

MESSAGE FROM THE CEO

As COVID-19 continued to impact each of us in 2021, the health and safety of our people remained our biggest priority. ASMI not only delivered strong financial results, but also took important steps forward in strengthening our position as an innovation leader and expanding our growth potential.



Benjamin Loh

President and Chief Executive Officer

The year began on an optimistic note, with the belief that vaccines would help control the pandemic and some normality would resume. But as 2021 unfolded, and new variants drove further COVID-19 waves, uncertainty and disruption persisted. We experienced the deep impact of the pandemic on our lives, communities, and world economies. At ASMI, we continued to prioritize the health and safety of our people, business partners, and communities. Throughout 2021 and at the start of 2022, we continued with our robust control measures, travel restrictions, and work-from-home protocols.

“WE TOOK IMPORTANT STEPS FORWARD IN EXPANDING OUR GROWTH POTENTIAL.”

I am proud of our people, and how they all pulled together as one ASMI team – putting health and safety first, while serving our customers in the best possible way. Thank you to all our employees for a great effort, and for showing your resilience and relentless commitment.

SEMICONDUCTORS ENABLING THE DIGITALIZATION TREND

Accelerated digitalization has driven strong growth in the semiconductor industry. The global semiconductor end market increased 24% in 2021, exceeding the US\$500 billion level for the first time. The pandemic triggered structural changes in how we communicate, consume, and work. Semiconductors provide key building blocks for the digitalization trend, and the continued build out of IT infrastructure. The surge in demand that started in 2020 and sped up in 2021 has been outstripping supply, despite sector-wide efforts to boost output and capacity. This resulted in shortages and increased lead times in many parts of the chip markets. This, in turn, has driven further investments in capacity. It has also highlighted the increased importance of the semiconductor industry in today's world.

STRONG GROWTH IN LOGIC/FOUNDRY AND EXPANDED POSITION IN MEMORY

The wafer fab equipment (WFE) market increased strongly with a mid-to-high 30s percentage in 2021. We benefited from strong demand across the board. In terms of customer segments, our sales were driven by foundry, followed by memory, and then logic. The combined logic/foundry segment remained the key driver for ASMI. This was fueled by our customers' substantial investments in leading-edge manufacturing capacity, to meet growing demand for high-end computing and 5G smartphones. We continued to benefit from substantial increases in the ALD requirement in the most advanced logic/foundry nodes, resulting in share of wallet gains for our company. During the year, we further expanded our R&D engagements for the next nodes, and we won several new key applications. We also saw the first meaningful bookings in the second half of 2021 for the upcoming node transition, which, for most of our key logic/foundry customers, is expected to go into high-volume manufacturing in the second half of 2022 and into 2023. We expect the number of ALD layers to show strong double-digit percentage growth in the next node. This will provide us with further opportunities for share of wallet increases with key logic/foundry customers.

“WE EXPECT THE NUMBER OF ALD LAYERS TO SHOW A STRONG DOUBLE-DIGIT PERCENTAGE GROWTH IN THE NEXT NODE.”

Against a backdrop of healthy spending trends in memory, we achieved a significant increase in our sales to memory customers in 2021. A key driver for our memory business has been the adoption of high-k metal gate ALD in DRAM. This is a key technology that enables greater power efficiency and improved performance of cutting-edge DRAM devices. We have strong engagements for several other new applications, both in DRAM and 3D-NAND, which we expect will increase our memory position in coming years.

Growth in WFE spending on the trailing-edge technology nodes in 2021 is also worth noting. This was driven by strong end-market demand and capacity shortages. In this market, we have a number of solid positions in niche segments, particularly in the power, analog and wafer-maker segments, even though ASMI in total derives most of its sales from the most advanced node spending. Analog/power demand, which has a relatively higher exposure to the automotive and industrial markets, rebounded strongly in 2021 following the drop in 2020.

EQUIPMENT REVENUE DRIVEN BY ALD AND EPI

In terms of product lines, revenue was again led by very solid double-digit growth in our ALD business, which continued to represent more than half our equipment revenue. Epi, our second-largest product line, also showed very strong growth on the back of robust demand in the advanced CMOS market, and the rebound in the analog/power segments. An important achievement in 2021 was the second customer win for our Intrepid ES tool, in the advanced CMOS market for an advanced gate-all-around application. We also launched the new Intrepid ESA. This makes the substantial performance and cost-of-ownership benefits of the Intrepid available for 300mm applications in the analog, power and wafer-maker markets.

We invest selectively in our PECVD and vertical furnace product lines. Noteworthy in 2021 is the contribution of the A400 DUO, our high-productivity 200mm vertical furnace. Introduced in 2019, this is now having great success, including several new customer wins in China.

“OUR OUTCOME-BASED SERVICES CREATE VALUE BY REDUCING COSTS AND INCREASING UPTIME.”

Our spares & services business delivered a solid performance, with 16% higher revenue. The sales increase in 2021 moderated compared to the 29% growth in 2020, in part due to the impact of customers investing in higher inventories of spares in 2020 in the face of COVID-19-related disruptions of global supply chains and logistics. Our new, innovative outcome-based services had strong traction. We booked multiple contracts for our so-called Complete Kit Management (CKM), and spares-as-a-service offerings. These are creating value for our customers by reducing costs and increasing uptime of our equipment.

SUPPLY CHAIN CHALLENGES

COVID-19 continued to create challenges in our operations, especially supply chain. In terms of our capacity, we benefited from our investment in the new manufacturing facility in Singapore. This provided us with the flexibility to meet increased demand. Since completion at the end of 2020, we have steadily been increasing headcount to raise output. In September 2021, we announced that we had started the design work on the second manufacturing floor within this new facility, aiming to be production ready by early 2023. This will result in a further substantial capacity boost.

In supply chain, the situation was already tight as we entered 2021, and constraints increased in the second half of the year. This included the impact of the lockdown measures, resulting in reduced factory outputs – in Southeast Asia, and especially Malaysia – which is an important link in the supply chains in our industry. Building on the learnings from COVID-19-related disruptions in 2020, we took several actions to mitigate the impact. This included maintaining higher buffer inventories, and qualifying new suppliers. We were still able to meet our customer requirements. We achieved quarter-on-quarter record-high sales thanks to very strong execution by our team, and outstanding support and commitment from our supply chain partners.

SUSTAINABILITY AND ESG

This was also the year we substantially stepped up our sustainability ambitions. Our focus is on long-term sustainable value creation for all our stakeholders. Building on a solid foundation of achievements in sustainability, we are now taking important steps forward as we strive to make a positive impact in the world. In 2021, we defined our key sustainability focus areas and priorities for 2021-2025 in key environmental, social, and governance areas. These are well-aligned with our strategy and the priorities of our key stakeholders.

Our priorities include: continuing our relentless focus on safety leadership; development of our people and culture; reductions in our environmental footprint; ensuring a responsible supply chain, and continued strengthening of governance, including cybersecurity and IP protection. An important step in 2021 was the announcement of our target to achieve Net Zero emissions, including Scope 3, by 2035. In 2021, we transitioned most of our key sites to electricity from renewable sources, in line with the commitment we made last September. We believe we remain on track to achieve our target for 100% electricity from renewable sources for all our sites by 2024, with an estimated 90% reduction in our Scope 1 and 2 greenhouse gas (GHG) emissions relative to 2020.

“OUR TARGET IS TO ACHIEVE NET ZERO EMISSIONS BY 2035.”

PEOPLE ARE OUR BIGGEST ASSET

One of our key focus areas in sustainability is people. We aim to create a safe and inspiring workplace of inclusion and diversity, where our employees can unleash their potential. In 2021, we launched ConvERGE – our new employee resource group – on International Women’s Day. We have set a target to increase the percentage of women working at ASMI from 15% in 2021

to 20% by 2025. As part of our aim to build a strong and unified culture, we launched our core values – We Care, We Innovate, We Deliver – defining who we are at ASMI, and what we stand for. We stepped up our internal communications, and implemented improvement actions following our earlier engagement survey. These steps are essential to making us attractive as an employer. The war for talent is fierce, especially in the semiconductor sector, and we need to significantly grow our workforce to execute our growth ambitions. We stepped up our talent-recruitment initiatives and benchmarked our global rewards and employee-benefits programs. In 2021, we succeeded in welcoming a record-high number of new colleagues, and grew our total number of employees by 28% to 3,312.

“WE AIM TO CREATE A SAFE AND INSPIRING WORKPLACE OF INCLUSION AND DIVERSITY.”

RECORD-HIGH FINANCIAL RESULTS

Our company again delivered strong financial results in 2021. Revenue increased 30% to €1.7 billion, our fifth consecutive year of double-digit growth. The gross margin improved from 47.0% to 47.9%. Net R&D increased by 9% and SG&A expenses by 20%. Our operating result grew about 50%, with the operating margin improving from 24.6% to 28.4%.

The income related to our 25% stake in ASMPT increased to €87 million from €45 million in 2020. This result excludes the amortization of intangible assets related to ASMPT.

Free cash flow more than doubled from €120 million in 2020 to €266 million in 2021. This increase was driven by the strong improvement in profitability, with working capital under control, and despite higher income tax paid. CapEx additions amounted to €79 million in 2021, with a significant part spent on expanding and upgrading our R&D lab facilities. In 2021, we also reconfirmed the key elements of our capital allocation policy. Investment in the growth of our company and maintaining a strong financial position remain the priority. Our commitment to pay a sustainable dividend and use any excess cash for the benefit of our shareholders is unchanged.

In 2021, ASMI returned €237 million to shareholders in the form of dividend and share buybacks, up from €165 million in the previous year. We will propose a dividend of €2.50 per share to be paid over 2021, up 25% from €2.00 last year.

OUTLINING OUR GROWTH THROUGH INNOVATION STRATEGY

Long-term prospects look bright. Data-intensive end-market applications, such as artificial intelligence and cloud computing, will drive investments in faster and more power-efficient semiconductors. At our Investor Day in September 2021, we outlined how we are going to drive growth through innovation. ALD and Epi will be critical technologies to enable the inflections on our customers' roadmaps, particularly the increasing adoption of 3D structures and new materials, coupled with traditional scaling. We believe our company is well positioned to benefit due to unique strengths. These include our networked R&D model, early customer engagements, vast experience in ALD materials, and a broad portfolio of ALD solutions.

We expect ALD to remain one of the fastest-growing segments of the WFE market, with a CAGR of 16% to 20% in the years to 2025*. In ALD, we aim to maintain a leading market share in excess of 55% by 2025. This is based on continued leadership in the logic/foundry space, and an increase in our ALD memory share. We project the Epi market to increase with a CAGR of 13% to 18% in the years to 2025*. We target our Epi market share to increase from about 15% last year to more than 30% by 2025. A key inflection will be gate-all-around (GAA), a new and advanced transistor architecture that is expected to further increase the need for both Epi and ALD.

In our vertical furnace and PECVD product lines, we target selective growth. Our spares & service business is further contributing to ASMI's growth, as we are moving to outcome-based services.

At our Investor Day, we also committed to 2025 financial targets. We aim to grow our revenue with a CAGR of 16% to 21% in the next five years*. We target solid gross margin in a range of 46%-50% and operating margin of 26% to 31% in 2021-2025.

LOOKING AHEAD TO 2022

Our industry entered 2022 with strong momentum. The global economy is forecast to show further solid improvement this year, despite risks related to the pandemic, including a continuing impact on the supply chain, geopolitical tensions, and inflationary pressures. Capacity shortages mean that part of the demand in 2021 has carried over into 2022.

The WFE market is expected to increase by a mid to high teens percentage in 2022. Solid spending is expected for the logic/foundry segment, driven by the combination of ongoing capacity additions as well as investments in next node initial capacity. While the memory market remains dependent on supply-demand developments, spending in 2022 is likely to be supported by expansion projects and investments in the new nodes.

Supported by a record high order backlog at the end of Q4, ASMI has started the year on a strong footing. Looking at the first half of the year of 2022, supply chain conditions are expected to remain tight. For Q1, on a currency comparable level, we expect revenue of €500-530 million, with a further steady increase in Q2 revenue compared to Q1. Based on the current visibility, we expect revenue in the second half of 2022 to be higher than the level in the first half. We expect to outperform the WFE market in 2022.

“WE WILL STAY FOCUSED ON FURTHER EXPANDING OUR ENGAGEMENTS WITH KEY CUSTOMERS.”

We will stay focused on further expanding our engagements with key customers. In 2022, we will also further invest in our business – to strengthen our position and tap into the many opportunities ahead of us. We also plan to report on our progress in sustainability, as we set further targets and undertake new initiatives in our key focus areas.

March 3, 2022



Benjamin Loh
President and Chief Executive Officer

*Compared to the baseline year 2020 as presented during the Investor Day in September 2021.