

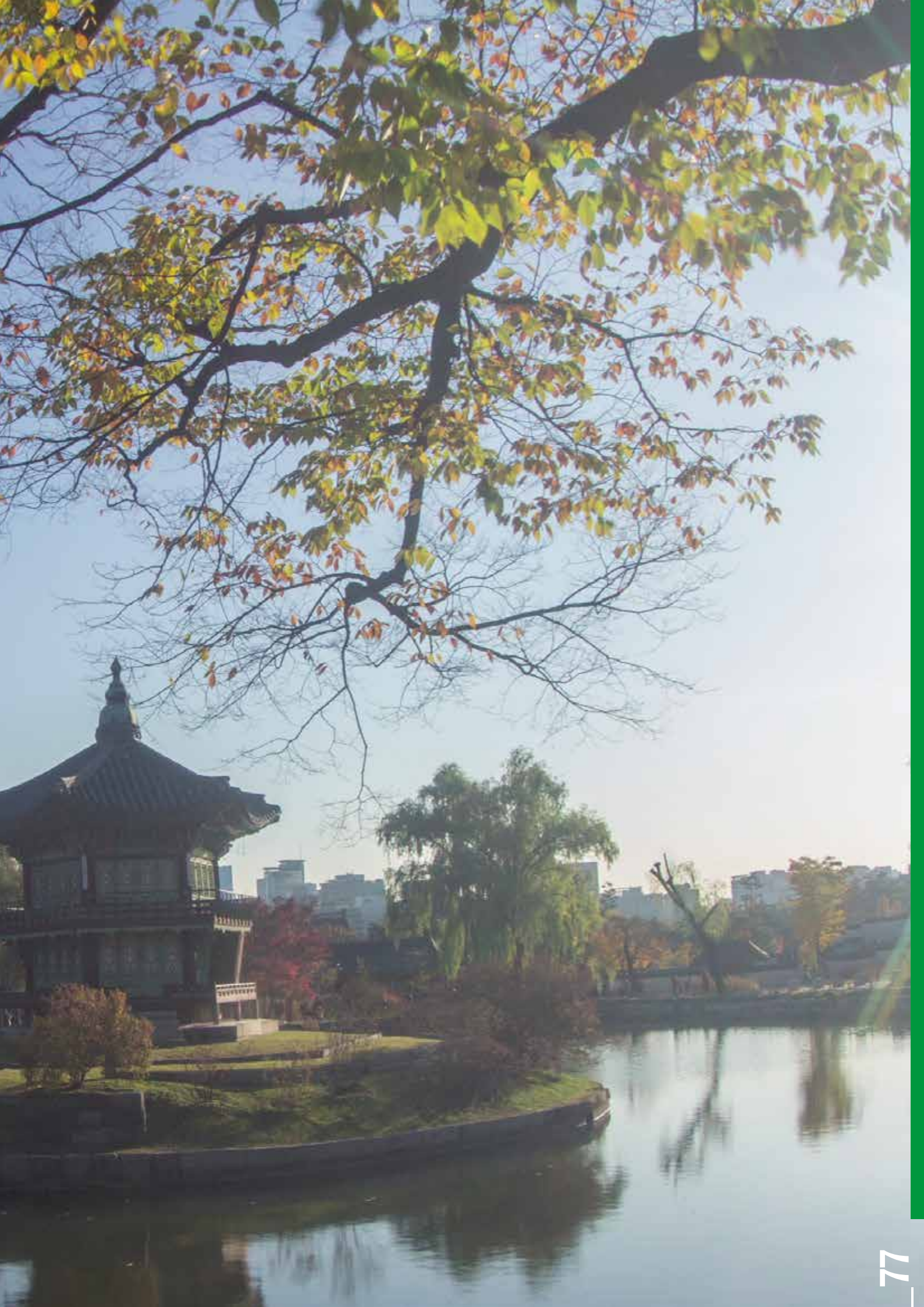


# responsive...

*... our essence to behave in  
a responsive, respectful and  
result-driven way.*

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# Corporate Social Responsibility underpins our strategy and helps us to manage our impact on society, and it contributes towards a more sustainable way of doing business.

SONGWON awarded GOLD level recognition for CSR by EcoVadis

For the 2<sup>nd</sup> consecutive year, EcoVadis awarded SONGWON gold recognition level for Corporate Social Responsibility (CSR). An independent rating agency specializing in sustainable development and performance monitoring, EcoVadis is highly regarded around the world. Their detailed rating methodology is built on international CSR standards, including the Global Reporting Initiative, United Nations Global Compact and ISO 26000.

This year, EcoVadis placed SONGWON among the top 5% of all businesses assessed. Receiving this recognition for our commitment to CSR, highlights to the industry that SONGWON is a top performing supplier, with regards to Environment, Labor Practices, Fair Business Practices, and Responsible and Sustainable Procurement.

For more information, see: [www.ecovadis.com](http://www.ecovadis.com)

# Corporate Social Responsibility (CSR)

## More than just compliance

SONGWON's ongoing commitment to sustainability, compliance and social responsibility is ongoing and represents the very core of what we stand for. For us, CSR is not just an afterthought or a question of compliance at SONGWON. It is as important to us as delivering innovative solutions and top service to our customers.

As an intrinsic part of our business, CSR underpins our strategy and helps us to manage SONGWON's impact on society by contributing to a more sustainable way of doing business. For us, CSR is imperative to our success and to maintaining SONGWON's reputation in the global marketplace as an organization operating with the utmost integrity, and as a key player committed to continually improving our ecological footprint, as well as taking care of our people and the communities we serve.

From the beginning, CSR has always been a fundamental part of how we do business. SONGWON's approach to CSR is founded on the values of passion, integrity, excellence, credibility and teamwork, and focused on understanding the needs of our customers and our communities. To support this, we have integrated CSR into our company values and operations. Our business and organizational decisions are always made mindful of the short- and long-term impact on all stakeholders: from our employees, customers and business partners to our communities and society at large.

CSR guides us to adopt environmentally aware, ethical and socially-responsible management approaches. At SONGWON, we are dedicated to not only improving our performance and the quality of our broad range of products, but also to optimizing the way we treat our global team of talented people, the communities we serve and the environment around us. We believe that performance and responsibility are inseparable. For us they belong together, and this belief is a key part of SONGWON's culture. We understand that the better we are at being responsible today, the better our business will be in the future.

## Committed to giving back

Social responsibility takes place on various levels, comes in many forms and can mean different things to different people. For us at SONGWON, it means doing our part responsibly in all of our endeavors and sustainably shaping the future. In simple terms, we live up to our commitments and take ownership for what we do.

Although we believe SONGWON's business is the best example of our CSR, our commitment extends beyond the positive contribution that our products are making every day. We look beyond our organization to see where we can make a positive contribution to humanity and give back to the vulnerable and less privileged in our communities. Addressing some of the wider issues that affect us as global citizens, SONGWON supports a variety of socio-economic, educational and health initiatives and programs.



**“For us, CRS is like a compass that ensures SONGWON grows in a responsible way. As one of the leaders in our industry, we strive to conduct our business in a socially and environmentally responsible manner while benevolently reaching out and looking for ways to give back and support the communities in which we operate.”**

Choong-Sik Kim,  
President of SONGWON Industrial Co., Ltd.



# Caring for those in need

It is estimated that 400 million people around the world have no access to healthcare, even though health is one of our basic human rights. Once again in 2017, to help efforts that enable people to lead better, healthier lives, SONGWON supported the efforts of a number of healthcare initiatives and medical missions.

For several years, SONGWON has supported medical missions to the Siem Reap Province in northwestern Cambodia. The second poorest province in the country with the mortality rates almost double those of the regional average (according to WHO Western Pacific Region); the extreme poverty is drastically detrimental to the health of many Cambodians, most of who live in the country's most isolated rural regions. SONGWON's financial support of medical missions enables medical professionals from South Korea to travel to Cambodia and provide free basic medical treatment and necessary surgery to people in need there.

Again this year, SONGWON supported the Dr. Jang Gi-ryeo Surgery Mission at the Hebron Medical Center. Although the center is located in Phnom Penh, the capital of Cambodia, there are also many underprivileged people here too who have very limited or no access healthcare. SONGWON's sponsorship makes it possible for medical experts specialized in cancer treatment from other countries, to perform necessary cancer-related operations on Cambodians who would not have been able to get this treatment otherwise. This mission is named after the renowned Korean surgeon, educator, and philanthropist, Dr. Jang Gi-ryeo and run by his grandson, Dr. Jang Yeogoo.

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Dr. Jang Gi-ryeo (August 14, 1911 – December 25, 1995) is known as the greatest doctor of all time in Korea. He devoted his life to helping the poor and during his lifetime, established many free medical clinics and founded the Blue Cross Medical Cooperative – Korea's first medical insurance union.

*"I've never forgotten my responsibility for poor patients since the day I became a doctor."*

*Dr. Jang Gi-ryeo*

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In 2017, we also continued our support of initiatives in the developing country of Laos. Similar to the medical missions to Cambodia, SONGWON's contribution to the Laos Medical Camp makes it possible for volunteering experts, working for the Korean Blue Cross Medical Corps to provide medical treatment free-of-charge to those in need in Laos.

Another initiative we have supported for a number of years is the Dr. Jang Gi-ryeo memorial initiative of the Korean Blue Cross Medical Cooperative's medical camp which also makes free medical treatment possible for those who are unable to afford it themselves.

In addition to this, we also support the charitable program in memory of Dr. Jang Gi-ryeo referred to as "Healing Shoes" for underprivileged children in Laos and Cambodia which takes place during the medical camp. Apart from the program's various educational activities, the young people are provided with shoes and school materials like books and pens.



## Raising awareness

In 2017, we extended our CSR efforts to include new initiatives aimed at raising awareness of health-related issues. In keeping with this, we donated to the Red Tie Challenge campaign. Initiated in the U.S. in 2016 by the National Hemophilia Foundation, the campaign aims to raise awareness and advance the fight against inheritable bleeding disorders. By raising funds for research, education and advocacy initiatives, the Foundation highlights the issues surrounding these types of illnesses. To make people more aware of them, campaigners wear a red tie during the month of March, which has been selected as the Bleeding Disorder Month.



Cleanliness is an essential element to remaining healthy and this year SONGWON supported a South Korean health and welfare initiative called "Cleaning Hands". The program provides students with valuable information on the importance of keeping hands as clean as possible. We also supported the Blue Cross Youth Corps program which educates medical healthcare students in South Korea on how to handle various types of medicine but also on ways to discard medicine waste properly to prevent polluting and damaging the environment.

Out-of-hospital cardiac arrest (OHCA) is considered to be an important health issue worldwide, and early defibrillation increases the chances of favorable prognosis. In 2007, South Korea initiated public access defibrillation (PAD) programs and automatic emergency defibrillators (AEDs) were installed in the towns close to SONGWON's Korean locations. So, in 2017, we supported an initiative that created AED maps with information to ensure people knew where they could be found and how to use them in emergencies.



## Supporting local communities

Our commitment to helping humanity has always been reflected in our core values at SONGWON and those of our employees. Last year, we supported charitable efforts in Pakistan initiated by one of our Songwon Polysys Additive employees. We decided to split our donation between two projects in 2017.

The first project is called "Street to School-STS| پروگرام کفالت (Sponsorship Program)". Songwon Polysys Additives LLC partnered with the Open for Everyone (O4E) Welfare Organization to provide an Early Childhood Education (ECE) Methodology learning skills program for kindergarten children. The program is free for all the children from a local community in Pakistan where there are no established schools in their area. With an interactive curriculum and classroom materials, it is especially designed to prepare the children for further primary and secondary education. The program was successfully carried out for the first time in 2017.

The second project involves supplying water to a local community in Karachi, Pakistan. With no access to clean water, the community has suffered from related disease and poor health conditions. SONGWON's donation is being used to support the installation of a pump and the creation of a well which will enable the community to access the fresh water supply available some 61 meters underground. Digging was started this year and when the project is completed in the early part of 2018, it will benefit approximately 400 people on a daily basis.





# Regulatory Affairs & REACH

## Committed to compliance

Ensuring compliance is imperative to SONGWON's operations and to our customers. Without it, we cannot do business. However, in our industry today, the task of remaining compliant is becoming ever more complex. Doing business globally subjects us to a multitude of international and local laws, regulations, policies authorities and cultural differences. Therefore, it is essential that we focus our efforts on ensuring that our products fulfill the necessary requirements and that all of our business operations are carried out in accordance with the highest ethical principles.

Our commitment to compliance is reflected in every aspect of our day-to-day business and it is engrained in our culture. Every SONGWON employee takes the issue of compliance seriously. With a heightened awareness of their responsibility and contribution to ensuring that SONGWON's business activities adhere to the regulatory standards, laws and regulations in our industry, each person at SONGWON is driven to be a good, ethical 'corporate citizen'.

The scrutiny and general skepticism surrounding the chemical industry overall remains strong, along with the widespread presumption that all chemicals are toxic, unsafe and pollute the environment. This makes it a necessity for industry players to assume sufficient responsibility and implement effective product stewardship strategies. Furthermore, in order to support both new and existing registrations, as well as certifications worldwide, it is also imperative that we ensure scientific integrity and compliance through all development phases. As a leader in the industry, we also focus on making sure that we have the required resources in place to support the ongoing development and production of more efficient and safer chemical substances.

## Sharing our expertise

One of our highest priorities is making sure that SONGWON's complete range of products meets our global customers' environmental, health and safety goals. We want our customers to feel confident knowing that they can rely on the fact that each SONGWON product has the quality level to comply with the industry's regulations and quality standards.

Beyond this, we also see it as our duty to share the most up-to-date information on industry standards and regulatory issues with SONGWON's customers, as well as the latest compliance requirements relating to technology and quality. We make a point of proactively anticipating future regulatory changes by participating in relevant industry associations where we work together with competitors and industry experts. Making sure that SONGWON remains fully compliant, our service provider, Chemservice helps us to quickly adapt to any new regulations we identify. We also inform our customers as soon as possible, so that they too, can prepare ahead.

## Supporting customers

Offering SONGWON customers our expertise and support, including assisting them to manage the complex aspects of regulatory compliance, registration and certification is also something that we take very seriously.

It is standard practice across the industry to provide customers with three types of essential product information such as the specification/CoA, a technical data sheet (TDS) and a safety data sheet (SDS). We supply an additional fourth one, the SONGWON regulatory data sheet (RDS) which concisely outlines key global product regulatory approval information.

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### In 2017, SONGWON:

- issued approximately 150 new SDSs
  - updated over 450 SDSs
  - produced & updated 5250 different translations
  - created 14 new RDSs
  - updated a total of 72 RDSs
-





The feedback we receive from SONGWON customers is very positive. They are highly appreciative of getting the regulatory information they require. By offering our SDSs in such a broad spectrum of languages, we make it easier for our globally operating customers to comply with their local hazard communications requirements. Customers can also find the answers to their most common regulatory questions in our RDSs and if not, our team of experts has extensive experience with global regulatory issues. If SONGWON's experts don't know the answers, then they know where to find them. In 2017, steps were started to make SDSs in additional Asian languages available on SONGWON's website in 2018.

Ensuring that we have the level of support we need is also a prerequisite to our ability of making sure SONGWON remains compliant. This year, new members joined the commercial team for Specialty Chemicals to increase the expertise in this area. The Regulatory Team helped familiarize them with the regulatory aspects of their products and now they are fully able to offer their support to this segment.

**“2017 marked another demanding but successful year for SONGWON’s Regulatory Affairs team. It is their valuable expertise and dedication combined with smooth collaboration with the talented individuals across the businesses, R&D and manufacturing that enables SONGWON to meet its regulatory obligations and ensure that our customers continue to benefit from timely, cost-effective and efficient product compliance.”**

Bob Campbell, Director of Global Regulatory Affairs

## REACH and K-REACH in 2017

At SONGWON, we want to be known as a responsible producer that is highly committed to people's health and safety and for taking care of the environment by minimizing all risks associated with our manufacturing activities. We also seek ways to improve the safety and environmental performance of all the products we produce.

For our organization, compliance is at the top of our list of priorities and we have always fully supported regulatory intervention, the development of new regulations and all the REACH (EU Regulation on Registration, Evaluation Authorization and Restriction of Chemicals) objectives. We also engage and cooperate with co-producers, suppliers and customers to achieve our REACH-related goals. Even at the time that REACH was first launched, we knew that it was a way for us to make a positive contribution to our common future.

As has become the norm, the global chemical control laws continued to change and evolve this year as well.

### For example:

- a year after the Frank R. Lautenberg Chemical Safety for the 21st Century Act ("TSCA Reform" Act) came into effect, the U.S. EPA launched a number of initiatives that will have a long-term impact on the way existing and new chemicals are prioritized and assessed for safety in the U.S.
- China updated its regulations on substances found in food contact
- Korea revised its requirements for K-REACH
- Brazil and numerous other developing economies continued to develop their own similar chemical control legislation

With regard to REACH and K-REACH, we proceeded to evaluate our products in relation to the registration requirements in the EU and South Korea, and addressed them as needed. Once again in 2017, working together with Chemservice, we prepared and submitted registrations dossiers well-in advance of registration deadlines for 2018.

## Up to the year 2017, Regulatory Affairs registered

- 34 substances for EU REACH; 3 of them in 2017
- 75 substances for K-REACH; 23 of them in 2017

## Expertise highlights in 2017

### Australia

In 2017, SONGWON's Regulatory Team was confronted with a legislative obstacle in Australia involving SONGNOX® PQ, a high performance secondary antioxidant for organic polymers used to effectively stabilize polyolefins, elastomers, engineering plastic and adhesives. The product was not being offered in Australia due to the "mistaken" belief that it was considered a "new chemical" under the Australian Chemical Management system (NICNAS).

Due to the relatively small size of the Australian market and the costly and time-consuming approvals process, the team sought to find another solution. With the help of the experts in Panoli, who provided a better outline of the chemical components within this complex product and some intensive research in the Australian Inventory of Chemical Substances (AICS) – a database of chemicals available for industrial use in Australia, the team was able to confirm that all of the components in SONGNOX® PQ were in fact existing chemicals. This effort and discovery by the team made it possible for SONGNOX® PQ to be offered to customers in Australia without the expense or delay of approvals.

### South Korea

After the PMC Group announced it was shutting its plant in China, SONGWON signed an agreement to take on the manufacturing of PMC's products. However, before all of the raw materials, intermediates and finished products could be handled by SONGWON's Ulsan plant, the appropriate approvals and clearances needed to be obtained. In collaboration with PMC's team, our team worked quickly and efficiently to register the necessary substances with the Korean authorities so that the regulatory requirements were fulfilled within a few months and SONGWON could begin manufacturing in full compliance with legislation in South Korea.





# EH&S & Sustainability

## Creating sustainable value

Right at the very core of what we stand for as an industry leader, is our long-term commitment to sustainability. We strive to operate our global organization in a socially responsible way, guided day-in, day-out by our sustainability vision, objectives and corporate values. In accordance with this, it is our aim to align economics with ecological awareness and social responsibility across all our business activities.

For us at SONGWON, success is only possible when we put health and safety first, ensure we are environmentally responsible and support the communities in which we operate. With full recognition of our business, environmental and social responsibilities at every level, we focus on sustainably harmonizing SONGWON's businesses, structures, processes and systems.

As a globally diverse organization, our responsibilities are extensive and spread across many countries, stakeholders and sectors. By responsibly managing our business activities, operations and portfolio, we aim to meet the ever-changing demands of our customers, markets, shareholders and the communities we serve. We are able to add value through our continuous efforts and focus on the optimization of SONGWON's manufacturing processes, and in the development of more innovations that bring savings in energy and resources.

Our main strategic objective is to be a leading organization – one that uses the resources available to us as efficiently and sustainably as possible, while generating profitable growth for our investors, remaining aligned with our customers' needs and adding value for society and future. By focusing on reducing SONGWON's environmental impact and carbon footprint, and ensuring the safety of our employees and neighbors, we help grow our supplier and customer businesses by providing them with sustainable solutions and ensuring safe product stewardship.

## Committed to EH&S

At SONGWON, we know that to be a truly sustainable organization with the ability to create value for stakeholders, we need environmental stewardship, as well as a healthy, safe and injury-free working environment. Health and safety is, and always will be, a top priority. To underpin SONGWON's commitment

to sustainability leadership and to ensure that EH&S remains paramount for everyone, we make sure that SONGWON's policies regarding EH&S are proactively implemented.

Regardless in which area of SONGWON's operations, our commitment to health and safety is non-negotiable and we make sure it remains uncompromised. It is fundamental to our core values, at the forefront of our business focus and embedded in all aspects of our global business operations—whether in relation to our operational practices, general working conditions or the safe handling, transport and storage of our products.

To successfully operate a leading specialty chemicals company requires the dedicated commitment to EH&S from every member of our global organization. Over the past decade, we have made tremendous progress and improvements in EH&S by increasing the awareness of its importance across our entire global organization. In every one of SONGWON's plants, we have well-established EH&S safety policies, procedures and performance standards in place that encompass a great deal more than the minimum necessary for complying with laws and regulations.

Providing safe and healthy work environments for all of our stakeholders (employees, contractors, neighbors), is an obligation we take very seriously. It is also of great importance to us to be seen as a trustworthy organization with a high level of safety awareness and clear safety processes. In line with this, we focused our attention once again on making sure that EH&S was also a priority in 2017 across all of our 9 manufacturing facilities—including our newer sites, and that our EH&S indicators were also implemented.

Each SONGWON employee is fully committed to contributing to ensuring the long-term health and safety of everyone in our organization, as well as protecting the environment in which we operate. We are proud of our global team and their active engagement in identifying and managing risks, and their relentless dedication to continually seeking new ways to protect the environment and improve the health and safety of our operations. Their efforts are vitally important to the overall success of our sustainability strategy, and we look forward to continuing to build on this going forward.



## Ensuring zero accidents

At SONGWON, we inherently believe that all accidents are preventable and that hazards can be safeguarded either physically or through safe working procedures. We also believe that the ability to achieve efficiency in production and preventing injuries go together. However, we know that accident-free manufacturing can only be achieved by having highly committed, safety-aware employees working in healthy and safe facilities.

We know that world-class safety levels are only attainable when we combine the right attitude, make the right decisions and carry out the right actions. Every SONGWON employee always keeps an eye out for anything that could possibly threaten the health, safety or well-being of others. They are also focused on eliminating or controlling risks. Addressing the root causes of workplace injuries, such as the incorrect handling of equipment and encouraging safe behavior, such as following the appropriate safety procedures and best practices, are of the highest priority for all of us at SONGWON.

Our efforts to increase EH&S awareness among all of our employees, continued in 2017. In monthly safety trainings and various online lectures, we provide comprehensive training on the issues of health, safety and the environment, including extensive guidance for hazardous chemical management safety. For this purpose, we use chemical accident videos and the EH&S materials created both by SONGWON and by official external authorities.

In this way, the intensive EH&S education and trainings support us to instill a higher level of awareness of these critical issues among all the levels of SONGWON's global organization, and foster a sense of responsible care and a proactive attitude throughout the company. EH&S awareness and responsibility is also supported and stressed by SONGWON's top management, and constantly emphasized as a top priority by SONGWON's managers across our organization.

Again this year, an extensive and deep EHS audit was carried out in SONGWON's South Korean facilities by the external accredited engineering company (KFPA). These audits are conducted every three years. After the audit, we were granted an improved rating over the previous audit and these positive results were confirmed by the same audit done by our insurance company. Both audits have provided us with good recommendations for where we still have room for improvement. In line with SONGWON's continuous improvement strategy, we have taken the results on board and will continue to use them to further improve our risk management.

In addition to the stringent procedures in place, we continuously investigate and assess all possible risks within SONGWON to improve our existing operating procedures.

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### In 2017, we:

- completely renewed and enhanced the safety briefing for visitors to our sites with new presentation tools
  - enforced a ban on the use of the cellphones inside all our sites
  - completed main EH&S care and risk management projects in our Maeam and Ulsan plants
  - continued the ongoing upgrade and improvements on our Suwon site
- 

## Accident reporting

At SONGWON, any accidents which occur must be reported. In our global database, we collect the accident report data and diligently classify any resulting injuries in accordance with the local laws and record-keeping criteria. The report data we compile includes all accidents involving Songwon Industrial Co., Ltd. employees, as well as any contractors operating in our plants.

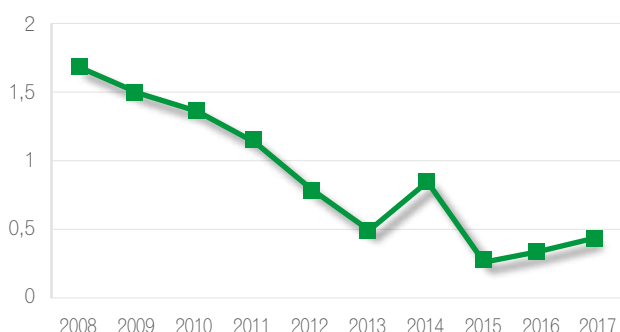
The total recordable accidents have steadily decreased over the past few years due to the increased safety awareness of our plant operators' and overall higher focus on safe operations throughout SONGWON. This year, there were 6 recordable accidents across all our manufacturing sites (includes both SONGWON employees and contractors).

## Environmental awareness

In 2017, as part of our ongoing efforts to minimize manual operations, a completely new bagging system (FFS=Form/Feed/Seal) was installed in our Maeam site, providing us with the best possible automation for packaging SONGWON's powder products. Looking ahead, our plan is to implement this new technology across all SONGWON's productions lines after the consolidation of the first one has been completed.

### TRCR: Total Recordable Case Rate

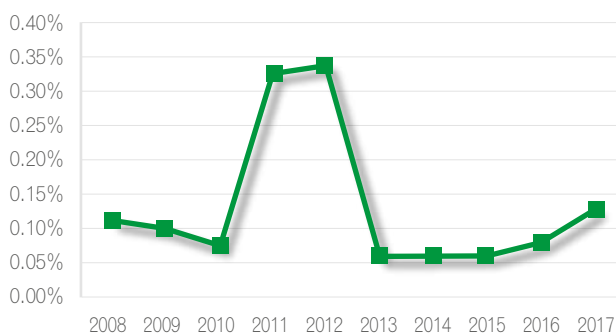
Recordable accidents \*200,000 / total working hours



The Total Recordable Case Rate (TRCR) reached 0.45 in 2017 and we registered a 0.13% Total Lost Day Rate (LDR). There were no fatalities and for the seventh continuous year, we achieved a zero Occupational Diseases Rate (ODR) and zero Absentee Rate (AR).

### LDR: Lost Day Rate

total lost days/total worked hours



We are deeply committed to continually reducing the environmental impact of SONGWON's business activities. To ensure that we meet our long-standing commitment to contributing to a better world, SONGWON's leadership team fully supports the development of processes that save energy, lower emissions and reduce SONGWON's overall carbon footprint.

To improve processes and increase our competitiveness by lowering costs, as well as significantly reducing energy consumption, waste production and CO<sub>2</sub> emissions, we have a well-established and rigorous program in place. Throughout 2017, we centered our efforts on achieving a considerable reduction of the organic content in our wastewater and solid salts to reduce the overall pollution impact of our manufacturing technologies.

In keeping with our on-going EH&S performance improvement strategy, we have started to implement the necessary technical improvements to ensure that by 2019 SONGWON is fully compliant with the recently introduced South Korean EH&S rules. This year, local authorities in South Korea accepted our updated PSM (process safety management) upgrade level in both our Ulsan and Suwon plants.

One of our most important efforts in 2017 was testing and developing the new technology for reducing the moisture and sludge generated by the biological waste water treatment at our Ulsan plant in South Korea. The new technology will make it possible for us to half the amount of sludge needing to be landfilled and our plan is to install it in our Ulsan facility during the first quarter of 2018.

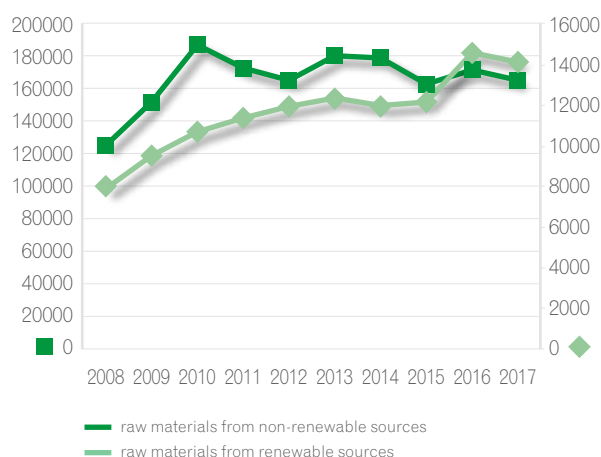


## Materials

### Raw materials

At SONGWON, we always seek to find opportunities to use raw materials from renewable sources. However, the majority of the raw materials SONGWON requires are metals or oil derivatives and so unfortunately, this means that there are actually very few key raw materials that we can obtain like this. Stearic acid and stearyl alcohol are the only raw materials available from renewable sources. Both are derived from palm kernel oil and represent circa 8% of the total raw materials we use.

**Used Raw Materials**  
in tons



### Recycled materials

We successfully consolidated the technology to recover the raw materials that were previously disposed of as a final product in the organic wastes, by applying a reverse reaction. In the areas where the technology has been a success, we have seen the double benefit of reducing the environmental impact and recycling ca. 8% of the material. This corresponds to approximately 3500 t/y, of the raw material that was used in the production.

## Energy

On January 1, 2015, South Korea launched its national ETS (KETS, Korea Emission Trading System) – a cap-and-trade program. For operating companies, this type of ETS is mandatory (threshold: company > 125,000 tCO<sub>2</sub>/year, installation > 25,000 tCO<sub>2</sub>/year) with voluntary opt in. Participation is mandatory for SONGWON.

### SONGWON's initiatives

We have a range of initiatives at SONGWON that have enabled us to reduce our energy needs and resulted in providing us with energy-efficient or renewable energy-based products and services.

Annually, we engage in energy consumption reduction program which once again this year involved the incineration of all the volatile organic compounds (VOC) produced in the plants. In this way, it is possible for us to generate all the steam we require for our manufacturing process. In our Maeam plant, we have had 3 incinerators in operation since 2012, and an efficient steam generator based on the LNG use since 2013.

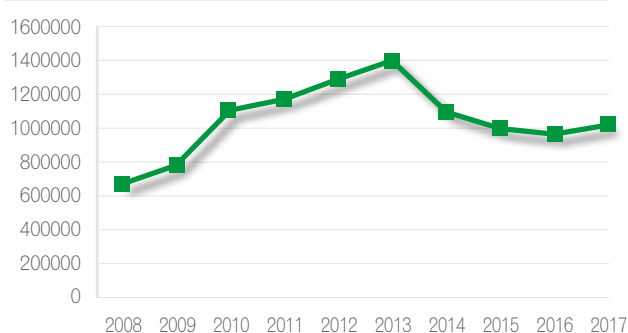
In addition, SONGWON also has several energy consumption reduction initiatives in place to improve the long-term efficiency of our operations and products. In 2017, we increased SONGWON's total annual energy consumption for generating power by 7% compared to 2016, notwithstanding an increase of the production volumes of almost 12% over 2016:



## Direct energy consumption

Almost 100% of SONGWON's direct energy consumption is in the form of natural gas. The majority is used for generating steam and heating oil and in 2017, we consumed 987'159 GJ, which is in line with our consumption in 2015 and 2016, again notwithstanding an average 12% increased produced intermediates and final volumes.

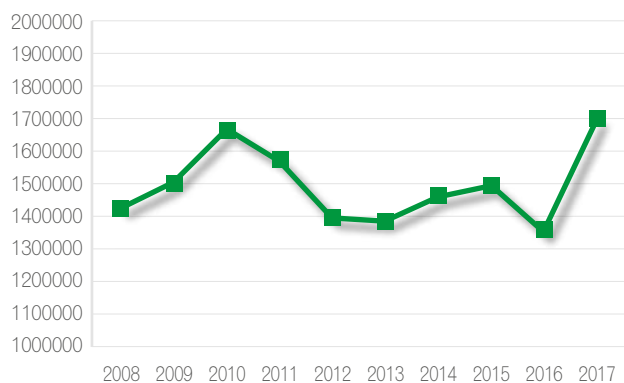
**Direct Energy Consumption**  
In GJ (gigajoules)



## Indirect energy consumption

We also purchase almost 70% of SONGWON's electricity and steam for our plants from the local utility companies who are using renewable energy sources.

**Indirect Energy Consumption**  
In GJ (gigajoules)

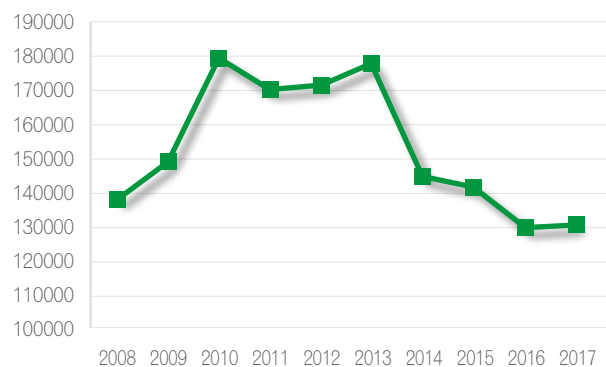


## Emissions

In South Korea, individual energy reduction measuring activities are not calculated singly and separate from each other but as follows:

Emission reduction = Emission allowance – Actual Emission (Unit: tCO<sub>2</sub>eq/year)

**Total GHG Emissions**  
in tCO<sub>2</sub>eq/year



Actual emissions are measured according to the "Guideline for the Greenhouse Gas Target Management System" and "The Allocation and Trade of Emission Allowance of Greenhouse Gas Act" under South Korean law.

This is applied as follows:

Emission = Fuel consumption × NCV × EF × GWP, where:

- NCV = Net Calorific Value
- EF = Emission Factor
- GWP = Global Warming Potential

## Direct & indirect greenhouse gas emissions

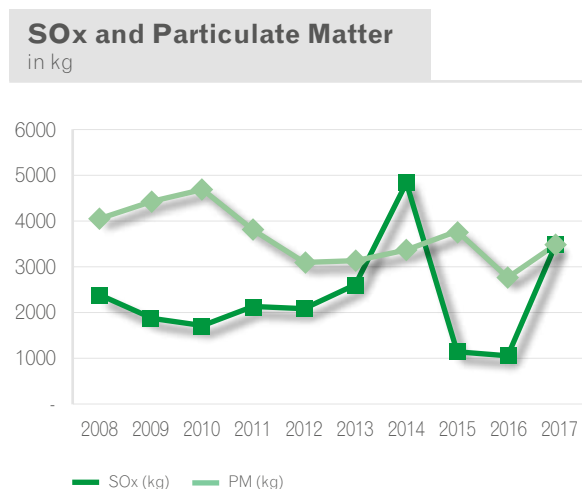
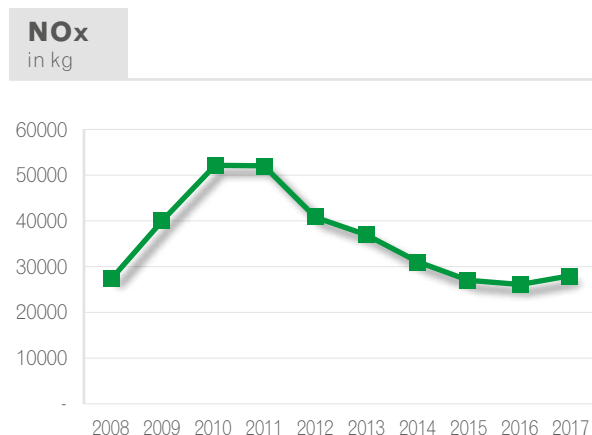
SONGWON's overall objective is to work progressively towards a reduction in carbon emissions, and we have confirmed our commitment in 2017 by reducing the general greenhouse gas (GHG) emissions by 8% compared to 2015. This is the same level as 2016, notwithstanding 12% higher production volumes in 2017 over 2016. This positive achievement was made possible once again, thanks to the purchase of steam generated from renewable energy and waste heat via an exothermic chemical reaction.

The data reported here does include the direct emissions and the indirect emissions from our electricity and steam purchasing. However, this year there are no other indirect emissions to be recorded.



## Significant air emissions

In SONGWON's plants, nitrogen oxide (NO<sub>x</sub>), sulfur oxide (SO<sub>x</sub>) and particulate matter (PM) emissions are measured automatically by in-line analyzers, and the values are sent in real-time to the relevant government agencies.



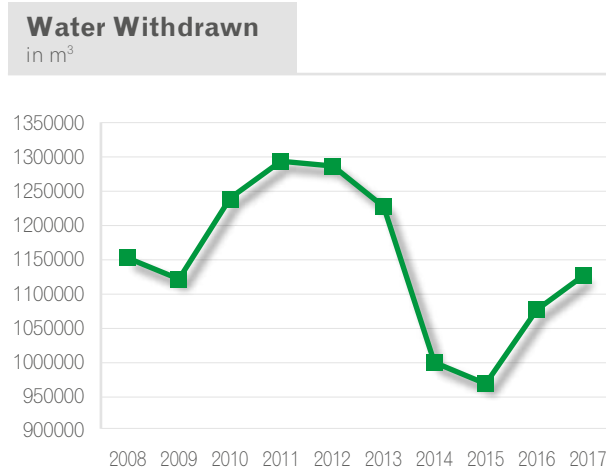
In 2017, we had an average increase of air emissions of 7% compared to the 2016. This is partially due to the increased manufactured volumes and the greater demand of steam generated by our incinerators, but also to the new analytical equipment installed at our sites which enables us to continuously make more accurate assessments of the very low SO<sub>x</sub> concentrations in the air emissions. Nevertheless, we still have an ongoing action plan in place for improving the future situation.

## Water

### Total withdrawal of water by source

SONGWON's total water consumption decreased in 2017 by 2% compared to 2016, according to direct measurements made onsite.

We purchase water we need from the local municipality and suppliers for SONGWON's Ulsan, Maeam and Panoli plants. For our Suwon plant, the water is sourced from underground.



**“For us, sustainability means meeting the needs of today without compromising the world of tomorrow. That is why we have made sustainability one of our core values. It provides us with a framework for all our decisions, priorities and actions, as well as an opportunity to continuously improve our competitiveness.”**







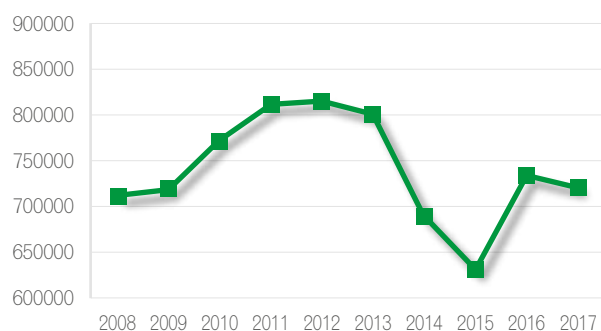
## Effluents & Wastes

### Total water discharged

All the water which is discharged by SONGWON's manufacturing facilities is internally treated and then conveyed to the central water treatment plants in the local municipalities. There, the organic content is reduced further and then released into the sea or discharged to a regional water treatment facility (e.g. as in Panoli, India).

#### Total Water Discharged

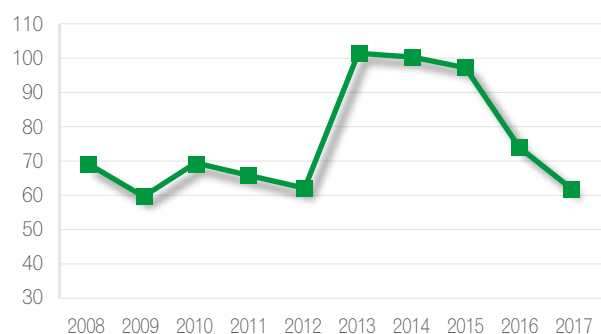
in m<sup>3</sup>



In 2017, we continued to significantly improve the quality of the water discharged during the year, and subsequently reduced the average COD (chemical oxygen demand) of SONGWON's manufacturing sites from 74 to 62 ppm. We were able to achieve this decrease as a result of the outstanding additional improvement of the average quality of the water discharged from our Panoli site in India, where COD was reduced by 50% compared to 2016.

#### Discharged Water Quality

COD (ppm)



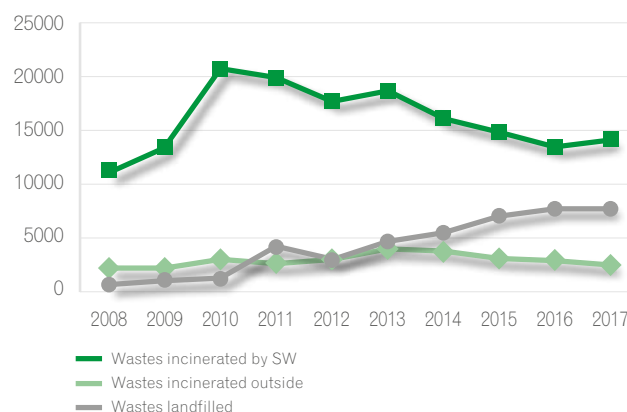
### Other wastes

In 2017, SONGWON'S operations generated 23'800 tons of hazardous wastes. The increase over 2016 is due this year's 12% increased manufacturing volumes.

Approximately half of the liquid organic wastes are currently incinerated onsite and the other half is incinerated offsite. Solid wastes are all disposed of offsite via landfilling.

#### Wastes Disposed Outside of SONGWON

in tons



### Significant spills

SONGWON has not had any spills to record or report since 2008. There were also none to record or required to report in 2017.

### Biodiversity

SONGWON does not own, lease or manage anything that is in, or near protected areas or areas of high biodiversity. Also, to the best of our knowledge, none of SONGWON's activities, products or services significantly impact biodiversity.

### Non-compliance

In 2017, SONGWON has been fully compliant with all environmental rules and regulations and also received no fines this year.



# Global Reporting Initiative Guidelines (GRI)

## Reporting method

The Board, the Executive Committee and the Senior Management are all in agreement that the topic of sustainability needs to be communicated not only internally, but also externally.

We want to send a clear signal and make our contribution to sustainable development in our industry. For this reason, we have decided to publish a sustainability report annually in accordance with the Guidelines of the international Global Reporting Initiative (GRI). The current report follows the GRI's G4 Guidelines, 'in accordance' Core option (SONGWON's 2016 Annual Report followed GRI's G4 Guidelines, 'in accordance' Core option). This will make it possible to compile comparable values and continuously improve upon them.

The GRI G4 Content Index lists information on GRI indicators and topics relevant for SONGWON.

- **General standard disclosures**  
The general standard disclosures offer a general strategic overview of the organization's sustainability. They are divided up into seven parts: strategy and analysis, organizational profile, identified material aspects and boundaries, stakeholder engagement, report profile, governance, and ethics and integrity.
- **Specific standard disclosures**  
The guidelines organize specific standard disclosures into three categories: economic, environmental and social. Within the specific standard disclosures, each indicator is allocated to the material topics.

Prior to selecting the relevant indicators, we looked at SONGWON's stakeholders, their requirements and their expectations of us as a globally operating company. In our selection of the relevant indicators, our assessment of the individual aspects was carried out from two separate perspectives. We divided the identified stakeholders into groups based on whether they were directly or indirectly influenced by SONGWON's activities. We also raised questions in relation to our organization with respect to identifying the goals that promise SONGWON sustainable success.

Our management discussed each GRI indicator individually and evaluated it using a point system. It was a process that included various stages, and which ultimately resulted in defining the aspects and indicators most relevant for SONGWON as an organization and for all of our stakeholders.

Fundamentally important for this step was the comprehensive expertise of our managing executives combined with SONGWON's years of experience interacting with a wide spectrum of different stakeholder groups. An overview of all the GRI indicators (incl. the UN Global Compact principles) and the relevant text sections can be found in the GRI G4 Content Index.

## Materiality analysis

This analysis shows a condensed summary of all of the individually assessed indicators. The number of indicators per category is reflected in the size of the circles in the graph on the following page. The x-axis shows the significance of the respective category in relation to its economic, environmental and social impacts, while the evaluated impact of this specific category on the assessment performed by our stakeholders is indicated by the y-axis. The average value for the individually assessed indicators in the categories determines the x and y values. From SONGWON's perspective, the economic, environmental, social categories appear to be of particularly high relevance to our stakeholders.

At SONGWON, we understand that our commitment to sustainability should not be restricted solely to our organization because true sustainability is only possible when all those involved work together. For this reason, we encourage our suppliers and partners to launch their own initiatives that highlight their commitment to the environment and resources protection, while upholding human rights and complying with labor laws just as we do.

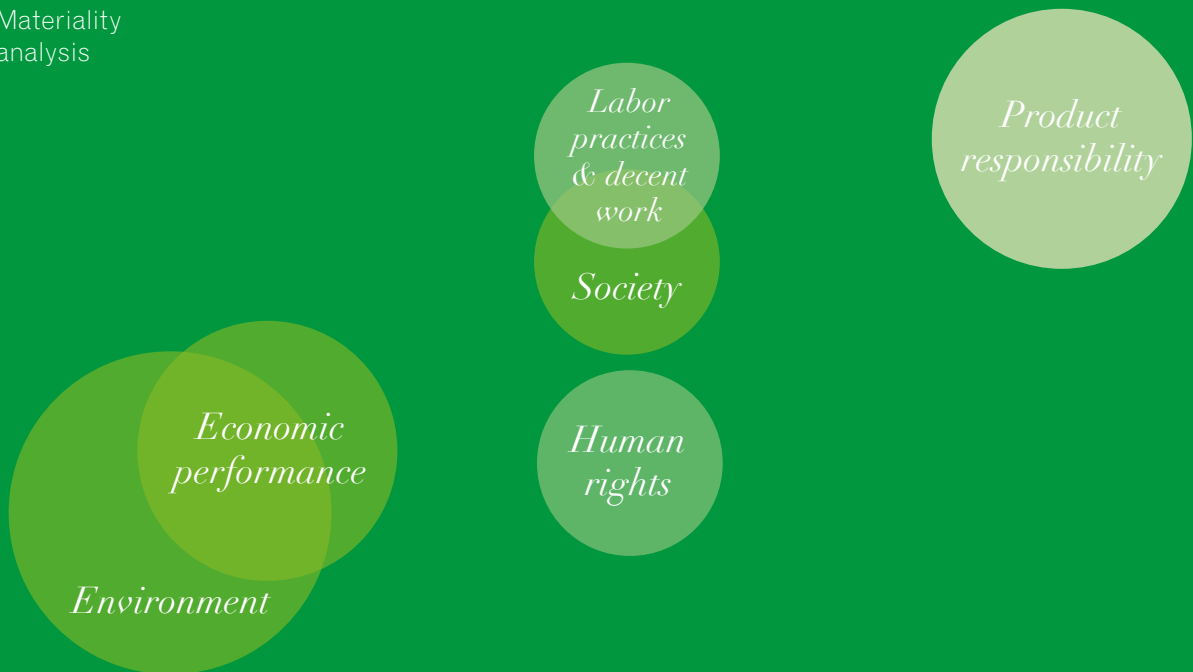
Operating internationally, we see it as our utmost obligation to act sustainably at both a global and local level. This is the reason that this report covers the entire SONGWON Industrial Group, unless indicated otherwise.

The scope of application is indicated in the respective chapters. Furthermore, we would like to emphasize that we have used gender-neutral terms and pronouns wherever possible for the sake of simplicity, but these should be understood to refer to both males and females alike without discrimination.

## SONGWON's categories/aspects/indicators:

Impact on the assessment performed by our stakeholders >

Materiality analysis



Significance for economical, environmental and social aspects >

## Category: Economic

Through all of SONGWON's operations, we aim to secure the organization's financial success and thus long-term value creation for our stakeholders. We know this can be achieved through implementing our long-term strategy, recognizing and managing risks and opportunities, as well as providing transparent information to our stakeholders.

Our strategy has four key focus areas: business focus, growth, geographical focus, and innovation.

SONGWON provides expertise and high-quality products to different industries, for a myriad of important applications. We are dedicated to creating long-term value, providing sustainable solutions, and strengthening the competitive position of our customers.

At SONGWON, we are focused on building a balanced product portfolio in order to support targeted growth and we are continuing with our expansion strategy to strengthen our presence in emerging markets and consolidating our position in existing ones.

### Aspect: Economic performance

#### G4-EC1

Direct economic value generated and distributed

#### G4-EC2

Financial implications and other risks and opportunities for the organization's activities due to climate change

#### G4-EC3

Overage of the organization's defined benefit plan obligations

## Category: Environmental

Our sustainability strategy supports SONGWON's business goals and enables us to continuously reduce our environmental footprint. At the same time, we are working to ensure that we give something back to both our employees and society as a whole. Our global sustainability commitment is directly managed by our Executive Committee. The committee is also responsible for overseeing the execution of all activities relating to achieving our sustainability goals.

All of SONGWON's initiatives are designed to ensure that we focus on those areas where we, as a company, have the greatest impact. They also provide us with a clear direction that enables us to strive for a better performance.

### Aspect: Materials

#### G4-EN1

Materials used by weight or volume

#### G4-EN2

Percentage of materials used that are recycled input materials

### Aspect: Energy

#### G4-EN3

Energy consumption within the organization

#### G4-EN4

Energy consumption outside of the organization

#### G4-EN6

Reduction of energy consumption

### Aspect: Water

#### G4-EN8

Total water withdrawal by source

#### G4-EN10

Percentage and total volume of water recycled and reused



**All of SONGWON's initiatives are designed to ensure that we focus on those areas where we, as a company, have the greatest impact. They also provide us with a clear direction that enables us to strive for even better performance.**



## Aspect: Biodiversity

### G4-EN11

Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas

## Aspect: Emissions

### G4-EN15

Direct greenhouse gas (GHG) emissions (Scope 1)

### G4-EN16

Energy indirect greenhouse gas (GHG) emissions (Scope 2)

### G4-EN19

Reduction of greenhouse gas (GHG) emissions

### G4-EN21

NOx, SOx, and other significant air emissions

## Aspect: Effluents and waste

### G4-EN22

Total water discharge by quality and destination

### G4-EN23

Total weight of waste by type and disposal method

### G4-EN24

Total number and volume of significant spills

## Aspect: Compliance

### G4-EN29

Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations

## Category: Social

At SONGWON, we emphasize the importance of our people for the company's long-term success: they manage strong brands, develop innovative products and support our customers around the world. Building and sustaining long-term, trustful relationships with our employees and all those who work for or with SONGWON is essential to our organizational success.

### Sub-category: Labor practices and decent work

## Aspect: Employment

### G4-LA1

Total number and rates of new employee hires and employee turnover by age group, gender and region

### G4-LA3

Return to work and retention rates after parental leave, by gender

## Aspect: Occupational health and safety

### G4-LA6

Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender

## Aspect: Training and education

### G4-LA10

Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings

## Aspect: Diversity and equal opportunity

### G4-LA12

Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity

**Sub-category:** Human rights

Aspect: Non-discrimination

**G4-HR3**

Total number of incidents of discrimination and corrective actions taken

**Sub-category:** Society

Aspect: Anti-corruption

**G4-SO4**

Communication and training on anti-corruption policies and procedures

**G4-SO5**

Confirmed incidents of corruption and actions taken

Aspect: Anti-competitive behavior

**G4-SO7**

Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes

Aspect: Compliance

**G4-SO8**

Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations

**Sub-category:** Product responsibility

Aspect: Product and service labelling

**G4-PR3**

Type of product and service and service information is required by the organization's procedures for product and service information and labeling

Aspect: Compliance

**G4-PR9**

Total monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services



# SONGWON's GRI G4 Content Index

## – 'in accordance' Core

This GRI G4 Content Index provides an overview of the G4 Standard Disclosures based on the selections made.



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### Sub-category: Labor practices and decent work

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**Material aspect: Training and education**

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**Material aspect: Diversity and equal opportunity**

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**Sub-category: Human rights**

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**Material aspect: Non-discrimination**

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**Sub-category: Society**

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**Material aspect: Anti-corruption**

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**Material aspect: Anti-competitive behavior**

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**Material aspect: Compliance**

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**Sub-category: Product responsibility**

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