

An aerial photograph of a city, likely Singapore, showing a dense urban landscape with numerous high-rise buildings, green spaces, and roads. A white network of lines is overlaid on the image, connecting various points across the city, symbolizing connectivity and integration. The SMA logo is in the top right corner, and the title 'Integrated. Connected.' is centered in large white text. Below the title is the tagline 'Sustainably shaping the energy supply of the future.'

SMA

Non-Financial Report 2019  
SMA Solar Technology AG

# Integrated. Connected.

Sustainably shaping the  
energy supply of the future.



# 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.



## NON-FINANCIAL STATEMENT

[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 (SDGs), we continuously develop our commitment to sustainability. In this way, we want to help meet the challenges associated with the global climate change, a steadily growing population and increasingly scarce resources. An overview of the Sustainable Development Goals that SMA has already achieved can be found at the end of the Annual Report on page 128. Our work focuses particularly on Goal 7: "Affordable and clean energy," Goal 11: "Sustainable cities and communities," Goal 12: "Responsible consumption and production" and Goal 13: "Climate action."

[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 2019 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 59. An overview of sustainability key figures can be found at the end of the Annual Report on page 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

[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. The sustainability mission statement already developed in 2012 was adapted to the Strategy 2020. Sustainability will also have a central role to play as SMA continues to develop its strategy.

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

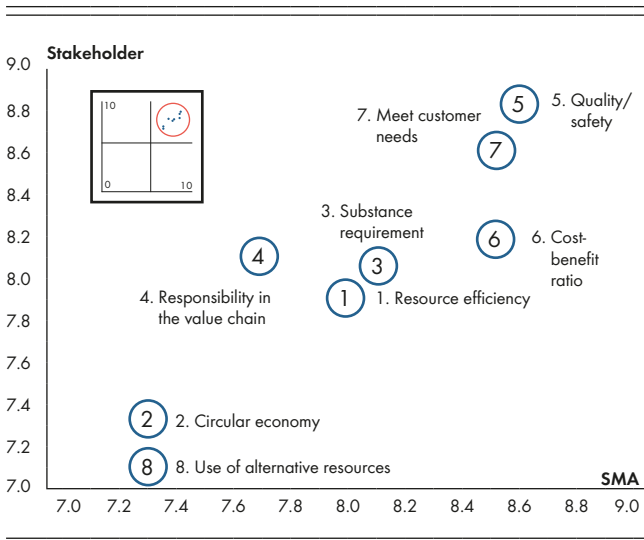
The four areas of action "Products and Processes," "Employees," "Environment and Energy," and "Social Responsibility" are the focal points for our commitment to sustainability. In terms of content, they relate to factors both at the Company and product level.

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 SMA. The materiality analysis revealed that many of the issues relating to sustainable product design we identified were highly relevant.



The stakeholder dialogue was continued over the reporting period through such means as a large-scale customer satisfaction survey and an improved level of communication on sustainability. By analyzing the extensive feedback, we have learned, for example, that issues relating to the use of resources for our products are coming increasingly to the fore.

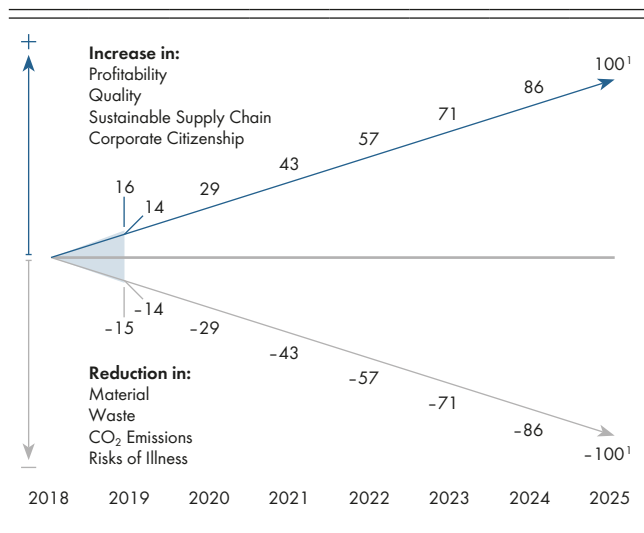
SUCCESS MEASURED BY COMPANY AND PRODUCT KPI

We have defined two key figures as primary variables that help us measure the success of our commitment to sustainability: the Company Key Figure and the Product Key Figure. In dialogue between specialists from different areas of the Company, we specified the main sustainability drivers in the four areas of action and determined the key parameters required to measure them. Each driver is allocated a formula and a measurable target, which can then be used as the basis for measuring the sustainability performance in the Company Key Figure and the Product Key Figure. This gives all stakeholders a clear picture of the progress that SMA is making with its sustainability performance. The merging of different parameters illustrates that sustainable business is possible only if there is a balance between economic, environmental and social aspects.

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 and goals for this:

Driver	Target by 2025
Profitability	Increase in EBITDA margin to > 5%
Quality	1% field failure rate
Sustainable supply chain	55% overall score for suppliers in EcoVadis assessment
Corporate citizenship	Increase in CC index by 5%
CO <sub>2</sub> emissions	50% reduction in scope 1 + 2 CO <sub>2</sub> emissions in kg/kW of inverter output produced
Waste	25% reduction in waste per metric ton of product produced
Use of Materials	25% reduction of the ratio of material input to product output
Accident frequency	Lost time incident rate of <1.5

In 2019, SMA achieved a high sustainability performance and even exceeded slightly the goals set:



<sup>1</sup> Planned level of target achievement by 2025 in %  
 ■ Performance 2019

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

Driver	Target by 2025
Use of renewable energy sources	50% ratio of renewables in total energy consumption
Quality/longevity	1% field failure rate
Design for recycling/disassembly	90% of recyclable product components
Preferable materials	25% increase in the ratio of secondary raw materials used
Product footprint	25% reduction in CO <sub>2</sub> emissions in kg/kW of inverter output
Use of Materials	30% reduction in product weight in kg/kW of inverter output
Non-preferable materials	15% reduction in the quantity of non-preferable materials
Waste	50% reduction in special waste disposal

To determine the Product Key Figure, we mostly consult data from our product life cycle assessments. Important factors include not only materials, CO<sub>2</sub> emissions and energy consumption, but also the quality and service life of our products. Collecting data for the Product Key Figure involves a lot more work as it is more complex. For this reason, the 2019 data will be calculated as a basis and performance will be assessed from 2020 onward.

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

[GRI 103-1-3] 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. We report below on the measures implemented and progress achieved during the reporting year in the four areas of action.

#### AREA OF ACTION: PRODUCTS AND PROCESSES

Customer satisfaction is the basis for the long-term economic success of the Company. With our high 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, 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 – Construction of New Test Center Under Way

[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 standard for over 20 years, thus guaranteeing compliance with internationally 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 all the safety standards required by each of our markets (e.g., UL, JET, VDE, etc.). Additionally, our sustainable product design concept focuses on the longevity of the products. Our practices of continuously reducing wearing parts and using efficient maintenance manuals serve this purpose.

Effective and efficient inspection and testing procedures help us achieve our quality goals. In the reporting period, we commenced construction work on the new EMC Test Center for large-scale inverters, which is expected to go into operation in 2020. 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. We have introduced recognized quality and risk management practices in supplier management and are working on developing them further.

#### Sustainable Profitability and Limited Capital Tie-Up – SMA Inverters Avoid Environmental Damage Amounting to €10.5 billion

[GRI 201–2, 203–2] The measures to reduce costs and increase sales that were resolved at the end of 2018 were implemented as planned in the reporting period with the aim of returning SMA quickly and sustainably to profitability. In March 2019, we concluded the sale of the Chinese subsidiaries to the local management entities and subsequently withdrew from the Chinese market. The unfortunate but unavoidable layoff of around 100 full-time positions at the headquarters in Germany was executed in a socially responsible manner by way of a voluntary severance program. This, combined with additional measures aimed at optimizing and consolidating operations, resulted in savings of over €23 million in 2019.

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 85 GW to date is equivalent to avoided environmental damage amounting to €10.5 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 59 million tons of CO<sub>2</sub> emissions every year worldwide (calculation: 85 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 – SMA Embarks on Extensive Strategy Development Process

[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 stand out due to a long service life. Defective devices that need to be serviced are immediately replaced by reconditioned devices, repaired wherever possible, and transferred to the replacement device pool.

In 2019, we began to develop a comprehensive circular economy strategy for SMA. This contributes to our Product Key Figure and the factors it encompasses. The aim of the strategy is to return as many materials as possible to the material cycle as secondary raw materials once our inverters reach the end of their useful lives. We thereby wish to become less dependent on raw material extraction, which involves working and environmental conditions that are difficult to control, and simultaneously improve our supply reliability.

The point of emphasis here is on relationships between materials along the entire value chain. The subject of design for recycling is becoming relevant for product development with a view to returning as many recyclable materials as possible to the material cycle. We intend to define recyclability quotas for our inverter categories and to continuously improve them on the basis of key figures. At the same time, we are also working on steadily increasing the percentage of secondary raw materials that we use in our products. Another aspect involves materials that we would like to scale down in the future or replace with substitutes. This includes not only materials that are subject to legal regulations, but also materials to be classified as critical with respect to supply reliability or based on environmental, health or human rights factors. Our aim is to assess these issues qualitatively in a matrix, which will then also serve as a basis for making material procurement decisions in product development.

Other key issues that we are bearing in mind in relation to circular economy are the high quality and service life of our products as well as their material and energy efficiency. Goals in relation to this include waste reduction, increased recovery rates and improved disposal (see also Area of Action: Environment and Energy).

Concurrently with the development of the circular economy strategy, we will expand step by step the guideline for sustainable product design that we created in 2018. One focus area here is design for recycling and disassembly. New findings from projects carried out at the Company will be incorporated into this process, including the findings from a project 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.

### Increasing Customer Satisfaction – International Surveys Conducted

[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 2019, we also conducted a survey of installers in select international markets that focused on how we can better support this customer group with their work. In the reporting period, we additionally rolled out a comprehensive international customer satisfaction survey for all customer groups to around 50,000 recipients worldwide. We will use the survey findings to derive ways of further improving customer satisfaction.

### 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 – Material Efficiency Increased Again

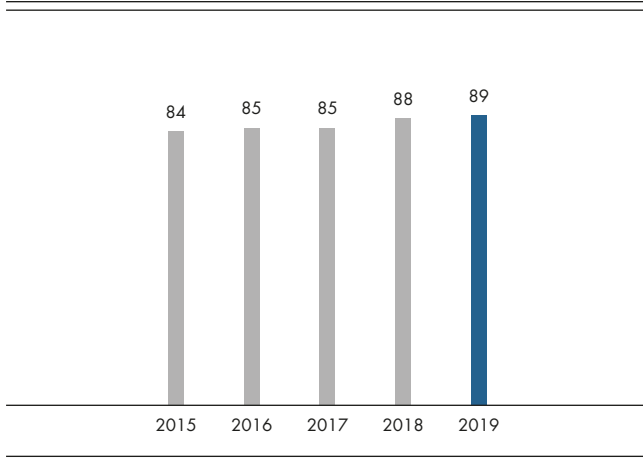
[GRI 301-1, 303-1, 304-1, 2, 306-2, 307-1] In resource efficiency, SMA sees a responsibility to the environment and also an economic advantage. Here the product life cycle assessment helps us find the greatest possibilities within our value chain, define the right goals and continuously improve the product sustainability key figure. The results of the assessment will be successively incorporated into our guidelines for sustainable product design. We have used this method in recent years for inverters of the Sunny Boy, Sunny Tripower and Sunny Central product families. We will continue this practice in order to review the impact of measures aimed at improving the product footprint. The results of previously prepared product life cycle assessments 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 2019. Whereas in the previous year the weight of our string inverters had averaged 2.97 kg/kW output, in the reporting year, this was brought down to just 2.47 kg/kW. We also increased the power density of our central inverters such that the weight across all products is now just 1.3 kg/kW output. Our latest generation of Sunny Central inverters now even weigh less than 1 kg/kW output. 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 includes both the requirements of the Montreal Protocol and SMA's own restrictions. Our suppliers have an obligation to comply with the standard. These are all aspects that we are focusing on in our current project to develop our circular economy strategy and enhance our product development process. In this context, 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 SMA production locations to almost 100% by 2020 and to hardly 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 optimizing the homogeneous separation of production waste. This has resulted in a continuous improvement in the recycling rate, which came to 88.8% of recyclable waste in 2019. In the process of consolidating production at our location in Niestetal starting 2020, we will adapt the location's disposal concept to bring us closer to the target we are striving to achieve. SMA is also working 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. In our preliminary supply chain, we expect our key suppliers to have an environmental plan in place that provides for ways of reducing water consumption where production processes are water-intensive.

**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 most of 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 for our inverter production is 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.

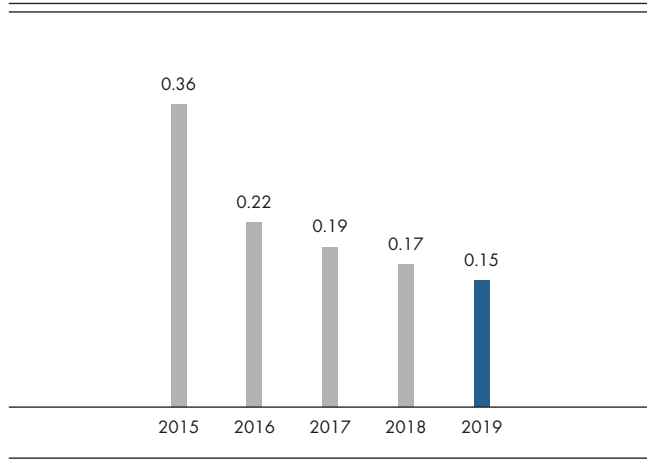
It is important to us to keep the environmental impact of our products as low as possible, beginning in the development phase. Our guidelines for sustainable product design therefore lay down key design criteria that ensure that our products become more sustainable from one generation to the next. It is not just material efficiency, efficiency and safety that contribute to sustainable design, but also the definition of “non-preferable materials.” 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. We also evaluate “preferable materials.” These are materials that should be used as a matter of preference because they contain secondary raw materials or otherwise have a very minimal impact on health, environmental and social factors. The Product Key Figure will illustrate the progress that has been achieved in each individual area. To reach this figure, we take into account all stages of the value chain. 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 and mobility management, energy-efficient buildings and a CO<sub>2</sub>-neutral electricity supply, we already have an exemplary CO<sub>2</sub> balance. The aim is to extend this to all locations worldwide and become a fully CO<sub>2</sub>-neutral Company in the medium term. Furthermore, 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 again refer to our primary key figures, which show the CO<sub>2</sub> footprint of the Company and its products. 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 of Inverter Output

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



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

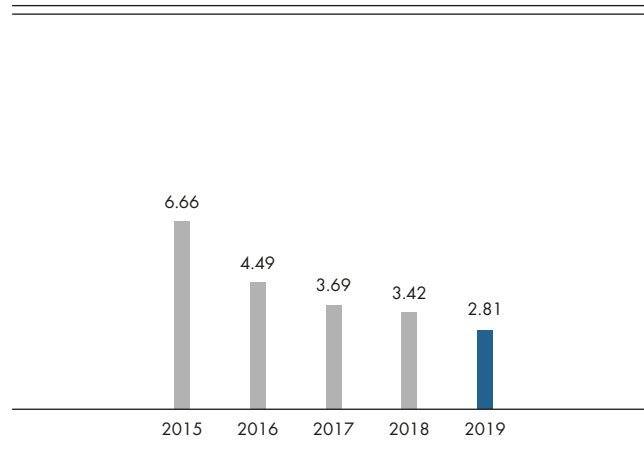
[GRI 302-1-5] Another important starting point for sustainability is our DIN EN ISO 50001-certified corporate energy management policy. SMA's energy concept is based on three levels from which we work to improve energy-related performance: avoiding energy consumption, using energy more efficiently and increasing the share of renewable energies used. The goal is to supply the German SMA locations 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 2019, the amount of self-produced solar power in our total electricity consumption in Germany slightly decreased to 38% (2018: 40%). This is mainly due to the fact that we made more use of our in-house PV systems to test our own products. 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. This project is now delayed, however, mainly due to regulatory approval obstacles.

In the course of merging our production activities at one of our production facilities, in 2020, we will optimize energy use at our Solar Factory 3. We will take inspiration from the energy optimization of Solar Factory 1, which we completed in 2018 and has helped lower energy consumption in the heating/cooling area alone by 1,500 MWh per year. Back in 2019, we already made a start on switching the hall lighting in Solar Factory 3 over to efficient LED lighting. This will reduce our lighting energy consumption by between 30% and 50%. We also achieved an exceptionally high energy efficiency performance in the new test area for large-scale central inverters. Overall in 2019, we continued to reduce energy consumption per produced kW of inverter output to 2.81 kWh (2018: 3.42 kWh) at our headquarters in Germany. This is mainly attributable to the higher degree of utilization of our production capacities. A special energy management software 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 of Inverter Power

Total energy consumption in kWh/kW, Germany only



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 72 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 nonprofit 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 currently provide our 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 72 tons of CO<sub>2</sub> on their commute to work in 2019. In 2019, we launched a project to expand the charging infrastructure at SMA, which will involve the installation of 50 more charging stations and will aim to demonstrate that e-mobility is possible with intelligent charging and load control without the need to expand power supply structures. Some of the CO<sub>2</sub>-neutral electricity for the charging stations will be produced directly in the PV system on the roof of the SMA parking garage.

Along with expanding the charging infrastructure, we are 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. 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 2019, more than 400 employees made use of the bicycle leasing system introduced in 2016. These and other measures have enabled us to almost double the percentage of employees who cycle to work from 9% to 17% over the past ten years. Not only this, but the flexible working option we give our employees to work from home also results in a CO<sub>2</sub> saving on their commute to work.

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 the 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.

#### Number of Employees Down After Layoffs

[GRI 102–7, 8, 401–1; UNGC 6] As of December 31, 2019, SMA had 3,124 employees worldwide (December 31, 2018: 3,353 employees; figures do not include temporary employees). Employee figures in Germany decreased to 2,186 (December 31, 2018: 2,212). SMA cut around 100 full-time positions in Germany through a voluntary severance program, and at the same time filled positions in strategically important future fields. The number of employees abroad fell to 938 (December 31, 2018: 1,141). Around 300 full-time positions were cut in China through the sale of the Chinese subsidiaries to local management entities. The excellent order situation meant that new jobs were created elsewhere. For instance, SMA signed a ten-year contract to provide operation and maintenance services for the North American solar portfolio of supplier TerraForm Power in the U.S., thereby growing the U.S. service team.

SMA still uses temporary employees to absorb order fluctuations. As of the reporting date, the number of temporary employees increased by 152 to 442 worldwide (December 31, 2018: 290) on the back of the excellent order situation. Temporary employees at SMA are paid the same hourly rate as SMA employees performing similar duties.

## Employees

Reporting date	2019/ 12/31	2018/ 12/31	2017/ 12/31	2016/ 12/31	2015/ 12/31
Employees (excl. temporary employees)	3,124	3,353	3,213	3,345	3,330
of which domestic	2,186	2,212	2,077	2,093	2,081
of which abroad	938	1,141	1,136	1,252	1,249
Temporary employees	442	290	701	530	671
Total employees (incl. temporary employees)	3,566	3,643	3,914	3,875	4,001

## Full-Time Equivalents

Reporting date	2019/ 12/31	2018/ 12/31	2017/ 12/31	2016/ 12/31	2015/ 12/31
Full-time equivalents (excl. trainees and temporary employees)	2,950	3,177	3,006	3,118	3,110
of which domestic	2,028	2,053	1,888	1,881	1,872
of which abroad	922	1,124	1,118	1,237	1,238

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 page 129.

## 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 any time. 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 at least every two years, complement our culture of feedback. We derive internal measures from the results of these surveys.

In 2019, we also finished the process of preparing and implementing the Global Leadership Fundamentals, which we had started the year before. The first step involved asking employees from all countries, hierarchical levels and areas of SMA to develop global approaches to leadership based on the values and objectives from the SMA Strategy 2020. This took place in various formats, some of which were virtual. The Managing Board and senior management team then held further workshops to take an in-depth look at the leadership principles that had been put forward. The next step involved gradually rolling out the leadership fundamentals across the Company. The fundamentals globally specify what employees can expect from their managers and what managers can expect from their employees. Leadership ambassadors from all areas help the managers with the process of implementation.

## 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. In 2019, we also continued to give attention to the topic of "new work." We focused on supporting initiatives from motivated employees, in particular, and on continuously developing working environments that are conducive to agile working practices in changing project teams.

Our talent management team aims to give employees with distinct potential long-term development opportunities at the Company. 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. We thus want to create a global network to ensure success in current and future business fields.



The 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 2019, SMA invested a total of around €1.7 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 the industrial/technical and commercial sectors. As of December 31, 2019, 59 young people were in vocational training at SMA (December 31, 2018: 72 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, 2019, 74.7% of employees were male and 25.3% 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 56 different nationalities in 18 countries. In addition to promoting international collaboration, the possibility of deployment to our international locations and intercultural training, in 2017, we started implementing a concept to integrate refugees into our vocational training program. In the reporting year, refugees from Afghanistan, Eritrea, 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, which has been implemented at the vast majority of global SMA locations since 2016, helps create transparency and enable comparison of pay across all areas of the Company. It is based on the requirements of each position and the 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.

In the reporting period, a Benefits Day was organized to provide employees with extensive information about the numerous other benefits that make SMA an attractive employer beyond remuneration.

### 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. The systematic performance of hazard assessments; regular safety

inspections and training; the inclusion of occupational safety and health management in workplace design; and the introduction of binding regulations for occupational safety and health responsibility are just a handful of the measures that enforce prevention and ensure a safe workplace environment. 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 and was superseded in 2018 by the new DIN EN ISO 45001 standard. Various subject-specific and department-specific meetings take place regularly to ensure that 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 occupational health physicians and the responsible Managing Board member.

In 2019, the SMA Crisis Management department was also given its own website and an emergency number, clearly distinguishing it from Emergency Management. The objective of crisis management at SMA is to enable the Company and all its subsidiaries to manage the impact of unforeseeable circumstances in an effective and efficient manner. Crisis management aims to avert risks to employees and to the Company's material and immaterial assets and to limit expected losses.

As the workforce ages, health promotion, ergonomics and psychological risk assessment are becoming increasingly important. These are all part and parcel of health management at SMA. It 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 and genders. One area of focus is aging- and age-adapted workplace design in production and logistics. In this context, in 2019, we also established the "Ergonomic Requirements" design guideline as an essential part of acceptance reports on our production lines, as well as consolidating the "MARIE" cooperation program in conjunction with rehabilitation clinics and pension funds to support employees with altered performance. Working alongside orthopedists, physical therapists and health insurance funds, we extended the physical therapist consultation hours and are now able to offer secondary and tertiary preventive measures for restrictions to activity caused by shoulder pain. As a result of further technical and organizational improvements, the key figure for "age-stable workplaces" that was introduced in production in 2017 showed an increase in the proportion of aging- and age-adapted workplaces to 55.9% in 2019 (2018: 53.5%).

## 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 to both our locations and 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. The SMA Group Compliance function 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, 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 2019, no risks of corruption or complaints were determined in this respect.

For employees with questions or suspicions about compliance, Group Compliance officers are on hand as a direct point of contact and information is also available on the intranet and via hotlines. Our executives are supported by the legal provisions task force on important issues in environmental and occupational safety law. There were no violations identified in these areas during the reporting period. 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 2019, SMA purchased goods of approximately €490 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. Since 2018, this has been handled by the external company EcoVadis. 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.

SMA also subjects itself to assessment by EcoVadis as a means of comparing its sustainability performance with that of its suppliers and having an external organization to show up potential areas for improvement. In 2019, EcoVadis awarded us a silver medal.

#### 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 2019, SMA employees donated around €12,000. As in the previous years, the sum was doubled by the Managing Board.

We are particularly committed to encouraging the widespread use of renewable energies. In this regard, as part of its close partnership with the University of Kassel, SMA funds an endowed chair for the specialist field of economics with a focus on the decentralized energy industry. We are also committed 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 and resource protection.

SMA supports the EU initiative to develop a uniform eco-design directive and eco-labeling for PV systems.

Our principles on political dialogue and representation of interests form the basis for a set of responsible, reliable and honest practices aimed at reconciling commercial and social interests. One such practice is neutrality with respect to political parties and lobby groups. Unlike previous years, in 2019, we gave a total of €3,000 in donations to political parties in Germany. We donated €1,000 each to the CDU, the SPD and BÜNDNIS 90/DIE GRÜNEN. These party donations were permitted under applicable law.



## 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 to 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. The international customer satisfaction analysis carried out in 2019 yielded important findings with regard to further activities.

Another contribution to the stakeholder dialogue involved hosting a webinar on "greenwashing versus credible sustainability" in fall 2019, which allowed us to reach out to over 100 industry actors worldwide. The webinar was part of an initiative by the specialist publication PV Magazine that SMA is sponsoring, which is looking to increase sustainability in the PV industry. In 2019, SMA also took part in the Open Day of "The Show with the Mouse" for the first time. The event, which is organized by Germany's most successful educational children's TV program, gives children and parents an insight into various organizations, research institutes and companies. There was a great deal of interest in SMA and the event was fully booked. We took over 400 visitors on tours of our inverter production facility and test laboratories.

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

		2019	2018
Sales	€ million	915.1	760.9
Inverter output sold	MW	11,409	8,449
Capital expenditure	€ million	27.6	40.3
Research and development costs (including own work capitalized)	€ million	63.1	87.1
Research and development ratio in relation to sales	%	6.9	11.4
EBITDA	€ million	34.2	-69.1
EBITDA margin	%	3.7	-9.1
Patents and utility models		1,491	1,244
Prevented emissions <sup>1</sup>	Millions of tons of CO <sub>2</sub>	59	52
Prevented environmental damage <sup>2</sup>	€ million	10,541	7,492
Quality - field failure rate	%	1.44	0.71

<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> €180 per prevented ton of CO<sub>2</sub> emissions (source: Federal Environment Agency)

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

		2019	2018
Total energy consumption	GWh	28.47	28.62
Energy consumption per kW <sup>2</sup>	kWh/kW	3.09	3.75
Total energy consumption, Germany	GWh	25.89	26.06
Energy consumption per kW, Germany	kWh/kW	2.81	3.42
Total power consumption	GWh	22.76	22.43
Power consumption per kW <sup>2</sup>	kWh/kW	2.47	2.94
Total power consumption, Germany	GWh	20.97	20.70
Power consumption per kW, Germany <sup>2</sup>	kWh/kW	2.27	2.72
Share of photovoltaics in total electricity consumption, Germany	%	38	40
Share of regional/decentralized renewable electricity, Germany	%	86.4	86.6
Total heat consumption	GWh	5.71	6.19
Total heat consumption, Germany	GWh	4.92	5.36
Water/effluent <sup>3</sup>	m <sup>3</sup> / employee	8.74	11.1
Total waste	t	1,835	2,101
Total waste, Germany	t	1,603	1,781
Share of recyclable waste	%	88.8	87.5
Share of hazardous waste	%	10.0	12.2
Waste per GW, Germany <sup>2</sup>	t/GW	173.7	234.4
CO <sub>2</sub> emissions S1+S2 total	t	2,940	2,870
CO <sub>2</sub> emissions S1+S2 per kW <sup>2</sup>	kg/kW	0.32	0.38
Total CO <sub>2</sub> emissions S1+S2, Germany	t	1,339	1,195
CO <sub>2</sub> emissions S1+S2 per kW, Germany <sup>2</sup>	kg/kW	0.15	0.17
CO <sub>2</sub> emissions of SMA vehicle fleet passenger cars, Germany <sup>3</sup>	kg/ employee	173.1	186.8
Ø CO <sub>2</sub> emissions of company cars <sup>4</sup>	g/km	112	108
CO <sub>2</sub> emissions S3			
CO <sub>2</sub> emissions aircraft <sup>3</sup>	kg/ employee	485.0	464.4
CO <sub>2</sub> emissions rail <sup>3</sup>	kg/ employee	1.86	3.25
CO <sub>2</sub> emissions logistics truck	%	16	4
CO <sub>2</sub> emissions logistics aircraft	%	69	88
CO <sub>2</sub> emissions logistics ship	%	15	8
CO <sub>2</sub> emissions logistics rail	%	0	0

<sup>1</sup> Total SMA production locations (Germany and Poland), if not specified otherwise, previous year's values were partly adjusted accordingly as last year only Germany was reported

<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 WLTP standard

## AREA OF ACTION: EMPLOYEES

		2019/12/31	2018/12/31
<b>SMA Group employees</b>			
Employees (excl. temporary employees)		3,124	3,353
of which domestic		2,186	2,212
of which abroad		938	1,141
Temporary employees		442	290
<b>Total employees (incl. temporary employees)</b>		<b>3,566</b>	<b>3,643</b>
<b>Trainees</b>			
		59	72
<b>Gender diversity of SMA employees</b>			
male	%	74.7	74.6
female	%	25.3	25.4
<b>SMA Group executives</b>			
male	%	83.7	85.7
female	%	16.3	14.3
<b>Domestic executives</b>			
male	%	88.4	90.5
female	%	11.6	9.5
Managing Board			
male	%	100	100
female	%	0	0
General Managers/Vice Presidents			
male	%	94.1	93.5
female	%	5.9	6.5
Directors			
male	%	86.2	90.6
female	%	13.8	9.4
<b>Executives abroad</b>			
male	%	76.1	78.6
female	%	23.9	21.4
<b>SMA Supervisory Board</b>			
male	%	67	75
female	%	33	25
<b>Occupational safety and health</b>			
Domestic Lost Work Day Rate <sup>1</sup>	Sick days/ working hours	13.37	14.41
Domestic Lost Time Incident Rate <sup>2</sup>	Accidents/ working hours	1.68	1.41

<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

		2019	2018
Sustainability evaluation of suppliers according to EcoVadis <sup>3</sup>	%	48.6	48.0
Locations assessed for risks of corruption	%	86	6
Employees given corruption avoidance training		1,177	2,037
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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