questions, if any, from the shareholders about the auditor's report on the financial statements.

The Audit Committee has determined that the provision of services by KPMG and its member firms is compatible with maintaining KPMG's independence. All audit and permitted non-audit services provided by KPMG and its member firms during 2018 were pre-approved by the Audit Committee.

AUDIT COMMITTEE POLICIES AND PROCEDURES

The Audit Committee has adopted the following policies and procedures for pre-approval of all audit and permitted non-audit services provided by our external auditor:

AUDIT SERVICES

Management submits to the Audit Committee for pre-approval the scope and estimated fees for specific services directly related to performing the independent audit of our statutory and consolidated financial statements for the current year.

AUDIT-RELATED SERVICES

The Audit Committee may pre-approve expenditures up to a specified amount for services included in identified service categories that are related extensions of audit services and are logically performed by the auditors. Additional services exceeding the specified pre-approved limits require specific Audit Committee approval.

TAX SERVICES

The Audit Committee may pre-approve expenditures up to a specified amount per engagement and in total for identified services related to tax matters. Additional services exceeding the specified pre-approved limits, or involving service types not included in the pre-approved list, require specific Audit Committee approval.

OTHER SERVICES

In the case of specified services for which utilizing our external auditor creates efficiencies, minimizes disruption or preserves confidentiality, or for which management has determined that our external auditor possesses unique or superior qualifications to provide such services, the Audit Committee may pre-approve expenditures up to a specified amount per engagement and in total. Additional services exceeding the specified pre-approved limits, or involving service types not included in the pre-approved list, require specific Audit Committee approval.

FINANCIAL STATEMENTS

CONSOLIDATED FINANCIAL STATEMENTS

ASM INTERNATIONAL N.V. FINANCIAL STATEMENTS

Our 2018 sales grew to record levels, reaching €818 million. ALD continued to be the key driver, although the other product lines also made a strong contribution.

We benefited from a further increase in wafer fab equipment spending following the very strong market growth in 2017. Our operating profit increased to €124.3 million from €113.2 million in 2017, while the operating profit margin remained stable.

OTHER DEVELOPMENTS

New bookings increased by 22% in 2018 to €942 million, with equipment bookings for ASMI as a whole led by logic, followed by foundry and then memory. Total research and development (R&D) expenses, excluding impairment charges, decreased by 1% in 2018 compared to 2017, mainly as a result of higher capitalization of development expenses.

CONSOLIDATED STATEMENT OF PROFIT OR LOSS

(EUR thousand, except per share data)	NOTES	YEAR ENDED DECEMBER 31, 2017	2018
Revenue	21	737,401	818,081
Cost of sales	23	(431,506)	(483,784)
GROSS PROFIT		305,895	334,297
Operating expenses:			
Selling, general and administrative	23	(99,931)	(121,442)
Research and development	23	(92,777)	(88,588)
TOTAL OPERATING EXPENSES		(192,708)	(210,030)
RESULT FROM OPERATIONS		113,187	124,267
Finance income		1,683	1,056
Finance expense		(1,799)	(2,466)
Foreign currency exchange gain (loss), net	17	(30,546)	1,276
Share in income of investments in associates	6	89,614	48,436
Result from sale of ASMPT shares	6	284,898	–
RESULT BEFORE INCOME TAXES		457,037	172,569
Income taxes	22	(4,635)	(15,436)
NET EARNINGS FROM OPERATIONS, ATTRIBUTABLE TO COMMON SHAREHOLDERS		452,402	157,133
Per share data	24		
Basic net earnings per share (EUR):			
FROM OPERATIONS		7.72	3.00
Diluted net earnings per share (EUR):			
FROM OPERATIONS		7.63	2.96
Weighted average number of shares (thousand):			
Basic		58,573	52,432
Diluted		59,325	53,110

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

(EUR thousand)	NOTES	YEAR ENDED DECEMBER 31, 2017	2018
NET EARNINGS FROM OPERATIONS, ATTRIBUTABLE TO COMMON SHAREHOLDERS		**452,402**	**157,133**
Other comprehensive income, net of income tax			
Items that will not be reclassified subsequently to profit or loss:			
Remeasurement of defined benefit obligation		(261)	**242**
Share of other comprehensive income (loss) investments in associates	**6**	(2,580)	**(1,161)**
		(2,841)	**(919)**
Items that may be subsequently reclassified to profit or loss:			
Foreign currency translation effect		(172,893)	**46,772**
		(172,893)	**46,772**
OTHER COMPREHENSIVE INCOME FOR THE YEAR, NET OF INCOME TAX		**(175,734)**	**45,853**
TOTAL COMPREHENSIVE INCOME, ATTRIBUTABLE TO COMMON SHAREHOLDERS	**12**	**276,668**	**202,986**

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

(EUR thousand)	NOTES	DECEMBER 31, 2017	DECEMBER 31, 2018
Assets			
Property, plant and equipment	3	106,632	148,749
Goodwill	4	11,270	11,270
Other intangible assets	5	113,295	149,927
Investments in associates	6	730,552	789,588
Deferred tax assets	22	18,116	11,316
Other non-current assets	29	4,845	11,641
Evaluation tools at customers	7	29,710	44,634
Employee benefits (pension assets)	13	–	224
TOTAL NON-CURRENT ASSETS		1,014,420	1,167,349
Inventories	8	142,849	171,826
Accounts receivable	9	163,135	173,450
Income taxes receivable	22	1,272	4,439
Other current assets	10	19,065	45,001
Cash and cash equivalents	11	836,461	285,907
TOTAL CURRENT ASSETS		1,162,782	680,623
TOTAL ASSETS		2,177,202	1,847,972
Equity and liabilities			
EQUITY	12	2,011,512	1,641,551
Employee benefits (pension liabilities)	13	386	–
Deferred tax liabilities	22	13,864	12,170
TOTAL NON-CURRENT LIABILITIES		14,250	12,170
Accounts payable		79,349	80,640
Provision for warranty	14	6,562	7,955
Income taxes payable	22	6,575	6,663
Accrued expenses and other payables	15	58,954	98,993
TOTAL CURRENT LIABILITIES		151,440	194,251
TOTAL LIABILITIES		165,690	206,421
TOTAL EQUITY AND LIABILITIES		2,177,202	1,847,972

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

(EUR thousand except for share data)	NOTES	NUMBER OF COMMON SHARES OUTSTANDING	COMMON SHARES	CAPITAL IN EXCESS OF PAR VALUE	TREASURY SHARES AT COST	RETAINED EARNINGS	OTHER RESERVES [1]	TOTAL EQUITY
BALANCE AS OF JANUARY 1, 2017		**59,815,843**	**2,552**	**225,837**	**(151,477)**	**1,691,742**	**229,488**	**1,998,142**
Net earnings		–	–	–	–	452,402	–	452,402
Other comprehensive income	12	–	–	–	–	–	(175,734)	(175,734)
TOTAL COMPREHENSIVE INCOME		–	–	–	–	**452,402**	**(175,734)**	**276,668**
Dividend paid to common shareholders		–	–	–	–	(41,470)	–	(41,470)
Compensation expense share-based payments	13	–	–	7,801	–	–	–	7,801
Exercise stock options out of treasury shares	13	626,939	–	(10,612)	23,904	–	–	13,292
Vesting restricted shares out of treasury shares	13	118,317	–	(4,501)	4,501	–	–	–
Purchase of common shares	12	(4,420,946)	–	–	(243,527)	–	–	(243,527)
Cancellation of common shares out of treasury shares	12	–	(60)	–	61,945	(61,885)	–	–
Other movements in investments in associates:								
Dilution	6	–	–	–	–	606	–	606
BALANCE AS OF DECEMBER 31, 2017		**56,140,153**	**2,492**	**218,525**	**(304,654)**	**2,041,395**	**53,754**	**2,011,512**
Adjustment on initial application IFRS 15, net of tax		–	–	–	–	15,992	–	15,992
ADJUSTED BALANCE AT JANUARY 1, 2018		**56,140,153**	**2,492**	**218,525**	**(304,654)**	**2,057,387**	**53,754**	**2,027,504**
Net earnings		–	–	–	–	157,133	–	157,133
Other comprehensive income	12	–	–	–	–	–	45,853	45,853
TOTAL COMPREHENSIVE INCOME		–	–	–	–	**157,133**	**45,853**	**202,986**
Dividend paid to common shareholders		–	–	–	–	(43,644)	–	(43,644)
Capital repayment		–	–	(159,817)	–	(48,957)	–	(208,774)
Compensation expense share-based payments	13	–	–	8,215	–	–	–	8,215
Exercise stock options out of treasury shares	13	258,688	–	(7,966)	12,783	–	–	4,817
Vesting restricted shares out of treasury shares	13	162,791	–	(8,055)	8,055	–	–	–
Purchase of common shares	12	(7,242,734)	–	–	(350,042)	–	–	(350,042)
Cancellation of common shares out of treasury shares	12	–	(240)	–	305,848	(305,608)	–	–
Other movements in investments in associates:								
Dilution	6	–	–	–	–	489	–	489
BALANCE AS OF DECEMBER 31, 2018		**49,318,898**	**2,252**	**50,902**	**(328,010)**	**1,816,800**	**99,607**	**1,641,551**

[1] Other reserves consist of the currency translation reserve, remeasurement on net defined benefit and the reserve for proportionate share in other comprehensive income investments in associates. See Note 12.

CONSOLIDATED STATEMENT OF CASH FLOWS

(EUR thousand)	NOTES	YEAR ENDED DECEMBER 31, 2017	2018
Cash flows from operating activities			
Net earnings from operations		452,402	157,133
Adjustments to reconcile net earnings to net cash from operating activities			
Depreciation, amortization and impairments	3,5,7,29	52,097	55,352
Share-based compensation	13	7,801	8,215
Non-cash financing costs		29,609	(81)
Share in income of investments in associates	6	(89,614)	(48,436)
Gain on sale of ASMPT shares	6	(284,898)	–
Income tax		4,635	15,436
Changes in assets and liabilities			
Accounts receivable		(37,930)	(9,189)
Inventories		(40,228)	(22,977)
Evaluation tools		(4,933)	(22,965)
Other assets		2,540	(25,011)
Accounts payable and accrued expenses		28,449	48,792
Income tax paid		(3,870)	(19,459)
NET CASH FROM OPERATING ACTIVITIES		**116,060**	**136,810**
Cash flows from investing activities			
Capital expenditures	3	(44,171)	(67,062)
Proceeds from sale of property, plant and equipment	3	823	3,758
Capitalized development expenditure	5	(38,615)	(49,688)
Purchase of intangible assets	5	(2,393)	(1,058)
Dividend received from associates	6	36,458	29,120
Proceeds from sale of ASMPT shares	6	690,660	–
NET CASH FROM / (USED IN) INVESTING ACTIVITIES		**642,762**	**(84,930)**
Cash flows from financing activities			
Debt issuance fees paid		(132)	–
Purchase of treasury shares ASMI	12	(239,555)	(354,963)
Proceeds from issuance of treasury shares	13	13,292	4,817
Dividends to common shareholders of ASMI		(41,470)	(43,644)
Capital repayment		–	(208,774)
NET CASH USED IN FINANCING ACTIVITIES		**(267,865)**	**(602,564)**
FOREIGN CURRENCY TRANSLATION EFFECT ON CASH AND CASH EQUIVALENTS		**(32,653)**	**130**
NET INCREASE / (DECREASE) IN CASH AND CASH EQUIVALENTS		**458,304**	**(550,554)**
Cash and cash equivalents at beginning of year	11	378,157	836,461
CASH AND CASH EQUIVALENTS AT END OF YEAR	11	**836,461**	**285,907**

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1. GENERAL INFORMATION/SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

GENERAL INFORMATION

ASM International N.V. (ASMI, or the Company) is a Dutch public liability company domiciled in the Netherlands with its principal operations in Europe, the United States of America, and Asia. The Company dedicates its resources to the research, development, manufacturing, marketing and servicing of equipment and materials used to produce mainly semiconductor devices. The Company is registered at Versterkerstraat 8, 1322 AP Almere, the Netherlands.

The Company's shares are listed for trading on the Euronext Amsterdam Stock Exchange (symbol ASM).

The accompanying consolidated financial statements include the financial statements of ASM International N.V., and its consolidated subsidiaries (together referred to as ASMI, or the Company). ASMI's subsidiaries are listed in Note 2 and associates are listed in Note 6.

BASIS FOR ACCOUNTING

The consolidated financial statements for the year ended December 31, 2018 have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union and also comply with the financial reporting requirements included in Section 362(9) of Part 9, Book 2 of the Dutch Civil Code.

The consolidated financial statements have been prepared by the Management Board of the Company and authorized for issue on March 12, 2019 and will be submitted for adoption to the Annual General Meeting of Shareholders (AGM) on May 20, 2019.

The consolidated financial statements will be filed at the Trade Register of the Chamber of Commerce in Almere, the Netherlands within eight days of adoption by the 2019 AGM.

This is the first set of the Company's consolidated financial statements in which IFRS 15 Revenue from Contracts with Customers and IFRS 9 Financial Instruments have been applied. Changes to significant accounting policies are described in section Changes in Accounting Policies.

FUNCTIONAL AND PRESENTATION CURRENCY

The consolidated financial statements are presented in Euro (EUR), which is the Company's functional currency. All amounts have been rounded to the nearest thousand, unless otherwise indicated.

BASIS OF PREPARATION

The consolidated financial statements have been prepared under the historical cost convention, unless otherwise indicated. The Company applies the going concern basis in preparing its consolidated financial statements.

Historical cost is generally based on the fair value of the consideration given in exchange for goods and services.

A number of the Company's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of whether that price is directly observable or estimated using another valuation technique.

The Company has an established approach with respect to the measurement of fair values. If third-party information, such as broker quotes or pricing services, is used to measure fair values, the Company assesses and documents the evidence obtained from the third parties to support the conclusion that such valuations meet the requirements of IFRS, including the level in the fair value hierarchy in which such valuations should be classified.

Fair values are categorized into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows:

- **Level 1:** quoted prices (unadjusted) in active markets for identical assets or liabilities;
- **Level 2:** inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- **Level 3:** inputs for the asset or liability that are not based on observable market data (unobservable inputs).

If the inputs used to measure the fair value of an asset or a liability fall into different levels of the fair value hierarchy, then the fair value measurement is categorized in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.

Further information about the assumptions made in measuring fair values is included in the following Notes:

- Note 13 - Employee benefits; and
- Note 17 - Financial instruments and financial risk management.

USE OF ESTIMATES AND JUDGMENTS

In preparing these consolidated financial statements, management has made judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to estimates are recognized prospectively.

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the year ended December 31, 2018 is included in the following Notes:

- Notes 3, 4, 5, 6 and 7 - Valuation of non-financial assets; and
- Note 22 - Valuation of deferred tax assets.

CRITICAL ACCOUNTING POLICIES

A critical accounting policy is defined as one that is both material to the presentation of ASMI's consolidated financial statements and that requires management to make difficult, subjective or complex judgments that could have a material effect on ASMI's financial condition or results of operations. Specifically, these policies have the following attributes: (1) ASMI is required to make assumptions about matters that are highly uncertain at the time of the estimate; and (2) different estimates ASMI could reasonably have used, or changes in the estimate that are reasonably likely to occur, could have a material effect on ASMI's financial condition or results of operations.

Estimates and assumptions about future events and their effects cannot be determined with certainty. ASMI bases its estimates on historical experience and on various other assumptions believed to be applicable and reasonable under the circumstances. These estimates may change as new events occur, as additional information is obtained, and as ASMI's operating environment changes. These changes have historically been minor and have been included in the consolidated financial statements as soon as they became known. In addition, management is periodically faced with uncertainties, the outcomes of which are not within its control and will not be known for prolonged periods of time. Based on a critical assessment of its accounting policies and the underlying judgments and uncertainties affecting the application of those policies, management believes that ASMI's consolidated financial statements are fairly stated in accordance with IFRS, and provide a meaningful presentation of ASMI's financial condition and results of operations. An analysis of specific sensitivity to changes of estimates and assumptions is included in the Notes to the (consolidated) financial statements.

Management believes that the following accounting policies are critical:

- revenue recognition;
- inventories;
- evaluation of long-lived assets for impairment;
- evaluation of investments in associates for impairment;
- intangible assets; and
- income taxes.

CHANGES IN ACCOUNTING POLICIES

Application of new and revised International Financial Reporting Standards (IFRS)

New and amended IFRS Standards that are effective for the current year

The Company has initially applied IFRS 15 from January 1, 2018. A number of other new standards (including IFRS 9) are also effective from January 1, 2018 but they do not have a material effect on the Company's consolidated financial statements.

Due to the transition method chosen by the Company in applying new standards, comparative information throughout these financial statements has not been restated to reflect the requirements of the new standards.

IFRS 15 Revenue from Contracts with Customers

IFRS 15 establishes a comprehensive framework for determining whether, how much and when revenue is recognized. It replaces IAS 18 Revenue, IAS 11 Construction Contracts and related interpretations. Under IFRS 15, revenue is recognized when a customer obtains control of the goods and/or services. Determining the timing of the transfer of control, at a point in time or over time, requires judgment.

The Company has adopted IFRS 15 using the modified retrospective approach, with the effect of initially applying this standard recognized at the date of initial application (opening balance January 1, 2018). Accordingly, the information presented for 2017 has not been restated, it has been presented (as previously reported) under IAS 18, IAS 11 and related interpretations. Additionally, the disclosure requirements in IFRS 15 have not generally been applied to comparative information.

IFRS 15 uses the terms 'contract asset' and 'contract liability' to describe that might more commonly be known as 'accrued revenue' and 'deferred revenue', however the standard does not prohibit an entity from using alternative descriptions in the statement of financial position. The Company has adopted the terminology 'accrued revenue' and 'deferred revenue' to describe such balances.

The following table summarizes the impact, net of tax, of transitioning to IFRS 15 on retained earnings at January 1, 2018.

(EUR thousand)	IMPACT OF ADOPTING IFRS 15 AS AT JANUARY 1, 2018
Retained earnings	
Timing of revenue	15,966
Related tax	26
IMPACT AT JANUARY 1, 2018	**15,992**

Impact of implementing IFRS 15 as at December 31, 2018

Under IAS 18 the decision whether to recognize revenue was, in addition to shipment and factory acceptance, based on the contractual agreement with customer. When conditions needed to be met, the Company could have decided to defer revenue recognition until completion of installation at the customer's site and obtaining final acceptance from the customer. Under IFRS 15, revenue for equipment is recognized at a point in time, when the control passes, upon shipment.

We changed from allocating the transaction price of a contract to the elements of the contract using the relative selling price of these elements in accordance with IAS 18 to allocating the transfer price of a contract based on stand-alone selling prices determined using the adjusted market assessment approach in accordance with IFRS 15. As a result, the customer discounts and credits, within volume purchase agreements, are considered as a reduction of the transaction price. Consequently, these customer discounts and credits are allocated to the performance obligations based on the stand-alone selling price, under IAS 18 we used the relative selling price to allocate these elements.

Under IAS 18 installation revenue was recognized upon completion of installation at the customer site. At point of shipment, the portion of the sales price related to the installation was deferred.

Under IFRS 15 it has been determined, in accordance with IFRS 15.35, that the customer simultaneously consumes and receives the benefits provided by the performance of the installation. As such, transfer of control takes place over the period of installation from delivery through customer acceptance, measured on a straight-line basis, as our performance is satisfied evenly over this period of time.

Under IAS 18 royalty revenue was recognized on an accrual basis in accordance with the substance of the relevant agreement. Under IFRS 15 fixed priced royalty revenue is recognized at a point in time, with a point in time being the transfer of control.

The Company's accounting policies for its revenue streams are disclosed in detail in section accounting policies below. Apart from providing more extensive disclosures for the revenue transaction, the application of IFRS 15 has not had a significant impact on the financial position and/or financial performance of the Company. The impact on retained earnings, financial position line items and statement of profit or loss and other comprehensive income (OCI) is shown in the tables below.

The following table summarizes the impact of adopting IFRS 15 on the Company's statement of financial position as at December 31, 2018 and its statement of profit or loss and OCI for the year then ended for each of the line items affected. There was no material impact on the Company's statement of cash flows for the year ended December 31, 2018.

Impact on consolidated statement of financial position

	DECEMBER 31, 2018		
(EUR thousand)	AS REPORTED	IMPACT	AMOUNTS WITHOUT ADOPTION OF IFRS 15
Assets			
Inventories	171,826	15,226	**187,052**
Trade and other receivables	218,451	(24,579)	**193,872**
Others	1,457,695	(15,225)	**1,442,470**
TOTAL ASSETS	**1,847,972**	**(24,578)**	**1,823,394**
Retained earnings	1,800,808	(10,536)	**1,790,272**
Opening balance	15,992	(15,992)	**–**
Others	(175,249)	(472)	**(175,721)**
TOTAL EQUITY	**1,641,551**	**(27,000)**	**1,614,551**
Liabilities			
Trade and other payables	151,378	(837)	**150,541**
Deferred revenue	28,255	7,639	**35,894**
Others	26,788	(4,380)	**22,408**
TOTAL LIABILITIES	**206,421**	**2,422**	**208,843**
TOTAL EQUITY AND LIABILITIES	**1,847,972**	**(24,578)**	**1,823,394**

Impact on the consolidated statement of profit or loss and OCI

	DECEMBER 31, 2018		
(EUR thousand)	AS REPORTED	IMPACT	AMOUNTS WITHOUT ADOPTION OF IFRS 15
CONTINUING OPERATIONS			
Revenue	818,081	(25,976)	**792,105**
Cost of sales	(483,784)	11,760	**(472,024)**
Income tax expense	(15,436)	4,318	**(11,118)**
Others	(161,728)	(638)	**(162,366)**
PROFIT FOR THE PERIOD	**157,133**	**(10,536)**	**146,597**
TOTAL COMPREHENSIVE INCOME	**202,986**	**(10,536)**	**192,450**

IFRS 9 Financial Instruments

IFRS 9 sets out requirements for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items. This standard replaces IAS 39 Financial Instruments: Recognition and Measurement.

IFRS 9 largely retains the existing requirements in IAS 39 for the classification and measurement of financial liabilities. However, it eliminates the previous IAS 39 categories for financial assets of held to maturity, loans and receivables and available for sale. The adoption of IFRS 9 has not had a significant effect on the Company`s accounting policies related to financial assets, financial liabilities and derivative financial instruments.

IFRS 9 replaces the 'incurred loss' model in IAS 39 with an 'expected credit loss' (ECL) model. The new impairment model applies to financial assets measured at amortized cost and contract assets. Under IFRS 9, credit losses are recognized earlier than under IAS 39. We have applied the expected credit loss model and we did not identify additional loss as a result of the adoption.

Management has assessed the impact of the implementation of IFRS 9 on the consolidated financial statements and has concluded the effect not to be material.

New and revised IFRS in issue but not yet effective

The Company has not applied the following new and revised IFRS that have been issued but are not yet effective:

- IFRS 16 Leases[1];
- IFRS 17 Insurance Contracts[2];
- Amendments to IFRS 9;
- Amendments to IAS 28;
- Annual improvements to IFRS Standards 2015-2017 Cycle;
- Amendments to IAS 19 Emloyee benefits;
- Amendments to References to Conceptual Framework in IFRS Standards; and
- IFRIC 23 uncertainty over Income tax treatment.

Management does not expect that the adoption of the Standards listed above will have a material impact on the financial statements of the group in future periods, except as noted below.

IFRS 16 Leases

The Company is required to adopt IFRS 16 Leases as of January 1, 2019. The Company has assessed the estimated impact that initial application of IFRS 16 will have on its consolidated financial statements, as described below. The actual impacts of adopting the standard on January 1, 2019 may change because:

- the Company has not finalized the testing and assessment of controls over its new IT systems;
- the actual impact can change because the tax effect implications of recognizing the right-of-use assets and lease liabilities are still being calculated by management; and
- the new accounting policies are subject to change until the Company presents its first financial statements that include the date of initial application.

General impact of application of IFRS 16 Leases

IFRS 16 introduces a single, on-balance sheet lease accounting model for lessees. A lessee recognizes a right-of-use asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. Lessor accounting remains similar to the current accounting but is not applicable to the Company.

[1] Effective for annual periods beginning on or after January 1, 2019, with earlier application permitted.

[2] Effective for annual periods beginning on or after January 1, 2021, with earlier application permitted.

Transition

The Company will apply IFRS 16 initially on January 1, 2019, using the modified retrospective approach. Therefore, the cumulative effect of adopting IFRS 16 will be recognized as an adjustment to the opening balance of retained earnings at January 1, 2019, with no restatement of comparative information.

The Company plans to apply the practical expedient to grandfather the definition of a lease on transition. This means that it will apply IFRS 16 to all contracts entered into before January 1, 2019 and identified as leases in accordance with IAS 17 and IFRIC 4.

Impact on Lessee Accounting

IFRS 16 will change how the Company accounts for leases previously classified as operating leases under IAS 17, which were off-balance sheet. The Company has leases related to land, buildings, houses, cars, etc..

Under IFRS 16, for all leases (except as noted below), the Company will:

- recognize right-of-use assets and lease liabilities in the consolidated statement of financial position, initially measured at the present value of the future lease payments;
- recognize depreciation of right-of-use assets and interest on lease liabilities in the consolidated statement of profit or loss; and
- reclassify cash flows related to lease payments. The repayment of the liability and the interest component will be presented as “cash flows from financing activities” in the consolidated statement of cash flows.

Right-of-use assets will be tested for impairment in accordance with IAS 36 Impairment of Assets.

For short-term leases (lease term of 12 months or less) and leases of low-value assets (up to the amount of €5 thousand asset value, such as water purifiers and air cleaners), the Company will opt to recognize a lease expense on a straight-line basis as permitted by IFRS 16.

Based on the information currently available, the Company estimates that it will recognize right-of-use assets and lease liabilities of €26 million as at January 1, 2019.

ACCOUNTING POLICIES

The Company has consistently applied the following accounting policies to all periods presented in these consolidated financial statements.

Consolidation

The consolidated financial statements include the accounts of ASMI and all of its subsidiaries where ASMI holds a controlling interest. Non-controlling interest is disclosed separately, where appropriate, in the consolidated financial statements.

Control is achieved when ASMI has:

- the power over an investee;
- exposure, or rights, to variable returns from its involvement with the investee; and
- the ability to use its power over the investee to affect the amount of the investor's returns.

ASMI reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control listed above.

As from the date these criteria are met, financial data of the relevant subsidiary are included in the consolidation and deconsolidated from the date on which ASMI's control ceases.

Loss of control

Upon loss of control, ASMI derecognizes the assets and liabilities of the subsidiary. Any surplus or deficit arising on the loss of control is recognized in profit or loss. If ASMI retains any interest in this subsidiary, then such interest is measured at fair value at the date on which control is lost. Subsequently, it is accounted for as an equity-accounted investee or as an available-for-sale financial asset, depending on the level of influence retained.

Subsidiaries

Subsidiaries are entities controlled by the Company. 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.

Interests in equity-accounted investees

The Company's interests in equity-accounted investees comprise investments in associates.

Associates are those entities in which the Company has significant influence, but not control or joint control, over the financial and operating policies.

Interests in associates are accounted for using the equity method. They are initially recognized at cost, which includes transaction costs. Upon acquisition of the investment in an associate, any excess of the cost of the investment over the Company's share of the net fair value of the identifiable assets and liabilities of the investee is recognized as goodwill, which is included in the carrying amount of the investment.

Subsequent to initial recognition, the consolidated financial statements include the Company's share of the profit or loss and other comprehensive income (OCI) of equity-accounted investees, until the date on which significant influence ceases.

Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealized income and expenses arising from intra-group transactions, are eliminated. Unrealized gains arising from transactions with equity-accounted investees are eliminated against the investment to the extent of the Company's interest in the investee. Unrealized losses are eliminated in the same way as unrealized gains, but only to the extent that there is no evidence of impairment.

Foreign currency translation

The individual financial statements of each group entity are presented in their local functional currency. For the purpose of the consolidated financial statements, the results and financial position of each entity is expressed in euros, which is ASMI's functional currency and the presentation currency for the consolidated financial statements.

Foreign currency transactions

In preparing the financial statements of the individual entities, transactions in foreign currencies are recorded at the exchange rates on the date of the transactions. At each balance sheet date, monetary items denominated in foreign currencies are translated at the rates prevailing on the balance sheet date. Non-monetary items carried at fair value that are denominated in foreign currencies are translated at the rates prevailing on the date when the fair value was determined.

Exchange rate differences arising on the settlement of monetary items, and on the translation of monetary items, are recognized in the consolidated statement of profit or loss in the period in which they arise. Exchange rate differences arising on the translation of non-monetary items carried at fair value are recognized in the consolidated statement of profit or loss for the period except for differences arising on the translation of non-monetary items in respect of which gains and losses are recognized directly in equity.

Foreign operations

For the purpose of presenting consolidated financial statements, assets and liabilities of foreign operations are translated into euro at the exchange rates at the reporting date. The income and expenses of foreign operations are translated into euro at the exchange rates at the dates of the transactions.

Foreign currency differences are recognized in OCI and accumulated in the translation reserve, except to the extent that the translation difference is allocated to non-controlling interest.

When a foreign operation is disposed of in its entirety or partially such that control or significant influence is lost, the cumulative amount in the translation reserve related to that foreign operation is reclassified to profit or loss as part of the gain or loss on disposal. If the Company disposes of part of its interest in a subsidiary but retains control, then the relevant proportion of the cumulative amount is reattributed to non-controlling interest. When the Company disposes of only part of an associate while retaining significant influence, the relevant proportion of the cumulative amount is reclassified to profit or loss.

Segment reporting

The Back-end segment is still reported as a separate segment after the Company ceased control on March 15, 2013, since the full results of the Back-end segment are continued to be reviewed by our Chief Operating Decision Maker (CODM).

The Company organizes its activities in two operating segments, Front-end and Back-end. Operating segments are reported in a manner consistent with the internal reporting provided to the Chief Executive Officer (CEO), which is the CODM. Operating segments are in line with the reporting segments.

Accordingly, the asset and profit or loss information regarding the operations that comprise the segment are disclosed. The full financial results are reviewed by the CODM, the external reporting of the segment is on an equity method investment basis. The total of all segments' financial amounts are reconciled to the corresponding amounts reported in the consolidated financial statements, eliminations are reflected in the reconciling column for amounts reported in excess of those amounts reflected in the consolidated financial statements.

The Front-end segment manufactures and sells equipment used in wafer processing, encompassing the fabrication steps in which silicon wafers are layered with semiconductor devices. The segment is a product driven organizational unit comprised of manufacturing, service, and sales operations in Europe, the United States, Japan, South Korea and Southeast Asia.

The Back-end segment manufactures and sells equipment and materials used in assembly and packaging, encompassing the processes in which silicon wafers are separated into individual circuits and subsequently assembled, packaged and tested. The segment is organized in ASM Pacific Technology Ltd, in which the Company holds a 25.33% interest, whilst the remaining shares are listed on the Stock Exchange of Hong Kong.

Property, plant and equipment

Items of property, plant and equipment are measured at cost, which includes capitalized borrowing costs, less accumulated depreciation and any accumulated impairment losses.

If significant parts of an item of property, plant and equipment have different useful lives, then they are accounted for as separate items (major components) of property, plant and equipment.

Depreciation is calculated to write off the cost of items of property, plant and equipment less their estimated residual values using the straight-line method over their estimated useful lives, and is generally recognized in profit or loss. The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimate accounted for on a prospective basis.

The estimated useful lives of property, plant and equipment for current and comparative periods are as follows:

Land, building and leasehold improvements	0-25 years
Machinery equipment	2-10 years
Furniture and fixtures and other equipment	2-10 years

An item of property, plant and equipment is recognized upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss on disposal of an item of property, plant and equipment is recognized in profit or loss.

Intangible assets

Goodwill

The Company accounts for business combinations using the acquisition method when control is transferred to the Company. The consideration transferred in the acquisition is generally measured at fair value, as are the identifiable net assets acquired. Any goodwill that arises is tested annually for impairment. Transaction costs are expensed as incurred.

Goodwill represents the excess of the costs of an acquisition over the fair value of the amounts assigned to assets acquired and liabilities incurred or assumed of the acquired subsidiary at the date of acquisition. Goodwill on acquisition of subsidiaries is allocated to cash generating units (CGUs) for the purpose of impairment testing. The allocation is made to those CGUs that are expected to benefit from the business combination in which the goodwill arose. Goodwill is tested for impairment annually and whenever events or changes in circumstances indicate that the carrying amount of the goodwill may not be recoverable. If the recoverable amount of the CGU is less than the carrying amount of the unit, the impairment loss is recognized. An impairment loss recognized for goodwill is not reversed in a subsequent period. Goodwill is stated at cost less accumulated impairment losses.

The Company's policy for goodwill arising on the acquisition of an associate is described in Note 6 'Investments in Associates'.

Other intangible assets

Other intangible assets include capitalized development expenses, software, purchased technology and remaining other intangible assets. Other intangible assets that are acquired by the Company with finite useful lives are measured at cost less accumulated amortization and any accumulated impairment losses.

Expenditure on research activities is recognized in profit or loss as incurred.

In determining the capitalization of development expenses, the Company makes estimates and assumptions based on expected future economic benefits generated by products that are the result of these development expenses. Other important estimates and assumptions are the required internal rate of return, the distinction between research, development and high-volume manufacturing and the estimated useful life.

Development expenses are capitalized when all of the following criteria are demonstrated:

- the technical feasibility of completing the intangible asset so that it will be available for use or sale;
- its intention to complete the intangible asset and use or sell it;
- its ability to use or sell the intangible asset;
- how the intangible asset will generate probable future economic benefits;
- the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
- its ability to reliably measure the expenditure attributable to the intangible asset during its development.

The Company capitalizes development expenses that meet the above-mentioned criteria in its consolidated financial statements. Subsequent to initial recognition, internally-generated intangible assets are reported at cost less accumulated amortization and accumulated impairment losses, on the same basis as intangible assets that are acquired separately.

Amortization of capitalized development expenses is calculated using the straight-line method over the estimated useful lives of the developed product. Amortization starts when the developed product is transferred to high-volume manufacturing.

Amortization method, useful life and residual value are reviewed at each reporting date and adjusted if appropriate.

The estimated useful lives of other intangible assets for current and comparative periods are as follows:

Development cost	5 years
Software	3 years
Purchased technology and other intangible assets	5-7 years

Investments in associates

Investments in associates are investments in entities in which ASMI can exert significant influence but which ASMI does not control, generally having between 20% and 50% of the voting rights. These entities are accounted for using the equity method and are initially recognized at cost. Dividend income from the Company's associated companies is recognized when the right to receive payment is established. Their carrying value includes goodwill identified upon acquisition, net of any accumulated impairment.

When ASMI's share of losses in an associate equals or exceeds its interest in the associate, including any other receivables for which settlement is neither planned nor likely to occur in the foreseeable future, ASMI does not recognize further losses, unless ASMI has obligations to or made payments on behalf of the associate.

At each reporting date, the Company determines if there is any objective evidence that the associate is impaired. An impairment, being the difference between the recoverable amount of the associate and its carrying value, is recognized in the consolidated statement of profit or loss.

ASMI does not separately test associates' underlying assets for impairment. However, ASMI recognizes its share of any impairment charge recorded by an investee and considers the effect, if any, of the impairment on the basis difference in the assets giving rise to the investee's impairment charge. A loss in value of an investment which is significant or prolonged will be recognized. Significant is defined as at least 20% over an uninterrupted period of nine months, or more than 40% on the reporting date. Prolonged is defined as measured below cost for more than a year.

Equity method investments are tested for prolonged decline in value. If the fair value of an investment is less than its carrying value, the Company determines whether the decline in value is temporary or prolonged. A prolonged decline in value is measured as of a balance sheet date. If after a prior recognized impairment the fair value is more than its carrying value, this impairment is reversed. The determination of whether an investment is impaired is made at the individual security level in each reporting period.

Evaluation tools at customers

Evaluation tools at customers are systems generally delivered to customers under evaluation and include substantial customization by our engineers and R&D staff in the field. Evaluation tools are recorded at cost and depreciated using the straight-line method over their estimated useful life of five years, or their shorter economic life. The depreciation expenses are reported as cost of sales.

On final acceptance from the customer, the purchase consideration is recognized as revenue and the carrying value of the evaluation system is recognized as cost of sales. In the circumstance that the system is returned, at the end of the evaluation period, a detailed impairment review takes place, and future sales opportunities and additional costs are identified. It is only when the fair value is below the carrying value of the evaluation tool that an additional depreciation is recognized. The remaining carrying value is recognized as finished goods (inventory).

Inventories

Inventories are stated at the lower of cost or net realizable value. The cost of inventories is based on the first-in, first-out principle. Costs include net prices paid for materials purchased, charges for freight and custom duties, production labor costs and factory overhead. Allowances are made for slow-moving, obsolete or unsellable inventory.

Allowances for obsolescence of inventory are determined based on the expected demand as well as the expected market value of the inventory. We regularly evaluate the value of our inventory of components and raw materials, work in progress and finished goods, based on a combination of factors including the following: forecasted sales, historical usage, product end of life cycle, estimated current and future market values, service inventory requirements and new product introductions, as well as other factors. Purchasing requirements and alternative uses for the inventory are explored within these processes to mitigate inventory exposure. We record write-downs for inventory based on the above factors and take into account worldwide quantities and demand into our analysis.

Financial instruments

The Company classifies non-derivative financial assets into loans and receivables. The Company classifies non-derivative financial liabilities into other financial liabilities.

Non-derivative financial assets and financial liabilities – Recognition and derecognition

The Company initially recognizes receivables on the date when they are originated. Receivables comprise account (trade) and other receivables and cash and cash equivalents. Receivables are measured at amortized cost using the effective interest method, less any impairment. Financial assets and financial liabilities are initially recognized on the trade date when the entity becomes a party to the contractual provisions of the instrument.

The Company derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred, or it neither transfers nor retains substantially all of the risks and rewards of ownership and does not retain control over the transferred asset. Any interest in such derecognizes a financial asset that is created or retained by the Company is recognized as a separate asset or liability.

The Company derecognizes a financial liability when its contractual obligations are discharged or cancelled, or expired.

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Company currently has a legally enforceable right to offset the amounts and intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

Non-derivative financial assets – Measurement

Loans and receivables are initially measured at fair value plus any directly attributable transaction costs. Subsequent to initial recognition, they are measured at amortized cost using the effective interest method.

Account receivable

A significant percentage of our accounts receivable is derived from sales to a limited number of large multinational semiconductor device manufacturers located throughout the world. In order to monitor potential credit losses, we perform ongoing credit evaluations of our customers' financial condition. An allowance for doubtful accounts is maintained for potential credit losses based upon management's assessment of the expected collectability of all accounts receivable. The allowance for doubtful accounts is reviewed periodically to assess the adequacy of the allowance. In making this assessment, management takes into consideration any circumstances of which we are aware regarding a customer's inability to meet its financial obligations; and our judgments as to potential prevailing economic conditions in the industry and their potential impact on the Company's customers.

The allowance is based on historical experience, credit evaluations, specific customer collection history and any customer-specific issues ASMI has identified. Changes in circumstances, such as an unexpected adverse material change in a major customer's ability to meet its financial obligation to ASMI or its payment trends, may require us to further adjust our estimates of the recoverability of amounts due to ASMI, which could have an adverse material effect on ASMI's financial condition and results of operations.

Cash and cash equivalents

Cash and cash equivalents consist of deposits held at call with banks, investments in money market funds that invest in debt securities of financial institutions and other short-term highly liquid investments with original maturity of three months or less. Bank overdrafts are included in notes payable to banks in current liabilities.

Non-derivative financial liabilities – Measurement

Other non-derivative financial liabilities are initially measured at fair value less any directly attributable transaction costs. Subsequent to initial recognition, these liabilities are measured at amortized cost using the effective interest method.

Share capital

Ordinary shares

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of ordinary shares are recognized as a deduction from equity, net of any tax effects.

Preference share capital

Preference share capital is classified as equity if it is non-redeemable, or redeemable only at the Company's option, and any dividends are discretionary. Discretionary dividends thereon are recognized as distributions within equity upon approval by the Company's shareholders.

Preference share capital is classified as a financial liability if it is redeemable on a specific date or at the option of the shareholders, or if dividend payments are not discretionary. Non-discretionary dividends thereon are recognized as interest expense in profit or loss as accrued.

Repurchase and reissue of ordinary shares (treasury shares)

When shares recognized as equity are repurchased, the amount of the consideration paid, which includes directly attributable costs, is recognized as a deduction from equity. Repurchased shares are classified as treasury shares and are presented in the treasury share reserve. When treasury shares are sold or reissued subsequently, the amount received is recognized as an increase in equity and the resulting surplus or deficit on the transaction is presented in a non-distributable capital reserve.

Issuance of shares by an equity accounted investee

The associate ASMPT yearly issues common shares pursuant to their employee share incentive scheme. The effect of these issuances is a dilution of the Company's ownership in ASMPT. The Company recognizes the impact of these issuances directly into equity.

Comprehensive income

Comprehensive income consists of net earnings (loss) and other comprehensive income. Other comprehensive income includes gains and losses that are not included in net earnings, but are recorded directly in equity.

Provisions

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that the Company will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

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 the risks specific to the liability. The unwinding of the discount is recognized as finance cost.

Impairment

Non-derivative financial assets

Financial assets not classified as at fair value through profit or loss, including an interest in an equity-accounted investee, are assessed at each reporting date to determine whether there is objective evidence of impairment.

Objective evidence that financial assets are impaired includes, default or delinquency by a debtor, restructuring of an amount due to the Company on terms that the Company would not consider otherwise, indications that a debtor or issuer will enter bankruptcy, adverse changes in the payment status of borrowers or issuers, the disappearance of an active market for a security because of financial difficulties, or observable data indicating that there is a measurable decrease in the expected cash flows from a group of financial assets.

Loans and receivables

The Company considers evidence of impairment for these assets at both an individual asset and a collective level. All individually significant assets are individually assessed for impairment. Those found not to be impaired are then collectively assessed for any impairment that has been incurred but not yet individually identified.

The impairment method for account receivables is described at Note 9 Accounts Receivable.

Equity-accounted investees

An impairment loss in respect of an equity-accounted investee is measured by comparing the recoverable amount of the investment with its carrying amount. An impairment loss is recognized in profit or loss, and is reversed if there has been a favorable change in the estimates used to determine the recoverable amount.

Non-financial assets

At each reporting date, the Company reviews the carrying amounts of its non-financial assets (other than biological assets, investment property, inventories and deferred tax assets) to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Goodwill is tested annually for impairment.

For impairment testing, assets are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or CGUs. Goodwill arising from a business combination is allocated to CGUs or groups of CGUs that are expected to benefit from the synergies of the combination.

The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs to sell. Value in use is based on the estimated future cash flows, 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 or CGU.

An impairment loss is recognized if the carrying amount of an asset or CGU exceeds its recoverable amount.

Impairment losses are recognized in profit or loss. They are allocated first to reduce the carrying amount of any goodwill allocated to the CGU, and then to reduce the carrying amounts of the other assets in the CGU on a pro rata basis.

An impairment loss in respect of goodwill is not reversed. For other assets, 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.

Commitments and contingencies

The Company has various contractual obligations such as operating lease commitments, purchase commitments and commitments for capital expenditure. These obligations are generally not recognized as liabilities on the Company's statement of financial position but are disclosed in the Notes to the financial statements.

Revenue recognition

The effect of initially applying IFRS 15 on the Company's revenue from contracts with customers is described above in the section New and amended IFRS Standards that are effective for the current year.

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

Revenue streams

The Company generates revenue primarily from the sales of equipment and sales of spares & services. The products and services described below by nature, can be part of both revenue streams. The revenue streams will be disclosed in note 21.

Nature of goods and services

The following is a description of principal activities from which the group generates its revenue.

PRODUCTS AND SERVICES	NATURE, TIMING OF SATISFACTION OF PERFORMANCE OBLIGATION AND SIGNIFICANT PAYMENT TERMS
EQUIPMENT	Revenue from equipment is recognized at a point in time when the performance obligation is satisfied, when the control transfers. This is usually upon shipment. The amount of revenue recognized is based on the amount of the transaction price that is allocated to the performance obligation. Any customer discounts and credits, within volume purchase agreements or bundled agreements, are considered as a reduction of the transaction price.
INSTALLATION	The customer simultaneously consumes and receives the benefits provided by the performance of the installation. As such, transfer of control takes place over the period of installation from delivery through customer acceptance, measured on a straight-line basis, as our performance is satisfied evenly over this period of time.
SPARES	Revenue from spares is recognized at a point in time when the performance obligation is satisfied, when the control transfers. This is usually upon shipment. The amount of revenue recognized is based on the amount of the transaction price that is allocated to the performance obligation. Any customer discounts and credits, within a volume purchase agreements, are considered as a reduction of the transaction price.
REVENUE ON ROYALTIES AND LICENSES	The fixed price royalty is a right to use the licenses and revenue is recognized at a point in time, with the point in time being the point that the license is transferred to the customer. For the sales-based royalty the performance obligation is satisfied when the license is transferred to the customer. Given this is earlier than when the sales occurs, revenue should be recognized when the sales occur.
TRAINING AND TECHNICAL SUPPORT	The customer simultaneously consumes and receives the benefits provided by the performance of the training or technical support. As such, transfer of control takes place over the period of training or technical support.

Contract balances

	2017	2018
Accrued revenue	1,509	**20,201**
Deferred revenue	9,879	**28,255**

The accrued revenue included in the 'Amounts to be invoiced' primarily relate to the Company's right to consideration for work completed and revenue recognized but not billed at the reporting date. The accrued revenue are transferred to account receivables when the rights become unconditional. This usually occurs when the Company issues an invoice to the customer.

Deferred revenue relate to the advance consideration received from customers for which revenue is not yet recognized because the performance obligation has not been satisfied yet. Deferred revenue consists of the revenue relating to undelivered elements of the arrangement with customers. This part of the revenue is deferred at the transaction price allocated to the performance obligations until shipment.

The amount of €6.7 million recognized in deferred revenue at the beginning of the period has been recognized as revenue for the period ended December 31, 2018.

Management expects that 99% of the transaction price allocated to the unsatisfied contracts as of the year ended 2018 will be recognized as revenue during the next reporting period. The remaining 1% will be recognized in 2020 and onward.

Cost of sales

Cost of sales comprise direct costs such as labor, materials, cost of warranty, depreciation, shipping and handling costs and related overhead costs. Cost of sales also includes third party commission, depreciation expenses of evaluation tools at customers, royalty payments and costs relating to prototype and experimental products, which the Company may subsequently sell to customers. Costs of warranty include the cost of labor and material necessary to repair a product during the warranty period.

Warranty

We provide maintenance on our systems during the warranty period, on average one year. Costs of warranty include the cost of labor and material necessary to repair a product during the warranty period. We accrue for the estimated cost of the warranty on products shipped in a provision for warranty, upon recognition of the sale of the product. The costs are estimated based on historical expenses incurred and on estimated future expenses related to current sales, and are updated periodically. Actual warranty costs are charged against the provision for warranty. The actual warranty costs may differ from estimated warranty costs, and we adjust our provision for warranty accordingly. Future warranty costs may exceed our estimates, which could result in an increase of our cost of sales.

Income tax

Income tax expense comprises current and deferred tax. It is recognized in the statement of profit or loss except to the extent that it relates to a business combination, or items recognized directly in equity or in other comprehensive income.

Current tax

The current corporate income tax charge recognized in the consolidated statement of profit or loss is calculated in accordance with the prevailing tax regulations and rates, taking into account non-taxable income and non-deductible expenses. The current income tax expense reflects the amount for the current reporting period that the Company expects to recover from or pay to the tax authorities. Current income tax related to items recognized directly in equity is recorded in equity and not in the consolidated statement of profit or loss. ASMI's management periodically evaluates positions taken in the tax returns regarding situations in which applicable tax regulations are subject to interpretation, and establishes provisions when deemed appropriate. Current tax also includes any tax arising from dividends.

Current tax assets and liabilities are offset only if certain criteria are met (IAS 12).

Deferred tax

Deferred income tax positions are recognized for temporary differences between the tax basis of assets and liabilities and their carrying values in ASMI's consolidated statement of financial position.

Deferred tax assets are recognized for all deductible temporary differences, the carry forward of unused tax credits and any unused tax losses. Deferred tax assets are recognized only to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilized. Both the recognized and unrecognized deferred tax assets are reassessed at each reporting date. Deferred tax assets are recorded for deductible temporary differences associated with investments in subsidiaries and are recorded only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized.

Deferred tax liabilities are recognized for all taxable temporary differences except when they affect neither the profit or loss reported in the consolidated statement of profit or loss nor the taxable profit or loss. Also, no deferred tax liabilities are recorded for taxable temporary differences associated with investments in subsidiaries when the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred tax positions are stated at nominal value and are measured at the corporate income tax rates the Company expects to be applicable in the year when the asset is realized or liability is settled based on enacted or substantially enacted tax laws.

Deferred income tax assets and liabilities are netted if there is a legally enforceable right to set off current tax assets against current tax liabilities, deferred income tax assets and deferred income tax liabilities relate to income taxes levied by the same taxation authority on the same taxable entity, and there is an intention to settle on a net basis.

We recognize a liability for uncertain tax positions when it is probable that an outflow of economic resources will occur. Measurement of the liability for uncertain tax positions is based on management's best estimate of the amount of tax benefit that will be lost.

Retirement benefit costs

The Company has retirement plans covering substantially all employees. The principal plans are defined contribution plans, except for the plans of the Company's operations in the Netherlands and Japan. The Company's employees in the Netherlands participate in a multi-employer defined benefit plan. Payments to defined contribution plans and the multi-employer plan are recognized as an expense in the consolidated statement of profit or loss as they fall due. The Company accounts for the multi-employer plan as if it were a defined contribution plan since the manager of the plan is not able to provide the Company with the required Company-specific information to enable the Company to account for the plan as a defined benefit plan.

The Company's employees in Japan participate in defined benefit plans. Pension costs in respect to this defined benefit plan are determined using the projected unit credit method. These costs primarily represent the increase in the actuarial present value of the obligation for pension benefits based on employee service during the year and the interest on this obligation in respect to employee service in previous years, net of the expected return on plan assets.

For the defined benefit plan the Company recognizes in its consolidated statement of financial position an asset or a liability for the plan's over-funded status or underfunded status respectively. Actuarial gains and losses are recognized when incurred.

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.

Share-based payments

The costs relating to employee stock options and shares (compensation expense) are recognized based upon the grant date fair value of the stock options or the shares. The fair value at grant date of employee stock options is estimated using a Black-Scholes option valuation model. This model requires the use of assumptions including expected stock price volatility, the estimated life of each award and the estimated dividend yield. The risk-free interest rate used in the model is determined, based on a euro government bond with a life equal to the expected life of the options. The estimated fair value at grant date of shares is based on the share price of the ASMI share at grant date minus the discounted value of expected dividends during the vesting period.

The grant date fair value of the stock options and shares is expensed on a straight-line basis over the vesting period, based on the Company's estimate of stock options and shares that will eventually vest. The impact of the true up of the estimates is recognized in the consolidated statement of profit or loss in the period in which the revision is determined. The total estimated share-based compensation expense, determined under the fair value based method is amortized proportionally over the option vesting periods.

Operating lease

Determining whether an arrangement contains a lease

Leases are classified as finance leases whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases. At inception of an arrangement, the Company determines whether the arrangement is or contains a lease.

Lease payments

Payments made under operating leases (net of any incentives received from the lessor) are recognized in the statement of profit or loss on a straight-line basis over the term of the lease.

NOTE 2. SUBSIDIARIES

Unless otherwise indicated, these are, directly or indirectly, wholly-owned subsidiaries.

The location included below is the principal place of business of the specified subsidiaries. There is no difference between the principal place of business and country of incorporation.

NAME	LOCATION	% OWNERSHIP DECEMBER 31, 2017	2018
Subsidiaries (consolidated)			
ASM Europe BV [1]	Almere, the Netherlands	100%	**100%**
ASM IP Holding BV [1]	Almere, the Netherlands	100%	**100%**
ASM Pacific Holding BV [1] [2]	Almere, the Netherlands	100%	**100%**
ASM Netherlands Holding BV [1]	Almere, the Netherlands	100%	**100%**
ASM United Kingdom Sales BV [1]	Almere, the Netherlands	100%	**100%**
ASM Germany Sales BV [1]	Almere, the Netherlands	100%	**100%**
ASM France SARL	Crolles, France	100%	**100%**
ASM Italia Srl	Milano, Italy	100%	**100%**
ASM Belgium NV	Leuven, Belgium	100%	**100%**
ASM Services and Support Ireland Ltd	Dublin, Ireland	100%	**100%**
ASM Services and Support Israel Ltd	Kiryat Gat, Israel	100%	**100%**
ASM Microchemistry Oy	Helsinki, Finland	100%	**100%**
ASM America Inc	Phoenix, Arizona, United States of America	100%	**100%**
ASM NuTool Inc	Phoenix, Arizona, United States of America	100%	**100%**
ASM Japan KK	Tokyo, Japan	100%	**100%**
ASM Wafer Process Equipment Singapore Pte Ltd	Singapore	100%	**100%**
ASM Front-End Manufacturing Singapore Pte Ltd	Singapore	100%	**100%**
ASM Services & Support Malaysia SDN BHD	Kulim, Malaysia	100%	**100%**
ASM Korea Ltd	Dongtan, South Korea	100%	**100%**
ASM Front-End Sales & Services Taiwan Co Ltd	Hsin-Chu, Taiwan	100%	**100%**
ASM China Ltd	Shanghai, People's Republic of China	100%	**100%**
ASM Wafer Process Equipment Ltd	Kwai Chung, Hong Kong, People's Republic of China	100%	**100%**

1 For these subsidiaries ASM International N.V. has filed statements at the Dutch Chamber of Commerce assuming joint and several liability in accordance with Article 403, Part 9 of Book 2 of the Dutch Civil Code.
2 ASM Pacific Holding BV holds 25.33% of the shares in ASM Pacific Technology Ltd.

NOTE 3. PROPERTY, PLANT AND EQUIPMENT

The changes in the amount of property, plant and equipment are as follows:

	LAND, BUILDINGS AND LEASEHOLD IMPROVEMENTS	MACHINERY, EQUIPMENT	FURNITURE AND FIXTURES AND OTHER EQUIPMENT	ASSETS UNDER CONSTRUCTION	TOTAL
At cost					
BALANCE JANUARY 1, 2017	46,172	178,708	21,971	15,289	262,140
Capital expenditures	225	1,619	790	41,537	44,171
Retirements and sales	(1,643)	(10,308)	(1,201)	–	(13,152)
Transfer from assets under construction	3,244	32,391	904	(36,539)	–
Reclassification to other intangible assets	–	–	66	–	66
Foreign currency translation effect	(3,226)	(16,357)	(1,638)	(1,391)	(22,612)
BALANCE DECEMBER 31, 2017	44,772	186,053	20,892	18,896	270,613
Capital expenditures	130	1,730	1,600	63,602	67,062
Retirements and sales	(1,408)	(13,304)	(466)	–	(15,178)
Transfer from assets under construction	1,064	26,442	1,786	(29,292)	–
Reclassification to other intangible assets	–	–	–	–	–
Foreign currency translation effect	2,071	7,483	1,165	1,196	11,915
BALANCE DECEMBER 31, 2018	46,629	208,404	24,977	54,402	334,412
Accumulated depreciation and impairment					
BALANCE JANUARY 1, 2017	28,030	120,780	18,326	–	167,136
Depreciation for the year	1,959	20,648	1,281	–	23,888
Impairment charges	–	–	–	–	–
Retirements and sales	(1,632)	(9,497)	(1,201)	–	(12,330)
Foreign currency translation effect	(1,871)	(11,457)	(1,385)	–	(14,713)
BALANCE DECEMBER 31, 2017	26,486	120,474	17,021	–	163,981
Depreciation for the year	2,362	21,541	1,758	–	25,661
Impairment charges	–	–	–	–	–
Retirements and sales	(1,013)	(9,953)	(454)	–	(11,420)
Foreign currency translation effect	1,198	5,285	958	–	7,441
BALANCE DECEMBER 31, 2018	29,033	137,347	19,283	–	185,663
Carrying amounts					
DECEMBER 31, 2017	18,286	65,579	3,871	18,896	106,632
DECEMBER 31, 2018	17,596	71,057	5,694	54,402	148,749
Useful lives in years	0-25	2-10	2-10		

NOTE 4. GOODWILL

The carrying amount of the goodwill is related to acquisitions in the following cash generating units:

	DECEMBER 31,	
	2017	2018
ALD	2,611	**2,611**
PEALD	8,659	**8,659**
TOTAL	**11,270**	**11,270**

We perform an annual impairment test on December 31 of each year or if events or changes in circumstances indicate that the carrying amount of goodwill exceeds its recoverable amount. For the Front-end impairment test and the determination of the recoverable amount, a discounted future cash flow approach is used which makes use of our estimates of future revenues, driven by assumed market growth and estimated costs as well as appropriate discount rates.

The material assumptions used for the discounted future cash flows of the cash generating units (CGUs) are:

- an average discount rate of 11.7% (2017: 11.5%) representing the pre-tax weighted average cost of capital;
- external market segment data, historical data and strategic plans to estimate cash flow growth per product line; and
- cash flow calculations are limited to four years of cash flow; after these four years perpetuity growth rates are set based on the market maturity of the products. For a maturing product, the perpetuity growth rates used are 1% or less and for enabling technology products the rate used is 3% or less.

These estimates are consistent with the plans and estimated costs we use to manage the underlying business. Based on this analysis, management concluded that as per December 31, 2018 the recoverable amount of the CGUs exceeded the carrying value. The excess was over 100% for each of the CGUs. Sensitivity analysis demonstrated that no reasonable possible change in estimated cash flows or the discount rate used in calculating the fair value would cause the carrying value of goodwill to exceed the fair value.

For Back-end, goodwill is included in the investment value of ASMPT. For the impairment test, reference is made to Note 6.

NOTE 5. OTHER INTANGIBLE ASSETS

Other intangible assets include capitalized development expenditure, software developed or purchased (including licenses) for internal use and purchased technology from third parties. The changes in the amount of other intangible assets are as follows:

	DEVELOPMENT COSTS	SOFTWARE	PURCHASED TECHNOLOGY AND OTHER INTANGIBLE ASSETS	TOTAL
At cost				
BALANCE JANUARY 1, 2017	**149,694**	**28,438**	**11,829**	**189,961**
Additions	38,615	2,335	58	**41,008**
Reclassification	–	(66)	–	**(66)**
Disposals	–	(242)	–	**(242)**
Foreign currency translation effect	(14,622)	(638)	(387)	**(15,647)**
BALANCE DECEMBER 31, 2017	**173,687**	**29,827**	**11,500**	**215,014**
Additions	49,688	1,058	–	**50,746**
Reclassification	–	–	–	**–**
Disposals	–	–	(2,678)	**(2,678)**
Foreign currency translation effect	8,569	259	93	**8,921**
BALANCE DECEMBER 31, 2018	**231,944**	**31,144**	**8,915**	**272,003**
Accumulated amortization and impairment losses				
BALANCE JANUARY 1, 2017	**63,768**	**16,449**	**9,565**	**89,782**
Amortization for the year	13,288	1,493	678	**15,459**
Impairments	4,337	–	–	**4,337**
Disposals	–	(242)	–	**(242)**
Foreign currency translation effect	(6,627)	(602)	(388)	**(7,617)**
BALANCE DECEMBER 31, 2017	**74,766**	**17,098**	**9,855**	**101,719**
Amortization for the year	12,039	5,240	670	**17,949**
Impairments	1,278	–	–	**1,278**
Disposals	–	–	(2,678)	**(2,678)**
Foreign currency translation effect	3,479	236	93	**3,808**
BALANCE DECEMBER 31, 2018	**91,562**	**22,574**	**7,940**	**122,076**
Carrying amounts				
DECEMBER 31, 2017	**98,921**	**12,729**	**1,645**	**113,295**
DECEMBER 31, 2018	**140,382**	**8,570**	**975**	**149,927**

We perform an annual impairment test on December 31 of each year or if events or changes in circumstances indicate that the carrying amount of development costs exceeds its recoverable amount. A discounted future cash flow approach is used which makes use of our estimates of future revenues, driven by assumed market growth and estimated costs as well as appropriate discount rates. For the impairment test, reference is made to Note 4.

Impairment charges on capitalized development costs are included in operating expenses under research and development. Impairment of capitalized development expenses primarily related to development of new hardware for which customer demand has shifted out in time, and purchased technology which became obsolete. The impairment charges for 2017 and 2018 related to customer specific projects.

Capitalized development costs are amortized over their estimated useful lives of five years, other intangible assets are amortized over their estimated useful lives of three to seven years.

Estimated amortization expenses relating to other intangible assets are as follows:

	DEVELOPMENT COSTS	SOFTWARE	PURCHASED TECHNOLOGY AND OTHER INTANGIBLE ASSETS	TOTAL
2019	16,280	2,588	670	**19,538**
2020	25,648	2,553	285	**28,486**
2021	25,445	2,418	10	**27,873**
2022	24,584	1,003	10	**25,597**
2023	23,412	8	–	**23,420**
Years thereafter	25,013	–	–	**25,013**
TOTAL	**140,382**	**8,570**	**975**	**149,927**

NOTE 6. INVESTMENTS IN ASSOCIATES

The location included below is the principal place of business of the specified associates. There is no difference between the principal place of business and country of incorporation.

		% OWNERSHIP DECEMBER 31,	
NAME	LOCATION	2017	2018
Associates			
Levitech BV	Almere, the Netherlands	26.64%	**26.64%**
ASM Pacific Technology Ltd	Kwai Chung, Hong Kong, People's Republic of China	25.18%	**25.33%**

Levitech BV is valued at nil (2017: nil).

The changes in the investment in associates are as follows:

	ASMPT			
	NET EQUITY SHARE	OTHER (IN)TANGIBLE ASSETS	GOODWILL	TOTAL ASMPT
BALANCE JANUARY 1, 2017	**432,532**	**123,211**	**662,281**	**1,218,024**
Share in net earnings of investments in associates	112,424	–	–	**112,424**
Other comprehensive income of investments in associates	(2,580)	–	–	**(2,580)**
Carrying amount of the divestment	(169,675)	(34,557)	(217,321)	**(421,553)**
Amortization recognized (in)tangible assets	–	(22,811)	–	**(22,811)**
Dividends	(36,458)	–	–	**(36,458)**
Dilution ASMPT share to 25.18%	1,491	(112)	(773)	**606**
Foreign currency translation effect	(32,063)	(11,991)	(73,046)	**(117,100)**
BALANCE DECEMBER 31, 2017	**305,671**	**53,740**	**371,141**	**730,552**
Share in net earnings of investments in associates	60,769	–	–	**60,769**
Other comprehensive income of investments in associates	(1,161)	–	–	**(1,161)**
Reclassification	–	14,587	–	**14,587**
Amortization recognized (in)tangible assets	–	(12,333)	–	**(12,333)**
Dividends	(29,120)	–	–	**(29,120)**
Dilution ASMPT share to 25.33%	489	–	–	**489**
Foreign currency translation effect	7,007	2,067	16,731	**25,805**
BALANCE DECEMBER 31, 2018	**343,655**	**58,061**	**387,872**	**789,588**

On March 15, 2013, the Company divested a controlling stake in its subsidiary ASM Pacific Technology Ltd (ASMPT). After the initial accounting of the sale transaction and related gains, future income from ASMPT was adjusted for the fair value adjustments arising from the basis differences as if a business combination had occurred under IFRS 3R, Business Combinations, i.e. a purchase price allocation (PPA).

The purchase of the associate has been recognized at fair value, being the value of the ASMPT shares on the day of closing of the purchase transaction. The composition of this fair value was determined through a PPA. The PPA resulted in the recognition of intangible assets for customer relationship, technology, trade name, product names and goodwill. For inventories and property, plant & equipment, a fair value adjustment was recognized.

The ASMPT investment is accounted for under the equity method on a go-forward basis. Equity method investments are tested for prolonged impairment. An investment is considered impaired if the fair value of the investment is less than its carrying value.

If the fair value of an investment is less than its carrying value at the balance sheet date, the Company determines whether the impairment is temporary or prolonged. The amount per share recognized as per December 31, 2018 under equity accounting amounts to HK$68.74, whereas the level 1 fair value per share (being the market price of a share on the Hong Kong Stock Exchange) was HK$75.45 as per December 31, 2018. Management concluded that based on quantitative analysis no impairment of its share in ASMPT existed as per December 31, 2018.

In April 2017, the Company divested a 4.9% stake in ASMPT for the proceeds of €246 million. In November 2017, the Company divested a 9.1% stake for the proceeds of €445 million. The Company has accounted for the remaining stake as an associate because the Company continues to have significant influence in ASMPT. The Company was considered to have significant influence over this entity due to the fact that it had board representation.

	2017
Proceeds of divestments	690,660
Plus: realized currency translation adjustment	15,791
Less: carrying amount of divestments	421,553
GAIN RECOGNIZED	**284,898**

During the first half year of 2018, 4,657,600 common shares of ASMPT were canceled and our ownership increased to 25.47%. In December 2018, 2,245,900 common shares of ASMPT were issued, for cash at par value of HK$ 0.10 per share, pursuant to the Employee Share Incentive Scheme of ASMPT. The shares issued under the plan in 2018 have diluted ASMI's ownership in ASMPT to 25.33% as of December 31, 2018.

Per December 31, 2018, the book value of our equity method investment in ASMPT was €790 million. The historical cost basis of our 25.33% share of net assets on the books of ASMPT under IFRS was €344 million as of December 31, 2018, resulting in a basis difference of €430 million. €58 million of this basis difference has been allocated to property, plant and equipment, and intangible assets. The remaining amount was allocated to equity method goodwill. Each individual, identifiable asset will periodically be reviewed for any indicators of potential impairment. We amortize the basis differences allocated to the assets on a straight-line basis, and include the impact within the results of our equity method investments. Amortization and depreciation are adjusted for related deferred tax impacts. Included in net income attributable to ASMI for 2018 was after-tax expense of €12 million, representing the depreciation and amortization of the basis differences.

The market value of our 25.33% investment in ASMPT on December 31, 2018 approximates €867 million.

Summarized 100% earnings information for ASMPT equity method investment excluding basis adjustments (foreign currency exchange rate average 2018 1 HK$: €0.10816, for December 31, 2017: 1 HK$: €0.11378).

(HK$ million)	2017	2018
Net sales	17,523	**19,551**
Income before income tax	3,274	**2,973**
Net earnings	2,796	**2,212**
Other comprehensive income	578	**(270)**
TOTAL COMPREHENSIVE INCOME	**3,374**	**1,942**

Summarized 100% statement of financial position information for ASMPT equity method investment excluding basis adjustments (foreign currency exchange rate per December 31, 2018 was 1 HK$: €0.11151 for December 31, 2017: 1 HK$: €0.10670).

	DECEMBER 31,	
(HK$ million)	2017	2018
Current assets	14,572	**15,168**
Non-current assets	4,029	**5,907**
Current liabilities	4,784	**7,792**
Non-current liabilities	2,439	**1,122**
Equity	11,377	**12,161**

Equity of ASMPT per December 31, 2018 translated into euros at a rate of 0.11151 was €1,356 million (our 25.33% share: €344 million).

The ASMPT Board is responsible for ongoing monitoring of the performance of the Back-end activities. The actual results of the Back-end operating unit are discussed with the ASMPT Audit Committee, which includes the representative of ASMI. The ASMI representative reports to the ASMI Management Board and the Audit Committee of ASMI on a quarterly basis.

Our share of income taxes incurred directly by the associates is reported in result from investments in associates and as such is not included in income taxes in our consolidated financial statements.

NOTE 7. EVALUATION TOOLS AT CUSTOMERS

The changes in the amount of evaluation tools are as follows:

	DECEMBER 31, 2017	DECEMBER 31, 2018
At cost		
BALANCE AT BEGINNING OF YEAR	**49,040**	**44,414**
Evaluation tools shipped	25,082	**35,613**
Evaluation tools sold and returns	(24,770)	**(19,499)**
Foreign currency translation effect	(4,938)	**3,323**
BALANCE AT END OF YEAR	**44,414**	**63,851**
Accumulated depreciation and impairment		
BALANCE AT BEGINNING OF YEAR	**12,446**	**14,704**
Depreciation for the year	8,224	**10,277**
Impairment charges	–	**–**
Evaluation tools sold and returns	(4,621)	**(6,851)**
Foreign currency translation effect	(1,345)	**1,087**
BALANCE AT END OF YEAR	**14,704**	**19,217**
CARRYING AMOUNT AT BEGINNING OF YEAR	**36,594**	**29,710**
CARRYING AMOUNT AT END OF YEAR	**29,710**	**44,634**

Useful lives in years:	5

NOTE 8. INVENTORIES

Inventories consist of the following:

	DECEMBER 31, 2017	DECEMBER 31, 2018
Components and raw materials	104,333	**127,113**
Work in progress	37,047	**36,064**
Finished goods	14,218	**22,013**
TOTAL INVENTORIES, GROSS	**155,598**	**185,190**
Allowance for obsolescence	(12,749)	**(13,364)**
TOTAL INVENTORIES, NET	**142,849**	**171,826**

The changes in the allowance for obsolescence are as follows:

	DECEMBER 31, 2017	DECEMBER 31, 2018
BALANCE AT BEGINNING OF YEAR	**(15,527)**	**(12,749)**
Charged to cost of sales	(6,312)	**(2,958)**
Reversals	4,973	**723**
Utilization of the provision	3,085	**1,978**
Foreign currency translation effect	1,032	**(358)**
BALANCE AT END OF YEAR	**(12,749)**	**(13,364)**

On December 31, 2018, our allowance for inventory obsolescence amounted to €13,364, which is 7.2% of total inventory. The major part of the allowance is related to components and raw materials. The addition for the years 2017 and 2018 mainly relate to inventory items which ceased to be used due to technological developments and design changes which resulted in obsolescence of certain parts.

The cost of inventories recognized as costs and included in cost of sales amounted to €365.8 million (2017: €336.4 million).

NOTE 9. ACCOUNTS RECEIVABLE

A significant percentage of our accounts receivable is derived from sales to a limited number of large multinational semiconductor device manufacturers located throughout the world. In order to monitor potential expected credit losses, we perform ongoing credit evaluations of our customers' financial condition.

The carrying amount of accounts receivable is as follows:

	DECEMBER 31, 2017	DECEMBER 31, 2018
Current	131,688	**154,607**
Overdue <30 days	15,784	**8,802**
Overdue 31-60 days	8,776	**2,258**
Overdue 61-120 days	2,800	**3,507**
Overdue >120 days	4,087	**4,276**
TOTAL	**163,135**	**173,450**

An allowance for doubtful accounts receivable is maintained for potential expected credit losses based upon management's assessment of the expected collectability of all accounts receivable. The allowance for doubtful accounts is reviewed periodically to assess the adequacy of the allowance. In making this assessment, management takes into consideration any circumstances of which we are aware regarding a customer's inability to meet its financial obligations, and our judgments as to potential prevailing economic conditions in the industry and their potential impact on the Company's customers.

The changes in the impairment loss on accounts receivable are as follows:

	DECEMBER 31, 2017	DECEMBER 31, 2018
BALANCE AT BEGINNING OF YEAR	**(94)**	**–**
Charged to selling, general and administrative expenses	–	**(155)**
Utilization of the provision	94	**–**
Foreign currency translation effect	–	**–**
BALANCE AT END OF YEAR	**–**	**(155)**

Accounts receivable are impaired and provided for on an individual basis. As of December 31, 2018, accounts receivable of €19 million were past due but not impaired. These balances are still considered to be recoverable because they relate to customers for whom there is neither recent history of default nor expectation that this will incur.

For further information on credit risk see Note 17.

NOTE 10. OTHER CURRENT ASSETS

Other current assets consist of the following:

	DECEMBER 31, 2017	DECEMBER 31, 2018
Prepayments	8,322	**12,585**
VAT receivable	5,650	**7,789**
Amounts to be invoiced	4,132	**24,366**
Other current assets	961	**261**
TOTAL	**19,065**	**45,001**

NOTE 11. CASH AND CASH EQUIVALENTS

Cash and cash equivalents at December 31, 2018 include deposits with financial institutions that have good credit ratings of €39 million (2017: €112 million), investments in money market funds that invest in debt securities of financial institutions that have good credit rating and governments of €9 million (2017: €467 million) and interest-bearing bank accounts of €238 million (2017: €257 million). Our cash and cash equivalents are predominantly denominated in Euros and US dollars, and partly in Singapore dollars, Korean won, and Japanese yen.

Bank guarantees exist for an amount of €770 at December 31, 2018 (€779 as per December 31, 2017). These guarantees mainly relate to lease and tax payments.

Cash and cash equivalents have insignificant interest rate risk and remaining maturities of three months or less at the date of acquisition. Except for an amount of €3.5 million (2017: €3.4 million), no restrictions on usage of cash and cash equivalents exist. The carrying amount of these assets approximates to their fair value. The Company has not recognised a provision for expected credit loss for cash and cash equivalents due to insignificance amount.

NOTE 12. EQUITY

Our Management Board has the power to issue ordinary shares and (financing) preference shares insofar as the Management Board has been authorized to do so by the Annual General Meeting of Shareholders (AGM). The Management Board requires the approval of the Supervisory Board for such an issue. The authorization by the AGM can only be granted for a certain period. In the case that the AGM has not authorized the Management Board to issue shares, the AGM shall have the power to issue shares.

COMMON SHARES, PREFERRED AND FINANCING PREFERRED SHARES

Following the amendment of the articles of association on August 3, 2018, the authorized capital of the Company amounts to 82,500,000 common shares of €0.04 par value, 88,500 preferred shares of €40 par value and 6,000 financing preferred shares of €40 par value.

The AGM of May 28, 2018, approved the cancellation of 6.0 million treasury shares. This became effective as per August 1, 2018.

As per December 31, 2018, 56,297,394 common shares with a nominal value of €0.04 each were issued and fully paid up, of which 6,978,496 common shares are held by us in treasury. All shares have one vote per €0.04 par value. Treasury shares held by the Company cannot be voted on. Of our 49,318,898 outstanding common shares at December 31, 2018, 49,022,494 are registered with our transfer agent in the Netherlands, ABN AMRO Bank N.V., and 296,404 are registered with our transfer agent in the United States, Citibank, NA, New York.

Financing preferred shares are designed to allow ASMI to finance equity with an instrument paying a preferred dividend, linked to EURIBOR loans and government loans, without the dilutive effects of issuing additional common shares.

Preferred and financing preferred shares are issued in registered form only and are subject to transfer restrictions. Essentially, a preferred or financing preferred shareholder must obtain the approval of the Company's Supervisory Board to transfer shares. If approval is denied, the Supervisory Board will provide a list of acceptable prospective buyers who are willing to purchase the shares at a cash price to be fixed by consent of the Supervisory Board and seller within two months after the approval is denied. If the transfer is approved, the shareholder must complete the transfer within three months, at which time the approval expires.

Preferred shares are entitled to a cumulative preferred dividend based on the amount paid up on such shares. Financing preferred shares are entitled to a cumulative dividend based on the par value and share premium paid on such shares.

As per December 31, 2018 no preferred shares are issued.

PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

On May 28, 2018, the AGM authorized the Company, for an 18-month period, to be calculated from the date of the AGM, to repurchase its own shares up to two times 10% of the issued capital, at a price at least equal to the shares' nominal value and at most a price equal to 110% of the shares' average closing price according to the listing on the Euronext Amsterdam stock exchange during the five trading days preceding the purchase date. For the years preceding the AGM 2018, a one-time 10% repurchase mandate was provided by the AGM. The exception of the additional 10% repurchase mandate was due to the sales of the ASMPT shares as announced on April 24, 2018, and November 2, 2018 and the subsequent share buy-back programs.

As part of these resolutions the Company noted that it was possible that it would temporarily hold in excess of 10% of its own capital if the full repurchase authority as mentioned above would be utilized by the Company. The Company noted that, at the Annual General Meeting in 2019, it would propose to withdraw any and all treasury shares, including the common shares to be repurchased, save for such number of treasury shares as may be necessary to fund ongoing share and option programs for employees and board members which shall in any case represent less than 10% of the issued capital.

On October 26, 2016, ASMI announced a share buyback program to purchase up to an amount of €50 million of its own shares within the 2016-2017 time frame. On March 2, 2017, ASMI announced an increase in the 2016-2017 share buyback program to €100 million. This program started on December 13, 2016 and was completed on August 31, 2017.

The following table provides a summary of shares repurchased by ASMI under this program:

PERIOD	TOTAL NUMBER OF SHARES PURCHASED	AVERAGE PRICE PAID PER SHARE (EUR)	CUMULATIVE NUMBER OF SHARES PURCHASED
Share buyback program 2016-2017:			
December, 2016	153,022	€42.30	153,022
January, 2017	143,498	€43.46	296,520
February, 2017	157,326	€47.56	453,846
March, 2017	330,000	€49.47	783,846
April, 2017	260,658	€51.73	1,044,504
May, 2017	258,400	€55.15	1,302,904
June, 2017	254,000	€53.07	1,556,904
July, 2017	182,000	€52.24	1,738,904
August, 2017	258,618	€49.35	1,997,522
TOTAL	1,997,522	€50.06	

On September 22, 2017, ASMI announced a share buyback program to purchase up to an amount of €250 million of its own shares within the 2017-2018 time frame. The program ended on March 29, 2018.

The following table provides a summary of shares repurchased by ASMI under this program:

PERIOD	TOTAL NUMBER OF SHARES PURCHASED	AVERAGE PRICE PAID PER SHARE (EUR)	CUMULATIVE NUMBER OF SHARES PURCHASED
Share buyback program 2017-2018:			
September, 2017	240,237	€52.81	240,237
October, 2017	823,362	€55.69	1,063,599
November, 2017	714,716	€60.75	1,778,315
December, 2017	863,338	€56.83	2,641,653
January, 2018	703,383	€59.23	3,345,036
February, 2018	885,173	€56.21	4,230,209
March, 2018	123,083	€61.43	4,353,292
TOTAL	4,353,292	€57.43	

On June 5, 2018, ASMI announced a share buyback program to purchase up to an amount of €250 million of its own shares within the 2018 time frame. The 2018 program started on June 6, 2018, and ended on October 11, 2018.

The following table provides a summary of shares repurchased by ASMI under this program:

PERIOD	TOTAL NUMBER OF SHARES PURCHASED	AVERAGE PRICE PAID PER SHARE (EUR)	CUMULATIVE NUMBER OF SHARES PURCHASED
Share buyback program 2018:			
June, 2018	812,515	€51.77	812,515
July, 2018	1,086,008	€47.59	1,898,523
August, 2018	1,234,202	€46.51	3,132,725
September, 2018	1,388,126	€43.46	4,520,851
October, 2018	923,037	€41.74	5,443,888
TOTAL	5,443,888	€45.92	

The following table provides the change in number of treasury shares and outstanding shares:

NUMBER OF SHARES	TREASURY SHARES	OUTSTANDING SHARES
BALANCE AT BEGINNING OF YEAR	6,157,241	56,140,153
Purchase common shares	7,242,734	(7,242,734)
Exercise stock options out of treasury shares	(258,688)	258,688
Vesting restricted shares out of treasury shares	(162,791)	162,791
Cancellation treasury shares	(6,000,000)	–
BALANCE AT END OF YEAR	6,978,496	49,318,898

ASMI intends to use part of the shares for commitments under the employee share-based compensation schemes and the option program for the management board.

The share buyback programs were executed by intermediaries through on-exchange purchases or through off-exchange trades. ASMI updated the markets on the progress of the share buyback programs on a weekly basis.

The repurchase programs are part of ASMI's commitment to use excess cash for the benefit of its shareholders.

TREASURY SHARES

On December 31, 2018, we had 49,318,898 outstanding common shares excluding 6,978,496 treasury shares. This compared to 56,140,153 outstanding common shares and 6,157,241 treasury shares at year-end 2017. Besides the cancellation of 6 million treasury shares in August 2018, the change in the number of treasury shares in 2018 was the result of approximately 7.2 million repurchased shares and approximately 421,000 treasury shares that were used as part of share based payments.

	2017	2018
As per January 1:		
Issued shares	63,797,394	**62,297,394**
Treasury shares	3,981,551	**6,157,241**
OUTSTANDING SHARES	**59,815,843**	**56,140,153**
Changes during the year:		
Cancellation of treasury shares	1,500,000	**6,000,000**
Share buybacks	4,420,946	**7,242,734**
Treasury shares used for share based performance programs	745,256	**421,479**
As per December 31:		
Issued shares	62,297,394	**56,297,394**
Treasury shares	6,157,241	**6,978,496**
OUTSTANDING SHARES	**56,140,153**	**49,318,898**

RETAINED EARNINGS

Distributions to common shareholders are limited to the extent the total amount of shareholders' equity exceeds the amounts of nominal paid-in share capital (exclusive any share premium) and any reserves to be formed pursuant to law or the Company's Articles of Association. The amounts are derived from the Company financial statements of ASMI.

ASMI aims to pay a sustainable annual dividend. The Supervisory Board, upon proposal of the Management Board, will annually assess the amount of dividend that will be proposed to the AGM. The decision that a dividend be proposed to the AGM will be subject to the availability of distributable profits as well as retained earnings and may be affected by our potential future funding requirements. Accordingly, dividend payments may fluctuate and could decline or be omitted in any year.

In 2018, we paid a dividend of €0.80 per common share. We will propose to the forthcoming 2019 AGM to declare a dividend of €1.00 per share.

Results on dilution of investments in associates are accounted for directly in equity. For 2018 and 2017, these dilution results were €489 and €606 respectively.

OTHER RESERVES

The changes in the amount of other reserves are as follows:

	PROPORTIONATE SHARE IN OTHER COMPREHENSIVE INCOME INVESTMENTS IN ASSOCIATES [1]	REMEASUREMENT ON NET DEFINED BENEFIT	TRANSLATION RESERVE	TOTAL OTHER RESERVES
BALANCE JANUARY 1, 2017	**(2,476)**	**–**	**231,964**	**229,488**
Proportionate share in other comprehensive income investments in associates	(2,580)	–	–	**(2,580)**
Remeasurement on net defined benefit	–	(264)	3	**(261)**
Foreign currency translation effect on translation of foreign operations	–	–	(172,893)	**(172,893)**
BALANCE DECEMBER 31, 2017	**(5,056)**	**(264)**	**59,074**	**53,754**
Proportionate share other comprehensive income investments in associates	(1,161)	–	–	**(1,161)**
Remeasurement on net defined benefit	–	254	(12)	**242**
Foreign currency translation effect on translation of foreign operations	–	–	46,772	**46,772**
BALANCE DECEMBER 31, 2018	**(6,217)**	**(10)**	**105,834**	**99,607**

[1] Proportionate share in other comprehensive income investments in associates, remeasurement on net defined benefit and translation reserve, items may be subsequently reclassified to profit or loss.

NOTE 13. EMPLOYEE BENEFITS

PENSION PLANS

The Company has retirement plans covering substantially all employees. The principal plans are defined contribution plans, except for the plans of the Company's operations in the Netherlands and Japan.

Multi-employer plan

There are 149 eligible employees in the Netherlands. These employees participate in a multi-employer union plan (Pensioenfonds van de Metalektro PME) determined in accordance with the collective bargaining agreements effective for the industry in which we operate. This current collective bargaining agreement has ended on May 31, 2018. A negotiation agreement was reached in February 2019 but no new collective bargaining agreement was effective yet. This multi-employer union plan, accounted for as a defined contribution plan, covers approximately 1,300 companies and approximately 145,000 contributing members. Our contribution to the multi-employer union plan was less than five percent of the total contribution to the plan. The plan monitors its risks on a global basis, not by participating company or employee, and is subject to regulation by Dutch governmental authorities. By law (the Dutch Pension Act), a multi-employer union plan must be monitored against specific criteria, including the coverage ratio of the plan's assets to its obligations. As of January 1, 2015, new pension legislation has been enacted. This legislation results in amongst others, an increase of legally required coverage levels. The coverage percentage is calculated by dividing the funds capital by the total sum of pension liabilities and is based on actual market interest rates. The coverage ratio as per December 31, 2018 of 97.6% (December 31, 2017: 101.6%) is calculated giving consideration to the pension legislation and is below the legally required level. We have however no obligation to pay off any deficits the pension fund may incur, nor do we have any claim to any potential surpluses.

Every company participating in the PME contributes a premium calculated as a percentage of its total pensionable salaries, with each company subject to the same contribution rate. The premium can fluctuate yearly based on the coverage ratio of the multi-employer union plan, for 2018 the contribution percentage was 25.35%. The pension rights of each employee are based upon the employee's average salary during employment.

Our net periodic pension cost for this multi-employer union plan for any period is the amount of the required employer contribution for that period minus the employee contribution.

Defined benefit plan

The Company's employees in Japan participate in a defined benefit plan. The Company makes contributions to defined benefit plans in Japan that provide pension benefits for employees upon retirement. These are average-pay plans, based on the employees' years of service and compensation near retirement.

The most recent actuarial valuations of plan assets and the present value of the defined benefit obligation were carried out on December 31, 2018. The present value of the defined benefit obligation and the related current service cost and past service cost were measured using the projected unit credit method. Significant actuarial assumptions for the determination of the defined obligation are discount rate, future general salary increases and future pension increases.

The net liability (asset) of the plan developed as follows:

	DECEMBER 31,	
	2017	2018
Defined benefit obligations	10,167	**10,502**
Fair value of plan assets	9,781	**10,726**
NET LIABILITY (ASSET) FOR DEFINED BENEFIT PLANS	**386**	**(224)**

The changes in defined benefit obligations and fair value of plan assets are as follows:

	DECEMBER 31, 2017	DECEMBER 31, 2018
Defined benefit obligations		
BALANCE JANUARY 1	**11,403**	**10,167**
Current service cost	747	735
Interest on obligation	52	50
Remeasurement result	(147)	(262)
Benefits paid	(926)	(914)
Foreign currency translation effect	(962)	726
BALANCE DECEMBER 31	**10,167**	**10,502**
Fair value of plan assets		
BALANCE JANUARY 1	**9,985**	**9,781**
Interest income	48	51
Return on plan assets	454	(8)
Company contribution	1,102	1,098
Benefits paid	(926)	(914)
Foreign currency translation effect	(882)	718
BALANCE DECEMBER 31	**9,781**	**10,726**

The defined benefit cost consists of the following:

	DECEMBER 31, 2017	DECEMBER 31, 2018
Current service cost	747	735
Net interest costs	4	(1)
NET DEFINED BENEFIT COST	**751**	**734**
Reclassification to remeasurement	866	–
Remeasurement on net defined benefit for the year	(602)	(254)
REMEASUREMENT ON NET DEFINED BENEFIT	**264**	**(254)**
TOTAL DEFINED BENEFIT COST	**1,015**	**480**

The assumptions in calculating the actuarial present value of benefit obligations and net periodic benefit cost are as follows:

	2017	2018
Discount rate for defined benefit obligations	0.50%	0.50%
Discount rate for defined benefit cost	0.50%	0.50%

Assumptions regarding life expectancy are based on mortality tables published in 2014 by the Ministry of Health, Labour and Welfare of Japan.

The main risk on the pension plan relates to the discount rate. The defined benefit obligation is sensitive to a change in discount rates, a relative change of the discount rate of 25 basis points would have resulted in a change in the defined benefit obligation of 2.7%.

The allocation of plan assets is as follows:

	DECEMBER 31, 2017		DECEMBER 31, 2018	
Cash and cash equivalent	95	1%	149	1%
Equity instruments	1,827	19%	1,879	18%
Debt instruments	1,029	11%	1,007	9%
Assets held by insurance company	6,830	69%	7,691	72%
TOTAL	**9,781**	**100%**	**10,726**	**100%**

The investment strategy is determined based on an asset-liability study in consultation with investment advisors and within the boundaries given by the regulatory bodies for pension funds.

Equity instruments consist primarily of publicly traded Japanese companies and common collective funds. Publicly traded equities are valued at the closing prices reported in the active market in which the individual securities are traded (level 1). Common collective funds are valued at the published price (level 1) per share multiplied by the number of shares held as of the measurement date. Debt instruments consists of government bonds and are valued at the closing prices in the active markets for identical assets (level 1). Assets held by insurance company consist of bonds and loans, government securities and common collective funds. Corporate and government securities are valued by third-party pricing sources (level 2). Common collective funds are valued at the net asset value per share (level 2) multiplied by the number of shares held as of the measurement date.

The plan assets do not include any of the Company's shares.

Retirement plan costs

ASMI contributed €1,101 to the defined benefit plan in 2018 (€1,096 in 2017). The Company expects to pay benefits for years subsequent to December 31, 2018 as follows:

	EXPECTED CONTRIBUTION DEFINED BENEFIT PLAN
2019	489
2020	323
2021	377
2022	808
2023	765
Aggregate for the years 2024-2028	3,971
TOTAL	6,733

The Company does not provide for any significant post-retirement benefits other than pensions.

MANAGEMENT BOARD AND EMPLOYEE AND LONG-TERM INCENTIVE PLAN

The Company has adopted various share plans (e.g. stock option plans, a restricted share plan and a performance share plan) and has entered into share agreements with the Management Board and various employees. Under the stock option plans, the Management Board and employees may purchase per the vesting date a specific number of shares of the Company's common stock at a certain price. Options are priced at market value in euros or US dollars on the date of grant. Under the restricted share plan, employees receive per the vesting date a specific number of shares of the Company's common stock. Under the performance share plan, the Management Board receives per the vesting date, and provided the performance criteria have been met, a specific number of shares of the Company's common stock.

Authority to issue options and shares

By resolution of the Annual General Meeting of Shareholders (AGM) of May 28, 2018, the formal authority to issue options and shares was allocated to the Management Board subject to the approval of the Supervisory Board. This authority is valid for 18 months and needs to be refreshed by the 2019 AGM to allow the continued application of the long-term incentive (LTI) plans beyond November 28, 2019.

The ASMI 2014 long-term incentive plan for employees (ELTI) is principally administered by the Management Board and the ASMI 2014 Long-Term Incentive Plan for members of the Management Board (MLTI) is principally administered by the Supervisory Board. This complies with applicable corporate governance standards. However, the Supervisory Board has no power to represent the Company. For external purposes the Management Board remains the competent body under both LTI plans. The LTI plans envisage that the Supervisory Board, or in the case of the ELTI the Management Board with the approval of the Supervisory Board, will determine the number of options and shares to be granted to the Management Board members and to employees.

Capital repayment

On August 10, 2018, ASMI distributed €4.00 per common share to its shareholders through a tax efficient repayment of capital. The ex-date of the distribution was August 7, 2018. This capital repayment was previously approved by the 2018 AGM. The Management Board of ASMI and the Supervisory Board of ASMI decided to apply a theoretical adjustment ratio of 0.91821713 to the outstanding options and restricted shares granted to employees including members of the Management Board.

2011 Long-Term Incentive Plan

In 2011 a stock option plan was adopted. In this plan to limit potential dilution, the amount of outstanding (vested and non-vested) options granted to the Management Board and to other employees will not exceed 7.5% of the issued ordinary share capital of ASMI. The stock option plan 2011 consists of two sub-plans: the ASMI stock option plan for employees (ESOP) and the ASMI stock option for members of the Management Board (MSOP).

For employees and existing Management Board members the grant date for all options granted is December 31 of the relevant year. In each of these situations, the three-year vesting period starts at the grant date. The exercise price in euros of all options issued under the ESOP and the MSOP is determined on the basis of the market value of the ASMI shares at (i.e. immediately prior to) the grant date.

The exercise period is four years starting at the third anniversary of the grant date.

The following table is a summary of changes in options outstanding under the 2011 and previous long-term incentive plan:

	EURO-PLANS		US DOLLAR-PLANS	
	NUMBER OF OPTIONS	WEIGHTED AVERAGE EXERCISE PRICE IN €	NUMBER OF OPTIONS	WEIGHTED AVERAGE EXERCISE PRICE IN US$
BALANCE JANUARY 1, 2017	**1,295,132**	**21.63**	**999**	**16.62**
Options forfeited	–	–	–	–
Options expired	(2,179)	21.13	–	–
Options exercised	(626,444)	21.14	(999)	16.62
BALANCE DECEMBER 31, 2017	**666,509**	**22.09**	**–**	**–**
Adjustment following capital repayment	53,455	–	–	–
Options forfeited	–	–	–	–
Options expired	(8,037)	18.96	–	–
Options exercised	(260,757)	18.70	–	–
BALANCE DECEMBER 31, 2018	**451,170**	**21.48**	**–**	**–**

The total intrinsic value of options exercised was €4,817 for the year ended December 31, 2018 (2017: €13,292). In 2018 treasury shares have been sold for the exercise of 258,688 options.

On December 31, 2018, options outstanding and options exercisable classified by range of exercise prices are:

	OPTIONS OUTSTANDING			OPTIONS EXERCISABLE	
RANGE OF EXERCISE PRICES	NUMBER OUTSTANDING	WEIGHTED AVERAGE REMAINING CONTRACTUAL LIFE	WEIGHTED AVERAGE EXERCISE PRICE	NUMBER EXERCISABLE	WEIGHTED AVERAGE EXERCISE PRICE
Euro plans		**In years**	**In EUR**		**In EUR**
€ 1.00 - 15.00	–	–	–	–	–
€15.01 - 20.00	–	–	–	–	–
€20.01 - 25.00	451,170	1.6	21.48	451,170	21.48
€1.00 - 25.00	**451,170**	**1.6**	**21.48**	**451,170**	**21.48**

At December 31, 2018, the aggregate intrinsic value of all options outstanding and exercisable under these plans is €16,332.

Under these plans, no more options to purchase shares can be issued. Under the various stock option plans a total of 451,170 options to purchase common stock were outstanding at December 31, 2018, expiring at various dates through 2020.

2014 Long-Term Incentive Plan

In 2014 a new long-term incentive plan was adopted. In the new plan to limit potential dilution, the amount of outstanding (vested and non-vested) options and shares granted to the Management Board and to other employees will not exceed 5% of the issued ordinary share capital of ASMI. The new long-term incentive plan 2014 consists of two sub-plans: the ELTI and the MLTI.

Options and performance shares are issued to Management Board members and restricted shares are issued to employees once per annum on the date following the publication of the first-quarter results of the relevant year. Possible grant to newly-hired employees can be issued once a quarter, on the date following the publication of the financial results of the relevant quarter. The number of options and shares outstanding under the long-term incentive plans or under any other plan or arrangement in aggregate may never exceed 5% of ASMI's share capital. In accordance with the ASMI remuneration policy, an exception is made for a transition period of four years, during which the dilution may exceed 5% but will not exceed 7.5%.

Performance and restricted shares outstanding

The following table is a summary of changes in performance shares and restricted shares outstanding under the 2014 long-term incentive plan.

	NUMBER OF PERFORMANCE SHARES	NUMBER OF RESTRICTED SHARES	STATUS	FAIR VALUE AT GRANT DATE (WEIGHTED AVERAGE)
BALANCE JANUARY 1, 2017	**29,645**	**307,505**		
Shares granted, employees	–	149,197	Unconditional	€52.29
Shares granted, Management Board	17,413	–	Conditional	€51.75
Shares vested	–	(118,317)		
Shares forfeited	–	(31,850)		
BALANCE DECEMBER 31, 2017	**47,058**	**306,535**		
Adjustment following capital repayment	5,312	28,582		
Shares granted, employees	–	174,951	Unconditional	€49.90
Shares granted, Management Board	25,573	–	Conditional	€49.78
Shares granted, Management Board	2,274	–	Unconditional	€43.21
Shares vested	(15,268)	(147,523)		
Shares forfeited	–	(21,357)		
BALANCE DECEMBER 31, 2018	**64,949**	**341,188**		

In 2018, treasury shares were sold for the vesting of 162,791 restricted shares.

Options outstanding

The following table is a summary of changes in options outstanding under the 2014 long-term incentive plan.

	NUMBER OF OPTIONS	EXERCISE PRICE IN €	FAIR VALUE AT GRANT DATE
BALANCE JANUARY 1, 2015	**–**		
Options granted, April 24, 2015	42,659	44.24	€17.33
BALANCE DECEMBER 31, 2015	**42,659**		
Options granted, April 22, 2016	62,555	37.09	€12.64
BALANCE DECEMBER 31, 2016	**105,214**		
Options granted, April 21, 2017	24,963	51.55	€14.57
BALANCE DECEMBER 31, 2017	**130,177**		
Adjustment following capital repayment	11,593	–	–
BALANCE DECEMBER 31, 2018	**141,770**		

The cost relating to stock options is measured at fair value on the grant date. The fair value for the stock options granted in 2018 was determined using the Black-Scholes option valuation model with the following weighted average assumptions:

	2018
Expected life (years)	**7**
Risk-free interest rate	**1.05%**
Dividend yield	**1.80%**
Expected volatility	**30.47%**
Exercise price	**€57.25**
Fair value per grant date	**€14.90**

The expected volatility measured at the standard deviation of continuously compounded share returns is based on statistical analysis of daily share prices over the last seven years.

At December 31, 2018, the aggregate intrinsic value of all options outstanding under the 2014 long-term incentive plan is €5,132.

Share-based payments expenses

The grant date fair value of the stock options, the restricted shares and the performance shares is expensed on a straight-line basis over the vesting period, based on the Company's estimate of stock options, restricted shares and performance shares that will eventually vest. The impact of the true up of the estimates is recognized in the consolidated statement of profit or loss in the period in which the revision is determined. We recorded compensation expenses of €4,817 for 2018 (2017: €7,801).

NOTE 14. PROVISION FOR WARRANTY

The changes in the amount of provision for warranty are as follows:

	DECEMBER 31, 2017	2018
BALANCE JANUARY 1	**5,800**	**6,562**
Charged to cost of sales	9,682	**18,408**
Deductions	(7,361)	**(8,985)**
Releases of expired warranty	(1,108)	**(8,214)**
Foreign currency translation effect	(451)	**184**
BALANCE DECEMBER 31	**6,562**	**7,955**

Costs of warranty include the cost of labor and materials to repair a product during the warranty period. The main term of the warranty period is one year. The Company accrues for the estimated cost of the warranty on its products shipped in the provision for warranty, upon recognition of the sale of the product. The costs are estimated based on actual historical expenses incurred and on estimated future expenses related to current sales, and are updated periodically. Actual warranty costs are charged against the provision for warranty.

NOTE 15. ACCRUED EXPENSES AND OTHER PAYABLES

Accrued expenses and other payables consist of the following:

	DECEMBER 31, 2017	2018
Personnel-related items	29,456	**32,636**
Deferred revenue	9,879	**28,255**
Financing related items	5,146	**–**
Advanced payments from customers	1,021	**25,382**
Supplier related items	979	**1,828**
Marketing related items	3,341	**1,049**
R&D projects	1,609	**1,209**
Other	7,523	**8,634**
TOTAL ACCRUED EXPENSES AND OTHER PAYABLES	**58,954**	**98,993**

Personnel-related items comprise accrued management bonuses, accrued vacation days, accrued wage tax, social securities and pension premiums. Deferred revenue consists of the revenue relating to the undelivered elements of the arrangements. This part of revenue is deferred at their relative selling prices until delivery of these elements. Other includes accruals for VAT, other taxes and invoices to be received for goods and services.

NOTE 16. CREDIT FACILITY

As per December 31, 2018, ASMI was debt-free. ASMI may borrow under separate short-term lines of credit with banks under an unsecured €150 million standby credit facility with a consortium of banks.

Total short-term lines of credit amounted to €150 million on December 31, 2018. The amount outstanding at December 31, 2018 was nil, so the undrawn portion totaled €150 million. The undrawn portion represents the Company's standby revolving credit facility of €150 million with a consortium of banks. The facility will be available through December 16, 2022 with an extension option for one year. As per December 31, 2018, this facility was undrawn.

The credit facility of €150 million includes two financial covenants:

- minimum consolidated tangible net worth; and
- consolidated total net debt/total equity ratio.

These financial covenants are measured twice each year, at June 30 and December 31.

The minimum level of consolidated tangible net worth for the year ended December 31, 2018 required was €450 million, the consolidated tangible net worth as per that date was €1,034 million.

Consolidated tangible net worth is defined as the net assets, deducting any amount shown in respect of goodwill or other intangible assets (including any value arising from any valuation of ASMPT).

Total equity is defined as the aggregate of:
- the amounts paid up on the issued common shares;
- share capital in excess of par value;
- retained earnings;
- accumulated other comprehensive income and loss; and
- deducting any amount shown in respect of goodwill or other intangible assets.

The net debt/total equity ratio should not exceed 1.5. For the year ended December 31, 2018, net cash was €286 million and total equity amounted to €1,642 million. The Company is in compliance with these financial covenants as of December 31, 2018.

ASMI does not provide guarantees for borrowings of ASMPT and there are no guarantees from ASMPT to secure indebtedness of ASMI. Under the rules of the Stock Exchange of Hong Kong, ASMPT is precluded from providing loans and advances other than trade receivables in the normal course of business, to ASMI or its non-ASMPT subsidiaries.

NOTE 17. FINANCIAL INSTRUMENTS AND FINANCIAL RISK MANAGEMENT

FINANCIAL INSTRUMENTS

Financial instruments include:

	DECEMBER 31, 2017	DECEMBER 31, 2018
Financial assets:		
Cash and cash equivalents	836,461	**285,907**
Accounts receivable	163,135	**173,450**
Financial liabilities:		
Accounts payable	79,349	**80,640**

The carrying amounts of cash and cash equivalents, accounts receivable and accounts payable equal their fair values because of the short-term nature of these instruments.

Gains or losses related to financial instruments are as follows:

	2017	2018
Interest income	1,683	**1,056**
Interest expense	(1,799)	**(2,466)**
Result from foreign currency exchange	(30,546)	**1,276**
Addition to allowance for doubtful accounts receivable	–	**(155)**

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. ASMI uses the following fair value hierarchy, which prioritizes the inputs to valuation techniques used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

Level 1
Quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2
Inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).

Level 3
Inputs for the asset or liability that are not based on observable market data (unobservable inputs).

There were no transfers between levels during the years ended December 31, 2018 and December 31, 2017.

FINANCIAL RISK FACTORS

ASMI is exposed to a number of risk factors: market risks (including foreign exchange risk), credit risk, liquidity risk and equity price risk. The Company may use forward exchange contracts to hedge its foreign exchange risk. The Company does not enter into financial instrument transactions for trading or speculative purposes.

Foreign exchange risk

ASMI and its subsidiaries conduct business in a number of foreign countries, with certain transactions denominated in currencies other than the functional currency of the Company (Euro) or one of its subsidiaries conducting the business. The purpose of the Company's foreign currency management is to manage the effect of exchange rate fluctuations on income, expenses, cash flows and assets and liabilities denominated in selected foreign currencies, in particular denominated in US dollars.

We may use forward exchange contracts to hedge our foreign exchange risk of anticipated sales or purchase transactions in the normal course of business, which occur within the next twelve months, for which we have a firm commitment from a customer or to a supplier. The terms of these contracts are consistent with the timing of the transactions being hedged. The hedges related to forecasted transactions are designated and documented at the inception of the hedge as cash flow hedges, and are evaluated for effectiveness on a quarterly basis. The effective portion of the gain or loss on these hedges is reported as a component of accumulated other comprehensive income (loss) net of taxes in equity, and is reclassified into earnings when the hedged transaction affects earnings.

Changes in the fair value of derivatives that do not qualify for hedge treatment, as well as the ineffective portion of any hedges, are recognized in earnings. We record all derivatives, including forward exchange contracts, on the statement of financial position at fair value in accrued expenses and payables. Should contracts extend beyond one year, these are classified as long-term.

Furthermore, we might manage the currency exposure of certain receivables and payables using derivative instruments, such as forward exchange contracts (fair value hedges) and currency swaps, and non-derivative instruments, such as debt borrowings in foreign currencies. The gains or losses on these instruments provide an offset to the gains or losses recorded on receivables and payables denominated in foreign currencies. The derivative instruments are recorded at fair value and changes in fair value are recorded in earnings under foreign currency exchange gains (losses) in the consolidated statement of profit or loss. Receivables and payables denominated in foreign currencies are recorded at the exchange rate at the balance sheet date and gains and losses as a result of changes in exchange rates are recorded in earnings under foreign currency exchange gains (losses) in the consolidated statement of profit or loss.

We do not use forward exchange contracts for trading or speculative purposes. Financial assets and financial liabilities are recognized on the Company's consolidated statement of financial position when the Company becomes a party to the contractual provisions of the instrument.

To the extent that exchange rate fluctuations impact the value of the Company's investments in its foreign subsidiaries, they are not hedged. The cumulative effect of these fluctuations is separately reported in consolidated equity. Reference is made to Note 12.

Per December 31, 2017 and December 31, 2018, there were no forward exchange contracts outstanding.

The following table analyzes the Company's exposure to currency risk in our major currencies.

	DECEMBER 31,							
	2017				2018			
(EUR thousand)	USD	JPY	KRW	SGD	USD	JPY	KRW	SGD
Accounts receivable	129,361	2,978,670	19,223,588	889	**118,198**	**5,138,417**	**5,028,459**	**337**
Cash and cash equivalents	328,620	889,637	35,695,104	13,889	**240,631**	**2,103,999**	**6,932,106**	**7,153**
Accounts payable	(28,114)	(2,873,963)	(19,536,521)	(21,187)	**(39,884)**	**(2,091,110)**	**(14,857,084)**	**(14,397)**
TOTAL	**429,867**	**994,344**	**35,382,171**	**(6,409)**	**318,945**	**5,151,306**	**(2,896,519)**	**(6,907)**

The following table analyzes the Company's sensitivity to a hypothetical 10% strengthening and 10% weakening of the US dollar, Singapore dollar, Korean won and Japanese yen against the euro as of December 31, 2017 and December 31, 2018. This analysis includes foreign currency-denominated monetary items and adjusts their translation at year-end for a 10% increase and 10% decrease against the euro.

	IMPACT ON FINANCIAL INSTRUMENTS	
(EUR thousand)	2017	2018
10% increase of US dollar versus euro	35,843	**27,855**
10% decrease of US dollar versus euro	(35,843)	**(27,855)**
10% increase of Singapore dollar versus euro	(400)	**(443)**
10% decrease of Singapore dollar versus euro	400	**443**
10% increase of Korean won versus euro	2,760	**(226)**
10% decrease of Korean won versus euro	(2,760)	**226**
10% increase of Japanese yen versus euro	737	**4,095**
10% decrease of Japanese yen versus euro	(737)	**(4,095)**

A hypothetical 10% strengthening or 10% weakening of any other currency against the euro as of December 31, 2017 and December 31, 2018, would not result in a material impact on net earnings.

Interest risk

We are exposed to interest rate risk through our cash deposits. The Company does not enter into financial instrument transactions for trading or speculative purposes or to manage interest rate exposure. As per December 31, 2018, the Company had no debt and was not exposed to interest rate risk on borrowings.

Credit risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash and cash equivalents, accounts receivable and derivative instruments. These instruments contain a risk of counterparties failing to discharge their obligations. We monitor credit risk and manage credit risk exposure by type of financial instrument by assessing the creditworthiness of counterparties. We do not anticipate non-performance by counterparties given their high creditworthiness.

Our customers are semiconductor device manufacturers located throughout the world. We perform ongoing credit evaluations of our customers' financial condition. We take additional measures to mitigate credit risk when considered appropriate by means of down payments or letters of credit. We generally do not require collateral or other security to support financial instruments with credit risk.

Concentrations of credit risk (whether on- or off-balance sheet) that arise from financial instruments exist for groups of customers or counterparties when they have similar economic characteristics that would cause their ability to meet contractual obligations to be similarly affected by changes in economic or other conditions.

We derive a significant percentage of our revenue from a small number of large customers. The ten largest customers accounted for approximately 79.2% of net sales in 2018 (2017: 83.1%). Included in net sales are revenues of approximately €350 million (2017: €437 million) to customers contributing more than 10% of total net sales. Sales to these large customers also may fluctuate significantly from time to time depending on the timing and level of purchases by these customers. Significant orders from such customers may expose the Company to a concentration of credit risk and difficulties in collecting amounts due, which could harm the Company's financial results.

We invest our cash and cash equivalents in short-term deposits, money market funds and derivative instruments with high-rated financial institutions. We only enter into transactions with a limited number of major financial institutions that have high credit ratings and we closely monitor the creditworthiness of our counterparties. Concentration risk is mitigated by not limiting the exposure to a single counter party.

The maximum credit exposure is equal to the carrying values of cash and cash equivalent, and accounts receivable.

Liquidity risk

Our policy is to maintain a strong capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business.

Our liquidity needs are affected by many factors, some of which are based on the normal on-going operations of the business, and others that relate to the uncertainties of the global economy and the semiconductor industry. Although our cash requirements fluctuate based on the timing and extent of these factors, we believe that cash generated from operations, together with our principal sources of liquidity are sufficient to satisfy our current requirements, including our expected capital expenditures in 2019.

We intend to return cash to our shareholders on a regular basis in the form of dividend payments and, subject to our actual and anticipated liquidity requirements and other relevant factors, share buybacks.

The following table summarizes the Company's contractual and other obligations as at December 31, 2018.

	TOTAL	LESS THAN 1 YEAR	1-3 YEARS	3-5 YEARS	MORE THAN 5 YEARS
Accounts payable	**80,640**	80,640	–	–	–
Income tax payable	**6,663**	6,663	–	–	–
Accrued expenses and other payables	**98,993**	98,993	–	–	–
Operating leases	**32,115**	11,119	12,502	4,439	4,055
Pension liabilities	**6,733**	489	700	1,573	3,971
Purchase obligations:					
Purchase commitments to suppliers	**99,889**	94,027	5,796	66	–
Capital expenditure and other commitments	**14,372**	11,147	3,089	117	19
TOTAL CONTRACTUAL OBLIGATIONS	**339,405**	**303,078**	**22,087**	**6,195**	**8,045**

Total short-term lines of credit amounted to €150 million at December 31, 2018. The amount outstanding at December 31, 2018 was nil and the undrawn portion totaled €150 million. The standby revolving credit facility of €150 million with a consortium of banks will be available through December 16, 2022.

For the majority of purchase commitments, the Company has flexible delivery schedules depending on the market conditions, which allows the Company, to a certain extent, to delay delivery beyond originally planned delivery schedules.

Equity price risk

The shares of ASMPT, our 25.33% equity investment, are listed on the Hong Kong Stock Exchange. If the fair value of an investment is less than its carrying value at the balance sheet date, the Company determines whether the impairment is temporary or prolonged. The amount per share recognized as per December 31, 2018 under equity accounting amounts to HK$68.74, whereas the level 1 fair value per share (being the market price of a share on the Hong Kong Stock Exchange) was HK$75.45. Management concluded that, based on quantitative analysis no impairment of its share in ASMPT existed as per December 31, 2018.

NOTE 18. COMMITMENTS AND CONTINGENCIES

On December 31, 2018, operating leases having initial or remaining non-cancelable terms in excess of one year are as follows:

	DECEMBER 31 2017	2018
Not later than 1 year	6,892	**11,119**
Between 1 and 5 years	10,813	**16,941**
Later than 5 years	1,360	**4,055**
TOTAL	**19,065**	**32,115**

Operating lease obligations include leases of land, buildings, motor vehicles and other equipment. Leases typically run up to a period of 5 years, some with an option to renew the lease after that date. Lease commitments also include some non-lease elements (such as service-charges).

In 2018 there is an amount of €4 million of land lease which we will pay upfront for a 30 years lease (included in not later than 1 year). We did not take into account extension options in the 2017 figures which we have taken into account for the 2018 figures due to the implementation of IFRS 16 as of January 1, 2019.

Per December 31, 2018, the Company had entered into purchase commitments with suppliers in the amount of €94,027 for purchases within the next 12 months. Commitments for capital expenditures and other commitments per December 31, 2018 were €11,147 within the next 12 months and €3,225 after 12 months.

CHANGE OF CONTROL TRANSACTION

Pursuant to our 1997 settlement agreement with Applied Materials, as amended and restated in 1998, if we desire to effect a change of control transaction, as defined in the settlement agreement which generally involves our operations and not our investment in ASMPT, with a competitor of Applied Materials, we must first offer the change of control transaction to Applied Materials on the same terms as we would be willing to accept from that competitor pursuant to a bona fide arm's-length offer made by that competitor.

NOTE 19. LITIGATION

In 2007, ASMI licensed Hitachi Kokusai Electric Inc (now called Kokusai Electric Company and hereafter referred to (including its affiliates) as Kokusai) under certain of its patents in the field of Atomic Layer Deposition. The license agreement was renewed in 2012.

On August 30, 2017, ASMI initiated an arbitration with the American Arbitration Association against Kokusai for breach of the license agreement between the parties. At this point of time it is unpredictable when the arbitration will be completed but the current expectation is in the first half of 2019.

Following the expiration of the parties' patent license agreement, ASMI filed, on December 1, 2017, a suit for patent infringement against Kokusai and its US subsidiary in the US District Court for the Northern District of California. ASMI has asserted infringement of three of its patents and is seeking both an injunction and monetary damages.

Kokusai filed suit on December 1, 2017 for alleged patent infringement against ASMI in the US District Court for the Northern District of California. Kokusai has asserted seven patents and also seeks an injunction and monetary damages. No specific monetary amount has been requested to date. On December 5, 2018, ASMI asserted in the same proceeding counterclaims which included infringement of three additional patents by Kokusai.

On February 20, 2018, Kokusai initiated litigation in the District of Oregon asserting four patents against ASMI. Both parties have filed for Inter Partes Reviews (IPR) at the U.S. Patent and Trademark Office on the U.S. Patents asserted in the various US jurisdictions. The outcomes of those IPRs are currently unknown but are anticipated to be completed in twelve to eighteen months.

On September 21, 2018 ASMI filed two lawsuits in Tokyo District Court against Kokusai asserting infringement of two patents and requesting a preliminary injunction to prevent the continued infringement of our patents in Japan.

On February 8, 2019 Kokusai filed seven lawsuits in Tokyo District Court against ASMI asserting infringement of nine patents in total and requesting a preliminary injunction to prevent the alleged continued infringement of their patents in Japan.

ASMI will vigorously defend its position in each suit asserted by or against Kokusai. Litigation concerning intellectual property rights is complex and usually takes a protracted period of time. Therefore in connection with these lawsuits ASMI may incur substantial legal fees and costs, and it is not certain that ASMI will prevail in the suits. If ASMI would not be successful in its suits as plaintiff or as defendant, then the potential outcomes may include, without limitation, payment of significant monetary damages, injunctive relief prohibiting sales (in the USA or Japan), and/or settlement involving significant costs. At this stage it is not possible to predict the outcome of the above mentioned suits, or whether other suits will be started by Kokusai. The final outcome could potentially have a material adverse effect on our business, results and financial condition.

NOTE 20. SEGMENT DISCLOSURE

The Company organizes its activities in two operating segments, Front-end and Back-end. Operating segments are reported in a manner consistent with the internal reporting provided to the Chief Executive Officer (CEO), which is the Chief Operating Decision Maker (CODM).

The Front-end segment manufactures and sells equipment used in wafer processing, encompassing the fabrication steps in which silicon wafers are layered with semiconductor devices. The segment is a product-driven organizational unit comprised of manufacturing, service, and sales operations in Europe, the United States, Japan, South Korea and Southeast Asia.

The Back-end segment manufactures and sells equipment and materials used in assembly and packaging, encompassing the processes in which silicon wafers are separated into individual circuits and subsequently assembled, packaged and tested. The segment is organized in ASM Pacific Technology Ltd, in which the Company holds a substantial share of 25.33% interest, whilst the remaining shares are listed on the Stock Exchange of Hong Kong. The segment's main operations are located in Hong Kong, the People's Republic of China, Singapore, Malaysia and Germany.

The Back-end segment remains reported as a separate segment since the cease of control per March 15, 2013. Since that date, the segment is reported as an equity method investment as the CEO reviews this information as part of his CODM package.

Accordingly, the asset and result information regarding the operations that comprise the segment are disclosed. The full financial results are reviewed by the CODM, the external reporting of the segment are on an equity method investment basis. The total of all segments' financial amounts are reconciled to the corresponding amounts reported in the consolidated financial statements, eliminations are reflected in the reconciling column for amounts reported in excess of those amounts reflected in the consolidated financial statements.

YEAR ENDED DECEMBER 31, 2017	FRONT-END	BACK-END 100%	DECON-SOLIDATED	TOTAL
Revenue	737,401	1,993,734	(1,993,734)	**737,401**
Gross profit	305,895	802,305	(802,305)	**305,895**
Result from operations	113,187	389,046	(389,046)	**113,187**
Interest income	1,683	3,532	(3,532)	**1,683**
Interest expense	(1,799)	(18,488)	18,488	**(1,799)**
Foreign currency exchange gains (losses), net	(30,546)	(1,542)	1,542	**(30,546)**
Result on investments in associates	–	–	89,614	**89,614**
Result from sale of ASMPT shares	–	–	284,898	**284,898**
Income tax expense	(4,635)	(54,453)	54,453	**(4,635)**
Net earnings	77,890	318,095	56,417	**452,402**
Cash flows from operating activities	116,060	184,447	(184,447)	**116,060**
Cash flows from investing activities	606,304	20,694	15,764	**642,762**
Cash flows from financing activities	(267,865)	(159,690)	159,690	**(267,865)**
Cash and cash equivalents	836,461	252,443	(252,443)	**836,461**
Goodwill	11,270	43,608	(43,608)	**11,270**
Other intangible assets	113,295	57,842	(57,842)	**113,295**
Investments in associates	–	–	730,552	**730,552**
Other identifiable assets	485,624	1,630,749	(1,630,749)	**485,624**
Total assets	1,446,650	1,984,642	(1,254,090)	**2,177,202**
Total debt	–	258,462	(258,462)	**–**
Headcount [1]	1,900	16,400	(16,400)	**1,900**

[1] Headcount includes employees with a fixed contract, and excludes temporary workers.

YEAR ENDED DECEMBER 31, 2018	FRONT-END	BACK-END 100%	DECON-SOLIDATED	TOTAL
Revenue	818,081	2,114,627	(2,114,627)	**818,081**
Gross profit	334,297	804,375	(804,375)	**334,297**
Result from operations	124,267	346,773	(346,773)	**124,267**
Interest income	1,056	3,353	(3,353)	**1,056**
Interest expense	(2,466)	(19,227)	19,227	**(2,466)**
Foreign currency exchange gains (losses), net	1,276	(9,318)	9,318	**1,276**
Result on investments in associates	–	–	48,436	**48,436**
Income tax expense	(15,436)	(82,357)	82,357	**(15,436)**
Net earnings	108,697	239,224	(190,788)	**157,133**
Cash flows from operating activities	136,810	210,087	(210,087)	**136,810**
Cash flows from investing activities	(114,050)	(150,698)	179,818	**(84,930)**
Cash flows from financing activities	(602,564)	(37,190)	37,190	**(602,564)**
Cash and cash equivalents	285,907	249,793	(249,793)	**285,907**
Goodwill	11,270	117,961	(117,961)	**11,270**
Other intangible assets	149,927	145,595	(145,595)	**149,927**
Investments in associates	–	–	789,588	**789,588**
Other identifiable assets	611,280	1,836,849	(1,836,849)	**611,280**
Total assets	1,058,384	2,350,198	(1,560,610)	**1,847,972**
Total debt	–	407,814	(407,814)	**–**
Headcount [1]	2,181	14,800	(14,800)	**2,181**

[1] Headcount includes employees with a fixed contract, and excludes temporary workers.

The accounting policies used to measure the net earnings and total assets in each segment are consistent to those used in the consolidated financial statements. The measurement methods used to determine reported segment earnings are consistently applied for all periods presented. There were no asymmetrical allocations to segments.

Geographical information is summarized as follows:

	YEAR ENDED DECEMBER 31,			
	2017		2018	
(EUR thousand)	REVENUE	PROPERTY, PLANT AND EQUIPMENT	REVENUE	PROPERTY, PLANT AND EQUIPMENT
United States	€199,498	€41,438	**€175,855**	**€51,254**
Europe	106,672	8,493	**165,602**	**8,468**
Asia	431,231	56,701	**476,624**	**89,027**
TOTAL	**€737,401**	**€106,632**	**€818,081**	**€148,749**

NOTE 21. REVENUE

Geographical information is summarized as follows:

	YEAR ENDED DECEMBER 31,	
	2017	2018
(EUR thousand)	REVENUE	REVENUE
United States	199,498	**175,855**
Europe	106,672	**165,602**
Asia	431,231	**476,624**
TOTAL	**737,401**	**818,081**

For geographical reporting, the revenue is attributed to the geographical location in which the customer's facilities are located.

Revenue stream

The Company generates revenue primarily from the sales of equipment and sales of spares & service. The products and services described by nature in Note 1, can be part of both revenue streams.

	YEAR ENDED DECEMBER 31,	
(EUR thousand)	2017	2018
Equipment revenue	573,742	**631,504**
Spares & service revenue	163,659	**186,577**
TOTAL	**737,401**	**818,081**

NOTE 22. INCOME TAXES

Amounts recognized in profit or loss

The components of income before income taxes consist of:

	YEAR ENDED DECEMBER 31,	
	2017	2018
The Netherlands	381,618	**75,833**
Other countries	75,419	**96,736**
INCOME BEFORE INCOME TAXES	**457,037**	**172,569**

The income tax expense consists of:

	YEAR ENDED DECEMBER 31,	
	2017	2018
Current:		
The Netherlands	(1,666)	**(4,128)**
Other countries	(5,651)	**(6,374)**
	(7,317)	**(10,502)**
Deferred:		
The Netherlands	2,812	**1,944**
Other countries	(130)	**(6,878)**
INCOME TAX EXPENSE	**(4,635)**	**(15,436)**

Reconciliation of effective tax rate

The provisions for income taxes as shown in the consolidated statements of profit or loss differ from the amounts computed by applying the Dutch statutory income tax rate to earnings before taxes. A reconciliation of the provisions for income taxes and the amounts that would be computed using the Dutch statutory income tax rate is set forth as follows:

	YEAR ENDED DECEMBER 31,			
	2017		2018	
EARNINGS BEFORE INCOME TAXES FROM CONTINUING OPERATIONS	**457,037**	**100.0%**	**172,569**	**100.0%**
Income tax provision based on Dutch statutory income tax rate	(114,259)	25.0%	**(43,142)**	**25.0%**
Non-deductible expenses	(2,998)	0.7%	**(5,432)**	**3.1%**
Foreign taxes at a rate other than the Dutch statutory rate	(885)	0.2%	**3,738**	**(2.2%)**
Recognition of net operating losses	(2,905)	0.6%	**(27)**	**–**
Utilization of net operating losses, previously not recognized	4,394	(1.0%)	**7,587**	**(4.4%)**
Non-taxable income [1]	102,450	(22.4%)	**20,612**	**(11.9%)**
Adjustments in respect of prior years' current taxes	(161)	–	**(191)**	**0.1%**
Other [2]	9,729	(2.1%)	**1,419**	**(0.8%)**
TAX INCOME / (EXPENSE)	**(4,635)**	**1.0%**	**(15,436)**	**8.9%**

1 Non-taxable income mainly consists of revenues deriving from the share in income of investments and associates which are exempted under the Dutch participation exemption.
2 Other mainly consists of tax credits, withholding taxes, changes in (enacted) tax laws and revaluation of certain assets.

On June 8, 2009, the Singapore Economic Development Board (EDB) granted a Pioneer Certificate to ASM Front-end Manufacturing Singapore Pte Ltd (FEMS), a principal subsidiary of the Group, to the effect that profits arising from certain manufacturing activities by FEMS of Front-end equipment will in principle be exempted from tax for a period of 10 years effective from July 1, 2008, subject to fulfillment of certain criteria during the period. This exemption has been extended for a period of five years.

Since 2011 the Dutch statutory tax rate is 25%. Taxation for other jurisdictions is calculated at the rates prevailing in the relevant jurisdictions. The Company's deferred tax assets and liabilities have been determined in accordance with these statutory income tax rates.

Movement in deferred tax balances

	JANUARY 1, 2017	CONSOLIDATED STATEMENT OF PROFIT OR LOSS	EQUITY	EXCHANGE DIFFERENCES	DECEMBER 31, 2017
Deferred tax assets:					
Reserves and allowances	2,134	(169)	366	(30)	2,301
Depreciation	2,856	4,156	–	(261)	6,751
Recognition net operating losses	7,257	(2,771)	–	(60)	4,426
R&D tax credits	–	2,733	–	(162)	2,571
Other	1,672	420	–	(25)	2,067
DEFERRED TAX ASSETS	**13,919**	**4,369**	**366**	**(538)**	**18,116**
Deferred tax liabilities:					
Capitalized development expenses	(13,070)	(1,737)	–	943	(13,864)
Other	(48)	50	–	(2)	–
DEFERRED TAX LIABILITIES	**(13,118)**	**(1,687)**	**–**	**941**	**(13,864)**
NET DEFERRED ASSETS	**801**	**2,682**	**366**	**403**	**4,252**

	JANUARY 1, 2018	CONSOLIDATED STATEMENT OF PROFIT OR LOSS	EQUITY	EXCHANGE DIFFERENCES	DECEMBER 31, 2018
Deferred tax assets:					
Reserves and allowances	2,301	4,467	–	176	6,944
Depreciation	6,751	3,843	–	270	10,864
Recognition net operating losses	4,426	2,545	–	19	6,990
R&D tax credits	2,571	11,401	–	32	14,004
Other	2,067	(1,990)	–	10	87
Set-off tax	–	(27,277)	–	(296)	(27,573)
DEFERRED TAX ASSETS	**18,116**	**(7,011)**	**–**	**211**	**11,316**
Deferred tax liabilities:					
Capitalized development expenses	(13,864)	(19,097)	–	(622)	(33,583)
Other	–	(6,103)	–	(57)	(6,160)
Set-off tax	–	27,277	–	296	27,573
DEFERRED TAX LIABILITIES	**(13,864)**	**2,077**	**–**	**(383)**	**(12,170)**
NET DEFERRED ASSETS (LIABILITIES)	**4,252**	**(4,934)**	**–**	**(172)**	**(854)**

Based on tax filings, ASMI and its individual subsidiaries have net operating losses available at December 31, 2018 of €91,049 to reduce future income taxes, mainly in the Netherlands. The Company believes that realization of its deferred tax assets is partly dependent on the ability of the Company to generate taxable income in the future. Given the volatile nature of the semiconductor equipment industry, past experience, and the tax jurisdictions where the Company has net operating losses, the Company believes that there is currently sufficient evidence to recognize a deferred tax asset in the amount of €6,990. Deferred tax assets and/or liabilities for temporary differences are recognized in the Netherlands, United States, Japan, South Korea and Singapore.

Unrecognized deferred tax assets

Deferred tax assets have not been recognized in respect of the following items, because it is not probable that future taxable profit will be available against which the Company can use the benefits therefrom.

	2018	
	GROSS AMOUNT	TAX EFFECT
Deductible temporary differences	32,059	6,826
Tax losses	57,084	11,736
Credits [1)]	15,121	15,121
UNRECOGNIZED DEFERRED TAX ASSETS	**104,264**	**33,683**

[1] These credits regards R&D credits generated in the US, in the state of Arizona. However, ASMI does not recognize these credits stemming from prior years due to the fact that utilization of prior year credits is only possibly if and when the credits generated in the current year are fully utilized. Given the level of R&D activity in the US, the company does not expect it could fully utilize the credits generated in the current year and, hence, does not expect to benefit from the available credits generated in prior years.

Tax losses carried forward

The amounts and expiration dates of the net operating losses for tax purposes are as follows:

EXPIRATION YEAR	TOTAL OF NET OPERATING LOSSES FOR TAX PURPOSES	NET OPERATING LOSSES FOR TAX PURPOSES THE NETHERLANDS	NET OPERATING LOSSES FOR TAX PURPOSES OTHER COUNTRIES
2019	**–**	–	–
2020	**204**	–	204
2021	**48,307**	48,307	–
2022	**26,815**	26,815	–
2023	**16**	–	16
2025	**2,688**	–	2,688
2026	**7,249**	7,249	–
2037	**5,608**	–	5,608
Unlimited	**162**	–	162
TOTAL	**91,049**	**82,371**	**8,678**

Summary of open tax years

A summary of open tax years by major jurisdiction is as follows:

JURISDICTION	
Japan	2013-2018
The Netherlands	2014-2018
Singapore	2014-2018
United States of America	1999-2018
South Korea	2015-2018

The calculation of the Company's tax liabilities involves dealing with uncertainties in the application of complex tax laws. The Company's estimate for the potential outcome of any unrecognized tax benefits is highly judgmental. Settlement of unrecognized tax benefits in a manner inconsistent with the Company's expectations could have a material impact on the Company's financial position, net earnings and cash flows. The Company is subject to tax audits in its major tax jurisdictions, and local tax authorities may challenge the positions taken by the Company.

Other taxes

The Company has not provided for deferred foreign withholding taxes, if any, on undistributed earnings of its foreign subsidiaries. At December 31, 2018, the undistributed earnings of subsidiaries, subject to withholding taxes, were approximately €57,048. These earnings could become subject to foreign withholding taxes if they were remitted as dividends and/or if the Company should sell its interest in the subsidiaries.

NOTE 23. EXPENSES BY NATURE

Expenses by nature were as follows:

	YEAR ENDED DECEMBER 31,	
	2017	2018
Materials and supplies	336,429	**365,831**
Personnel expenses	170,786	**188,503**
Depreciation, amortization and impairments	52,097	**55,352**
Other personnel related expenses	42,109	**47,761**
Professional fees	14,791	**23,646**
Other	8,002	**12,721**
TOTAL COST OF SALES, SELLING, GENERAL AND ADMINISTRATIVE AND RESEARCH AND DEVELOPMENT EXPENSES	**624,214**	**693,814**

Research and development consists of the following:

	YEAR ENDED DECEMBER 31,	
	2017	2018
Research and development expenses	114,093	**125,280**
Capitalization of development expenses	(38,615)	**(49,688)**
Amortization of capitalized development expenses	13,288	**12,039**
Research and development grants and credits	(326)	**(321)**
TOTAL RESEARCH AND DEVELOPMENT EXPENSES	**88,440**	**87,310**
Impairment of research and development related assets	4,337	**1,278**
TOTAL	**92,777**	**88,588**

The impairment expenses in 2017 and 2018 is related to customer specific projects.

The Company's operations in the Netherlands, Belgium and the United States receive research and development grants and credits from various sources.

Personnel expenses for employees were as follows:

	DECEMBER 31,	
	2017	2018
Wages and salaries	142,141	**158,371**
Social security	14,131	**14,802**
Pension expenses	5,931	**6,937**
Share-based payment expenses	7,801	**8,215**
Restructuring expenses	782	**178**
TOTAL	**170,786**	**188,503**

Personnel expenses are included in cost of sales and in operating expenses in the consolidated statement of profit or loss.

The number of employees, exclusive of temporary workers, by geographical area at year-end was as follows:

GEOGRAPHICAL LOCATION	DECEMBER 31, 2017	DECEMBER 31, 2018
Europe:		
- the Netherlands	143	**151**
- EMEA	171	**189**
United States	555	**576**
Japan	228	**248**
South Korea	221	**273**
Singapore	395	**463**
Asia, other	187	**281**
TOTAL	**1,900**	**2,181**

The number of employees, exclusive of temporary workers, by function at year-end was as follows:

PER FUNCTION	DECEMBER 31, 2017	DECEMBER 31, 2018
Research and development	497	**544**
Manufacturing	361	**456**
Marketing and sales	268	**277**
Customer service	597	**716**
Finance and administration	177	**188**
TOTAL	**1,900**	**2,181**

NOTE 24. EARNINGS PER SHARE

Basic net earnings per common share is calculated by dividing net income attributable to common shareholders by the weighted average number of common shares outstanding for that period. The dilutive effect is calculated using the treasury stock method. The calculation of diluted net income per share assumes the exercise of options issued under our stock option plans (and the issuance of shares under our share plans) for periods in which exercises (or issuances) would have a dilutive effect.

The calculation of basic and diluted net income per share attributable to common shareholders is based on the following data:

	DECEMBER 31, 2017	DECEMBER 31, 2018
Net earnings used for purposes of calculating net income per common share		
NET EARNINGS FROM OPERATIONS	**452,402**	**157,133**
Basic weighted average number of shares outstanding during the year (thousands)	58,573	**52,432**
Effect of dilutive potential common shares from stock options and restricted shares	752	**678**
DILUTIVE WEIGHTED AVERAGE NUMBER OF SHARES OUTSTANDING	**59,325**	**53,110**
Basic net earnings per share:		
from operations	7.72	**3.00**
Diluted net earnings per share:		
from operations	7.63	**2.96**

NOTE 25. BOARD REMUNERATION

The remuneration of members of the Management Board has been determined by the Supervisory Board.

During 2018, the Company considered the members of the Management Board and the Supervisory Board to be the key management personnel. Total remuneration for key management personnel in 2018 amounts to €3,806 (2017: €3,637).

The following table sets information concerning all remuneration from the Company (including its subsidiaries) for services in all capacities to all current members of the Management Board of the Company:

	BASE COMPEN-SATION	BONUSES	PENSIONS [2]	SHARE-BASED PAYMENT EXPENSES [1]	FRINGE BENEFITS	TOTAL
Management Board:						
C.D. del Prado						
2018	**669**	**511**	**119**	**883**	**78**	**2,260**
2017	637	549	111	785	65	**2,147**
P.A.M. van Bommel						
2018	**426**	**257**	**89**	**437**	**37**	**1,246**
2017	416	289	85	398	47	**1,235**

[1] These amounts represent the vesting expenses related to the financial year.
[2] Including pension compensation due to maximum pensionable salary of €105, C.D. del Prado €92 (2017: €88), P.A.M. van Bommel €65 (2017: €63).

SHORT-TERM INCENTIVE (CASH BONUS)

Each year, a short-term incentive can be earned, based on achieving specific challenging targets. These targets are for 75% based on company financial targets and for 25% based on non-financial targets. The on-target bonus percentage for the CEO is 100% of base salary, with a maximum pay-out of 150% of base salary. The on-target bonus percentage for the other members of the Management Board is 75% of base salary, with a maximum pay-out of 125% of base salary. For the year 2018, the Management Board partially met the company financial targets and met the non-financial targets.

LONG-TERM INCENTIVE (STOCK OPTIONS/PERFORMANCE SHARES)

The members of the Management Board are eligible to receive stock options and performance shares under the ASMI 2014 long-term incentive plan for members of the Management Board in order to focus on the long-term interest of the company. Stock options vest after three years subject to continued employment and expire after seven years. Performance shares vest after three years subject to meeting certain conditions. The members of the Management Board are required to hold the vested performance shares for an additional two years; however, they are allowed to sell a part of the unconditional shares after three years for tax purposes. The next grant of stock options and restricted shares will take place in April 2019.

PENSION ARRANGEMENT

As of 2015, the members of the Management Board no longer participate in the industry wide pension fund. They are offered participation in a defined contribution plan for their salary up to €105,075. For their salary above €105,075, the members of the Management Board are compensated with an amount equal to the employer pension contribution. The members of the Management Board have the option to participate in a net pension plan offered by the company or to have the compensation paid out in cash.

FRINGE BENEFITS

Fringe benefits cover compensation related to the use of a (company) car, a representation and expense allowance, social security premium and premium for health and disability insurance.

OUTSTANDING OPTIONS

The following table shows the outstanding options to purchase ASMI common shares held by current members of the Management Board, and changes in such holdings during 2018:

	YEAR OF GRANT	OUTSTANDING JANUARY 1, 2018	GRANTED IN 2018	EXERCISED IN 2018 [2]	ADJUSTMENTS FOLLOWING THE CAPITAL REPAYMENT [3]	OUTSTANDING DECEMBER 31, 2018	EXERCISE PRICE [4]	END DATE
C.D. del Prado [1]	2011	88,450	–	(96,328)	7,878	**–**	€ 17.39	Dec 31, 2018
C.D. del Prado [1]	2012	70,760	–	–	6,302	**77,062**	€ 21.05	Dec 31, 2019
C.D. del Prado [1]	2013	75,000	–	–	6,680	**81,680**	€ 21.79	Dec 31, 2020
C.D. del Prado [1]	2015	28,050	–	–	2,498	**30,548**	€ 40.62	Apr 24, 2022
C.D. del Prado [1]	2016	41,589	–	–	3,704	**45,293**	€ 34.06	Apr 22, 2023
C.D. del Prado [1]	2017	16,757	–	–	1,492	**18,249**	€ 47.33	Apr 21, 2024
P.A.M. van Bommel [1]	2011	62,504	–	(68,071)	5,567	**–**	€ 17.39	Dec 31, 2018
P.A.M. van Bommel [1]	2012	47,173	–	–	4,202	**51,375**	€ 21.05	Dec 31, 2019
P.A.M. van Bommel [1]	2013	53,000	–	–	4,721	**57,721**	€ 21.79	Dec 31, 2020
P.A.M. van Bommel [1]	2015	14,609	–	–	1,301	**15,910**	€ 40.62	Apr 24, 2022
P.A.M. van Bommel [1]	2016	20,966	–	–	1,867	**22,833**	€ 34.06	Apr 22, 2023
P.A.M. van Bommel [1]	2017	8,206	–	–	731	**8,937**	€ 47.33	Apr 21, 2024
TOTAL		**527,064**	**–**	**(164,399)**	**46,943**	**409,608**		

1 Options are granted for a term of seven years and become exercisable after a three-year vesting period.
2 Options of C.D. del Prado were exercised on December 3, 2018 at a share price of €39.44 and options of P.A.M. van Bommel were exercised on December 4, 2018 at a share price of €38.19.
3 Following the sale of a 14% share of ASMPT in 2017, a capital repayment of €4 per common share was effectuated on August 10, 2018. As a result of this capital repayment the underlying value of ASMI option holders was diluted. The Management Board of ASMI and the Supervisory Board of ASMI decided to apply a theoretical adjustment ratio of 0.91821713 to the outstanding options granted to employees including members of the Management Board as determined based on the specific rules issued and applied by NYSE Liffe. These specific rules issued by NYSE Liffe are similar to the adjustment ratio as applied to traded securities that are also not entitled to receive the capital repayment. Under these rules a theoretical adjustment ratio was determined based on the value and the effective date of the capital repayment and this ratio was applied to adjust the original number of the options and the original exercise price of the outstanding options.
4 Exercise price adjusted for capital repayment.

In 2018, 164,399 options to purchase ASMI common shares were exercised and 164,399 treasury shares were sold for the exercise of these options.

OUTSTANDING PERFORMANCE SHARES

The following table shows the outstanding performance shares granted to members of the Management Board in 2018 and held by members of the Management Board per December 31, 2018:

	GRANT DATE	STATUS	NUMBER OF SHARES AT GRANT DATE	PERFORMANCE ADJUSTMENT	VESTED IN 2018	ADJUSTMENTS FOLLOWING THE CAPITAL REPAYMENT [1]	OUTSTANDING DECEMBER 31, 2018	FAIR VALUE AT GRANT DATE [2]	VESTING DATE
C.D. del Prado	April 24, 2015	Conditional	8,544	1,495	(10,039)	–	–	€43.21	April 24, 2018
C.D. del Prado	April 22, 2016	Conditional	11,070	–	–	986	12,056	€31.84	April 22, 2019
C.D. del Prado	April 21, 2017	Conditional	11,689	–	–	1,041	12,730	€47.52	April 21, 2020
C.D. del Prado	April 20, 2018	Conditional	17,302	–	–	1,541	18,843	€45.71	April 20, 2021
P.A.M. van Bommel	April 24, 2015	Conditional	4,450	779	(5,229)	–	–	€43.21	April 24, 2018
P.A.M. van Bommel	April 22, 2016	Conditional	5,581	–	–	497	6,078	€31.84	April 22, 2019
P.A.M. van Bommel	April 21, 2017	Conditional	5,724	–	–	510	6,234	€47.52	April 21, 2020
P.A.M. van Bommel	April 20, 2018	Conditional	8,271	–	–	737	9,008	€45.71	April 20, 2021
TOTAL			**72,631**	**2,274**	**(15,268)**	**5,312**	**64,949**		

1 Following the sale of a 14% share of ASMPT in 2017, a capital repayment of €4 per common share was effectuated on August 10, 2018. As a result of this capital repayment the underlying value of ASMI unvested share holders was diluted. The Management Board of ASMI and the Supervisory Board of ASMI decided to apply a theoretical adjustment ratio of 0.91821713 to the outstanding performance and restricted shares granted to employees including members of the Management Board as determined based on the specific rules issued and applied by NYSE Liffe. These specific rules issued by NYSE Liffe are similar to the adjustment ratio as applied to traded securities that are also not entitled to receive the capital repayment. Under these rules a theoretical adjustment ratio was determined based on the value and the effective date of the capital repayment and this ratio was applied to adjust the original number of the performance and restricted shares.
2 Fair value adjusted for capital repayment.

The shares will become unconditional after three years, depending on the achievement of predetermined targets. The financial targets to be achieved are measured over a three-year performance period and relate to a sales growth compared to market and an average EBIT percentage performance measure. The Management Board members will hold the unconditional shares for at least an additional two years; however, they are allowed to sell a part of the unconditional shares after three years for tax purposes.

The following table sets forth information concerning all remuneration (base compensation, no bonuses or pensions were paid) from the Company (including its subsidiaries) for services in all capacities to all current and former members of the Supervisory Board of the Company:

	YEAR ENDED DECEMBER 31,	
	2017	2018
Supervisory Board:		
J.C. Lobbezoo	70.0	**78.6**
M.J.C. de Jong [2]	–	**34.0**
S. Kahle-Galonske	30.5	**55.9**
H.W. Kreutzer [1]	52.5	**21.4**
M.C.J. van Pernis	52.5	**56.0**
U.H.R. Schumacher	50.0	**53.5**
TOTAL	**255.5**	**299.4**

1 Period January 1 to May 28, 2018
2 Period as of May 28, 2018

The remuneration of members of the Supervisory Board has been determined by the 2018 Annual General Meeting of Shareholders.

No stock options or performance shares have been granted to members of the Supervisory Board.

NOTE 26. SHARE OWNERSHIP AND RELATED PARTY TRANSACTIONS

The ownership or controlling interest of outstanding common shares of ASMI by members of the Management Board and Supervisory Board or members of their immediate family are as follows:

	DECEMBER 31, 2017		DECEMBER 31, 2018	
	SHARES OWNED	PERCENTAGE OF COMMON SHARES OUTSTANDING	SHARES OWNED	PERCENTAGE OF COMMON SHARES OUTSTANDING
C.D. del Prado (member of the Management Board)	918,684	1.64%	**823,964**	**1.67%**
P.A.M. van Bommel (member of the Management Board)	–	–	**20,256**	**0.04%**
M.J.C. de Jong (member of the Supervisory Board)	–	–	**4,050**	**0.01%**

The Company has a related party relationship with its subsidiaries, equity accounted investees and members of the Supervisory Board and the Management Board. Related party transactions, if any, are conducted on an at arm's length basis with terms comparable to transactions with third parties.

NOTE 27. PRINCIPLE AUDITOR'S FEES AND SERVICES

KPMG Accountants N.V. has served as our external auditor for the years 2018 and 2017. The table sets out the aggregate fees for professional audit services and other services rendered by the external auditors and its member firms and/or affiliates in 2018 and 2017. The fees mentioned in the table for the audit of the financial statements 2018 (2017) relate to the total fees for the audit of the financial statements 2018 (2017), irrespective of whether the activities have been performed during the financial year 2018 (2017). The following fees were charged by KPMG Accountants N.V. to the Company, its subsidiaries and other consolidated companies, as referred to in Section 2:382a(1) and (2) of the Dutch Civil Code.

	2017			2018		
	KPMG ACCOUNTANTS NV	KPMG NETWORK	KPMG TOTAL	KPMG ACCOUNTANTS NV	KPMG NETWORK	KPMG TOTAL
Audit fees	515	125	640	**478**	**176**	**654**
Audit-related fees	–	–	–	**–**	**–**	**–**
Tax fees	–	–	–	**–**	**–**	**–**
Other fees	–	–	–	**–**	**–**	**–**
TOTAL	**515**	**125**	**640**	**478**	**176**	**654**

AUDIT COMMITTEE PRE-APPROVAL POLICIES

The Audit Committee has determined that the provision of services by KPMG described in the preceding paragraphs is compatible with maintaining KPMG's independence. All audit and permitted non-audit services provided by KPMG during 2018 were pre-approved by the Audit Committee.

The Audit Committee has adopted the following policies and procedures for pre-approval of all audit and permitted non-audit services provided by our external auditor:

Audit services

Management submits to the Audit Committee for pre-approval the scope and estimated fees for specific services directly related to performing the independent audit of our consolidated financial statements for the current year.

Audit-related services

The Audit Committee may pre-approve expenditures up to a specified amount for services included in identified service categories that are related extensions of audit services and are logically performed by the auditors. Additional services exceeding the specified pre-approved limits require specific Audit Committee approval.

Tax services

The Audit Committee may pre-approve expenditures up to a specified amount per engagement and in total for identified services related to tax matters. Additional services exceeding the specified pre-approved limits, or involving service types not included in the pre-approved list, require specific Audit Committee approval.

Other services

In the case of specified services for which utilizing our external auditor creates efficiencies, minimizes disruption, or preserves confidentiality, or for which management has determined that our external auditor possesses unique or superior qualifications to provide such services, the Audit Committee may pre-approve expenditures up to a specified amount per engagement and in total. Additional services exceeding the specified pre-approved limits, or involving service types not included in the pre-approved list, require specific Audit Committee approval.

NOTE 28. SUBSEQUENT EVENTS

Subsequent events were evaluated up to March 5, 2019, which is the issuance date of this Annual Report 2018. There are no subsequent events to report.

NOTE 29. OTHER NON-CURRENT ASSETS

	YEAR ENDED DECEMBER 31,	
	2017	2018
Non-current receivable	3,329	**4,292**
Tax receivable	–	**5,977**
Other [1]	1,516	**1,372**
TOTAL	**4,845**	**11,641**

[1] This amount includes amortisation of EUR 187 (2017: EUR 187).

SIGNING

Almere

March 5, 2019

SUPERVISORY BOARD

J.C. Lobbezoo

M.J.C. de Jong

S. Kahle-Galonske

M.C.J. van Pernis

U.H.R. Schumacher

MANAGEMENT BOARD

C.D. del Prado

P.A.M. van Bommel

COMPANY BALANCE SHEET

(before proposed appropriation of net earnings for the year)

(EUR thousand)	NOTES	DECEMBER 31, 2017	DECEMBER 31, 2018
Non-current assets			
Property, plant and equipment, net	2	339	285
Goodwill, net	3	11,270	11,270
Other intangible assets, net	4	13,841	8,411
Investments in subsidiaries	5	1,373,070	1,602,871
Loans to subsidiaries	5	46,863	46,698
Other non-current assets		754	6,543
Deferred tax assets	6	7,812	11,066
TOTAL NON-CURRENT ASSETS		1,453,949	1,687,144
Current assets			
Loans to subsidiaries	5	1,892	2,064
Amounts due from subsidiaries		880	528
Other current assets		827	490
Cash and cash equivalents	14	568,185	–
TOTAL CURRENT ASSETS		571,784	3,082
TOTAL ASSETS		2,025,733	1,690,226
Equity			
Common shares		2,492	2,252
Capital in excess of par value		218,525	50,902
Treasury shares		(304,654)	(328,010)
Legal reserves			
Translation reserve		53,754	99,607
Other legal reserves		778,608	886,151
Accumulated net earnings		810,385	773,516
Net earnings current year		452,402	157,133
TOTAL EQUITY	7	2,011,512	1,641,551
Current liabilities			
Accounts payable		1,320	404
Amounts due to subsidiaries	14	1,052	42,791
Accrued expenses and other payables	8	11,849	5,480
TOTAL CURRENT LIABILITIES		14,221	48,675
TOTAL EQUITY AND LIABILITIES		2,025,733	1,690,226

COMPANY STATEMENT OF PROFIT OR LOSS

		YEAR ENDED DECEMBER 31,	
(EUR thousand)	NOTES	2017	2018
Operating expenses:			
Selling, general and administrative		(25,406)	(37,463)
Research and development		(2,038)	(1,955)
TOTAL OPERATING EXPENSES	13	(27,444)	(39,418)
RESULT FROM OPERATIONS		(27,444)	(39,418)
Finance income		1,371	932
Finance expense		(1,429)	(2,215)
Foreign currency exchange gain (loss), net		4,618	(5,978)
Intercompany charging operating expenses		3,568	3,112
Sale of stake in associate		15,791	–
RESULT BEFORE INCOME TAXES		(3,525)	(43,567)
Income taxes		2,618	1,522
NET EARNINGS FROM HOLDING ACTIVITIES		(907)	(42,045)
Net earnings from subsidiaries and associates		453,309	199,178
TOTAL NET EARNINGS		452,402	157,133

NOTES TO THE COMPANY FINANCIAL STATEMENTS

NOTE 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

ASM International N.V. (ASMI or the Company) is a Dutch public liability company. Statutory seat: Versterkerstraat 8, 1322 AP Almere, the Netherlands.

The description of our activities and our structure, as included in the Notes to the consolidated financial statements, also apply to the Company financial statements.

The accompanying Company financial statements are stated in thousands of euro unless otherwise indicated.

ACCOUNTING POLICIES APPLIED

The financial statements of the Company included in this section are prepared in accordance with Part 9 of Book 2 of the Dutch Civil Code. Section 362 (8), Book 2, Dutch Civil Code, allows companies that apply IFRS as endorsed by the European Union in their consolidated financial statements to use the same measurement principles in their Company financial statements. The Company has prepared these Company financial statements using this provision.

Participating interests in group companies

Investments in subsidiaries are stated at net asset value as we effectively exercise significant influence over the operational and financial activities of these investments. For a list of all subsidiaries see Note 2 to the consolidated financial statements.

NOTE 2. PROPERTY, PLANT AND EQUIPMENT

The changes in the amount of property, plant and equipment are as follows:

	LAND, BUILDINGS AND LEASEHOLD IMPROVEMENTS	FURNITURE AND FIXTURES	TOTAL
At cost:			
BALANCE JANUARY 1, 2017	**47**	**452**	**499**
Additions	–	177	**177**
BALANCE DECEMBER 31, 2017	**47**	**629**	**676**
Additions	–	57	**57**
BALANCE DECEMBER 31, 2018	**47**	**686**	**733**
Accumulated depreciation:			
BALANCE JANUARY 1, 2017	**47**	**261**	**308**
Depreciation for the year	–	29	**29**
BALANCE DECEMBER 31, 2017	**47**	**290**	**337**
Depreciation for the year	–	111	**111**
BALANCE DECEMBER 31, 2018	**47**	**401**	**448**
Property, plant and equipment, net:			
DECEMBER 31, 2017	**–**	**339**	**339**
DECEMBER 31, 2018	**–**	**285**	**285**

USEFUL LIVES IN YEARS:	
Land, buildings and leasehold improvements	0-25
Furniture and fixtures	2-10

NOTE 3. GOODWILL

The carrying amount of the goodwill is related to acquisitions in the following cash generating units:

	DECEMBER 31, 2017	DECEMBER 31, 2018
ALD	2,611	2,611
PEALD	8,659	8,659
TOTAL	11,270	11,270

NOTE 4. OTHER INTANGIBLE ASSETS

The changes in the carrying amount of other intangible assets are as follows:

	SOFTWARE	PURCHASED TECHNOLOGY AND OTHER INTANGIBLE ASSETS	TOTAL
At cost:			
BALANCE JANUARY 1, 2017	24,561	6,397	30,958
Additions	2,187	–	2,187
BALANCE DECEMBER 31, 2017	26,748	6,397	33,145
Additions	242	–	242
BALANCE DECEMBER 31, 2018	26,990	6,397	33,387
Accumulated amortization:			
BALANCE JANUARY 1, 2017	13,241	4,133	17,374
Amortization for the year	1,261	669	1,930
BALANCE DECEMBER 31, 2017	14,502	4,802	19,304
Amortization for the year	5,012	660	5,672
BALANCE DECEMBER 31, 2018	19,514	5,462	24,976
Other intangible assets net:			
DECEMBER 31, 2017	12,246	1,595	13,841
DECEMBER 31, 2018	7,476	935	8,411

Other intangible assets are amortized over their useful lives of three to seven years. Estimated amortization expenses relating to other intangible assets are as follows:

	SOFTWARE	PURCHASED TECHNOLOGY AND OTHER INTANGIBLE ASSETS	TOTAL
2019	2,168	660	2,828
2020	2,206	275	2,481
2021	2,139	–	2,139
2022	963	–	963
Years thereafter	–	–	–
TOTAL	7,476	935	8,411

NOTE 5. INVESTMENTS AND LOANS TO SUBSIDIARIES

	INVESTMENTS IN SUBSIDIARIES	LOANS TO SUBSIDIARIES	TOTAL
BALANCE JANUARY 1, 2017	1,801,500	54,877	1,856,377
Net result of subsidiaries	453,309	–	453,309
Other comprehensive income investments	(2,844)	–	(2,844)
Dividend received	(728,997)	–	(728,997)
Capitalizations	422	–	422
Disposal of investments	(80)	–	(80)
Dilution	606	–	606
Foreign currency translation effect	(150,846)	(6,122)	(156,968)
BALANCE DECEMBER 31, 2017	1,373,070	48,755	1,421,825
Net result of subsidiaries and associates	199,178	–	199,178
Other comprehensive income investments	499	–	499
Dividend received	(29,649)	–	(29,649)
Reclassification	14,587	–	14,587
Repayment of loans	–	(2,114)	(2,114)
Dilution	489	–	489
Foreign currency translation effect	44,697	2,121	46,818
BALANCE DECEMBER 31, 2018	1,602,871	48,762	1,651,633

	December 31,	
	2017	2018
Loans due from subsidiaries - non-current portion	46,863	**46,698**
Loans due from subsidiaries - current portion	1,892	**2,064**
TOTAL	**48,755**	**48,762**

Interest relates mainly to a subsidiary and is based on the Bank of America's prime rate with a rise of two percent points. The repayment schedule of the loan is as follows: 24 annual installments of US$2 million, starting December 31, 2018, followed by a final installment of US$5.3 million on December 31, 2043.

NOTE 6. DEFERRED TAX ASSETS

Based on tax filings, ASMI has net operating losses available at December 31, 2018 of €82,371 to reduce future income taxes. The Company believes that realization of its net deferred tax assets is dependent on the ability of the Company to generate taxable income in the future. Given the volatile nature of the semiconductor equipment industry and past experience, the Company believes that there is currently sufficient evidence to recognize a deferred tax asset in the amount of €11,066.

Reference is made to Note 22 to the consolidated financial statements.

NOTE 7. EQUITY

The changes in equity are as follows:

(EUR thousand)	COMMON SHARES	CAPITAL IN EXCESS OF PAR VALUE	TREASURY SHARES	ACCUMULATED NET EARNINGS	NET EARNINGS CURRENT YEAR	LEGAL RESERVES: TRANSLATION RESERVE	LEGAL RESERVES: OTHER LEGAL RESERVES	TOTAL EQUITY
BALANCE AS OF JANUARY 1, 2017	**2,552**	**225,837**	**(151,477)**	**264,826**	**135,471**	**229,488**	**1,291,445**	**1,998,142**
Appropriation of net earnings:	–	–	–	135,471	(135,471)	–	–	–
Components of comprehensive income								
Net earnings	–	–	–	–	452,402	–	–	452,402
Other comprehensive income	–	–	–	–	–	(175,734)	–	(175,734)
TOTAL COMPREHENSIVE INCOME (LOSS)	**–**	**–**	**–**	**–**	**452,402**	**(175,734)**	**–**	**276,668**
Dividend paid to common shareholders	–	–	–	(41,470)	–	–	–	(41,470)
Compensation expense share-based payments	–	7,801	–	–	–	–	–	7,801
Exercise stock options out of treasury shares	–	(10,612)	23,904	–	–	–	–	13,292
Vesting restricted shares out of treasury shares	–	(4,501)	4,501	–	–	–	–	–
Purchase of common shares	–	–	(243,527)	–	–	–	–	(243,527)
Cancellation of common shares out of treasury shares	(60)	–	61,945	(61,885)	–	–	–	–
Change in retained earnings subsidiaries	–	–	–	121,741	–	–	(121,741)	–
Fair value accounting investments	–	–	–	404,092	–	–	(404,092)	–
Capitalized development expenses subsidiaries	–	–	–	(12,996)	–	–	12,996	–
Other movements in investments in associates:								
Dilution	–	–	–	606	–	–	–	606
BALANCE AS OF DECEMBER 31, 2017	**2,492**	**218,525**	**(304,654)**	**810,385**	**452,402**	**53,754**	**778,608**	**2,011,512**
Adjustment on initial application IFRS 15, net of tax	–	–	–	15,992	–	–	–	15,992
ADJUSTED BALANCE AT JANUARY 1, 2018	**2,492**	**218,525**	**(304,654)**	**826,377**	**452,402**	**53,754**	**778,608**	**2,027,504**
Appropriation of net earnings	–	–	–	452,402	(452,402)	–	–	–
Components of comprehensive income:								
Net earnings	–	–	–	–	157,133	–	–	157,133
Other comprehensive income	–	–	–	–	–	45,853	–	45,853
TOTAL COMPREHENSIVE INCOME (LOSS)	**–**	**–**	**–**	**–**	**157,133**	**45,853**	**–**	**202,986**
Dividend paid to common shareholders	–	–	–	(43,644)	–	–	–	(43,644)
Capital repayment	–	(159,817)	–	(48,957)	–	–	–	(208,774)
Compensation expense share-based payments	–	8,215	–	–	–	–	–	8,215
Exercise stock options out of treasury shares	–	(7,966)	12,783	–	–	–	–	4,817
Vesting restricted shares out of treasury shares	–	(8,055)	8,055	–	–	–	–	–
Purchase of common shares	–	–	(350,042)	–	–	–	–	(350,042)
Cancellation of common shares out of treasury shares	(240)	–	305,848	(305,608)	–	–	–	–
Change in retained earnings subsidiaries	–	–	–	(45,032)	–	–	45,032	–
Fair value accounting investments	–	–	–	(21,051)	–	–	21,051	–
Capitalized development expenses subsidiaries	–	–	–	(41,460)	–	–	41,460	–
Other movements in investments in associates:								
Dilution	–	–	–	489	–	–	–	489
BALANCE AS OF DECEMBER 31, 2018	**2,252**	**50,902**	**(328,010)**	**773,516**	**157,133**	**99,607**	**886,151**	**1,641,551**

COMMON SHARES, PREFERRED AND FINANCING PREFERRED SHARES

Following the amendment of the articles of association on August 3, 2018, the authorized capital of the Company amounts to 82,500,000 common shares of €0.04 par value, 88,500 preferred shares of €40 par value and 6,000 financing preferred shares of €40 par value.

The AGM of May 28, 2018, approved the cancellation of 6.0 million treasury shares. This became effective as per August 1, 2018.

As per December 31, 2018, 56,297,394 common shares with a nominal value of €0.04 each were issued and fully paid up, of which 6,978,496 common shares are held by us in treasury. All shares have one vote per €0.04 par value. Treasury shares held by the Company cannot be voted on. Of our 49,318,898 outstanding common shares at December 31, 2018, 49,022,494 are registered with our transfer agent in the Netherlands, ABN AMRO Bank N.V., and 296,404 are registered with our transfer agent in the United States, Citibank, NA, New York.

As at December 31, 2018 no preferred shares are issued.

TREASURY SHARES

With respect to treasury shares, reference is made to Note 12 to the consolidated financial statements.

OTHER LEGAL RESERVES

Legal reserves include reserves regarding participating interests, capitalized development expenses and the cumulative foreign currency translation effect on translation of foreign operations, and is included in the accumulated other comprehensive income (loss).

The other legal reserve for participating interests regarding retained earnings, which amounts to €745,769 (2017: €679,686), pertains to participating interests that are accounted for according to the equity accounting method. The reserve represents the difference between the participating interest' retained earnings and direct changes in equity, as determined on the basis of the Company's accounting policies, and the share thereof that the Company may distribute. As to the latter share, this takes into account any profits that may not be distributable by participating interests that are Dutch limited companies based on the distribution tests to be performed by the management of those companies. The legal reserve is determined on an individual basis.

In accordance with applicable legal provisions, a legal reserve for the carrying amount of €140,382 (2017: €98,922) has been recognized for capitalized development costs.

Changes in other legal reserves in 2017 and 2018 were as follows:

	RESERVE FOR PARTICIPATING INTERESTS, REGARDING RETAINED EARNINGS	RESERVE FOR PARTICIPATING INTERESTS, REGARDING CAPITALIZED DEVELOPMENT EXPENSES	OTHER LEGAL RESERVES
BALANCE AS OF JANUARY 1, 2017	**1,205,519**	**85,926**	**1,291,445**
Retained earnings subsidiaries and investments	(121,741)	–	**(121,741)**
Fair value accounting investments	(404,092)	–	**(404,092)**
Development expenditures	–	12,996	**12,996**
BALANCE AS OF DECEMBER 31, 2017	**679,686**	**98,922**	**778,608**
Retained earnings subsidiaries and investments	45,032	–	**45,032**
Fair value accounting investments	21,051	–	**21,051**
Development expenditures	–	41,460	**41,460**
BALANCE AS OF DECEMBER 31, 2018	**745,769**	**140,382**	**886,151**

For more detailed information, reference is made to Note 12 to the consolidated financial statements.

EMPLOYEE STOCK PLAN, OPTION PLAN AND EMPLOYEE RESTRICTED SHARES PLAN

The Company has adopted various stock option plans and restricted share plans and has entered into related agreements with various employees. For detailed information, reference is made to Note 13 to the consolidated financial statements.

APPROPRIATION OF RESULT

It is proposed that net earnings for the year 2018 are carried to the accumulated deficit/net earnings.

NOTE 8. ACCRUED EXPENSES AND OTHER PAYABLES

Accrued expenses and other payables consist of personnel related items €3,824 (2017: €4,425), financing related items €0 (2017: €4,920) and other €1,656 (2017: €2,504).

NOTE 9. SHARE OWNERSHIP OF THE MANAGEMENT BOARD AND SUPERVISORY BOARD

With respect to share ownership of the Management Board and Supervisory Board, reference is made to Note 25 and 26 to the consolidated financial statements.

NOTE 10. PERSONNEL

The average number of employees of ASMI in full-time equivalents during 2018 was 21.5 (2017: 19.8). Salaries, social security charges and pension expenses amounted to €5,422, €262 and €591, respectively, for 2018 (2017: expenses of €6,068, €232 and €534, respectively). Further information concerning the number of employees can be found in Note 23 to the consolidated financial statements.

For information on the parent company's defined benefit pension plan, the remuneration of the Management Board and the Supervisory Board and the parent company's share-based compensation plans, see Notes 13 and 25 to the consolidated financial statements.

NOTE 11. COMMITMENTS AND CONTINGENCIES

At December 31, 2018, operating leases having initial or remaining non-cancelable terms in excess of one year are as follows:

	2017	2018
Not later than 1 year	162	**117**
Between 1 and 5 years	173	**177**
Later than 5 years	–	**–**
TOTAL	**335**	**294**

Lease payments recognized in the expenses were €204 for the year ended December 31, 2018 (2017: € 195).

With respect to certain Dutch subsidiaries, ASMI has assumed joint and several liability in accordance with Article 403, Part 9 of Book 2 of the Dutch Civil Code.

ASMI forms a fiscal unity (tax group for corporate income tax purposes) together with its Dutch subsidiaries for purposes of Dutch tax laws and is as such jointly and severally liable for the tax debts of the unity. The tax unity consists of ASM International N.V. and the following subsidiaries:

- ASM Europe BV (operational company);
- ASM IP Holding BV (operational company);
- ASM Pacific Holding BV (holding company);
- ASM Netherlands Holding BV (holding company);
- ASM United Kingdom Sales BV (operational company); and
- ASM Germany Sales BV (operational company).

NOTE 12. AUDITOR'S FEES AND SERVICES

For information regarding auditor's fees and services we refer to Note 27 to the consolidated financial statements.

NOTE 13. EXPENSES BY NATURE

Expenses by nature were as follows:

	YEAR ENDED DECEMBER 31,	
	2017	2018
Salaries and wages	(6,834)	**(6,275)**
Depreciation, amortization and impairments	(1,959)	**(5,783)**
Other personnel related expenses	(8,031)	**(9,245)**
Professional fees	(7,669)	**(14,651)**
Other	(2,951)	**(3,464)**
TOTAL SELLING, GENERAL AND ADMINISTRATIVE AND RESEARCH AND DEVELOPMENT EXPENSES	**(27,444)**	**(39,418)**

NOTE 14. AMOUNTS DUE TO SUBSIDIARIES

The amounts due to subsidiaries are mainly related to the cash pool and in-house bank operated by the Company.

NOTE 15. SUBSEQUENT EVENTS

Subsequent events were evaluated up to March 5, 2019, which is the issuance date of this Annual Report 2018. There are no subsequent events to report.

SIGNING

Almere
March 5, 2019

SUPERVISORY BOARD

J.C. Lobbezoo
M.J.C. de Jong
S. Kahle-Galonske
M.C.J. van Pernis
U.H.R. Schumacher

MANAGEMENT BOARD

C.D. del Prado
P.A.M. van Bommel

INDEPENDENT AUDITOR'S REPORT

To: the General Meeting of Shareholders and the Supervisory Board of ASM International N.V.

REPORT ON THE AUDIT OF THE FINANCIAL STATEMENTS 2018 INCLUDED IN THE ANNUAL REPORT

OUR OPINION

In our opinion:

- the accompanying consolidated financial statements give a true and fair view of the financial position of ASM International N.V. as at December 31, 2018 and of its result and its cash flows for the year then ended, 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 ASM International N.V. financial statements give a true and fair view of the financial position of ASM International N.V. as at December 31, 2018 and of its result for the year then ended in accordance with Part 9 of Book 2 of the Dutch Civil Code.

WHAT WE HAVE AUDITED

We have audited the financial statements 2018 of ASM International N.V. ("ASMI") based in Almere. The financial statements include the consolidated financial statements and ASMI's financial statements.

The consolidated financial statements comprise:

1. the consolidated statement of financial position as at December 31, 2018;
2. the following consolidated statements for 2018: the statement of profit or loss, the statement of comprehensive income, the statement of changes in equity and the statement of cash flows; and
3. the notes comprising a summary of the significant accounting policies and other explanatory information.

The ASMI financial statements comprise:

1. the company balance sheet as December 31, 2018;
2. the company statement of profit or loss for 2018; and
3. the notes comprising a summary of the significant accounting policies and other explanatory information.

BASIS FOR OUR OPINION

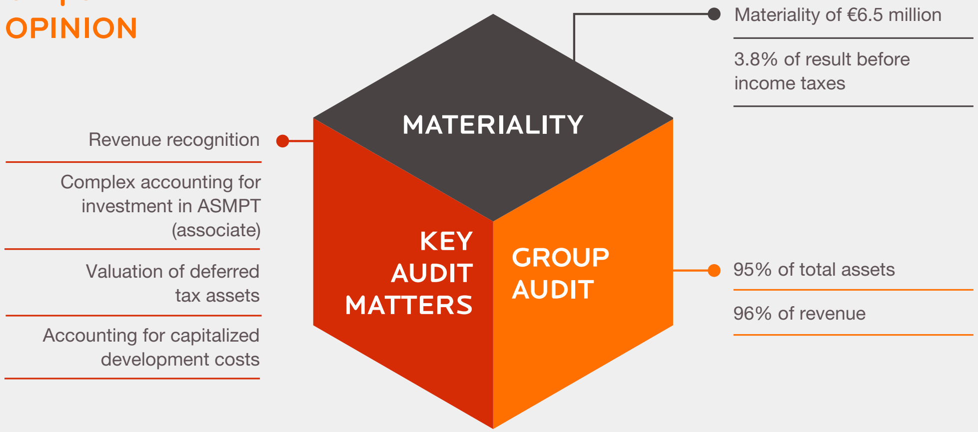
We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing. Our responsibilities under those standards are further described in the 'Our responsibilities for the audit of the financial statements' section of our report.

We are independent of ASMI in accordance with the EU Regulation on specific requirements regarding statutory audits 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.

AUDIT APPROACH SUMMARY

UNQUALIFIED OPINION



Materiality

Based on our professional judgement we determined the materiality for the financial statements as a whole at EUR 6.5 million (2017: EUR 5.5 million). The materiality is determined with reference to result before income taxes, of which it represents 3.8% (2017: 2.7%). Note that in 2017 the result before tax is adjusted for a non-recurring gain on a partial disposal of an associate and the impact of foreign exchange results. For 2018 there were no significant non-recurring items for which result before income taxes had to be normalized for. We consider result before income taxes as the most appropriate benchmark because ASMI is a profit oriented company and the key users of the financial statements are focused on profit. 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 EUR 325,000 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.

Scope of the group audit

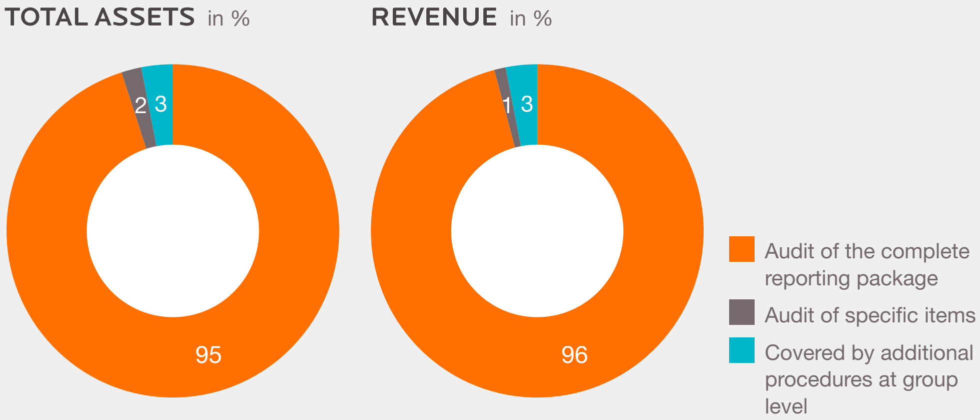
ASMI is at the head of a group of components. The financial information of this group is included in the financial statements of ASMI.

Our group audit mainly focused on significant components where account balances are of significant size, have significant risks of material misstatement to the group associated with them or are considered significant for other reasons.

- We selected components for which audit of the complete reporting package is performed and components of which audit of specific items is performed. Furthermore, we have determined the nature and extent of the audit procedures that we perform at group level and at ASMI's Shared Services Center ("SSC").
- Our procedures cover the significant operations in Japan, South Korea, the Netherlands, Singapore and the United States of America, all mainly through our audit procedures at the SSC, supplemented with local audits of specific items. Furthermore, our procedures cover the (results from) investments in associates, including the work performed by the non-KPMG member firm auditors on ASM Pacific Technology Ltd. ("ASMPT"). The remaining balances are covered by additional procedures at group level.
- We have sent detailed instructions to all component auditors, covering the significant areas that should be covered (which included the relevant risks of material misstatement detailed below) and set out the information required to be reported to the group auditor. We visited Singapore and ASMPT in Hong Kong for site visits and file reviews and held various telephone calls with the auditors of the components, to discuss the group audit, significant risks, audit approach and instructions, as well as the audit findings and observations reported to the group auditor.

By performing the procedures mentioned above at group components, 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 financial statements.

Our procedures as described above can be summarized as follows:



AUDIT SCOPE IN RELATION TO FRAUD AND NON-COMPLIANCE WITH LAWS AND REGULATIONS

In accordance with the Dutch Standards on Auditing we are responsible for obtaining reasonable assurance that the financial statements taken as a whole are free from material misstatement, whether caused by fraud or error. In determining the audit procedures we will make use of the evaluation of management in relation to fraud risk management (prevention, detections and response), including ethical standards to create a culture of honesty.

In our process of identifying fraud risks we assessed fraud risk factors, which we discussed with management and Supervisory Board. Fraud risk factors are events or conditions that indicate an incentive or pressure to commit fraud or provide an opportunity to commit fraud. In these risk assessments we made use of a forensic specialist.

We also assessed factors related to the risk of non-compliance with laws and regulations which could have a direct or indirect impact on the financial statements. We assessed the extent of compliance with the direct laws and regulations as part of our procedures on the related financial statement items. In relation to non-compliance with laws and regulations we have considered the fraud risk factor 'Operating in jurisdictions that are perceived as potentially unethical or higher risk (with a CPI score <60). Based on our assessment this fraud risk factor did not result in a risk of non-compliance with laws and regulations which could have a material impact on the financial statements. Auditing standards limit the required audit procedures to identify non-compliance with indirect laws and regulations, which we performed, to inquiry of management and those charged with governance and inspection of regulatory and legal correspondence.

Based on the auditing standards we addressed the following presumed fraud risks that were relevant to our audit:

- fraud risk in relation to the revenue recognition of sales, concerning the existence of equipment sales in the cut-off period, within the financial year; and
- fraud risk in relation to management override of controls.

Our audit procedures included substantive audit procedures, including detailed testing of (administrative) journal entries and documentation in relation to revenue recognition criteria. For details on the fraud risk on revenue recognition we refer to the key audit matter Revenue recognition.

Data analytics, including the identification of high-risk journal entries, are part of our audit approach to address fraud risk in relation to management override of controls which could have a material impact on the financial statements. We identified high risk journal entries based on, amongst others, balances which include significant management estimates, transactions identified based on specific characteristics such as journal entries without a clearly evident business purpose or processed by an unexpected official.

Our audit procedures differ from a specific forensic fraud investigation, which investigation often has a more in-depth character.

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.

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

Description

As disclosed in note 1 to the financial statements, equipment sales is measured taking into account multiple element arrangements, for example a single sales transaction that combines the delivery of goods and rendering of (installation) services, as contracts with customers typically include separately identifiable components that are recognized based on the relative selling price. Furthermore, equipment sales is recognized when the customer obtains control of the products and services. We consider revenue recognition a key audit matter, due to the thereto related risk of management override of controls as well as the fraud risk concerning the existence of equipment sales in the cut-off period, within the financial year.

Our response

Our audit procedures included, among other things, assessing the appropriateness of ASMI's revenue recognition accounting policies relating to revenue recognition. We evaluated ASMI's controls in the sales process that would identify a misstatement as a result of revenue recognition in the incorrect period. Based on our evaluation of internal controls we have performed additional testing by vouching transactions with supporting documentation to determine the correct cut-off within the financial year. We also assessed the existence and accuracy of the sales recorded by performing a three-way match of sales by ways of data analytics tools. We further assessed the adequacy of the net sales disclosures included in note 1 and note 21 of the financial statements.

Our observation

The results of our procedures related to the accounting for revenue recognition are satisfactory. We consider the disclosure in note 1 and note 21 of the financial statements as adequate.

COMPLEX ACCOUNTING FOR INVESTMENT IN ASMPT (ASSOCIATE)

Description

ASMI holds approximately 25% of the shares in ASMPT, an entity listed on the Hong Kong Stock Exchange. The investment in ASMPT is accounted for under the equity method. The accounting for the results of and investment in ASMPT is significant to our audit due to the significance of the carrying amount of the investment, the share in income of investments in associates for the financial statements, the complexity of PPA accounting and the possible significant effects of dilution on the financial statements. As at December 31, 2018, the book value of the Investments and associated companies amounted to EUR 790 million whilst the share in income of investments in associates amounted to EUR 48 million.

Our response

Our audit procedures included instructing the statutory auditor of ASMPT to perform an audit on the relevant financial information of ASMPT for the purpose of the financial statements of ASMI. We refer to the Scope of the group audit' section of our report for further details. We evaluated management considerations on the impairment indicators of the investment in ASMPT. We have audited the changes in the investment value during 2018 to determine that the effects of dilution and amortization of the PPA accounting are correctly reflected in the financial statements. We further assessed the adequacy of ASMI's disclosure in note 6.

Our observation

The results of our procedures related to the accounting for investments in associated companies are satisfactory. We consider the disclosure in note 6 of the financial statements as adequate.

VALUATION OF DEFERRED TAX ASSETS

Description

ASMI has significant unrecognized net operating losses. Deferred tax assets are significant to our audit because the assessment process is complex, includes a certain level of estimation uncertainty and the amounts involved are material to the financial statements as a whole.

Our response

We inspected correspondence with tax authorities and assessed and tested management's assumptions that substantiate the probability that deferred tax assets recognized in the balance sheet will be recovered through taxable income in future years and available tax planning strategies. During our procedures, we challenged, among other things, budgets, forecasts and application of tax laws. In addition, we performed a retrospective review on management's prior year assumptions, such as the future taxable income. In those components determined to be part of jurisdictions with a significant tax risk, we involved tax specialists and/or other auditors to analyze the tax positions that may have an effect on the valuation of the deferred tax assets, and to challenge the assumptions used to determine the tax positions. We also assessed the adequacy of ASMI's disclosure in note 22, Income taxes, in relation to deferred tax assets.

Our observation

We assessed the assumptions supporting the valuation of the deferred tax assets to be reasonable. We consider the disclosure in note 22 of the financial statements in relation to deferred tax assets as adequate.

ACCOUNTING FOR CAPITALIZED DEVELOPMENTS COSTS

Description

Capitalized development costs are deemed significant to our audit, given the significance of the capitalized balances of EUR 140 million including additions of EUR 50 million in 2018, as well as the specific criteria that have to be met for capitalization. This involves management judgment with respect to technical feasibility, intention and ability to complete the intangible asset, the ability to use or sell the asset, the generation of future economic benefits and the ability to measure the costs reliably.

Our response

Our audit procedures on development costs included assessing the appropriateness of the ASMI's accounting policies relating to internal and external cost capitalization. We evaluated ASMI's controls in the capitalized developments costs' process that would identify a misstatement as a result of incorrect capitalization of developments costs. We challenged the key assumptions used or judgements made in capitalizing development costs such as the technical feasibility, intention and ability to complete the intangible asset, the ability to use or sell the asset and the generation of future economic benefits, the accuracy of costs included and the useful economic life attributed to the asset. In addition, we considered whether any indicators of impairment were present by understanding the business rationale and by challenging management judgments and assumptions on future market or economic developments. We also assessed the adequacy of the ASMI's disclosure in note 5, Other intangible assets.

Our observation

The results of our procedures related to the accounting for capitalized development costs are satisfactory. We consider the disclosure in note 5 of the financial statements as adequate.

REPORT ON THE 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:

- Strategy and Business;
- Performance review;
- Governance; and
- Other information pursuant to 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; and
- contains the information as required by Part 9 of Book 2 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 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 of ASMI is responsible for the preparation of the other information, including the information as required by Part 9 of Book 2 of the Dutch Civil Code.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

ENGAGEMENT

We were engaged by the Annual General Meeting of Shareholders as auditor of ASMI on May 21, 2014, as of the audit for the year 2015 and have operated as statutory auditor ever since that financial year.

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 audits of public-interest entities.

DESCRIPTION OF RESPONSIBILITIES REGARDING THE FINANCIAL STATEMENTS

RESPONSIBILITIES OF MANAGEMENT BOARD AND THE SUPERVISORY BOARD FOR THE FINANCIAL STATEMENTS

Management Board 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 Board 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 Board is responsible for assessing ASMI's ability to continue as a going concern. Based on the financial reporting frameworks mentioned, Management Board should prepare the financial statements using the going concern basis of accounting unless Management Board either intends to liquidate ASMI, or to cease operations, or has no realistic alternative but to do so. Management Board should disclose events and circumstances that may cast significant doubt on the ASMI's ability to continue as a going concern in the financial statements.

The Supervisory Board is responsible for overseeing ASMI'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.

A further description of our responsibilities for the audit of the financial statements is included in appendix of this auditor's report. This description forms part of our auditor's report.

Amstelveen, March 5, 2019
KPMG Accountants N.V.
R.P. Kreukniet RA

Appendix: Description of our responsibilities for the audit of the financial statements

APPENDIX

We have exercised professional judgement and have maintained professional scepticism throughout the audit, in accordance with Dutch Standards on Auditing, ethical requirements and independence requirements. Our audit included among others:

- identifying and assessing the risks of material misstatement of the financial statements, whether due to fraud or error, designing and performing audit procedures responsive to those risks, and obtaining 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 the risk resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtaining an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the ASMI's internal control;
- evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by Management Board;
- concluding on the appropriateness of Management Board's use of the going concern basis of accounting, and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on ASMI'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;
- evaluating the overall presentation, structure and content of the financial statements, including the disclosures; and
- evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

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 components. Decisive were the size and/or the risk profile of the group components or operations. On this basis, we selected group components for which an audit or review had to be carried out on the complete set of financial information or specific items.

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 audits 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.

SHAREHOLDERS INFORMATION

During 2018, we returned approximately €607 million to shareholders in the form of dividends, share buybacks and the capital return. This was up from €281 million in 2017 and €140 million in 2016.

Over the 2010-2018 period, we returned more than €1.6 billion to the financial markets through dividends, share buybacks, return of capital, and buyback of convertible bonds.

SHAREHOLDER DIVIDEND

In 2018, we paid a dividend of €0.80 per common share and we will propose to the forthcoming AGM to declare a dividend of €1.00 per share for 2019. The proposed 2019 dividend will mark the ninth consecutive year that we have paid a dividend.

INTERVIEW WITH THE CFO

Peter A.M. van Bommel
Member of the Management Board and Chief Financial Officer

In the following interview Chief Financial Officer Peter A.M. van Bommel discusses some of the key financial topics that impacted the company in 2018 and comments on capital return and share buyback programs that were executed during the year.

HOW WOULD YOU DESCRIBE ASMI'S FINANCIAL PERFORMANCE IN 2018?

We increased our sales by 11% in 2018 to €818 million, which is a new record high. We benefited from increasing demand particularly in the logic, DRAM and analog market segments. Equipment sales continued to be led by ALD, but the other product lines, epitaxy, vertical furnaces and PECVD also delivered a very robust performance.

The gross margin decreased slightly to 40.9% due to the impact from investments in new products and growth initiatives. With operating expenses under control operating profit increased by 14% and the operating margin improved slightly to 15.2% (2017: 14.8% based on comparable 2017 financials restated for IFRS15).

Results from investments excluding amortization of intangible assets – reflecting our share of ASMPT's net profits – decreased by 46% to €61 million. This was due to a 21% decrease in ASMPT's net profits on a 100% basis and the full year impact of the reduction of our stake in ASMPT during 2017 from 39% to 25%. In total, our normalized net profits decreased by 11% to €170 million.

ASMI's financial position continues to be healthy. While our cash balances decreased from to €836 million to €286 million, this was fully caused by the more than €600 million in cash that we returned to our shareholders in 2018.

In terms of financial reporting, in 2018 we began disclosing the sales breakdown between spares & services and equipment sales. Our spares & service business, which is a solid and consistent contributor to our growth, increased revenue by 14% in 2018.

In 2017 we combined our Corporate Responsibility report and Annual Report to increase the relevance and quality of reporting for all our stakeholders. The 2018 Annual Report again reflects the additional steps we have taken in areas such as reducing our environmental footprint and strengthening our safety culture. Going forward, we will continue to move towards integrated reporting.

CAN YOU COMMENT ON THE DEVELOPMENT IN GROSS MARGIN AND OPERATING EXPENSES?

The gross margin decreased slightly in 2018 from 41.5% to 40.9%. This decrease was entirely due to initially lower margins on newly introduced products, a substantial increase in evaluation tools shipped to customers and new growth initiatives such as investments in the expansion of our service organization. The impact was especially visible in the first half of the year, while gross margins improved in the second half to 41.2% (H1 2018: 40.3%). We maintain a strong cost focus. One of our key projects in 2018 was the implementation of a new product lifecycle management (PLM) system, which, amongst others, will help to drive further cost reductions at an early stage of the product lifecycle. Our structural target for the gross margin continues to be a percentage in the low to mid 40's.

We kept operating expenses under control during the year. Total R&D expenditure increased by 10%. Reported R&D decreased as capitalization went up, which is explained by a higher balance of development projects that were closer to the point of commercialization in 2018.

SG&A expenses increased by 22% due to costs related to the new PLM system, targeted investments such as in the Chinese market and higher legal expenses for the patent litigation cases that we initiated in 2017.

HOW HAS THE FREE CASH FLOW DEVELOPED IN 2018?

Free cash flow for the year decreased to €23 million, from €32 million in 2017, due to a substantial rise in investments. Over the last few years we have been able to largely accommodate increased customer demand within our existing facilities. However, to grow to structurally higher levels we are stepping up investments in the 2018-2019 period, as we already announced last year. Capital expenditure increased to €63 million (2017: €43 million), which primarily reflected the investments in two new facilities. In October, we completed our new facility in Dongtan, South Korea, which includes an expanded, state-of-the-art R&D lab. We also made the first investments in a new expanded manufacturing facility in Singapore. As we further invest in the construction of this facility, we project a continued higher level of capital expenditure in 2019, in line with our earlier indications. Furthermore, in 2018, we also had a significantly higher cash outflow for evaluation tools placed with customers of which the benefits should become visible in the coming years.

Working capital has been, and continues to be, an important area of attention within our organization. In the first quarters of 2018 our free cash flow was negatively impacted by an increase in working capital. Accounts receivables fluctuated from quarter to quarter in 2018, depending on the distribution of sales within a quarter, but the underlying quality, which was already healthy, further improved in 2018. Due to greater volatility in tool shipments and supply chain constraints in 2018, we maintained higher levels of inventories to ensure timely deliveries to our customers.

During the course of the year we began several initiatives to mitigate this effect by structurally bringing down inventory levels. During the latter part of 2018 these actions started to bear fruit. With a meaningful improvement in working capital in the final months of the year we generated free cash flow of more than €60 million in the fourth quarter. By the end of 2018, working capital was still higher year-on-year, in part due to the higher activity level in the fourth quarter. Measured in quarterly sales, days of working capital decreased to 72 at the of 2018, down from 103 at the end of the third quarter and 89 at the end of 2017.

CAN YOU COMMENT ON THE COMPANY'S SHAREHOLDER REMUNERATION POLICY?

During 2018, we used €607 million in cash for shareholder remuneration, more than double the amount we spent in 2017. As a reminder, during 2017 we reduced our shareholding in ASMPT in two partial stake sales from 39% to 25% and we committed to returning the proceeds to our shareholders. From the total of approximately €700 million in cash proceeds, we returned €500 million via two share buyback programs. The first one we started in September 2017 and completed in March 2018. The second buyback program began in June 2018 and we completed it in November. In total, we purchased 7.2 million of our own shares during 2018. In addition, we used more than €200 million to distribute €4 per common share to our shareholders through a tax efficient capital repayment. This was in addition to the regular dividend of €0.80 per share paid in 2018. During the year, we also canceled 6 million treasury shares which reduced the share count by almost 10%.

Since 2010, we have returned more than €1.6 billion in cash in different forms to the financial markets. Our policy to use excess cash for the benefit of our shareholders remains unchanged. Our overall financial position continues to be healthy and enables us to continue investing in the growth of our business, which remains our key priority.

"INVESTING IN THE GROWTH OF OUR COMPANY REMAINS OUR KEY PRIORITY."

Looking at 2019, we will propose a dividend of €1.00 per share to the forthcoming AGM, which is an increase of 25% compared to last year and underlines our confidence in the prospects for the company. We will also propose the cancellation of 5 million shares. This will further reduce the number of issued shares by approximately 9%.

THE WAFER FAB EQUIPMENT MARKET IS EXPECTED TO DROP BY MORE THAN 10% IN 2019. HOW WILL THIS EFFECT ASMI'S FINANCIAL PERFORMANCE?

Wafer fab equipment (WFE) spending started to slow down in the second half of 2018. This slowdown was due to a correction in memory spending, particularly in 3D-NAND investments. For 2019, market watchers expect a double-digit decrease in WFE spending, due to a further drop in memory investments. At the same time, the logic and foundry segments increased in the second half of 2018 and are expected to remain relatively healthy in 2019, driven by spending on the most advanced nodes. We hold a particularly strong position in logic and foundry. This drove our revenue to record levels in the fourth quarter of 2018 and we expect it will further support our sales performance in 2019, as evidenced by our guidance for continued solid sales levels in the first and second quarter.

We believe the long term outlook for our industry remains solid, though the exact spending level will fluctuate annually due to the timing of our customers' investments in new technologies and depending on general economic conditions. We are well equipped to deal with such swings in demand. Our focus has been on consistently improving the efficiency and flexibility of our manufacturing and supply chain operations. In addition, our outsourced model helps to limit the impact from swings in demand on our gross margins.

SHARE LISTING

Our strategy aims to create sustainable value for all our stakeholders. As part of this strategy, we are committed to creating long-term shareholder value. This chapter provides information that is particularly relevant for shareholders and investors, including information related to the share listing and share price performance, dividends and share buybacks.

On December 31, 2018, the total number of issued common shares of ASMI amounted to 56,297,394 compared to 62,297,394 at year-end 2017. The decrease was the result of the cancellation of 6,000,000 treasury shares that was approved by the Annual Meeting of Shareholders (AGM) on May 28, 2018, and became effective on August 1, 2018.

On December 31, 2018, we had 49,318,898 outstanding common shares excluding 6,978,496 treasury shares. This compared to 56,140,153 outstanding common shares and 6,157,241 treasury shares at year-end 2017. Besides the cancellation of 6 million treasury shares in August 2018, the change in the number of treasury shares in 2018 was the result of approximately 7.2 million repurchased shares and approximately 421,000 treasury shares that were used as part of share based payments.

	2017	2018
As per January 1:		
Issued shares	63,797,394	**62,297,394**
Treasury shares	3,981,551	**6,157,241**
OUTSTANDING SHARES	**59,815,843**	**56,140,153**
Changes during the year:		
Cancellation of treasury shares	1,500,000	**6,000,000**
Share buybacks	4,420,946	**7,242,734**
Treasury shares used for share based performance programs	745,256	**421,479**
As per December 31:		
Issued shares	62,297,394	**56,297,394**
Treasury shares	6,157,241	**6,978,496**
OUTSTANDING SHARES	**56,140,153**	**49,318,898**

On December 31, 2018, 49,022,494 of the outstanding common shares were registered with our transfer agent in the Netherlands, ABN AMRO Bank NV; and 296,404 were registered with our transfer agent in the United States, Citibank, NA, New York.

On February 21, 2019, ASMI announced that it would propose to the AGM 2019 the cancellation of 5 million treasury shares. This follows the intention that ASMI earlier expressed to reduce its issued share capital by withdrawing the shares repurchased as part of the 2018 share buyback program, save for such number of treasury shares as maybe necessary to fund ongoing share and option programs for employees and board members.

MARKET CAPITALIZATION

The market capitalization of ASMI at year-end 2018 was €1,785 million, based on the closing share price of €36.20 at Euronext Amsterdam on December 31, 2018 and 49.3 million total outstanding shares per year-end. The market capitalization at year-end 2017 was €3,165 million.

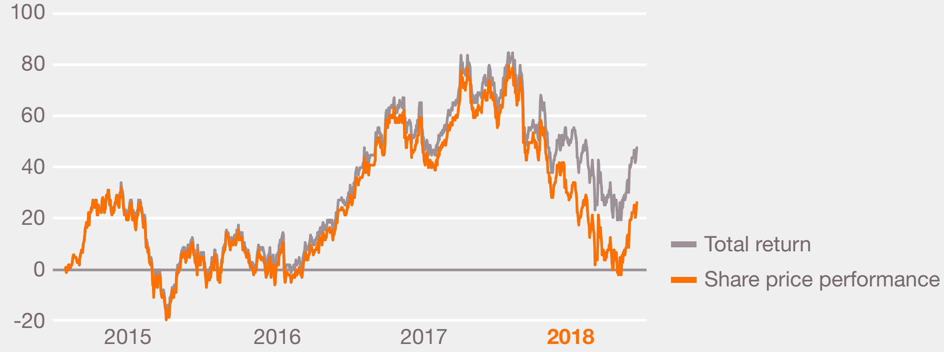
SHARE PERFORMANCE

On December 31, 2018, the closing price of ASMI's shares on Euronext Amsterdam was €36.20. The highest closing price during the year was €62.62, on March 12, 2018, and the lowest was €33.90, on December 24, 2018. The average daily trading volume of ASMI shares on Euronext Amsterdam in 2018 was 266,960. This compares to an average daily volume of 251,997 in 2017.

Euronext Amsterdam accounted for 59% of total trading in ASMI shares in 2018, with a further 21% of total traded on CHI-X, 9% on Turquoise and 11% on other trading venues.

The graph below shows the performance of ASMI's shares on Euronext. The total share return in this graph is the performance of the share including dividends paid and capital returned over the period.

SHARE PRICE PERFORMANCE AND TOTAL SHARE RETURN in %



Following the voluntary delisting from Nasdaq in 2015, our NY Registry Shares have been eligible for trading on the over-the-counter (OTC) market in the United States under the symbol ASMIY. Information on the trading and share price of our shares on the OTC Market in the United States can be found on www.otcmarkets.com.

SHAREHOLDER RETURNS

We are committed to paying a sustainable dividend. Additionally, in recent years we have returned excess cash to the financial markets in the form of share buyback programs and extraordinary repayments of capital.

DIVIDENDS

ASMI aims to pay a sustainable annual dividend. Annually, the Supervisory Board, upon proposal of the Management Board, will assess the amount of dividend that will be proposed to the Annual General Meeting of Shareholders (AGM). The decision that a dividend be proposed to the AGM will be subject to the availability of distributable profits as well as retained earnings and may be affected by our potential future funding requirements. Accordingly, dividend payments may fluctuate and could decline or be omitted in any year.

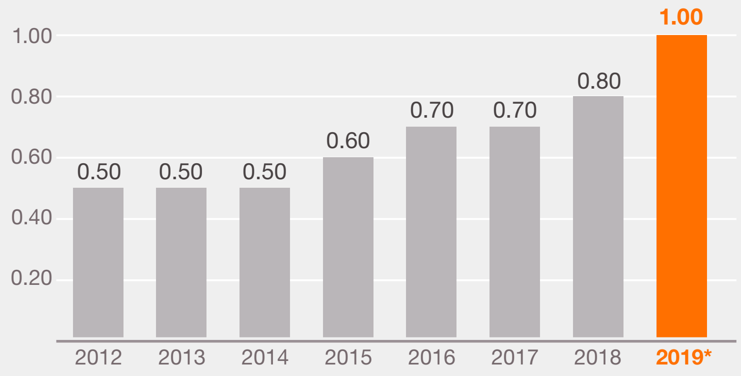
The proposed dividend for 2019 will mark the ninth consecutive year that we have paid a dividend. In 2012, 2013 and 2014, we paid a dividend of €0.50 per common share. In 2015 we paid a dividend of €0.60, in 2016 and 2017 we paid a dividend of €0.70 and in 2018 we paid a dividend of €0.80 per common share.

ASMI will propose to the forthcoming 2019 AGM, which will be held on May 20, 2019, to declare a dividend of €1.00 per common share.

DIVIDEND TIMETABLE

Ex-dividend date shares Euronext and OTC US: May 22, 2019
Record date: May 23, 2019
Payment date: May 29, 2019

DIVIDEND PAID EUR



* Proposed

CAPITAL REPAYMENT

In addition to the regular dividend, on August 10, 2018, ASMI distributed €4.00 per common share to its shareholders through a tax efficient repayment of capital. The ex-date of the distribution was August 7, 2018.

The proposal for this capital repayment was initially announced on February 28, 2018, and approved by the 2018 AGM.

In July 2013, ASMI distributed €4.25 per ordinary share to its shareholders. This followed on the sale of 12% of the total shares in ASMPT in March 2013. The extraordinary return of capital in 2013 was in addition to the dividend paid that year.

SHARE BUYBACK

On June 5, 2018, ASMI announced the start of a share buyback program of ASMI's common shares up to €250 million. This program followed on ASMI's announcement on February 28, 2018, that it intended to use €250 million of the proceeds of the partial sale of a stake of approximately 9% in ASMPT for a new share buyback program.

The 2018 program started on June 6, 2018, and ended on October 11, 2018. In total, we repurchased 5,443,888 shares at an average price of €45.92, including expenses, under the 2018 program.

This share buyback program was executed by a third party. ASMI has the intention to reduce its capital by withdrawing the shares repurchased as part of the 2018 share buyback program, save for such number of treasury shares as maybe necessary to fund ongoing share and option programs for employees and board members. This withdrawal of shares is intended to be proposed to the Annual General Meeting in 2019. The 2018 repurchase program is part of ASMI's commitment to use excess cash for the benefit of its shareholders.

In 2018, we also completed the €250 million share buyback program 2017-2018. This program was funded with the proceeds of approximately €248 million of the partial secondary placement of shares of ASMPT that was executed on April 24, 2017. The 2017-2018 share buyback program started on September 22, 2017, and ended on March 29, 2018. In total, we repurchased 4,353,292 shares at an average price of €57.43, including expenses, under this program.

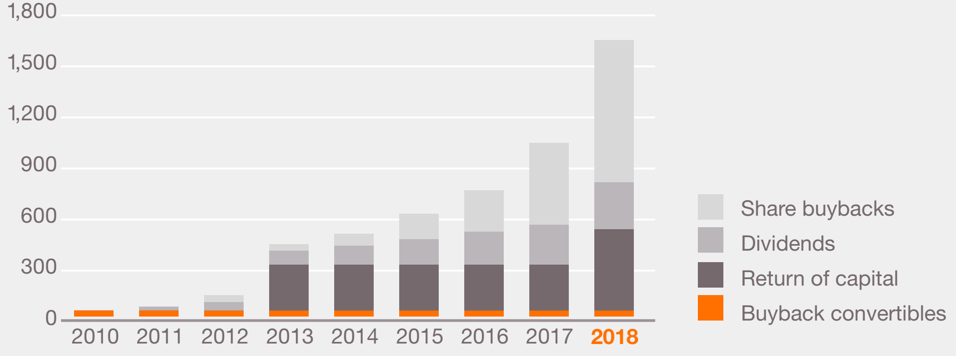
During the whole of 2018, we bought back a total of approximately 7.2 million shares at an average share price of €49.01 and for a total value of approximately €355 million. This compares with a total of approximately 4.4 million bought back in 2017 at an average price of €54.19 and for a total value of €240 million.

The 2018 program is the fifth consecutive share buyback program. Next to the 2018 program the earlier programs included:

- The €100 million share buyback program 2016-2017 that was announced on October 26, 2016 – initially for an amount of €50 million – and was increased to €100 million as announced on March 2, 2017. This program started on December 13, 2016 and was completed on August 31, 2017. Under the 2016-2017 share buyback program 1,997,522 shares were repurchased at an average price of €50.06;
- The €100 million share buyback program 2015-2016 that was announced in October 2015. This program started on November 26, 2015 and was completed on November 11, 2016. Under the 2015-2016 share buyback program 2,772,729 shares were repurchased at an average price of €35.98; and
- The €100 million share buyback program 2014-2015 that was announced in October 2014. This program started on November 24, 2014 and was completed on May 20, 2015. In total, 2,594,420 shares were repurchased at an average price of €38.55, for an amount of €100 million, under this program.

During 2018, we returned approximately €607 million to shareholders in the form of dividends, share buybacks and the capital return. This was up from €281 million in 2017 and €140 million in 2016. Over the 2010-2018 period, we returned more than €1.6 billion to the financial markets through dividends, share buybacks, return of capital, and buyback of convertible bonds.

CUMULATIVE CASH RETURNED TO MARKET EUR million



SHARES AND SHAREHOLDERS' RIGHTS

Our shares are listed on the Euronext Amsterdam Stock Exchange (symbol: 'ASM') where ASMI is included in the Midcap index. In the US, our shares, held in the form of New York Registry Shares, trade on the OTC market. Details about our shares and how our shareholders are able to exercise their rights, including information on our Annual and Extraordinary General Meetings of Shareholders, voting rights, and major shareholders in the company, are outlined below.

ANNUAL GENERAL MEETING OF SHAREHOLDERS

ASMI shareholders exercise their rights through Annual and Extraordinary General Meetings of Shareholders. ASMI is required to convene an Annual General Meeting of Shareholders (AGM) in the Netherlands each year, no later than six months after the end of the Company's financial year. Additional Extraordinary General Meetings of Shareholders may be convened at any time by the Supervisory Board or the Management Board.

The convocation date is legally set at 42 days prior to the date of the AGM.

The record date is legally set at 28 days prior to the date of the AGM. Those who are registered as shareholders at the record date are entitled to attend the meeting and to exercise other shareholder rights. Shareholders may be represented by written proxy.

PUBLICATION IN ENGLISH

The Annual Report, the Financial statements and other regulated information such as defined in the Dutch Act on Financial Supervision (Wet op het Financieel Toezicht), will solely be published in English on the Company's website (www.asm.com).

The draft minutes of the AGM are available on the Company's website no later than three months after the meeting. Shareholders may provide their comments in the subsequent three months. Thereafter, the minutes are adopted.

2018 AGM OF ASMI

On May 28, 2018, ASMI held its AGM in Amsterdam, the Netherlands. The attendance rate was 69.1% of the total issued share capital of ASMI as per the registration date. In line with the ASMI Boards' recommendations, the shareholders approved all resolutions as proposed to the AGM. The minutes of the AGM are published on the Company's website.

VOTING RIGHTS

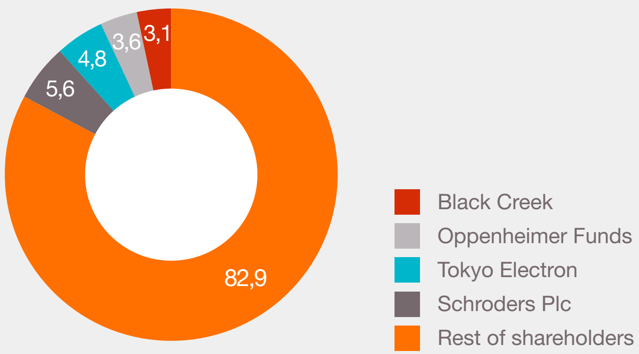
In the AGM, each ordinary share with a nominal value of €0.04 entitles the holder to cast one vote, each financing preferred share with a nominal value of €40.00 entitles the holder to cast one thousand votes and each preferred share with a nominal value of €40.00 entitles the holder to cast one thousand votes. Presently, there are no preferred shares and financing preferred shares outstanding. Treasury shares held by the Company cannot be voted on.

Following the amendment of the articles of association on August 3, 2018, the authorized capital of the Company amounts to 82,500,000 common shares of €0.04 par value, 88,500 preferred shares of €40 par value and 6,000 financing preferred shares of €40 par value, of which 56,297,394 common shares, no preferred and no financing preferred shares were outstanding as at December 31, 2018. All per December 31, 2018 outstanding common shares were fully paid.

Financing preferred shares are designed to allow ASMI to finance equity with an instrument paying a preferred dividend, linked to EURIBOR loans and government loans, without the dilutive effects of issuing additional common shares.

The graph below provides an overview of the shareholders' structure.

VOTING RIGHTS ASMI in %



PREFERRED SHARES

Preferred and financing preferred shares are issued in registered form only and are subject to transfer restrictions. Essentially, a preferred or financing preferred shareholder must obtain the approval of the Company's Supervisory Board to transfer shares. If the approval is denied, the Supervisory Board will provide a list of acceptable prospective buyers who are willing to purchase the shares at a cash price to be fixed by consent of the Supervisory Board and seller within two months after the approval is denied. If the transfer is approved, the shareholder must complete the transfer within three months, at which time the approval expires.

Preferred shares are entitled to a cumulative preferred dividend based on the amount paid-up on such shares. Financing preferred shares are entitled to a cumulative dividend based on the par value and share premium paid on such shares.

STICHTING AGREEMENT

ASMI is party to an agreement with the Stichting Continuïteit ASM International (Stichting), pursuant to which Stichting is granted an option to acquire up to a number of our preferred shares corresponding with a total par value equal to 50% of the par value of our common shares issued and outstanding at the date of the exercise of the option. Stichting is a non-membership organization organized under Dutch law. The objective of the Stichting is to serve the interests of the Company. For that objective, the Stichting may, among other things, acquire, own, and vote on preferred shares in order to maintain our independence and/or continuity and/or identity.

The members of the board of Stichting are:

- Dick Bouma, Retired Chairman Board Pels Rijcken & Droogleever Fortuijn;
- Rob Ruijter, former Chairman Supervisory Board Delta Lloyd; and
- Rinze Veenenga Kingma, President Archeus Consulting BV.

The purpose of above mentioned option is to protect the independence, the continuity and the identity of ASMI against influences that are contrary to the interests of ASMI, its enterprise and the enterprises of its subsidiaries and all stakeholders.

POWERS

The powers of the AGM are defined in our Articles of Association. The main powers of the shareholders are to:

- appoint, suspend, and dismiss members of the Management Board and Supervisory Board;
- adopt the financial statements;
- declare dividends;
- discharge the Management Board and Supervisory Board from responsibility for the performance of their respective duties for the previous financial year;
- appoint the external auditors;
- adopt amendments to the Articles of Association;
- issue shares and grant subscriptions for shares;
- authorize the Management Board to issue shares and grant subscriptions for shares;
- withdraw pre-emptive rights of shareholders upon issuance of shares;
- authorize the Management Board to withdraw pre-emptive rights of shareholders upon issuance of shares; and
- authorize the Management Board to repurchase or cancel outstanding shares.

MAJOR SHAREHOLDERS

Pursuant to the Dutch Financial Supervision Act (Wet op het financieel toezicht or WFT), legal entities as well as natural persons must immediately notify the Dutch Authority for the Financial Markets (AFM) when a shareholding equals or exceeds 3% of the issued capital. The AFM must be notified again when this shareholding subsequently reaches, exceeds or falls below a threshold. This can be caused by the acquisition or disposal of shares by the shareholder or because the issued capital of the issuing institution is increased or decreased. Thresholds are: 3%, 5%, 10%, 15%, 20%, 25%, 30%, 40%, 50%, 60%, 75%, and 95%. The AFM incorporates the notifications in the public register, which is available on its website. Failure to disclose the shareholding qualifies as an offense, and may result in civil penalties, including suspension.

The following table sets forth information with respect to the ownership of our common shares as of February 1, 2019, by each beneficial owner known to us of more than 3% of our common shares:

	NUMBER OF SHARES	PERCENT [1]	NUMBER OF VOTING RIGHTS	PERCENT [1]
ASM International N.V. [2]	6,978,496	12.4%	–	–
Schroders Plc [3]	–	–	3,172,577	5.6%
Tokyo Electron Ltd. [4]	2,699,000	4.8%	2,699,000	4.8%
Oppenheimer Funds, Inc. [5]	2,017,010	3.6%	2,017,010	3.6%
Black Creek Investment Management, Inc. [6]	1,734,461	3.1%	1,734,461	3.1%

1 Calculated on the basis of 56,297,394 issued common shares as of February 1, 2019, and without regard to options.
2 On December 31, 2018, ASMI held 6,978,496 ordinary shares in treasury. Treasury shares held by the Company cannot be voted on.
3 All of the 3,172,577 voting rights of Schroders Plc are held indirectly actual. Based on the notification filed with the AFM on December 12, 2017.
4 All of the 2,699,000 shares in capital interest and voting rights of Tokyo Electron Ltd are held directly actual. Based on the notification filed with the AFM on July 1, 2013.
5 All of the 2,017,010 shares and voting rights of Oppenheimer Funds, Inc are held directly actual. Based on the notification filed with the AFM on October 17, 2018.
6 Of the share capital interest and voting rights held by Black Creek Investment Management, Inc 80,144 shares are directly actual and 1,654,317 are indirectly actual. Based on the notification filed with the AFM on October 15, 2018.

A 'beneficial owner' of a security includes any person who, directly or indirectly, through any contract, arrangement, understanding, relationship, or otherwise has or shares (i) voting power which includes the power to vote, or to direct the voting of, such security and/or (ii) investment power which includes the power to dispose, or to direct the disposition, of such security. In addition, a person shall be deemed to be the beneficial owner of a security if that person has the right to acquire beneficial ownership of such security, as defined above, within 60 days, including but not limited to any right to acquire: (i) through the exercise of any option, warrant or right; (ii) through the conversion of a security; or (iii) pursuant to the power to revoke, or pursuant to the automatic termination of, a trust, discretionary account, or similar arrangement.

KEY DATES

Our key investor dates are listed below. An up-to-date investor calendar is available on our website.

ANNUAL GENERAL MEETING OF SHAREHOLDERS

The Annual General Meeting of Shareholders will be held on May 20, 2019

APRIL 24, 2019

Announcement of first quarter results 2019

JULY 23, 2019

Announcement of second quarter results 2019

OCTOBER 30, 2019

Announcement of third quarter results 2019

KEY FIGURES

KEY FIGURES PER SHARE

The table below shows the key figures per share and other relevant share data for the last three years.

(EUR, except number of shares)	2016	2017	2018
Net earnings per share, diluted	2.21	7.63	**2.96**
Normalized net earnings per share, diluted	2.65	3.21	**3.19**
Dividend per share	0.70	0.70	**0.80**
Shareholders' equity	33.40	35.83	**33.28**
Issued shares year-end (thousand)	63,797	62,297	**56,297**
Outstanding shares year-end (thousand)	59,816	56,140	**49,319**
Average outstanding shares basic (thousand)	60,616	58,573	**52,432**
Average outstanding shares diluted (thousand)	61,253	59,325	**53,110**
Closing share price Euronext Amsterdam			
Year-end	42.64	56.37	**36.20**
High	43.05	62.27	**62.62**
Low	32.14	42.07	**33.90**
Market capitalization year-end (EUR million)	2,551	3,165	**1,785**

CONTACT INFORMATION

OPEN DIALOG AND TIMELY INFORMATION

We maintain an open dialog with our shareholders and investors. We provide the financial markets with accurate and timely information through, among other things, press releases, our annual reports, quarterly earnings calls and webcasts and investor meetings. Investors can find up-to-date and comprehensive information about the company and our shares on our website.

VICTOR BAREÑO

Almere, the Netherlands
T: +31 88 100 8500
E: victor.bareno@asm.com

GENERAL INFORMATION

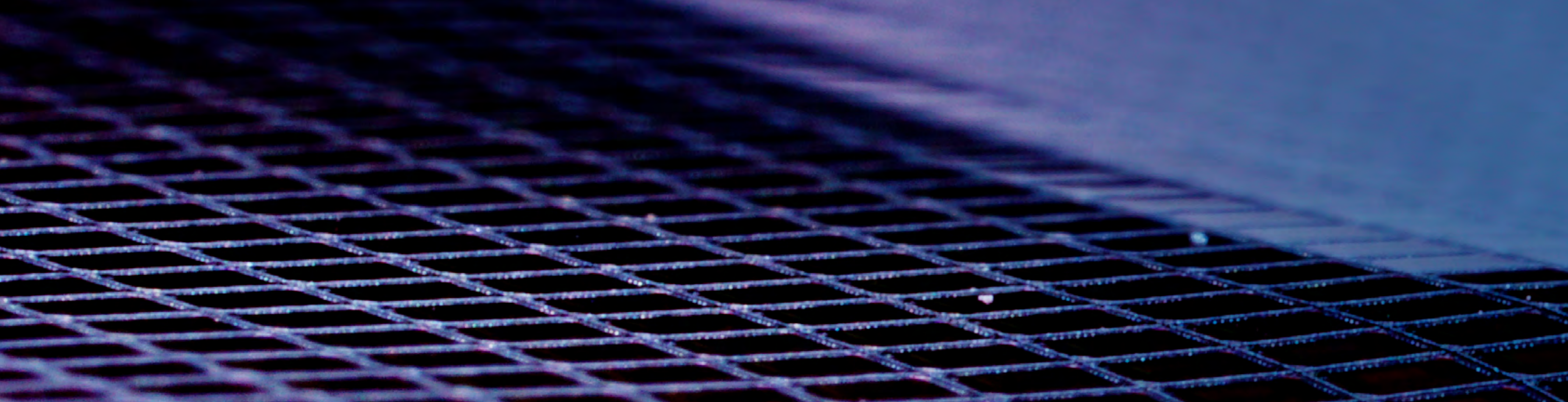
Our products include wafer processing deposition systems for single-wafer ALD, PECVD, epitaxy and batch diffusion/furnace systems.

We are active in two technology segments for Atomic Layer Deposition (ALD) tools: thermal ALD and plasma enhanced ALD (PEALD). Within Chemical Vapor Deposition (CVD) we also offer two types of tools: single-wafer plasma enhanced CVD (PECVD) and batch low pressure CVD (LPCVD). And we offer multiple types of tools for single-wafer Epitaxy and batch diffusion furnace applications.

COMPLIANCE WITH CORPORATE GOVERNANCE CODE

The Dutch Corporate Governance Code was last amended on December 8, 2016. As of 2018, Dutch listed companies are required to report for the first time on compliance with the revised Code for the financial year 2017.

We apply the relevant principles and best practices of the revised Code applicable to the Company, to the Management Board, and to the Supervisory Board, in the manner set out in the Corporate Governance section, as long as it does not entail disclosure of commercially sensitive information, as accepted under the Code.



PRODUCT DESCRIPTION

Our products include wafer processing deposition systems for single-wafer ALD, PECVD, epitaxy and batch diffusion / furnace systems.

TECHNOLOGY – PRODUCT MATRIX

DEPOSITION APPLICATION	ASMI PRODUCT PLATFORM	ASMI PRODUCTS	PROCESS APPLICATION
ALD	XP[1]	Pulsar XP ALD system EmerALD XP ALD system	High-k gate dielectric Metal gate electrode
	XP8[1]	Synergis ALD system	Metal oxides, Metal nitrides, Dielectrics, Pure metals
PEALD	XP8[1]	Eagle XP8 PEALD system XP8 QCM PEALD system	Spacer for multipatterning Gate spacer Etch stop
PECVD	XP8[1]	Dragon XP8 PECVD system	Inter-layer dielectric Silicon nitride
Diffusion Oxidation LPCVD ALD	Advance Series	A400 batch vertical furnace system A412 batch vertical furnace system	Furnace: - Diffusion, oxidation - Polysilicon - Silicon nitride
Epitaxy	XP[1]	Intrepid ES epitaxy	Silicon channel Strain layer
	Epsilon	Epsilon 2000 single-wafer epitaxy system Epsilon 3200 single-wafer epitaxy system	

[1] The XP is our standard single-wafer processing platform designed to accommodate multiple process application modules with common platform standards. In 2012 ASMI launched the XP8 high productivity platform for PECVD and PEALD, based on our common XP platform standard with an expanded configuration that enables integration of up to eight chambers on one wafer handling platform.

PRODUCT APPLICATIONS AND DESCRIPTIONS

Atomic Layer Deposition (ALD)

ASMI offers ALD tools in two technology segments: thermal ALD and plasma enhanced ALD (PEALD).

Pulsar XP ALD system

Pulsar XP is a 300mm thermal ALD tool designed for depositing extremely thin high-k dielectric materials required for advanced transistor gates and other applications. Pulsar is the benchmark ALD high-k gate dielectric tool for the industry. Up to four Pulsar process modules can be configured on a Pulsar XP system.

EmerALD XP ALD system

EmerALD XP is a 300mm thermal ALD tool designed for depositing metal gate layers for advanced high-k metal gate transistors and other applications. Up to four EmerALD process modules can be configured on an EmerALD XP system.

Eagle XP8 PEALD system

Eagle XP8 is a high-productivity 300mm tool for PEALD applications. The system can be configured with up to four Dual Chamber Modules (DCM), enabling eight chambers in high-volume production within a very compact footprint. The system is capable of a broad range of dielectric PEALD processes, including low-temperature spacers for multiple patterning applications.

Synergis ALD system

Synergis is a high-productivity 300mm tool for thermal ALD applications. The system can be configured with up to four Dual Chamber Modules (DCM), enabling eight chambers in high-volume production within a very compact footprint. The system is capable of depositing a broad range of thermal ALD films including metal oxides, metal nitrides, dielectrics, and pure metals.

XP8 QCM PEALD system

XP8 QCM is a 300mm tool for high-productivity PEALD applications. XP8 QCM allows for the integration of up to 4 modules each containing four process reactors, enabling 16 chambers in high-volume production within a compact footprint.

Advance series batch vertical furnace

The Advance is our batch vertical furnace tool, available as the A412 for 300mm wafers and as the A400 for smaller wafer sizes. Various thermal ALD films can be deposited on the batch furnace for high productivity.

Chemical Vapor Deposition (CVD)

We offer two types of CVD tools: single-wafer plasma enhanced CVD (PECVD) and batch low pressure CVD (LPCVD).

Dragon XP8 PECVD system

Dragon XP8 is a high-productivity 300mm tool for PECVD applications. The system can be configured with up to four Dual Chamber Modules (DCM), enabling eight chambers in high-volume production within a very compact footprint. Processes include a broad range of dielectric PECVD films for applications such as interconnect dielectrics layers, passivation layers, and etch stop layers.

Advance series batch vertical furnace

The Advance is our batch vertical furnace tool, available as the A412 for 300mm thermal LPCVD and as the A400 for LPCVD on smaller wafer sizes. CVD applications on the furnace include polysilicon, silicon nitride, and silicon oxide.

Epitaxy

We offer two families of epitaxy tools: Intrepid and Epsilon.

Intrepid epitaxy system

Intrepid ES is a 300mm epitaxy tool using our XP platform, and is designed for depositing critical transistor strain and channel layers. Processes include silicon (Si), silicon-germanium (SiGe), silicon-carbon (SiC), and other silicon-based compounds. Up to four Intrepid process modules can be configured on an Intrepid ES system.

Epsilon epitaxy system

The Epsilon series is a single-wafer, single-chamber tool that deposits silicon-based materials for many applications, ranging from high-temperature silicon for wafer manufacturing, to low-temperature silicon, silicon-germanium (SiGe), silicon-carbon (SiC), and other silicon-based compounds. Epsilon is the market leader for epitaxy applications in the analog and power devices market.

Diffusion

We offer batch vertical furnace tools for diffusion and oxidation applications.

Advance series batch vertical furnace

The Advance is our batch vertical furnace tool series, available as the A412 for 300mm and as the A400 for smaller wafer sizes. Atmospheric thermal applications on the furnace include diffusion to introduce dopants in materials in controlled amounts, annealing to affect material properties by heating to a specific temperature and oxidation to form silicon oxide.

Service and spare parts

Service and spare parts are important product offerings for our business. We provide service support to our customers with technical service personnel who are trained to maintain our systems at customers' fabrication plants around the world. Our service team is located globally at regional and local service centers to assure prompt availability.

We sell spare parts for our equipment from parts stocks located at global distribution centers.

OTHER INFORMATION

The additional information below includes a brief summary of the most significant provisions of our Articles of Association.

INFORMATION ON THE PROVISIONS IN THE ARTICLES OF ASSOCIATION RELATING TO THE APPROPRIATION OF PROFIT

The Articles of Association of ASM International N.V. (the Company) provide the following with regard to distribution of profit and can be summarized as follows:

- From the profits, distributions shall in the first place, if possible, be made on the preferred shares equal to the EURIBOR-rate for six months' loans, increased by one and a half, on the paid-up amount which had to be paid on the preferred shares, weighted to the number of days to which this was applicable. If profits are insufficient, the dividend will be paid from the reserves with priority over any dividends. If the reserves are insufficient, the dividend deficit has to be made up in future years;
- Second, a dividend, if possible, is distributed on financing preferred shares. The dividend is a percentage of the par value, plus share premium paid, on the financing preferred shares. The percentage is determined by the Management Board, subject to approval of the Supervisory Board. The percentage is related to the average effective yield on government loans with a weighted average remaining term of no more than ten years, if necessary increased or decreased by no more than three percent, subject to the then prevailing market conditions. If profits are insufficient, the dividend shall be paid from the reserves. If the reserves are insufficient, the dividend deficit has to be made up in future years;
- With the approval of the Supervisory Board, the Management Board will determine which part of the profit remaining after adoption of the provisions of the previous paragraphs will be reserved. The profit after reserving will be at the disposal of the Annual General Meeting of Shareholders;
- The Company may only make distributions to the shareholders and other persons entitled to profit insofar as its equity exceeds the amount of the paid-up and called amounts of the share capital increased with the reserves that must be kept by virtue of law;
- Article 33, para 3 of the Articles of Association provides that dividend claims expire after the lapse of five years.

For the full text, please see our website (Articles of Association).

SPECIAL STATUTORY CONTROL RIGHTS

Article 27 of the Articles of Association provides that each common share gives the right to cast one vote, each preferred financing share to cast one thousand votes, and each preferred share to cast one thousand votes.

Article 29 of the Articles of Association provides that meetings of holders of preferred shares or of financing preferred shares shall be convened as often and insofar as a decision of the meeting of holders of preferred shares or financing shares desires this, and furthermore as often as the Management Board and or the Supervisory Board shall decide to hold such a meeting. At the meeting, resolutions will be passed with an absolute majority of the votes. In the event that there is a tie of votes, no resolution will take effect.

The following resolutions and actions can only be taken on a proposal by the Management Board and the Supervisory Board:

- the amendment of the Articles of the Company; and
- the dissolution of the Company.

For the complete text, please see our website (Articles of Association).

STICHTING CONTINUÏTEIT ASM INTERNATIONAL

The objective of Stichting Continuïteit ASM International (Stichting) is to serve the interests of the Company. To that objective Stichting may, amongst others, acquire, own and vote on our preferred shares in order to maintain our independence and/or continuity and/or identity.

The members of the board of Stichting are:

- Dick Bouma, retired Chairman Board Pels Rijcken & Droogleever Fortuijn;
- Rob Ruijter, Chairman Supervisory Board Delta Loyd; and
- Rinze Veenenga Kingma, President Archeus Consulting BV.

SUBSEQUENT EVENTS

Subsequent events were evaluated up to March 5, 2019, which is the issuance date of this Annual Report 2018. There are no subsequent events to report.

ANNUAL REPORT

The Annual Report, prepared in accordance with International Financial Reporting Standards (IFRS), is available free of charge by writing to our corporate offices, sending an email to investor.relations@asm.com or downloading the file through our website.

NON-FINANCIAL DATA GLOSSARY

All boundary scopes are for ASMI Front-end unless noted.

INDICATORS	DEFINITIONS	SECTION COVERED
STAFF (EMPLOYEE)	Employee is a person with a fixed contract, excluding temporary labor. Definition may be varied by country per local and country labor law. The number of employees at the last day of the reporting period	People and society
EMPLOYEES IN R&D	The number of employees on the last day of the reporting period whose work is directly related to the research and development of the product during the reporting year	Research and development
PATENT FILINGS	The total number of patent applications filed and applied with patent offices globally by ASMI for the invention described	Research and development
EMPLOYEES BASED ON NATIONALITIES	The number of nationalities of employees on the last reporting day of the period	People and society
EMPLOYEES COVERED BY COLLECTIVE BARGAINING AGREEMENTS	The percentage of employees that are covered by collective bargaining agreements per local labor requirement divided by the total number of employees at reporting year-end	People and society
REPORTED CONCERNS FROM ANONYMOUS GLOBAL REPORTING PROGRAM SPEAKUP!	The number of questions, remarks and/or concerns reported to the Ethics Office related to a potential violation of the Code of Conduct and Business Policies via reporting tool SpeakUp! in the reporting period	People and society
VOLUNTARY TURNOVER RATE	The percentage of employees in a workforce that leave voluntarily during this reporting period	People and society
RECORDABLE INJURY RATE	The Recordable Injury Rate measures cases that require a response greater than first aid (or serious injuries) per 100 employees in reporting period	People and society
INJURY RATE	The Injury Rate is a measure of all first aid or greater injuries per every 100 employees in reporting period	People and society
NUMBER (#) OF EMPLOYEES COMPLETING BI-ANNUAL ETHICS TRAINING	All employees completing the online compliance training courses bi-annually during our compliance month within the reporting year. We track # of employees and % of the total that completed the training. It is applicable to all employees	People and society
ETHICS CONCERNS REPORTED FROM ANONYMOUS GLOBAL REPORTING PROGRAM SPEAKUP!	The number of any ethics concerns reported by employees through our anonymous employee reporting channel SpeakUp!; that may be related to a potential violation of the Code of Conduct and Business Principles or Policies in the reporting year	People and society
ETHICS CONCERNS REPORTED THROUGH OTHER CHANNELS	The number of any ethics concerns reported by employees through other means including directly to management or the Compliance Officer, that may be related to a potential violation of the Code of Ethics and Business Principles or Policies in the reporting year	People and society
RESPONSIBLE BUSINESS ALLIANCE (RBA)	We adopted the industry standard RBA Code of Conduct. More detail about the code can be find at http://www.responsiblebusiness.org/standards/code-of-conduct/	Corporate Responsibility strategy
SELF-ASSESSMENT QUESTIONNAIRE (SAQ) RISK RATING/RESULT	We adopted the RBA standard tool for risk assessment Self-Assessment Questionnaire (SAQ) to assess our own and supply chain risk. This rate apply to our own operation SAQ results with our major sites	Corporate Responsibility strategy

INDICATORS	DEFINITIONS	SECTION COVERED
CRITICAL AND STRATEGIC SUPPLIERS	Suppliers that are determined to be critical to our business either because the business spends, or critical components or critical materials, or strategic technical partnership	Supply chain
SUPPLY CHAIN SPEND BY REGION	Total amount of Euro spent with our global suppliers for the materials, components and services that are used to produce our products and services for our customers and for non-product related products services that enable our operations globally in the reporting period	Supply chain
CRITICAL SUPPLIER COMMITMENT %	The percent of critical suppliers that have acknowledged their commitment to RBA code or whose code of conduct is assessed to be acceptable as it covers the similar principles of the RBA Code of Conduct	Supply chain
CRITICAL SUPPLIERS' LOW MEDIUM RISK RANK BASED ON SELF-ASSESSMENT QUESTIONNAIRE (SAQ) RESULT	The percent of critical suppliers who completed the required Supplier Self-Assessment Questionnaire and resulted with low and medium risks	Supply chain
SUPPLY CHAIN SPENDS PER REGION (IN EURO AND %)	Total Euro amount we spent and equivalent to the % of total spends with suppliers by each region	Supply chain
GREENHOUSE GAS (GHG) EMISSIONS	The number of metric tons of CO_2 equivalent emissions including both the direct CO_2 equivalent emissions (scope 1) and indirect CO_2 equivalent emissions (scope 2) in the reporting period	Environment
WATER CONSUMPTION	The total amount of water consumption in cubic meters for the reporting period	Environment
LANDFILL DIVERSION RATE	The percentage of solid waste diverted from landfill via recycling and reuse efforts in the reporting period as generated at ASMI major Manufacturing, Engineering and R&D sites.	Environment

DEFINITIONS AND ABBREVIATIONS

AENEAS: AENEAS is an association, established in 2006, providing unparalleled networking opportunities, policy influence & supported access to funding to all types of RD&I participants in the field of micro- and nanoelectronics enabled components and systems.

AGM: Annual General Meeting of Shareholders (AGM) is the annual general meeting of shareholders.

ALD: Atomic Layer Deposition (ALD) is a surface-controlled layer-by-layer process that results in the deposition of thin films one atomic layer at a time. Layers are formed during reaction cycles by alternately pulsing precursors and reactants and purging with inert gas in between each pulse.

BCP: Business Continuity Plan

CAP: Corrective Action Plan

CMRT: The CFSI Conflict Minerals Reporting Template (CMRT) is an industry widely adopted standard template used by companies to collect conflict minerals due diligence data.

Conflict Minerals/3TG: Tin, tantalum, tungsten and gold.

CONNECT!: ASMI's internal newsletter

COSO: The Committee of Sponsoring Organizations of the Treadway Commission (COSO) is a joint initiative of five private sector organizations listed that is dedicated to providing thought leadership through the development of frameworks and guidance on enterprise risk management, internal control and fraud deterrence.

CR: Corporate Responsibility

CVD: Chemical Vapor Deposition (CVD) is a chemical process used to produce high quality, high-performance, solid materials. The process is often used in the semiconductor industry to produce thin films. In typical CVD, the wafer (substrate) is exposed to one or more volatile precursors, which react and/or decompose on the substrate surface to produce the desired deposit. Frequently, volatile by-products are also produced, which are removed by gas flow through the reaction chamber.

DCM: Dual Chamber Module

DFX: Term used interchangeably, where the X is a variable which can have one of many possible values, such as design for manufacturability, power, variability, cost, yield, reliability, or sustainability (DFS).

DRAM: Dynamic Random Access Memory

DRC: The Democratic Republic of Congo

ECO: Engineering change order.

EHS: Environmental, Health & Safety

Epitaxy (EPI): Epitaxy is one of a portfolio of wafer processing technologies for which we provide equipment. The word comes from the Greek epi meaning above, and taxis meaning in an ordered manner. It involves the deposition of silicon or silicon compounds to form layers that help to continue and perfect the crystal structure of the bare silicon wafer below. Epitaxy improves the electrical characteristics of the wafer surface, making it suitable for highly complex microprocessors and memory devices. Selective Epitaxy is an Epitaxy process that only deposits silicon or a silicon compound on certain predetermined areas of the wafer.

FinFET: A Field Effect Transistor (FET) architecture that uses a raised channel, referred to as a fin, from source to drain. A finFET is a considered a 3D transistor since the channel is in a vertical orientation.

FLBL: Forced Labor/Bonded Labor

FMEA: Failure Mode Effects Analysis

GES: ASMI's Global Employment Standards

GRI: The Global Reporting Initiative (GRI) is an international independent standards organization that helps businesses, governments and other organizations understand and communicate their impacts on issues such as climate change, human rights and corruption (www.globalreporting.org).

IC: Integrated Circuit

IFRS: International Financial Reporting Standards

ILO: International Labor Organization

imec: imec is an internationally renowned research institute that performs research in different fields of nanoelectronics. It is headquartered in Leuven, Belgium, and has offices in the Netherlands, Taiwan, US, China, India, Nepal and Japan.

IoT: Internet of Things

IP: Intellectual Property

ISO 14001: The ISO 14001 Environment Management System (EMS) standard is an internationally recognized environmental management standard.

NCG: New College Graduate (NCG)

NGOs: Non-Government Organizations

LPCVD and Oxidation/Diffusion: Low Pressure Chemical Vapor Deposition (LPCVD) is a thermal process that deposits various films at low pressure. LPCVD processes include polysilicon, silicon nitride and silicon oxides. Diffusion (sometimes referred to as annealing) is a thermal treatment used to move dopants, or impurities, and make dopants introduced by ion implantation electrically active. Oxidation forms a silicon oxide layer on the wafer's surface, which acts as an insulating or protective layer over it.

NAND: A type of nonvolatile memory device technology which does not require power to retain its data. NAND flash memory is used in mobile phones, USB memory drives, solid state drives and other electronic products.

NWO: Nederlandse Organisatie voor Wetenschappelijk Onderzoek

OECD: OECD (Organization for Economic Cooperation and Development) is an international organization helping governments tackle the economic, social and governance challenges of a globalized economy. It publishes guidance and frameworks such as OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.

PEALD: Plasma Enhanced ALD (PEALD) uses specific chemical precursors just like in thermal ALD. However, it also makes use of cycling an RF-plasma to create the necessary chemical reactions in a highly controlled manner.

PECVD: Plasma Enhanced Chemical Vapor Deposition (PECVD) is the CVD that utilizes plasma to enhance chemical reaction rates of the precursors. PECVD processing allows deposition at lower temperatures, which is often critical in the manufacture of semiconductors. The lower temperatures also allow for the deposition of organic coatings, such as plasma polymers, that have been used for nanoparticle surface functionalization.

PLC: Product Life Cycle

R&D: Research and Development

RBA: Responsible Business Alliance - Industry coalition seeking to create a industry-wide standards on social, environmental and ethical issues in the industry supply chain. Rebranded from the Electronics Industry Citizenship Coalition (EICC) in October 2017.

RCOI: Reasonable Country of Origin Inquiries (RCOI)

RMI: Responsible Minerals Initiative – (http://www.conflictfreesourcing.org)

SAQ: Self-Assessment Questionnaire (SAQ) is one of the EICC's standardized risk assessment tools.

SDG: United Nations Sustainable Development Goals

SEAJ: Semiconductor Equipment Association Japan

SEMI: Semiconductor Equipment and Materials International (SEMI) is a global industry association of companies that provide equipment, materials and services for the manufacture of semiconductors, photovoltaic panels, LED and flat panel displays, micro-electromechanical systems (MEMS), and related micro and nanotechnologies.

TTW: Toegepaste en Technische Wetenschappen

VLAIO: Vlaams Agentschap Innoveren & Ondernemen

DECLARATIONS

COMPLIANCE WITH DUTCH CORPORATE GOVERNANCE CODE

The Dutch Corporate Governance Code was last amended on December 8, 2016. As of 2018, Dutch listed companies are required to report for the first time on compliance with the revised Code for the financial year 2017. The full text of the Dutch Corporate Governance Code can be found on the website of the Monitoring Commission Corporate Governance Code (www.mccg.nl).

ASMI applies the relevant principles and best practices of the revised Code applicable to the Company, to the Management Board, and to the Supervisory Board, in the manner set out in the Corporate Governance section, as long as it does not entail disclosure of commercially sensitive information, as accepted under the Code.

ASMI agrees with principle 3.2.3 of the Code that in most circumstances a maximum severance payment of one year for Management Board members is appropriate. However, we want to reserve the right to agree to different amounts in case we deem this to be required by the circumstances. Any deviations will be disclosed.

RESPONSIBILITY STATEMENT

The members of the Management Board state that, to the best of their knowledge, the statutory financial statements prepared in accordance with IFRS-EU and Title 9 of part 2 of the Dutch Civil Code as included in this Annual Report 2018 provide a true and fair view of the assets, liabilities, financial position, and results of the Company and its subsidiaries included in the consolidated statements and that the management report provides a true and fair view of the position and the business of the Company and its subsidiaries, and the Annual Report 2018 provides a description of the principal risks and uncertainties that the Company faces.

CORPORATE GOVERNANCE STATEMENT

ASMI complies with the Corporate Governance Code. All required information is part of this Annual Report.

Corporate governance-related documents are available on our website. These include, amongst others, the Supervisory Board profile, Supervisory Board rules, Management Board rules, the Audit Committee charter, the Nomination, Selection and Remuneration Committee charter, the Code of Ethics, the whistleblower policy, the anti- fraud policy, the rules concerning Insider Trading, the remuneration policy, diversity policy and policy regarding communications and bilateral contacts with shareholders.

ARTICLE 10 EU TAKEOVER DIRECTIVE DECREE

The Management Board states that the information required under Article 10 of the EU Takeover Directive Decree is disclosed in this Corporate Governance chapter to the extent that it is applicable to ASMI.

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SAFE HARBOR STATEMENT

In addition to historical information, some of the information posted or referenced herein or on the website contains statements relating to our future business and/or results, including, among others, statements regarding future revenue, sales, income, expenditures, sufficiency of cash generated from operations, maintenance of interest in ASM Pacific Technology Ltd, business strategy, product development, product acceptance, market penetration, market demand, return on investment in new products, facility completion dates and product shipment dates, corporate transactions, restructurings, liquidity and financing matters, outlooks, and any other non-historical information. These statements include certain projections and business trends, which are 'forward-looking'. We caution readers that no forward-looking statement is a guarantee of future performance and that actual results could differ materially from those contained in the forward-looking statements.

You can identify forward looking statements by the use of words like 'may', 'could', 'should', 'project', 'believe', 'anticipate', 'expect', 'plan', 'estimate', 'forecast', 'potential', 'intend', 'continue', and variations of these words or comparable words.

Forward-looking statements do not guarantee future performance and involve risks and uncertainties. You should be aware that our actual results may differ materially from those contained in the forward-looking statements as a result of certain risks and uncertainties. These risks and uncertainties include, but are not limited to, economic conditions and trends in the semiconductor industry and the duration of industry downturns, currency fluctuations, the timing of significant orders, market acceptance of new products, competitive factors, litigation involving intellectual property, shareholder or other issues, commercial and economic disruption due to natural disasters, terrorist activity, armed conflict or political instability, epidemics and other risks indicated in our most recently filed Statutory Annual Report and other filings from time to time. The risks described are not the only ones. Some risks are not yet known and some that we do not currently believe to be material could later become material. Each of these risks could materially affect our business, revenues, income, assets, liquidity, and capital resources. All statements are made as of the date of posting unless otherwise noted, and we assume no obligation to update or revise any forward-looking statements to reflect future developments or circumstances.

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