

# Smart. Easy.

DRIVING THE ENERGY FUTURE

**Non-Financial Report 2018**  
SMA Solar Technology AG

# Energy that changes

As a leading global specialist for photovoltaic system technology, SMA is setting the standards today for the decentralized and renewable energy supply of tomorrow.

More than 3,000 SMA employees in 18 countries have devoted themselves to this task.

Our innovative solutions for all photovoltaic applications and our unsurpassed service offer our customers worldwide greater independence in meeting their energy needs.

In collaboration with our partners and customers, we are helping people around the world transition to a self-sufficient, decentralized and renewable energy supply.



## Sustainable from the Beginning

[GRI 102-14] Since SMA was founded, sustainability has been an essential part of its corporate mission statement. We understand sustainability as combining long-term economic success with protection of the environment and social responsibility. Our sense of identity includes satisfied employees thanks to an attractive corporate culture, a fair and honest business policy, social commitment, exemplary handling of environmental issues and resources through sustainable production, and the use of renewable energy sources at all levels of the value chain. With our products and services, we are driving the transition to a globally sustainable, renewable energy supply and are helping curb global climate change.

The SMA Managing Board is committed to the ten principles of the UN Global Compact, which SMA signed back in 2011. Based on these principles and the 17 UN Sustainable Development Goals, we continuously develop our commitment to sustainability. In this way, we want to help meet the challenges associated with a steadily growing population, rising globalization and urbanization, and increasingly scarce resources. The focus here is particularly on Goal 7: "Ensure access to affordable, reliable, sustainable and modern energy."

[GRI 102-11, 12, 14, 18, 48-52, 54] On the following pages, we report on the developments and progress we made in terms of sustainability in the 2018 fiscal year. Significant risks from the Company's business activities and from its products and services that could have negative effects on the aspects covered in the Non-Financial Statement are described in the Risks and Opportunities Report starting on page 58. An overview of sustainability key figures can be found at the end of the Annual Report on pages 128 et seq. In addition, we publish information about sustainability at SMA on our website at [www.SMA.de/en](http://www.SMA.de/en).

The report uses the Core option of the Global Reporting Initiative (GRI) standards. The disclosures also fulfill the criteria of the UN Global Compact annual progress report. In the future, we will also report on how the Company's activities measure up against each of the 17 UN Sustainable Development Goals. The precautionary principle, as outlined in the Rio Declaration on Environment and Development, is also an integral part and driving force of our sustainability commitment.

## Sustainability – An Important Element of the SMA Strategy 2020

[GRI 102-14, 22, 23, 34] SMA knows that a comprehensive, credible commitment to sustainability is possible only when it is an established part of the corporate strategy. That is why sustainability is an essential element of the SMA Strategy 2020. Objective 5 of this strategy is: SMA is an attractive company – working sustainably along the entire value chain. The sustainability mission statement developed in 2012 was adapted to the Strategy 2020.

On this basis, we have defined four areas of action for sustainability that comprise the following topics:

PRODUCTS AND PROCESSES	ENVIRONMENT AND ENERGY	EMPLOYEES	SOCIAL RESPONSIBILITY
Quality and safety	Resource efficiency	Culture of feedback	Responsibility in the supply chain
Customer satisfaction	Preventive environmental protection	Advanced training	Stakeholder dialogue/transparency
Circular economy	Holistic energy management	Diversity	International principles and values
Sustainable profitability	Sustainable mobility	Occupational safety and health management	Social commitment

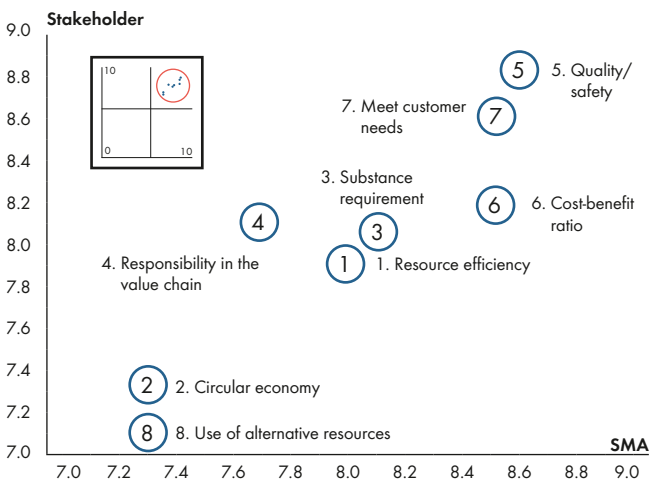
The four areas of action "Products and Processes," "Employees," "Environment and Energy" and "Social Responsibility" are the focal points for our commitment to sustainability. In terms of content, they relate to factors both at the company level and at the product level.

For all company activities, the Global Quality unit coordinates implementation of the sustainability commitment. Decisions are made by the Global Management Committee, which consists of the Managing Board and top-level managers.

KEY FACTORS DETERMINED USING STAKEHOLDER ANALYSIS

[GRI 102-40, 42-44, 46, 47, 103-1] Ongoing dialogue with various interest groups and the general public is important to us. In 2017, we carried out a stakeholder analysis to identify key areas of action for a sustainable company strategy. Our survey gave internal and external interest groups (customers, suppliers, employees, NGOs) the chance to directly influence the development of SMA's sustainability commitment. The survey included three sections: sustainable company, sustainable product design and sustainable value chain. The results of the stakeholder analysis serve as the basis for continuous development of our commitment to sustainability.

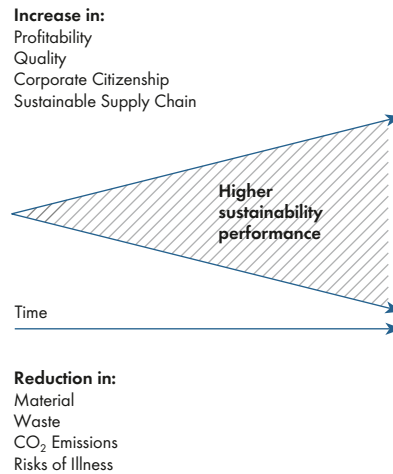
Using the example of sustainable product design, the graphic below shows the analysis of the key areas of action. Internal and external stakeholders were asked about the relevance (materiality) of presorted issues from the points of view of the stakeholder and of SMA. The materiality analysis revealed that many of the issues relating to sustainable product design we identified were highly relevant.



SUCCESS MEASURED BY COMPANY AND PRODUCT KPI

We measure the scope and success of our commitment to sustainability using a Product Key Figure and a Company Key Figure. These two figures were compiled for the first time in 2017. In dialogue between specialists and stakeholders from different areas of the Company, we then thoroughly scrutinized the main sustainability drivers in the four areas of action again in 2018 and adjusted the parameters. The next step will involve making all of the drivers measurable and allocating ambitious targets, which can then be used as the basis for measuring the sustainability performance in the Company Key Figure and the Product Key Figure.

The Company Key Figure measures the use of resources and the value that this creates. The aim here is to create more value with fewer resources. The bigger the gap between the value created and the resources used to do so, the more sustainable the Company. We have determined the following parameters for this:



The Product Key Figure follows the same pattern and measures the increase in sustainability of our products and services. We evaluate this using defined sustainability criteria, which are based on the results of our stakeholder analysis and our internal expert dialogue.

## Developments in the Four Areas of Action in the Reporting Year

[GRI 103-1, 2-3] As a result of the integrated management system implemented at the headquarters in Niestetal/Kassel, we follow clearly defined management approaches and also meet the requirements in accordance with DIN EN ISO 9001, DIN EN ISO 14001, DIN EN ISO 50001 and DIN EN ISO 45001. These also influenced the specification of key aspects within the four areas of action. Due to the extensive internal expert dialogue, the definition of specific targets for all key aspects at the product and company level – which was originally planned for 2018 – has not yet been completed. Regardless of this, SMA successfully implemented further measures in the four areas of action in 2018, which we report on below.

### AREA OF ACTION: PRODUCTS AND PROCESSES

Customer satisfaction is the basis for the long-term economic success of the Company. With our strong capacity for innovation and high quality along the entire value chain, we develop sustainable products and processes that meet the changing demands of an increasingly digitalized world, and the requirements for sustainability and a circular economy. Here we concentrate on the following issues:

#### Ongoing Improvement of Quality and Waste Reduction in all Business Processes – Focus on Supplier Quality

[GRI 416-1-3] When serving our customers, our aim is to fulfill the highest quality requirements at all times. We aim for added value, zero defect tolerance and flexible quality concepts on a global level. SMA's headquarters in Kassel/Niestetal have been certified by the DIN EN ISO 9001 quality management standard for over 20 years, thus guaranteeing compliance with recognized quality principles. Our high standard of quality is also enhanced by the accreditation of our in-house Test Center for Electromagnetic Compatibility (EMC) by ISO/IEC 17025, the international standard for test and calibration laboratories. In addition to these and other management certifications, our products also meet the official safety standards required by the various markets (e.g., UL, JET, VDE, etc.). Additionally, in the past, our sustainable product design concept largely focused on the longevity of the products by reducing wearing parts.

Effective and efficient inspection and testing procedures help us achieve our quality goals. Thanks to a sound quality index system, we can also identify sources of error at an early stage and address risks to a large extent. In 2018, we particularly concentrated on supplier quality at SMA, implementing additional processes and optimization measures in this area.

#### Sustainable Profitability and Limited Capital Tie-Up – SMA Inverters Avoid Environmental Damage Amounting to €7.5 billion

[GRI 201-2, 203-2] In addition to further cost reduction measures, in 2018, the SMA Managing Board resolved extensive restructuring measures to quickly return the company to profitability over the long term in an environment characterized by strong price pressure. The main measures that are implemented since January 2019 include giving up the locations in China and selling the Chinese companies to the local management. The restructuring is aimed at reducing SMA's fixed costs and making optimal use of our capacity at the headquarters by focusing on our core competencies, outsourcing and automating activities, and reorganizing structures.

In addition, environmental damage avoided will increasingly be taken into account in the economic analysis of companies. Assuming an average value, SMA's total current inverter output of around 75 GW to date is equivalent to avoided environmental damage amounting to €7.5 billion. Our inverters enable a cost-effective and environmentally friendly energy supply worldwide, helping support the fight against climate change and contributing to the achievement of UN Sustainable Development Goals 7, 11 and 13. The PV inverters produced by SMA to date help prevent nearly 52 million tons of CO<sub>2</sub> emissions every year worldwide (assuming 75 GW of output, 1,300 kWh of power generation a year per kW, 0.53 kg CO<sub>2</sub>/kWh).

#### Achieving a Comprehensive Circular Economy – Guideline for Sustainable Product Design Created

[GRI 301-2, 3] As a sustainability-conscious company aiming for high resource efficiency, creating a circular economy is hugely important to us. Our inverters already have a long service life. Defective devices that need to be serviced are immediately replaced by reconditioned devices, repaired if possible, and transferred to the replacement device pool.

In the next few years, we will develop a comprehensive strategy aimed at achieving a circular economy in our value chain. This strategy will focus on reusing as many materials as possible after our inverters have been used, from the product development stage on. Additional goals are waste reduction, increased recovery rates and improved disposal (see also Area of Action: Environment and Energy).

In 2018, we developed the basic version of a guideline for sustainable product design. One focus area here is design for recycling and disassembly. The guideline is continuously expanded based on new project results within the company. These also include the findings from a project carried out in the year under review to investigate more homogeneous recycling of SMA inverters after they have finished being used. The goal here is to design the inverters in a way that enables high-quality raw materials to be returned to the material cycle as easy and resource-efficiently as possible after the end of the devices' service life.

#### Increasing Customer Satisfaction – International Survey Designed

[GRI 102-43, 44] To understand exactly what our customers expect from us, we engage in constant dialogue with them and actively request feedback. This takes place at customer events as part of the SMA partner program, at SMA Solar Academy seminars and regular international trade fairs. In 2018, we also conducted a survey of installers in Germany that focused on how we can better support this customer group with their work. The survey is to be adapted for additional markets in 2019. In addition, we designed a comprehensive international customer satisfaction survey for all customer groups in 2018. This will be rolled out to around 50,000 recipients worldwide in 2019.

#### AREA OF ACTION: ENVIRONMENT AND ENERGY

SMA will continuously reduce its use of resources in terms of raw materials, energy, mobility and waste along the entire value chain, increase its use of renewable energies, environmentally friendly materials and sustainable forms of mobility as well as improve its recycle and reuse rates. This will be taken into consideration early on in the development of new products and solutions. Important issues here are:

#### Increasing Resource Efficiency Throughout the Entire Product Life Cycle – Another Product Life Cycle Assessment Prepared and Material Efficiency Increased Again

[GRI 301-1, 303-1, 304-1, 2, 306-2, 307-1] SMA sees in resource efficiency a responsibility to the environment but also an economic advantage. Here the product life cycle assessment helps us find the greatest possibilities within our value chain, define the right goals and continuously improve the product sustainability key figure. The results of the assessment will be successively incorporated into our guidelines for sustainable product design. We have already used this method in recent years for inverters in the Sunny Boy and Sunny Central product families. In 2018, we also performed a life cycle assessment of the inverter family for commercial applications, Sunny Tripower, in collaboration with the Fraunhofer Institute for Building Physics IBP. The results showed that the high efficiency and high quality standard of our inverters and their associated long service life have a positive influence. In the future, we will direct focus to our preliminary supply chain.

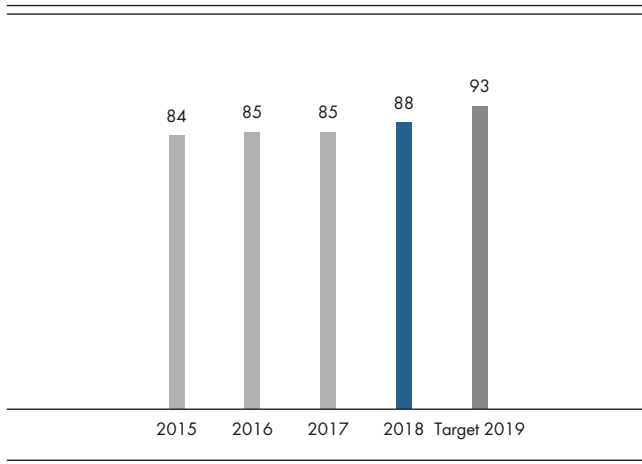
Material efficiency – We once again increased the material efficiency of our inverters in 2018. Whereas in the previous year the weight of our string inverters had averaged 3.4 kg/kW output, in the year under review, this fell to just 2.97 kg/kW. In the area of central inverters, we increased the power density such that the Sunny Central UP, which has been available to order since September 2018, produces over 50% more power with the same weight and volume than the Sunny Central 3000-EV, previously SMA's most powerful inverter. The high power density also reduces the number of inverters required within a PV power plant. We know that material savings partially go hand in hand with the use of critical raw materials. That is why, in addition to the warranty with which we already comply to avoid the use of conflict minerals in our inverters, we aim to act in accordance with material requirements such as REACH and RoHS and to gradually reduce the use of critical and rare substances. Our standard for the use of hazardous substances was adjusted again this year. In addition to the requirements of the Montreal Protocol, SMA introduced its own restrictions. We have called on all suppliers to comply with the standard. In our product development process, we are currently developing further criteria for materials to be excluded or reduced to make our products more sustainable.

Waste – The issue of waste reduction is to be closely connected with our circular economy strategy. We regard waste products as a secondary raw material and seek to avoid waste as much as possible and to reuse materials. We strive to increase the share of recyclable waste at the global SMA production locations to almost 100% by 2020 and to no longer produce any residual waste. In addition to the comprehensive separation of all garbage categories that has now been introduced in all office areas, we are also optimizing the homogeneous separation of production waste.

This has resulted in a continuous improvement in the recycling rate, which came to 87.5% of recyclable waste in 2018. SMA is working equally intensively to reduce and avoid hazardous waste materials. The packaging for some of our product groups already consists almost completely of environmentally friendly materials.

### Share of Recyclable Waste in Total Waste Generation

Share of recyclable waste in %



**Water** – Water consumption does not play a significant role in production at SMA. In some buildings, we use well water to cool the building in an environmentally friendly way. We direct the water close to the surface, which has had the positive side effect of creating a wetland habitat.

**Biodiversity** – Some of SMA’s properties border on conservation areas. We comply in full with the conditions imposed on us in this respect. There have been no administrative penalty proceedings in this regard since the company was founded. We offset the unavoidable space our production and administration buildings take by using green roofs on nearly all our buildings.

### Preventive Environmental Protection – Exemplary CO<sub>2</sub> Balance Further Improved

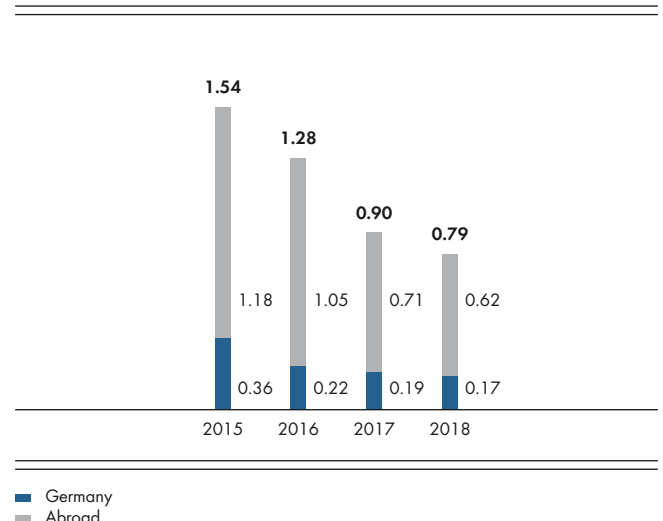
[GRI 302-2, 5, 305-1-5] The environmental management system used at SMA’s Kassel/Niestetal production location and the inverter production in Yangzhong (China) are certified in accordance with DIN EN ISO 14001. This system ensures that we avoid environmental damage at every stage of the value chain and act in accordance with current environmental legislation.

It is important for us to keep the environmental impact of our products as low as possible, beginning in the development phase. Our guidelines for sustainable product design therefore lay down key design criteria that ensure our products become more sustainable from one generation to the next. The definition of “non-preferable materials” also contributes to sustainable design. Efforts to avoid these materials, which pose environmental or health risks or whose production involves a violation of human rights, are to be taken into consideration in the pre-development stage and tracked through to the preliminary supply chain. A key figure shows the improvements in each individual area. To reach this figure, we take into account all stages of the value chain. In addition to the circular economy issues already described, this also involves the reduction of critical materials, material efficiency, efficiency and safety. The corporate social responsibility aspect must also be taken into account from the product development stage on. Here, responsibility throughout the supply chain plays a decisive role. Our life cycle assessments have shown us that the biggest lever for improving our product life cycles is our suppliers’ use of renewable energy sources.

By collecting data in accordance with the GHG Protocol Standard, we transparently map our CO<sub>2</sub> footprint. At the Kassel/Niestetal location, thanks to our excellent energy management, energy-efficient buildings and a CO<sub>2</sub>-neutral electricity supply, we already have an exemplary CO<sub>2</sub> balance. The long-term plan is to expand this to the entire value chain and also factor in the production of raw materials, all our suppliers, the utilization phase and recycling of our products. Our goal is to reduce the already very low emissions as defined in GHG Scope 1 and GHG Scope 2 by another 5% per year. So far, we have been able to determine GHG Scope 3 emissions to a limited extent only. We are currently working on recording CO<sub>2</sub> emissions in the supply chain. However, the results of our life cycle assessments already provide us with better insights into the main emission factors in the value chain.

### Development of CO<sub>2</sub> Emissions per Produced kW Inverter Output

CO<sub>2</sub> emissions Scope 1 + Scope 2 in kg/kW



## Excellence in Energy Management – Use of Renewable Energy Sources Again Increased

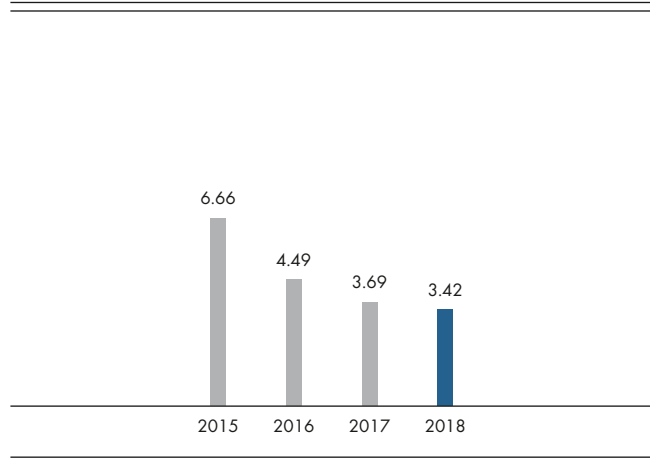
[GRI 302-1-5] Another important starting point for sustainability is our DIN EN ISO 50001-certified corporate energy management policy. SMA's energy concept is based on three levels from which we work to improve energy-related performance: avoiding energy consumption, using energy more efficiently and increasing the share of renewable energies used. The goal is to supply SMA entirely with decentralized renewable energy from the local region by 2020. In this context, the SMA Climate Roadmap forms the basis for continuous development of projects contributing to the energy transition at SMA's headquarters.

SMA has already undertaken a number of flagship projects in the past with its CO<sub>2</sub>-neutral inverter production facility at its Solar Factory 1 in Kassel, Germany; the Solar Academy in Niestetal, near Kassel, Germany, which functions independently from the utility grid; and Data Processing Center, which was completed in 2013 and is one of the most resource-efficient centers of its kind. These projects are a testament to the high priority SMA places on its sustainable energy strategy. In 2018, we increased the amount of self-produced solar power in our total electricity consumption to 40% (2017: 33%). This was particularly attributable to another in-house PV system with an output of 750 kWp that was commissioned in June 2018 and also serves as a test site for new types of inverter. We aim to achieve our goal of supplying the SMA headquarters entirely with decentralized renewable energy from the local region by 2020 as part of a sponsored project involving collaboration with regional partners.

In addition, the energy optimization of Solar Factory 1 that began in 2017 has been successfully completed, thereby reducing energy consumption by 1,500 MWh per year in the heating/cooling area alone. Overall in 2018, we again reduced energy consumption per produced kW of inverter output to 3.42 kWh (2017: 3.69 kWh). The introduction of special energy management software also makes it possible to monitor all types of consumption on an ongoing basis. A large amount of data from all our SMA locations is already being monitored by this software.

## Development of Energy Consumption per Produced kW Inverter Output

Total energy consumption in kWh/kW



In the future, we will extend the climate roadmap from our own locations to those of our suppliers, helping them make their energy supply sustainable and efficient.

## Sustainable Mobility – Around 58 Tons of CO<sub>2</sub> Saved on the Commute to Work

[GRI 305-5] SMA's commitment to sustainability also includes corporate mobility management that has already won multiple awards and that raises employee awareness of environmentally friendly forms of transportation. Our fleet organization, recognized by non-profit environmental and consumer protection association Deutsche Umwelthilfe as a good example of climate protection, includes a bonus/malus system for our vehicle fleet's CO<sub>2</sub> emissions. By 2020, we aim to reduce the vehicles' CO<sub>2</sub> emissions to 95 g/km. This target is to be achieved partly by promoting e-mobility. At our headquarters in Kassel/Niestetal, we provide employees and visitors with 45 charging stations, at which electric vehicles can be charged with CO<sub>2</sub>-neutral electricity. Thanks to these charging stations, SMA employees with electric vehicles alone saved around 58 tons of CO<sub>2</sub> on their commute to work in 2018. Along with expanding the charging infrastructure, we are also promoting e-mobility by giving all employees the option of electric vehicle leasing. We are also gradually changing over the in-house vehicle fleet to e-mobility. Within the SMA vehicle fleet, we used data loggers to examine the route profiles and their suitability for the use of electric vehicles in 2018. Electric vehicles already account for more than 20% of our fleet. By 2020, our goal is to have at least half of the vehicles in the fleet electrically powered using renewable energy. Another aspect of the corporate mobility management system relates to increasing the proportion of cyclists. In 2018, almost 300 employees made use of the bicycle leasing system introduced in 2016.



Logistics are also continuously being made more efficient. In 2018, for the first time SMA tested the use of electric trucks for internal logistics. Electric vehicles are already in use at our production sites in the form of electric forklifts and tugger trains.

Due to its international positioning, air travel is an important issue for SMA. Measures such as the consistent use of our video conference rooms to avoid air travel reduce some of the burden in this respect. In the future, we will further increase our efforts to avoid air travel.

#### AREA OF ACTION: EMPLOYEES

The high level of commitment and willingness of our employees to always learn are essential factors in SMA's success. In the competition for talent, it is extremely important to us to be perceived as an attractive employer. That is why continuing to develop our corporate culture, based on fairness and respect, is an important part of our SMA Strategy 2020. We put our values of trust, performance and team spirit into practice in our day-to-day work, creating scope for responsible, entrepreneurial action and opportunities for shaping international collaboration.

#### Employee Headcount Slightly Increased From Hiring Temporary Staff

[GRI 102-7, 8, 401-1; UNGC 6] As of December 31, 2018, SMA had 3,353 employees worldwide (December 31, 2017: 3,213 employees; figures do not include temporary employees). Employee figures in Germany increased to 2,212 (December 31, 2017: 2,077). This rise can be attributed primarily to SMA's hiring temporary employees on fixed-term contracts in the first half of 2018. By contrast, the number of employees abroad remained nearly constant at 1,141 (December 31, 2017: 1,136) despite the hiring of temporary employees on fixed-term contracts.

SMA still uses temporary employees to absorb order fluctuations. As of the reporting date, the number of temporary employees decreased by 411 to 290 worldwide (December 31, 2017: 701 temporary employees). Temporary employees at SMA are paid the same hourly rate as SMA employees performing similar duties.

#### Employees

Reporting date	2018/ 12/31	2017/ 12/31	2016/ 12/31	2015/ 12/31	2014/ 12/31
Employees (excl. temporary employees)	3,353	3,213	3,345	3,330	5,060
of which domestic	2,212	2,077	2,093	2,081	3,469
of which abroad	1,141	1,136	1,252	1,249	1,591
Temporary employees	290	701	530	671	467
Total employees (incl. temporary employees)	3,643	3,914	3,875	4,001	5,527

#### Full-Time Equivalents

Reporting date	2018/ 12/31	2017/ 12/31	2016/ 12/31	2015/ 12/31	2014/ 12/31
Full-time equivalents (excl. trainees and temporary employees)	3,177	3,006	3,118	3,110	4,667
of which domestic	2,053	1,888	1,881	1,872	3,094
of which abroad	1,124	1,118	1,237	1,238	1,573

As part of the restructuring, layoffs are unfortunately unavoidable. The SMA Managing Board plans to cut around 425 full-time positions worldwide by mid-2019. Approximately 110 of these full-time positions relate to Germany and around 315 to locations abroad. The staff reductions outside Germany will mostly take place as a result of the sale of the Chinese companies to the local management. The layoffs are to be implemented in a transparent and socially responsible way.

Additional key figures on employees, in particular on the gender balance at management level, can be found in the overview of sustainability key figures on pages 128 et seq.

#### High Transparency and Strong Feedback Culture

[GRI 102-41, 402-1; UNGC 3] As a global company, SMA ensures that respect for human rights, including freedom of association and the International Labour Organization (ILO) rules, is guaranteed at all locations at all times. Open and trustful interaction with each other as well as the highest possible transparency and involvement of employees in corporate decisions are highly important to us. That is why we provide our employees with regular and comprehensive information about developments and changes in the company.

We use our annual employee appraisals to coordinate the tasks of each employee and the associated qualification requirements, to measure performance and to provide feedback on collaboration in an exchange between manager and employee. Global employee surveys, carried out every two years, complement our culture of feedback. We derive internal measures from the results of these surveys.

In addition, three web-based, cross-functional global leadership fundamentals workshops were held in 2018. These workshops were open to employees from all countries, hierarchical levels and areas of SMA. They were aimed at developing a shared global understanding of leadership based on the values and objectives from the SMA Strategy 2020. The workshops represented the first step in developing a shared mindset on leadership in mixed teams, in an interactive, participatory and sustainable way. The fundamentals developed will apply globally and specify what employees can expect from their managers and what managers can expect from their employees.

#### Lifelong Learning and Targeted Development of Talent

[GRI 404-1, 2] SMA operates in a dynamic environment that places high demands on our employees. Radical developments, such as rapid digitalization of the energy supply and Work 4.0, require new skills and competencies. For us, sustainable personnel development therefore means providing our employees with opportunities for lifelong learning, individual development and building qualifications to current and future challenges. In addition to external training, SMA employees benefit from a diverse internal training program comprising a variety of topics. Furthermore, we offer our Technology and Sales employees in particular subject-specific content via our SMA University and Online Sales Academy. To make existing knowledge accessible throughout the company and to ensure we learn from each other, information is exchanged and channeled through peer groups. We also gave particular attention to the topic of "new work" in 2018. With the "Future Blog", we created a platform on which employees from different parts of the company can launch initiatives, invite others to join in and present their results. In addition, in 2018, we set up a "Future Office" covering an entire floor of one of our office buildings. The concept centers on agile work methods, constantly changing project teams and creative workplace environments with the option to choose the right environment for upcoming tasks.

In the reporting year, we ran national and international talent management projects aimed at systematically supporting talented employees and opening up long-term development prospects for them. We support talented employees with individual development plans and group-oriented measures over a period of at least 12 months, and prepare them for project management or management tasks. The aim is to create a global network to ensure success in current and future business fields.

Our Leadership Development Program, designed to promote a culture of leadership and cross-divisional global collaboration, is aimed at middle-management executives from all departments. The program includes various aspects of leadership topics, which are communicated through individual coaching and working on global projects and serve to promote entrepreneurial thinking and action with a focus on strategic management. We work to ensure that the composition of these programs is at least representative of the proportion of women in the company as a whole.

In 2018, SMA invested a total of around €1.8 million in employee training.

Vocational training as a key element in securing and fostering the next generation is also a high priority at SMA. We currently offer training at the Kassel/Niestetal location in five different training occupations in both the industrial/technical and commercial sectors. As of December 31, 2018, 72 young people were in vocational training at SMA (December 31, 2017: 94 people). Following vocational training, a transfer concept creates the possibility for further employment at SMA. The trainees benefit from the international nature of the organization and, apart from the opportunity to complete language training courses, they have the chance to complete an internship on project work at an international location for a defined period of time. We are committed to supporting the next generation of MINT (mathematics, information technology, natural sciences and technology) trainees in several ways, including running the annual Girls Camp at SMA.

#### Continuously Increasing Diversity

[GRI 405-1] We see the diversity of our employees as an asset to our company. SMA is committed to equal opportunities and promotes collaboration in "mixed" teams. In joining the "Diversity Charter" in 2011, we undertook to create a work environment in which all employees have the same opportunities for development, regardless of gender, nationality, religion or ideology, disability, age or sexual orientation.

Given the Company's strong technology orientation, the proportion of male employees is comparatively high. On December 31, 2018, 74.6% of employees were male and 25.4% female. Our aim is to continuously increase the percentage of female employees. We offer our employees family-friendly working conditions. This includes flexible working hours and models, the possibility of working from home, childcare and other family services. Other measures to support female employees include mentoring and targeted support for self-managed internal networks.

We also aim to integrate different cultures and strengthen collaboration between employees of different nationalities. SMA employs people of 54 different nationalities in 18 countries. In addition to promoting international collaboration, the possibility of deployment to our international locations and regular intercultural training, in 2017, we started implementing a concept to integrate refugees into our vocational training program. In the reporting year, refugees from Afghanistan, Iraq, Iran and Syria were carrying out vocational training at SMA.

#### Performance-Based Remuneration for Motivated Employees

[GRI 202-1, 401-2] In addition to appreciating our employees in the form of qualified feedback and further development opportunities, it is important to us to acknowledge their commitment and performance through appropriate remuneration. Our job level model, in use in Germany, the U.S. and Poland since 2016, helps create transparency and enable comparison of compensation across all areas of the Company. It is based on the requirements of each position and the employee's individual performance.

For us, it goes without saying that there are no systematic differences in the remuneration of female and male employees. In addition to fixed and performance-related remuneration components, our remuneration system also includes non-cash remuneration and components of the company pension plan. In addition, both permanent employees and temporary staff participate financially in the Company's success. Temporary employees at SMA are paid the same hourly rate as SMA employees performing similar duties. It also goes without saying that SMA complies with the legal provisions on minimum wage.

#### Attractive Employer With Exemplary Occupational Safety and Health Management

[GRI 403-1-7] Occupational safety and health management, a health promotion policy and workplace rehabilitation management are part of sustainable safeguarding of the company's future. The focus of occupational safety and health management at SMA is on avoiding work-related accidents and illnesses. We work in accordance with the principle of prevention. Targeted, regular safety inspections and training, the inclusion of occupational safety and health management in workplace design, and the binding regulation of responsibility ensure a high level of safety in all workplace environments. Integrating laws and ordinances as well as implementing technical standards into our business processes has always been a matter of course for us. Occupational safety and health management processes are regulated by the provisions of the management system BS OHSAS 18001, which was introduced at the Kassel/Niestetal headquarters in 2012. In 2018, SMA became one of the first companies to be certified in accordance with the new DIN EN ISO 45001. Various subject-specific and department-specific meetings take place regularly to ensure the topic of occupational safety and health management is firmly established within the company. These include the quarterly meetings held by the occupational safety committee, with participation from the responsible Managing Board member.

As the workforce ages, health promotion – and particularly ergonomics and psychological risk assessment – is becoming increasingly important. SMA's health management policy is aimed at avoiding chronic unfavorable stress and thus minimizing the risk of illness and reducing the illness rate. Our various health measures are quality-assured and developed and implemented to meet the requirements of particular target groups. One area of focus is aging- and age-adapted workplace design in production and logistics. In this context, we introduced the "Ergonomic Requirements" design guideline in the product development process in 2018, as well as initiating the "MARIE" cooperation program in conjunction with rehabilitation clinics and pension funds to support employees with altered performance. The key figure for "age stable workplaces" that was introduced in production in 2017 showed an increase in the proportion of age-adapted workplaces to 53.5% in 2018. Many specific examples at SMA in 2018 showed that an ergonomically designed workplace helps make work easier, simpler and therefore more reliable in terms of quality. In the intervention areas, the sick rate fell by more than two percentage points.

## AREA OF ACTION: CORPORATE SOCIAL RESPONSIBILITY

As an international company, SMA meets its societal and moral responsibilities with regard to all relevant interest groups. Internationally applicable laws and standards apply both to our locations and to the entire supply chain. We are a member of national and international organizations and associations to promote the growth of renewable energy sources.

### Compliance With All International Regulations, Fair and Transparent Along the Entire Value Chain

[GRI 102-12, 16, 205-1-3, 407-1, 408-1, 409-1, 412-1, 3, 413-1] Respect for human rights and compliance with legal regulations are of the utmost priority to SMA. By signing the UN Global Compact in 2011, we made a public declaration of our commitment to responsible corporate governance. At the core of the UN initiative are ten principles in the areas of human rights, labor standards, environmental protection and anti-corruption.

As early as 2009, SMA signed the cross-sector code of conduct issued by the German Association of Supply Chain Management, Procurement and Logistics (BME e.V.). In 2010, we supplemented this code of conduct with SMA's own guidelines for suppliers (SMA Supplier Code). This Supplier Code covers topics such as corruption, antitrust law, ethical principles, labor standards and employee rights, environmental protection, quality and product safety. In the future, we intend to align ourselves even more closely with the UN Sustainable Development Goals. Suppliers must sign the SMA Supplier Code on conclusion of a contract.

Compliance – with legal provisions and internal directives – has become increasingly important in recent years. A risk-oriented and preventive compliance strategy is now more important than ever. SMA Group Compliance has formulated the business principles and directives from which basic work sequences and processes are derived and implemented globally. All employees are obligated, in the context of their work for SMA, to act ethically in accordance with the directives and with the laws and regulations of their country. Compliance with these obligations is consolidated through regular, global obligatory compliance training. At the end of 2018, we also published the SMA Compliance Manual, in which all Corporate Compliance guidelines were revised and compiled. At regular intervals, Group Compliance reports to the Managing Board and Supervisory Board with information on the latest developments, suspicious cases, measures and processes. In 2018, no risks of corruption or complaints were determined.

Information is available on the intranet and via hotlines for employees with questions or suspicions about compliance. Our executives are supported by the legal provisions task force on important issues in environmental and occupational safety law. There were no violations determined in this respect in 2018.

SMA actively promotes the shaping of corporate co-determination. In Germany, the foundations for this are regulated by the Works Council Constitution Act and elsewhere.

### Responsibility Along the Entire Supply Chain – 90% of Goods Volume Tested for Sustainability

[GRI 102-9, 308-1, 2, 414-1, 2] In 2018, SMA purchased goods of approximately €450 million from around 450 suppliers in Europe, North and South America and the Asia-Pacific region. Based on our comprehensive analyses of the environmental and societal impact of our products, we defined the supply chain as a key point of focus. In 2017, we began the evaluation of our entire supply chain's performance in terms of sustainability. Supplier participation in the evaluation is mandatory. We have already evaluated suppliers corresponding to around 90% of our goods volume. This has revealed a mostly positive picture. The evaluation criteria, which we will refine further in the coming year, include guaranteed compliance with the universal SMA standards such as respect for human rights, freedom of association, avoidance of child labor and forced labor, and the use of a sustainable, climate-friendly energy supply. They will be recorded in a "Supplier Sustainability Guideline," which alongside our Supplier Code, will formulate clear goals for our suppliers.

### Social Commitment – Paving the Way for a Sustainable, Reliable and Cost-Effective Energy Supply

[GRI 102-13] For SMA, supporting and guiding social development for a sustainable future is a matter of course. Over the past years, we have thus supported projects, organizations and initiatives from different areas – on a regional and national level as well as in newly industrialized and developing countries. The traditional Christmas donation by SMA employees is used to support regional projects and initiatives via the fund-raising organization A.M.S. In 2018, SMA employees donated around €11,100. As in the previous years, the sum was doubled by the Managing Board.

We are also focusing on our commitment to numerous networks, partnerships and initiatives that play a significant role in further development of photovoltaics, climate protection and the digitalization of the energy supply. For example, SMA is represented on the managing boards of the German Solar Industry Association (Bundesverband Solarwirtschaft) and the European industry association SolarPower Europe (SPE), where SMA experts preside over the “Digitalisation & Solar Task Force”, among others. In this context, we work with politicians, industry associations and the general public advocating for increased installation of renewable energy in conjunction with cross-sector energy management and optimizing the conditions for a completely decentralized and digital energy supply based on renewable sources. This can contribute to countries’ national and international obligations to reduce greenhouse gas emissions and to increase climate protection.

SMA supports the EU initiative to develop a uniform eco-design directive and eco-labeling for PV systems. In 2018, our experts once again contributed to the success of several projects and publications with their technological expertise. This included a project by the German Federal Environment Agency in which reliable data on the life cycle assessment of PV systems were calculated with SMA’s help. The results are to be published in the spring. In the “energy payback time,” for example, they will convincingly demonstrate that the energy consumption and CO<sub>2</sub> emissions in the production phase are amortized in a very short space of time.

SMA does not make any donations to political parties or to related or associated organizations or individuals.

### Transparent Stakeholder Dialogue – Providing Information Openly and Responding to Suggestions

As a globally operating company, we are subject to a wide variety of political changes and decisions that affect our business activities. To safeguard the future of SMA, it is important for us to communicate our company’s interests in open dialogue with governments, industry associations and organizations as well as societal stakeholders. We also respond to our stakeholders’ suggestions and interests with the same openness, valuing them as reliable partners.

We place high value on ongoing, transparent dialogue with important interest groups. We report important events within the company in ad hoc messages, press releases, on our website and social media channels. By sharing information on all relevant issues, we ensure that we are always acting in the interests of our core stakeholders. Our stakeholder analysis, performed in 2017, enabled us to explore in more detail the key issues of a sustainable company and sustainable products. We hope that the international customer satisfaction analysis prepared in 2018 will lead to suggestions for further activities in 2019. We will continue this open and transparent dialogue with key interest groups in the future.

# SUSTAINABILITY KEY FIGURES OF THE SMA GROUP

## AREA OF ACTION: PRODUCTS AND PROCESSES

		2018	2017
Sales	€ million	760.9	891.0
Inverter output sold	MW	8,449	8,538
Capital expenditure	€ million	40.3	33.2
Research and development costs (including own work capitalized)	€ million	87.1	83.0
Research and development ratio in relation to sales	%	11.4	9.3
EBITDA	€ million	-69.1	97.3
EBITDA margin	%	-9.1	10.9
Patents and utility models		1,244	1,057
Prevented emissions <sup>1</sup>	Millions of tons of CO <sub>2</sub>	52	45
Prevented environmental damage <sup>2</sup>	€ million	7,492	6,525
Quality - field failure rate	%	0.71	0.54

<sup>1</sup> Global CO<sub>2</sub> savings by SMA products compared with the fuel mix in Germany of 0.53 kg/kWh

<sup>2</sup> €145 per prevented ton of CO<sub>2</sub> emissions (Federal Environment Agency - medium-term costs, mean value)

## AREA OF ACTION: ENVIRONMENT AND ENERGY<sup>1</sup>

		2018	2017
Total energy consumption <sup>2</sup>	kWh/kW	3.42	3.69
Total power consumption	kWh/kW	2.72	2.72
Share of photovoltaics in total electricity consumption	%	40	33
Share of regional/decentralized renewable electricity	%	87	70
Water/effluent <sup>3</sup>	m <sup>3</sup> /employee	11.1	10.8
Total waste <sup>2</sup>	t/GW	234.4	229.2
Share of recyclable waste	%	87.5	85.4
Share of hazardous waste	%	12.2	14.7
CO <sub>2</sub> emissions S1+S2 total <sup>2</sup>	kg/kW	0.79	0.90
CO <sub>2</sub> emissions S1+S2 Germany <sup>2</sup>	kg/kW	0.17	0.19
CO <sub>2</sub> emissions S1+S2 abroad <sup>2</sup>	kg/kW	0.62	0.71
CO <sub>2</sub> emissions of SMA vehicle fleet passenger cars <sup>3</sup>	kg/employee	186.8	190.2
Ø CO <sub>2</sub> emissions of company cars according to ECE <sup>4</sup>	g/km	108	111
CO <sub>2</sub> emissions S3			
CO <sub>2</sub> emissions aircraft <sup>3</sup>	kg/employee	464.4	558.0
CO <sub>2</sub> emissions rail <sup>3</sup>	kg/employee	3.25	3.23
CO <sub>2</sub> emissions logistics truck	%	4	Not given
CO <sub>2</sub> emissions logistics aircraft	%	88	Not given
CO <sub>2</sub> emissions logistics ship	%	8	Not given
CO <sub>2</sub> emissions logistics rail	%	0	Not given

<sup>1</sup> Niestetal/Kassel location, if not specified otherwise

<sup>2</sup> In relation to inverter output produced

<sup>3</sup> In relation to the number of employees at the end of the period

<sup>4</sup> In accordance with manufacturer specifications as outlined in the ECE standard

## AREA OF ACTION: EMPLOYEES

		2018/12/31	2017/12/31
<b>SMA Group employees</b>			
Employees (excl. temporary employees)		3,353	3,213
of which domestic		2,212	2,077
of which abroad		1,141	1,136
Temporary employees		290	701
<b>Total employees (incl. temporary employees)</b>		<b>3,643</b>	<b>3,914</b>
<b>Trainees</b>		<b>72</b>	<b>94</b>
<b>Gender diversity of SMA employees</b>			
male	%	74.6	75.0
female	%	25.4	25.0
<b>SMA Group executives</b>			
male	%	85.7	85.7
female	%	14.3	14.3
<b>Domestic executives</b>			
male	%	90.5	90.8
female	%	9.5	9.2
<b>Managing Board</b>			
male	%	100	100
female	%	0	0
<b>General Managers/Vice Presidents</b>			
male	%	93.5	88.6
female	%	6.5	11.4
<b>Directors</b>			
male	%	90.6	89.6
female	%	9.4	10.4
<b>Executives abroad</b>			
male	%	78.6	77.7
female	%	21.4	22.3
<b>SMA Supervisory Board</b>			
male	%	75	75
female	%	25	25
<b>Occupational safety and health</b>			
Domestic Lost Work Day Rate <sup>1</sup>	Sick days/ working hours	14.41	12.95
Domestic Lost Time Incident Rate <sup>2</sup>	Accidents/ working hours	1.41	1.51

<sup>1</sup> Sick days due to work-related accidents x 200,000 in relation to working hours

<sup>2</sup> Accidents > 1 lost day x 200,000 in relation to working hours

## AREA OF ACTION: CORPORATE SOCIAL RESPONSIBILITY

		2018	2017
Sustainability evaluation of suppliers according to EcoVadis <sup>3</sup>	%	48	Not given
Locations assessed for risks of corruption	%	6	50
Employees given corruption avoidance training		2,037	305
Cases of corruption		0	0

<sup>3</sup> Since 2018, sustainability performance evaluation of the main suppliers is done by EcoVadis. The sustainability performance of SMA suppliers is in the green area of the EcoVadis scale.



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