



Annual Report 2016

It's all about **the chemistry™**



Our Vision

Sound and sustainable growth for all our stakeholders in harmony with the interests of our planet and its people.

Our Mission

To be the supplier of choice for all our product lines by delivering unique expertise, outstanding value, reliable service and innovation all over the world.

To be the employer of choice by offering an inspirational environment, fair treatment, equal development opportunities and safe working conditions.

SONGWON stands for

Passion

SONGWON's team of committed chemical professionals is dedicated to advancing the interests of customers and the industry.

Entrepreneurship

SONGWON is a global leader in chemical specialties that has retained the spirit of its early years: a lean, innovative and flexible organization that seeks and drives new opportunities and sets new trends.

Accessibility

SONGWON people act as extended teams for their clients: they are readily available and always within reach.

Credibility

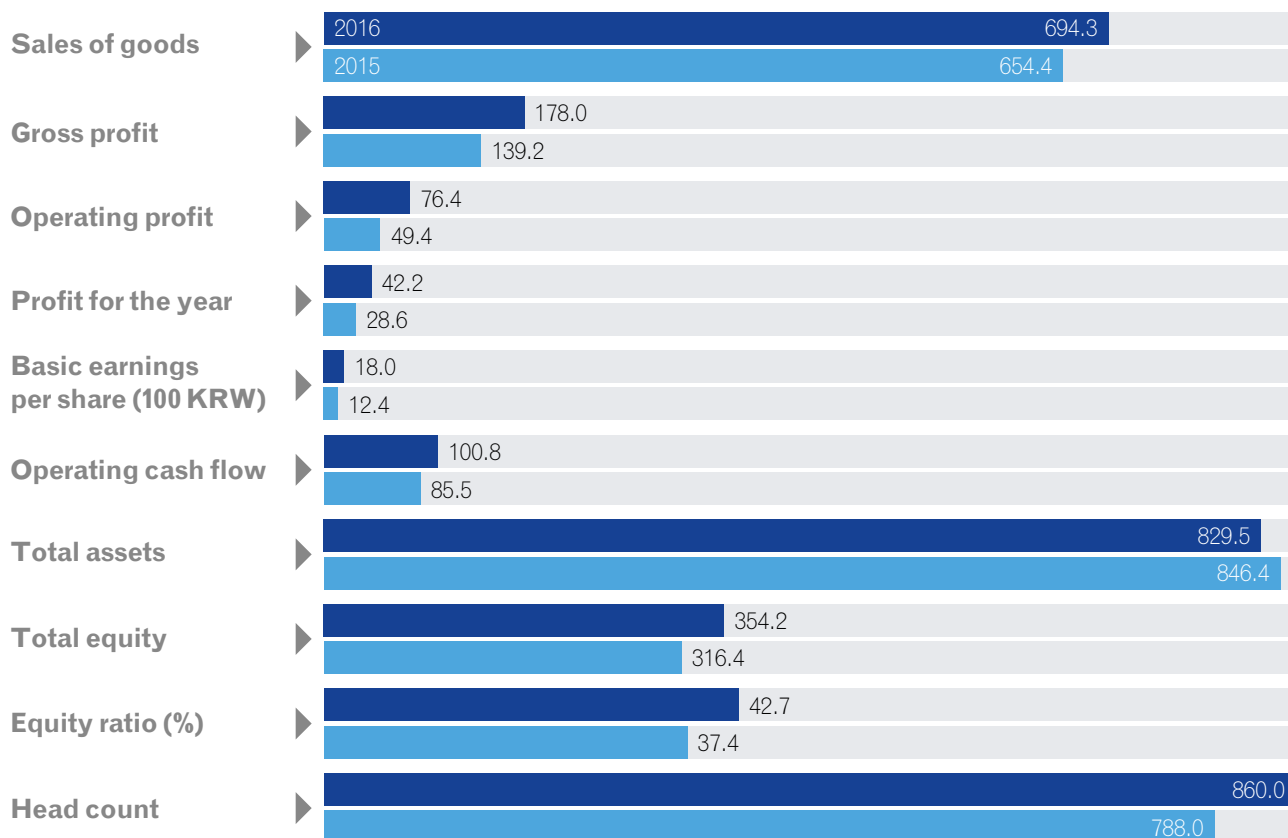
SONGWON's past, people, products and processes bear the hallmark of reliability, trust and confidence in the future.

Expertise

SONGWON offers a specialty chemicals knowhow pool to facilitate and accelerate business and industry growth in a sustainable and environmentally responsible manner.

Key Financial Data 2016

Billion KRW



SALES BY REGION IN 2016



SALES BY PRODUCT GROUP IN 2016



SONGWON Industrial Group

2016 overview

42.2

*Profit for the year
(Billion KRW)*

76.4

*Operating profit
(Billion KRW)*

29

*Female employees
Europe*

1

*SAP and
Flocculants sales (%)*

91

*Total female employees
worldwide*

69

*Polymer
Stabilizers sales
(AOX and UVs) (%)*

42.7

*Equity
ratio (%)*

124

*Total greenhouse
gas emissions
tons CO₂ (×1000)*

27

*Sales by
Korea (%)*

25.8

*NO_x
(×1000 kg)*

1,802

*Basis earnings
per share (KRW)*

182

*Employees working
20+ years*

7

*PVC Stabilizers
sales (%)*

100.8

*Operating cash flow
(Billion KRW)*

21

*Sales by North and
South America (%)*

21

*Sales by
Europe (%)*

187

*(×1000) tons raw
materials used*

354.2

*Total equity
(Billion KRW)*

0.16

*Lost Day Rate
(LDR) (%)*

23

*Sales by
Rest of Asia (%)*

829.5

*Total assets
(Billion KRW)*

0.24

*Total recordable case
rate (TRCR)(%)*

11

*Tin Intermediates
sales (%)*

860

Total head count

1965

1965

December – Songwon Industrial Co., Ltd. established with Head Office and plant in Busan (Korea)



1973

December – Korean Ministry of Commerce and Industry grants Trader's License to SONGWON

1979

December – Songwon Moolsan Co., Ltd. (holding company) is established in Seoul (Korea)

1986

May – Start-up of SONGWON's Ulsan plant (Korea)



1983

November – SONGWON's R&D Center established in Ulsan and approved by the Ministry of Science and Technology (Korea)

1987

April – Office opened in Tokyo (Japan)

1992

April – Company moved to new SONGWON Building in Seoul (Korea)

1995

July – SONGWON awarded ISO-9002

1988

March – SONGWON's Head Office and plant moved from Busan to Ulsan (Korea)



1977

February – Start-up of SONGWON's 2nd production site in Suwon (Korea)

June – Songwon Industrial Co., Ltd. went public (Korea)



2001

March – Songwon Japan K.K. established in Tokyo (Japan)

2005

December – Songwon Brilliant Chemicals Co., Ltd. established in Shanghai (China)

2010

February – ChemService Asia Co., Ltd. established in Seoul (Korea)

April – Songwon China Ltd. established in Hong Kong (China SAR)

April – Songwon International-India Pvt. Ltd. established in Mumbai (India)

July – Songwon Trading Shanghai Ltd. established in Shanghai (China)



2014

Q1 – Green field investment for OPS plant in Abu Dhabi (UAE)

August – Sequent Specialty Chemicals, Ltd. acquired in Panoli (India)



2007

June – Start-up of Maeam plant for main AOs (Korea)

December – ISO-14001 certification awarded to the Ulsan plant (Korea)



2012

August – Songwon Baifu Chemicals (Tangshan) Co., Ltd. established in China

October – Songwon Additive Technologies-Americas, Inc. established for producing One Pack Systems (OPS) in Houston (USA)

2016

January – SONGWON's new OPS plant officially opened in Abu Dhabi (UAE)

November – SONGWON's new OPS plant officially opened in Qingdao (China)



2016

2006

June – Songwon International AG established in Frauenfeld (Switzerland)

August – Songwon International – Americas Inc. established in Friendswood, Texas (USA)



2011

January – Songwon Holdings AG (ex Mantenere Holding AG) acquired in Frauenfeld (Switzerland)

August – new AO 1076 production line started in the Maeam plant (Korea)

October – Songwon Chemicals Co., Ltd. established in Shanghai (China)

November – Songwon Additive Technologies AG established in Frauenfeld (Switzerland)

December – ATG Additive Technology Greiz GmbH acquired in Greiz (Germany)

2015

August – Qingdao Long Fortune Songwon Chemical Co., Ltd. JV established in Qingdao (China)



2009

June – Start-up of IBL plant in Maeam (Korea)

July – ISO-14001 certification awarded to the Maeam plant (Korea)



2002

December – Office opened in Maeam (Korea)



2013

Q1 – Songwon Additive Technologies – Middle East FZE established in Dubai and Polysys Additive Technologies – Middle East LLC in Abu Dhabi (UAE)



Table of contents

Mission & Vision	01
Key Financial Data 2016	02
SONGWON Industrial Group 2016 overview	03
History of SONGWON	04
For our Shareholders	08
Letter to our Shareholders	10
SONGWON's Leadership	16
Share Price Development	18
Business Report	20
SONGWON Industrial Group	22
Global Locations	24
SONGWON's Product Portfolio	26
SONGWON's Product Groups	28
Market, Risks & Opportunities	30
Highlights 2016	34
Sales Strategy	35
Customer Service	42
Procurement	45
Supply Chain	46
Global Application Community & Technical Service	48
Research & Development (R&D)	50
Manufacturing Excellence	53
Quality Assurance (QA)	57
Our People	60
Corporate Responsibility	68
Corporate Social Responsibility	71
Regulatory Affairs & REACH	75
EH&S & Sustainability	79
Global Reporting Initiative Guidelines (GRI)	88
SONGWON's GRI G4 Content Index	94
Corporate Governance	98
Corporate Governance at SONGWON	100
Financial Statements	104
Financial Statements Content	107
Introduction to Financial Statements	109
Independent Auditors' Report	110
Financial Data	112
Final Overview	200
SONGWON's Brands	202
About this Report	205
Forward Looking Statements	205
SONGWON's Contacts	206



Letter to our Shareholders	10
SONGWON's Leadership	16
Share Price Development	18



For our Shareholders



⌘ Maurizio Butti | Chief Executive Officer

Dear Shareholders,

SONGWON delivered excellent financial results in 2016, demonstrating that our strategy is working and best positioning the company to deliver long-term value to investors by generating significant, sustainable growth.

In 2016, SONGWON generated consolidated revenues of 694.3 Billion KRW with a 6.1% increase year over year, and a consolidated net profit of 42.2 over a net profit of 28.6 Billion KRW in 2015. In this fiscal year, all of SONGWON's key operational results greatly improved. The Group achieved a gross profit of 25.6% – which is 4.3 percent points higher when compared to the previous year. SONGWON's operating profit grew to 76.4 Billion KRW, an improvement of 54.6% over last year and our EBITDA performance was around 16.4% of sales – which is 2.3 percent points higher than in 2015.

SONGWON's sound and balanced performance – across industries, businesses and in the regions we are operating – is particularly impressive against the backdrop of a global economic environment that continues to remain both volatile and uncertain. Once again, it has been another challenging year worldwide with financial tensions, high levels of political instability, increased international geopolitical conflicts and social upheaval across the globe.

Although the global GDP was marginally better than in the previous year, the chemical industry as a whole did not perform and delivered an anemic growth of only 2.1%. The market situation was again highly competitive due the lack of growth in demand, fueled in part by the very low oil price. However, in terms of the growth in demand, SONGWON's major market, the polymer industry actually performed slightly better. Also in 2016, the fluctuations in the development of the currencies and the FX environment were hard to predict and the SONGWON Group was subsequently affected in 2016 by a negative currency impact of 3.95 Billion KRW.


Despite the challenging environment, SONGWON was able to start the fiscal year 2016 very positively. This was mainly due to our ability to benefit from the favorable raw material prices while defending SONGWON's selling prices at the same time. During the first part of the year, we saw SONGWON's business initiatives gaining traction, while the latter part of 2016 was more challenging because of increasing raw material prices, accompanied by a softening of the selling prices. Furthermore, we felt positive benefits of the consolidation of our continuous effort to improve SONGWON's processes and technologies, reduce production fixed costs and increase efficiencies, as well as our inherent ability to introduce new innovations to the market.

2016 has also been the year where we have made significant, definable progress in our strategic transformation from being a polymer stabilizers leader to becoming a world-class, globally diversified specialty chemicals organization. We successfully added innovations to our portfolio, launched solutions in new areas of business, as well as a fresh, new corporate identity.

We are pleased to report that our efforts to establish SONGWON's presence in new markets and applications have started to deliver the expected results. Although the new businesses actual contribution to the bottom line is not very visible just yet, we have been successful in attracting the attention of both the market and customers, and the response has been very positive.

After these initial results, we strongly believe that we have established a solid foundation for another step towards profitable growth for the organization while reducing the overall business risk. We are confident in SONGWON's ability to consistently deliver solid results while balancing the needs of our multiple stakeholders – even in an uncertain and volatile economic environment. The fundamental pillars of

SONGWON's business are strong, and over the years we have developed the flexibility and resilience needed to compete in today's demanding markets and create superior value for our shareholders in the process.



In general, all of our existing businesses performed well in 2016 and we remain well-positioned to execute on our business strategy.

Polymer Stabilizers

The polymer stabilizers business has been SONGWON's growth engine in the last several years and the positive trend continued in terms of volumes and revenues. The improvement in profitability that the business achieved was particularly significant and the result of the continuous efforts made to strengthen and consolidate SONGWON's number 2 position in the world market. With this goal in mind, we focused on improving processes and our cost position, expanding SONGWON's global manufacturing footprint and bringing innovative high-end solutions to the market.

In 2016, we continued to selectively invest in the expansion of our manufacturing footprint and particularly in the expansion of our One Pack Systems (OPS) business in two major regions. At the beginning of the year, we officially inaugurated our new manufacturing facility in Abu Dhabi, UAE. Our state-of-the-art facility puts SONGWON in a stronger position to better meet the needs of our current and future customers in the Middle East – one of the fastest growing markets for polyolefins and already a major consumer of OPS.



Later in the year, after completing construction on our JV plant for OPS with Qingdao Long Fortune Chemical & Auxiliary Co., Ltd. (QLF) in China, the plant was commissioned and began operations in November. Having a world-class facility in this key region enables us to fulfill our ambition to become a leading polymer stabilizer supplier in China – which is already the largest market in the world.

Tin Intermediates, PVC Stabilizers & Polymers (TPP)

Leveraging our many years of industry knowledge and manufacturing experience, we continued our strategic plan to reposition the business as a supplier of more value added TPU solutions that give our customers a competitive edge and help them meet their end-use requirements. In 2016, the business achieved good improvements in profitability and we plan to continue along this path and increasing the production capacity. Shortly after the increase scheduled for 2017, we expect to see solid growth.

After we took actions to overcome the devaluation of the Japanese Yen, following a difficult 2015, SONGWON's tin intermediates business delivered good results in 2016 – with both top line and profitability growth. Japan is a major market for our products and so we have additional actions in place to further enhance profitability.

During the course of 2016, PVC stabilizers showed both improved sales and profit. Going forward, our focus will be on cost improvements and the introduction of new products. We also are implementing strategies to grow our polymers business worldwide.

New Businesses

Throughout 2016, we continued to work at full speed on the development of SONGWON's new businesses. These are the areas we had previously identified as offering good opportunities for profitable growth in the years to come:

- Fuel and Lubricant antioxidants (F&LA)
- Specialty chemicals (electronic chemicals, coatings additives and functional monomers)

Driving these developments is SONGWON's highly experienced R&D. In 2016, to support these advancements, we invested in creating a team of

competent and experienced professionals. Their aim is to constantly push the limits of innovation to maximize opportunities for SONGWON while focusing on delivering solid returns for our customers and shareholders at the same time.

Fuel & Lubricant Antioxidants (F&LA)

This is the most advanced of SONGWON's new businesses. In 2016, we have been able to establish a good product range of antioxidants. Already after the first year of activity, the business represents 3% of the Group's sales. F&LA continues to show an interesting profitability level and high potential for further growth.

Specialty Chemicals

In the middle of the year, we entered an agreement with Heraeus – a global technology group headquartered in Germany. Combining their experience in electronic chemicals and market experience with our new product development capabilities and processes, has made it possible for us to establish a positive presence for SONGWON as an electronic chemicals player.

In 2016, we have also been able to build an interesting product range of coatings additives with more solutions on the horizon. Although both electronic chemicals and coatings additives are already delivering commercial sales we expect to see an additional positive impact starting from next year.

In parallel to these product areas, we have been focusing on other new businesses and we have identified more interesting proprietary products. Going forward, we will continue to build on the initial success of the new businesses launched this year while continuing to pursue additional identified opportunities.

Operational Excellence

As it was in the past and will be in future, operational excellence was a key focus area in 2016. We have always understood that to be competitive, SONGWON must be flexible and have the ability to swiftly adapt to the ever-changing market conditions, as well as respond to global challenges.

For us, operational excellence is synonymous with maintaining SONGWON's position as a global leader delivering outstanding quality and service. Therefore, we constantly strive to better our business processes

in order to achieve greater efficiencies, improved costs, well-managed stocks and increased capacities. We also continuously develop and implement new tools which support operational excellence at SONGWON.

Sustainability

One of SONGWON's core values, sustainability is infused in all of our activities and strongly influences the way we do business. We know that SONGWON operates in sectors that can have a significant impact on the environment. We understand that we have an even greater responsibility to make sure we use resources wisely. We consistently strive for sustainable development by carrying out a detailed analysis on the environmental impact of our products.

At SONGWON, we also place great importance on best-in-class EH&S performance, fulfilling our employee obligations and being a responsible company within our communities. Our ongoing investments reflect our long-term commitment to sustainable growth and we integrate EH&S into all our processes and practices. Once again in 2016, our efforts and focus on EH&S helped us to exceed the already excellent results we achieved in 2015.

For us, being committed to sustainability also means successfully seeking to balance SONGWON's economic success, environmental stewardship and social progress to benefit all of our stakeholders. Furthermore, with our irreproachable business conduct, we are dedicated to making sure that all of our products and activities are 100% compliant with, or actually exceed international standards.

By controlling and reducing energy and water consumption, as well as increasing the use of renewable raw materials whenever possible, we aim to further reduce the environmental impact of our business. In 2016, as in previous years, we proactively reviewed the risk profile of our manufacturing facilities, and are investing considerable resources to improve the overall safety of our plants. Even though we have already completed a major part of this effort, risk assessment and mitigation will continue to be one of SONGWON's key areas of focus in future.

Corporate Governance

We have a commitment to sound corporate governance at SONGWON and firmly believe that creating sustainable long-term value for shareholders is only possible through strong governance practices. We see corporate governance not only as essential to maintaining competitive and sustainable operations worldwide but that our reputation as a trusted and reliable business partner depends on it.

To better protect the interests of SONGWON's shareholders and all other stakeholders, we have always placed great emphasis on ensuring that we conduct our business with the highest level of integrity. We also aim to foster open dialogue with shareholders through continuous direct engagement.

The larger Board of Directors, approved at the last Annual General Meeting of Shareholders, and a clear separation between its responsibilities and those of the Executive Committee has further strengthened the corporate governance of the Group by ensuring greater transparency, controls and accountability.

Our People & Organization

While remaining focused on cost control, we understand that the successful future of the Group lies in the hands of our most valuable asset – our people. Therefore, once again in 2016, we devoted our efforts to strengthening our team, building on competencies and helping our employees to deliver their full potential. We also added key resources to areas that we expect to deliver growth and profitability, and which we consider crucial to ensuring SONGWON'S future success.



Jongho Park | Chairman of the Board >

Looking ahead

We will continue to work hard towards building a company known for its deep and long-lasting customer relationships, for best-in-class products and services, and for the exceptional talent and commitment of all its employees. At SONGWON, we know the depths of our potential and are committed to continuing to deliver profitable growth. In addition, we aim to continue playing an important role in our existing markets, as well as an even more significant role in the new markets we have entered, and those we plan to enter.

Although the short-term economic development remains unpredictable and volatile, and the global economy is not yet showing consistent and sustainable growth, we know that fundamental megatrends (population growth, demand for end-use products in emerging markets and inter-material competition) will remain unaffected. Going forward, this is what will drive demand growth.

With an eye on the future, we are confident that we have well-positioned SONGWON to benefit from these developments with our proprietary technologies, global manufacturing footprints, excellent economics, best-in-class quality, service and reliability, as well as the robust and growing product portfolio we offer customers.

Thanks to our dedicated employees, management and Board members, and most importantly, the continued confidence and support from you, our shareholders, SONGWON is looking at a bright and prosperous future.

Maurizio Butti
Chief Executive Officer

Jongho Park
Chairman of the Board



DOUG EXCELL



PHILIPPE SCHLÄPFER

Executive Committee



GIACOMO SASSELLI



MAURIZIO BUTTI



HANS-PETER WÜEST

Board of Directors



From left to right: MAURIZIO BUTTI, CHOONG-SIK KIM, GERHARD SCHLOSSER, JONGHO PARK, DIETER MORATH, YUNG-KU HA, HANS-PETER WÜEST

The SONGWON Industrial Group

Executive Committee and Board of Directors

MAURIZIO BUTTI

Chief Executive Officer and Executive Board Member

As CEO, Maurizio Butti spearheads the implementation of all the Group's business and day-to-day operating activities, from revenue and sales growth, expenses, cost and margin control to monthly, quarterly and annual financial goal management. Before joining SONGWON, he was EVP Polymer Stabilizers and a member of the Chief Executive Council of Great Lakes Chemical Corporation. Prior to that he held various marketing, business, strategic planning and corporate development management positions at Great Lakes, EniChem and SOL Industries.

HANS-PETER WÜEST

Chief Financial Officer and Executive Board Member

Hans-Peter Wüest gained his broad international experience in a wide variety of financial positions in the manufacturing and service industries. Before taking up his role at SONGWON, he held finance leadership positions with DHL/Deutsche Post and Great Lakes Chemicals.

PHILIPPE SCHLÄPFER

Leader Performance Chemicals

Before joining SONGWON, Philippe spent more than 20 years as a key contributor to the Ciba Polymer Additives business. With 15 years of experience in the Asia Pacific region, he headed up Ciba's global antioxidant product portfolio to serve the polymer industry.

GIACOMO SASSELLI

Leader Operations

Giacomo Sasselli held a number of key technology positions with the EniChem Group. He then broadened his experience as site manager. Later, he joined the Great Lakes Chemical Corporation where he was responsible for the operation of a worldwide network of polymer additive production sites.

DOUG EXCELL

Leader QA, Regulatory & Best Practices

Before joining SONGWON, Doug Excell held various supply chain, business management, marketing, procurement and corporate development positions at Compass Minerals, Chemtura, Great Lakes Chemical and Amcol International.

JONGHO PARK

Chairman of the Board

Jongho Park has driven SONGWON's international journey, successfully steering global expansion and transforming the company from a local Korean manufacturer into a global specialty chemicals leader. Committed to delivering on SONGWON's vision, he makes recommendations, and advises the Board on organizational changes and new opportunities. Jongho Park also plays a key role in investor relations and focuses on fostering solid relationships with all stakeholders to secure a bright future for SONGWON.

CHOONG-SIK KIM

Executive Board Member

Choong-Sik Kim's role is to guarantee that SONGWON Industrial Co., Ltd. remains fully in line and compliant with Korean laws and regulations. He is also responsible for making sure that all operations at SONGWON Industrial Co., Ltd. are fully aligned and integrated with the organization's policies and strategies. To gain the full alignment of each functional group and timely implementation of the related processes, it is Choong-Sik Kim's responsibility to communicate and explain Group policies, strategies and critical decisions to SONGWON's Korean employees.

DIETER MORATH

Non-Executive Board Member

Former Executive President Global Sales SONGWON Industrial Group, Dieter Morath has turned his attention to guiding the company's future development, which includes exploring and pursuing both organic and inorganic opportunities that support SONGWON's long-term growth strategy.

YUNG-KU HA

Non-Executive Board Member

Yung-Ku Ha brings decades of economy and finance experience to the Board. In an advisory role, he supports SONGWON's growth strategy by overseeing the financial drivers of the business and tracking progress against strategic objectives. Furthermore, he shares his know-how and significant expertise in financing, investor interaction and strategic planning with respect to the current economic Korean outlook and global trends.

GERHARD SCHLOSSER

Non-Executive Board Member

With his wealth of valuable international experience, especially in Asian countries (Japan, Korea, etc.), Gerhard Schlosser supports SONGWON's vision and offers strategical guidance. In close cooperation with SONGWON's shareholders and operational management teams at all levels of the Group, he shares his knowledge and provides direction on business development initiatives, international marketing strategies and improving operational capabilities to ensure the overall growth of the company.

Share Price Development

Peak performance amid market instability

SONGWON ended the year on December 31, 2016 with a market cap of 410 billion KRW – a positive increase of 18% when compared to SONGWON's 2015 market cap level. Benchmarked against the Korea Composite Stock Price Index (KOSPI) which only gained 3.3% in the fiscal year 2016, SONGWON's result can also be considered outstanding.

Starting the year 2016 with its lowest level of 13,650 KRW in January, SONGWON's stock price steadily rose and climbed to a record high of 23,300 KRW per share on June 20, 2016. This was the peak level of the year, but also the highest stock price on record since SONGWON was publicly listed on the stock market in 1977.



“Focusing on the present with an eye on the future, we will concentrate on driving a profitable and sustainable business model in the longer term and delivering value for all of our stakeholders.”

Hans-Peter Wüest,
Group Chief Financial Officer

During 2016, decreased investments by asset management companies in small- and mid-cap stock entities resulted in an overall weak performance in 2016. Taking this into account, we are of the opinion that we can classify SONGWON's share price performance this year as brilliant. During the fiscal year 2016, the stakes in SONGWON which are owned by domestic institutions increased by 5%, and those owned by foreign institutions also increased respectively by 2%.

In the first six months of 2016, the outstanding upward performance of SONGWON's share price was mainly the result of our exceptional business performance. Compared to the same period in the previous year, we saw a sharp increase in SONGWON's bottom line. Although partly influenced by eased competition, the rise was actually mainly due to the combination of our solid business strategy and strong execution.

In response to SONGWON's significant earnings in the first half of 2016, domestic investors began increasing their stakes in the company with the anticipation that SONGWON's earnings for the entire year would grow as well. Although SONGWON's business remained stable, the share price began to fall in the second half of 2016. By the end of August, it had dropped to 18,800 KRW but soon began to rebound, and in October 2016 the price had risen again to 22,200 KRW.

From this point onwards, SONGWON's share price suffered on the back of the market's disappointment that the company had not met the expectations in terms of its earnings in the fourth quarter 2016. This was due to the deteriorating market environment with its decreased demand in specific market segments, coupled with the customers' traditional end of the year destocking activities and an historically low business volume.

2016 was a tumultuous year for the South Korean stock market. The negative market sentiment stemming from the country's political and economic instability further exacerbated SONGWON's stock price. On December 5, 2016, SONGWON's stock price plunged to 14,700 KRW. However, in spite of the general market pessimism, SONGWON's stock price began improving again in early December.

At year-end 2016, SONGWON's stock price stabilized at 17,100 KRW, driven by our extensive and continued IR activities directed towards institutional investors who make up the majority of the investment in SONGWON after the major shareholder. These IR efforts are fundamental and directly contribute to the expansion of our investor base, and our commitment serves to enhance the interest in SONGWON shares as attractive investments.

SONGWON ended financial year 2016 with a positive performance. This was recognized by the market and resulted in investors regaining confidence. Moving forward, the outlook looks promising and SONGWON anticipates a positive demand development. Existing businesses are expected to perform steadily and the organization is confident that it will continue to see a positive impact from its newly launched specialty chemical solutions.

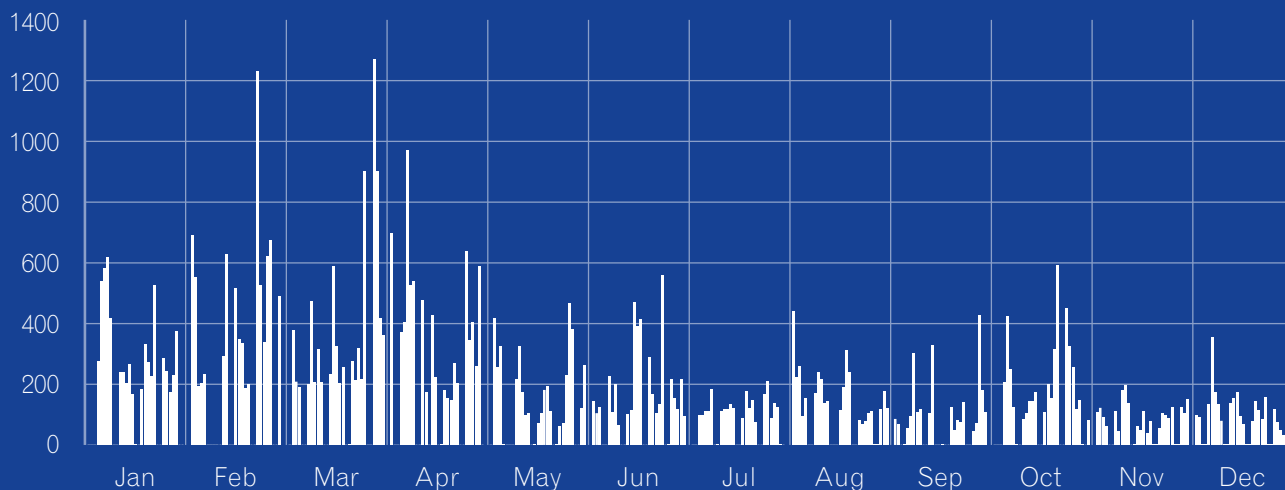
SONGWON share price 2016

(×1000 KRW)



SONGWON share volume 2016

(×1000 KRW)



Ticker:	KOSE: A004430
Stock exchange:	Korea
Listed since:	1977
Shares outstanding:	24 million
Market capitalization: (million KRW)	410,400

Share price (31.12.2016):	17,100 KRW
52-week high:	23,300 KRW
52-week low:	13,650 KRW
Free float:	64.50%
Dividend per share (2016): (12% of nominal share value)	70 KRW

SONGWON Industrial Group	22
Global Locations	24
SONGWON's Product Portfolio	26
SONGWON's Product Groups	28
Market, Risks & Opportunities	30
Highlights 2016	34
Sales Strategy	35
Customer Service	42
Procurement	45
Supply Chain	46
Global Application Community & Technical Service	48
Research & Development (R&D)	50
Manufacturing Excellence	53
Quality Assurance (QA)	57
Our People	60



Business Report



SONGWON Industrial Group

Global strength but local focus

SONGWON, founded in 1965 and headquartered in Ulsan, South Korea, is a leader in the development, production and supply of specialty chemicals.

The second largest manufacturer of polymer stabilizers worldwide, SONGWON has group companies operating all over the world, and offers the combined benefits of a global organization and readily accessible local companies. Dedicated experts work closely together with customers to develop tailor-made solutions that meet specific requirements.

The ongoing efforts to strengthen the foundation of SONGWON Industrial Group's global position are paying off. SONGWON has proprietary technologies and excellent economics. With its combination of wholly or partly owned subsidiaries and joint ventures, SONGWON is well-balanced to continue expanding internationally. Joint ventures are facilitated by holding companies which enable the organizations to manage risk and also provide further market access and economies of scale.

SONGWON Industrial Group's structure* comprises:

- Headquarters in Ulsan, Korea
 - 11 companies, including 2 joint ventures and 2 representative offices, located in 10 different countries on 3 continents
 - 7 manufacturing facilities, 3 of which are located in Korea, and the others in Germany, USA, India, UAE, as well as 2 additional manufacturing JV plants in China
 - A worldwide network of sales offices, distributors, customer service and logistic hubs and warehouses
-

* as of December 31, 2016



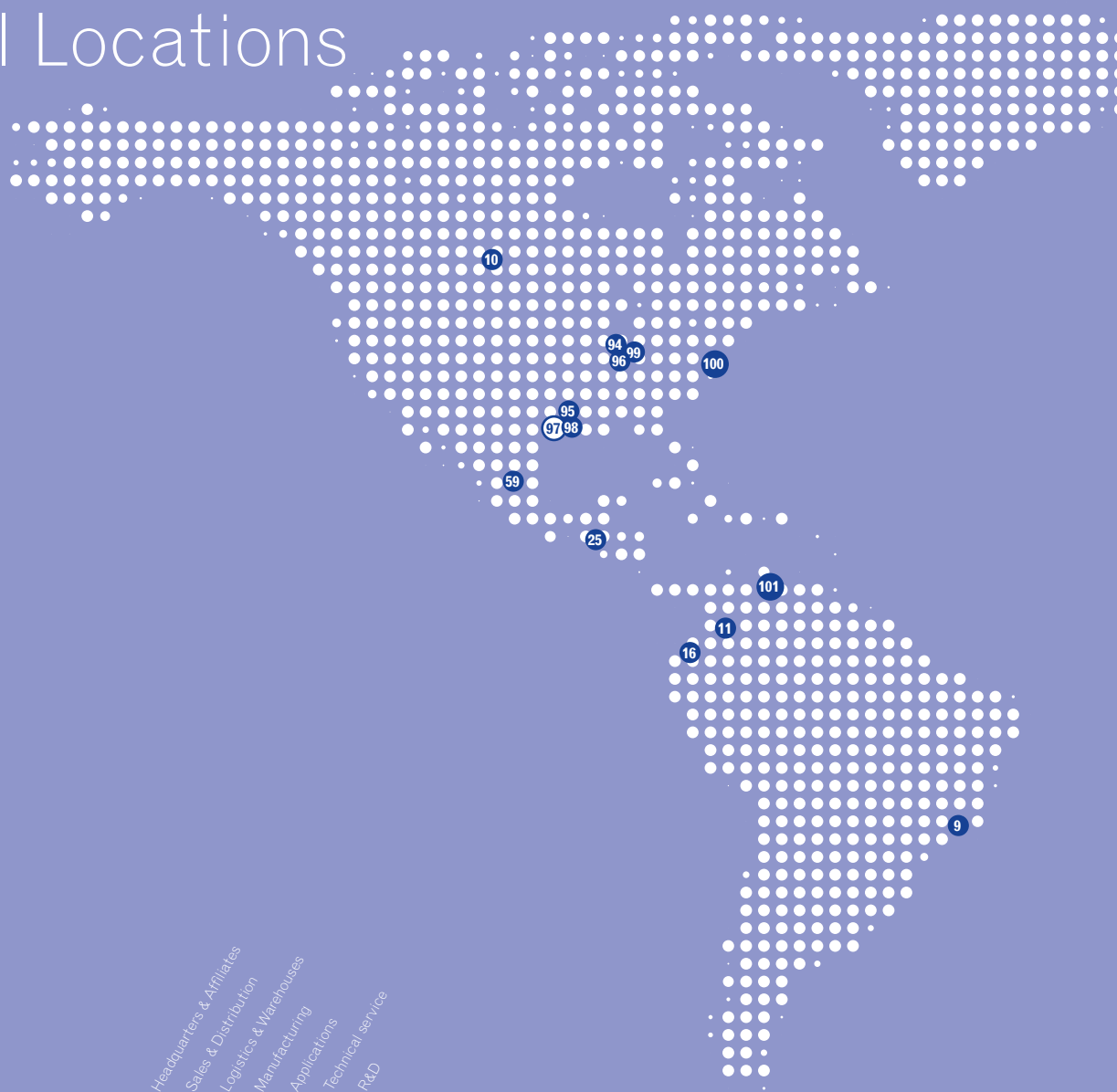
SONGWON Industrial Group structure



- Manufacturing
- Holding
- Sales & Distribution

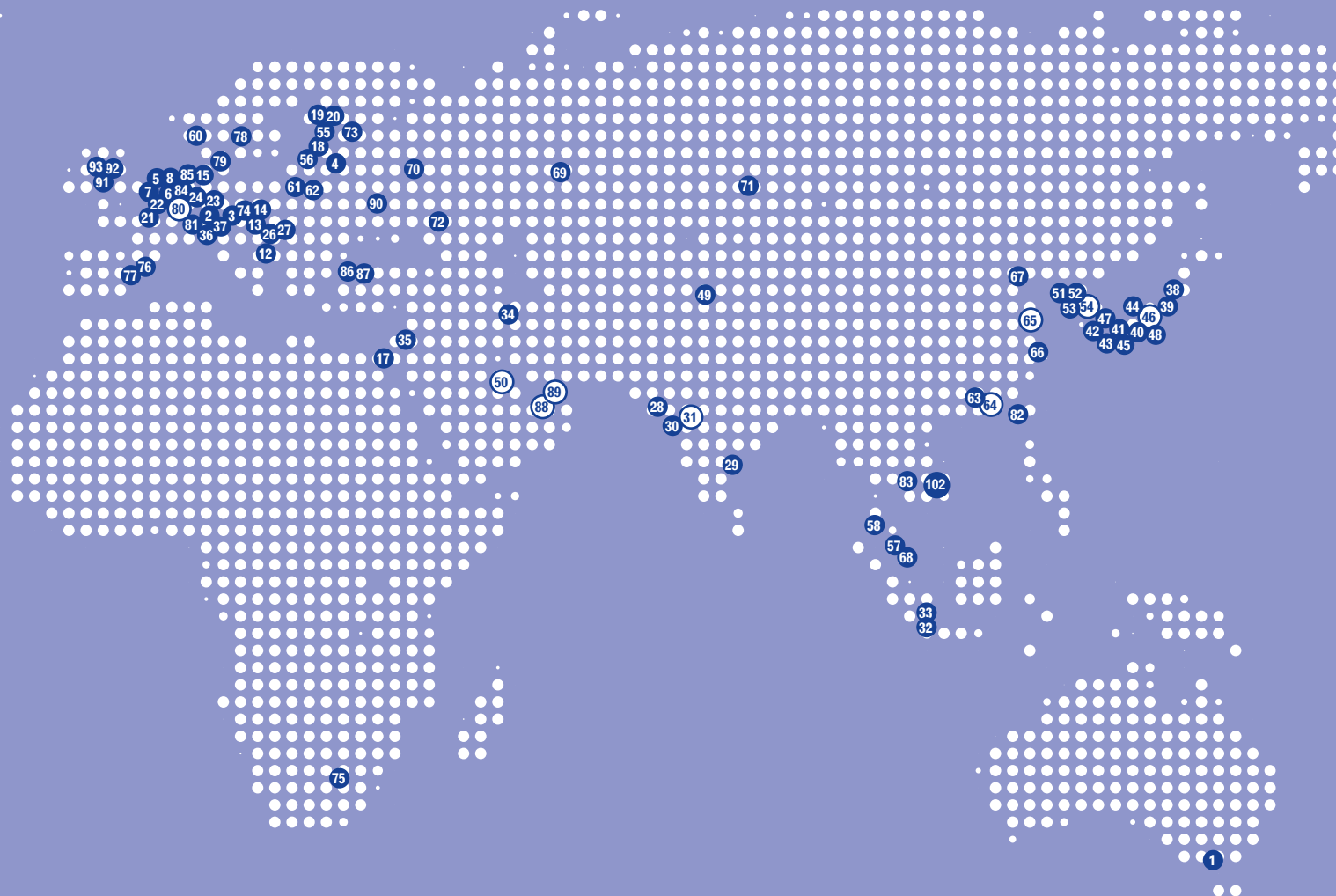
* 36.75 % shareholding
plus 18.75 % economical interest

Global Locations



1	Australia, Melbourne		■	■				
2	Austria, Linz			■				
3	Austria, Vienna		■					
4	Belarus, Minsk		■	■				
5	Belgium, Antwerp			■				
6	Belgium, Grâce-Hollogne			■				
7	Belgium, Hemiksem		■	■				
8	Belgium, Kallo			■				
9	Brazil, Sao Paulo		■	■				
10	Canada, Edmonton			■				
11	Colombia, Bogotá		■					
12	Croatia, Zagreb		■					
13	Czech Republic, Jeneč			■				
14	Czech Republic, Prague		■					
15	Denmark, Vamdrup			■				
16	Ecuador, Quito		■					
17	Egypt, Cairo		■					
18	Estonia, Tallinn			■				
19	Finland, Espoo			■				
20	Finland, Turku			■				
21	France, Paris		■					
22	France, Saint-Brice-Courcelles			■				
23	Germany, Greiz			■	■	■	■	
24	Germany, Solingen			■				
25	Guatemala, Guatemala City		■					
26	Hungary, Budapest		■					

27	Hungary, Gyál				■			
28	India, Baroda			■				
29	India, Chennai			■				
30	India, Mumbai			■			■	
31	India, Panoli		■		■	■		■
32	Indonesia, Bogor			■				
33	Indonesia, Jakarta			■	■			
34	Iran, Tehran			■				
35	Israel, Bney Aish			■				
36	Italy, Milan			■				
37	Italy, Trezzo sull'Adda				■			
38	Japan, Chiba				■			
39	Japan, Ibaraki				■			
40	Japan, Kanagawa				■			
41	Japan, Nagoya				■			
42	Japan, Okayama				■			
43	Japan, Osaka				■			
44	Japan, Saitama				■			
45	Japan, Shizuoka				■			
46	Japan, Tokyo		■	■	■		■	
47	Japan, Yamaguchi				■			
48	Japan, Yokohama				■			
49	Kazakhstan, Almaty			■	■			
50	Kingdom of Bahrain, Manama		■				■	
51	Korea, Maeam				■	■		■
52	Korea, Seoul			■				



53	Korea, Suwon							
54	Korea, Ulsan							
55	Latvia, Riga							
56	Lithuania, Kaunas							
57	Malaysia, Johor Bahru							
58	Malaysia, Kuala Lumpur							
59	Mexico, Mexico City							
60	Norway, Drammen							
61	Poland, Ożarów Mazowiecki							
62	Poland, Warsaw							
63	PR China, Guangzhou							
64	PR China, Hong Kong							
65	PR China, Qingdao							
66	PR China, Shanghai							
67	PR China, Tangshan							
68	Rep. of Singapore, Singapore							
69	Russia, Ekaterinburg							
70	Russia, Moscow							
71	Russia, Novosibirsk							
72	Russia, Rostov							
73	Russia, Saint Petersburg							
74	Slovakia, Senec							
75	South Africa, Johannesburg							
76	Spain, Barbera del Valles							
77	Spain, Barcelona							

78	Sweden, Kvarntorp						
79	Sweden, Malmö						
80	Switzerland, Frauenfeld						
81	Switzerland, Liestal						
82	Taiwan, Kaohsiung						
83	Thailand, Bangkok						
84	The Netherlands, Roosendaal						
85	The Netherlands, Rotterdam						
86	Turkey, Istanbul						
87	Turkey, Tuzla						
88	UAE, Abu Dhabi						
89	UAE, Dubai						
90	Ukraine, Kiev						
91	United Kingdom, Chester						
92	United Kingdom, Halifax						
93	United Kingdom, Leigh						
94	USA, Akron						
95	USA, Channelview						
96	USA, Cincinnati						
97	USA, Friendswood						
98	USA, La Porte						
99	USA, Mogadore						
100	USA, Newark						
101	Venezuela, San Francisco						
102	Vietnam, Ho Chi Minh City						

SONGWON's Product Portfolio

Adding value with high performance solutions

A leader in the industry, we are well-known for the more than 50 years of expertise that goes into every one of SONGWON's high performance solutions. Focused on meeting market needs and helping our customers overcome challenges, we apply innovative thinking and invest the utmost effort into each of our business segments. Our aim is to be the customers' supplier of choice in the application areas we serve.

We are proud to serve customers in more than 53 countries and contribute to their success by adding value. SONGWON's customer base includes a wide range of multinational and regional market leaders, as well as leading global manufacturers of industrial and consumer products.

Our products offer customers many features and benefits. They help to:

- improve mechanical performances, durability and recyclability
- extend life cycles and reduce maintenance costs
- make innovative, environmentally friendly, design solutions possible

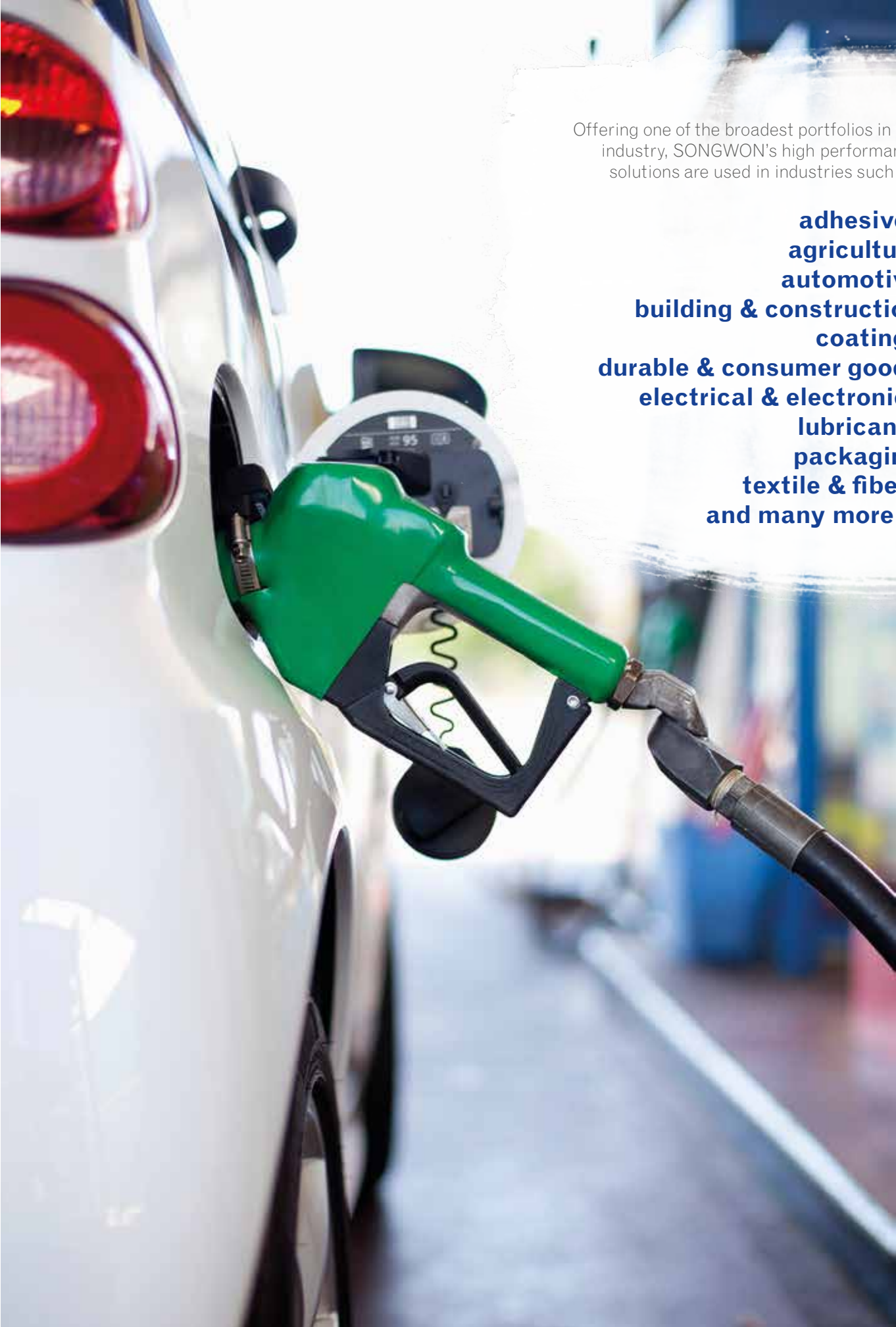
Most recently, we have concentrated our efforts on offering customers an even more balanced business portfolio. With SONGWON's latest solutions, we have successfully positioned the organization to win an additional share of existing markets, but also to prosperously expand into new ones.

In 2016, SONGWON received the

2016 New Product Innovation Award

from Frost & Sullivan. The highly regarded, global research and consulting firm based its decision on SONGWON's commitment to product innovation in the polymer stabilizers market and our customer-oriented approach to developing new products.





Offering one of the broadest portfolios in the industry, SONGWON's high performance solutions are used in industries such as:

adhesives
agriculture
automotive
building & construction
coatings
durable & consumer goods
electrical & electronics
lubricants
packaging
textile & fibers
and many more ...

SONGWON's Product Groups

A comprehensive, well-balanced portfolio

As the second largest manufacturer of polymer stabilizers in the world, SONGWON offers one of the broadest portfolios in the industry.

To best meet customers' diverse needs, SONGWON's products are organized into 4 main groups:

1. Polymer Stabilizers
2. Fuel & Lubricant Antioxidants
3. Tin Intermediates, PVC Stabilizers & Polymers
4. Specialty Chemicals

1. Polymer Stabilizers

Plastics require stabilization to prevent degradation when exposed to heat and light. SONGWON's specially developed stabilizers protect polymers during processing and ensure that plastic end products retain their physical properties during use which prolongs their life.

SONGWON offers a comprehensive range of processing, heat and light stabilizers in a variety of blends and physical forms that facilitate handling and application use.

2. Fuel & Lubricant Antioxidants

SONGWON offers an extensive range of phenolic antioxidants for fuels and lubricants, which mainly come in liquid form. Working together with customers, SONGWON continues to develop even more high-performance solutions.

With its economy-of-scale production facilities in Korea, SONGWON is the largest producer of phenolic antioxidants in Asia – which is currently the region showing the strongest growth in fuel and lubricant antioxidants.

With its backward integration of the key raw materials for phenolic antioxidants, SONGWON ensures reliability of supply and adds value to the production chain.

3. Tin Intermediates, PVC Stabilizers & Polymers (TPP)

SONGWON's businesses: Tin Intermediates, PVC stabilizers and Polymers are grouped together under TPP.

Tin Intermediates are designed for applications in the coatings industry such as automotive paints and glass coatings, as well as being used as catalysts.

PVC stabilizers and plasticizers for the PVC industry provide protection against the damage caused by heat and during processing e.g. in lubrication systems.

Polymers, such as polyester diols, "solution" (thermosetting and/or thermoplastic) polyurethanes (PUs) and thermoplastic polyurethanes (TPUs) based on esterification technology are used in ink binders, adhesives, and several other applications.

4. Specialty Chemicals

SONGWON's most recent addition and area of development is specialty chemicals for fast-moving industries such as electronics, as well as coatings additives and functional monomers for a wide variety of applications.

Electrical and electronic devices require numerous different chemicals in order to function or manufacture them and SONGWON's broad range meets these requirements.

In cooperation with Heraeus, an international leader in the electronics field, SONGWON jointly develops, manufactures and markets high-end specialty chemicals for the electronics industry.

SONGWON offers a comprehensive range of high-value, high-performance coating stabilizers for numerous substrates which protect coatings against the harmful effects of light and heat.

SONGWON's wide range of functional monomers provides standard polymers with additional, enhanced performance features and when incorporated in the polymerization process, significantly improves the processing performance.



1



2



3



4

Market, Risks & Opportunities

The global situation

As a globally active organization, SONGWON is subject to numerous risks that are intrinsically linked with our business activities. However, these risks go hand in hand with various opportunities. For this reason, at SONGWON, we strive to develop the capacities, products, skills and market understanding to make the most of the opportunities emerging from risk. We understand that to achieve growth and meet our investors' expectations, we have to remain vigilant and look beyond what everyone else is doing to focus on what our business can offer that our competitors cannot.

Just the same as in the past few years, the biggest risk facing SONGWON Industrial Group and any other global company today is economic and political volatility and instability. A major risk, it can affect companies directly, for example, due to a recession or lack of growth, or indirectly because companies have failed to see the challenges on the horizon and have not taken the necessary steps well ahead of time.

We have witnessed that the world economy has never really recovered from the recurring, cyclical, global crises of 2008-2009 and 2011-2012. In 2016, global growth has been around 3.1% below the average annual GDP growth of 3.5% of the previous 35 years. In fact, in 6 out of the last 8 years, the average has not been reached. The 2 exception years of "higher" growth occurred as more of a mere bounce back from the sharp downturn of 2009 than being the indicators of a sustainable turnaround.

The chemical industry, and subsequently all of its players are currently facing strong structural headwinds arising from the global economy. This problematic macroeconomic environment has directly resulted in a fall in demand for chemicals. For some multinationals, the strong US dollar has also made the situation worse.

The industry's overall sales growth increased to an anemic 2.1% in 2016. With the lower oil prices leading to sharp top-line declines, sometimes ranging from 30-40%, many chemical companies selling petroleum-based products were seen to frequently fall short of the industry averages.

In today's unsettled conditions, the only "positive" note has been the consistent demand for plastic products which has continued to show a higher growth rate than the global GDP, sustained by the usual global megatrends: population growth, developments in emerging economies, inter-material competition, new and demanding applications and climate change.

The future of the global chemical industry

2016 was another difficult year for the world's economy with global trade stagnant, investment subdued and a heightened level of policy uncertainty. Backed by the weak performance in the world's advanced economies, the global economy did continue to grow, but once again the pace of its growth was disappointing.

Looking towards the coming years, the world's economy is currently expected to marginally improve over its performance in 2016. Although a GDP annual growth rate of 3.5-3.9% is predicted, the global economic issues and geo-political developments in the final months of the year are responsible for a dramatic increase in the levels of unpredictability and sense of apprehension. Contrary to the plastics industry – which has been forecasted to continue to deliver a sustained rate of growth of 4-5% until the year 2020 – the outlook for the chemical industry is expected to remain at the same level of growth as has been seen in 2016.

However, for companies unwilling to adapt and alter their status quo, or implement necessary measures for addressing the continuing levels of uncertainty, the outlook could potentially be much worse. Discounting a possible recession or a slowdown in China in 2017, the EBITDA in the chemical industry is predicted to slip 1-2% year over year.

The picture becomes clearer if we look at this more closely and split it into the individual markets.

USA

The impact of the new administration in the USA has added a new layer of uncertainty to the global stage. It seems highly likely that we could possibly see the reduction of business regulations and the introduction of subsequent policies that would adversely affect free trade and globalization.

Stimulating investments in domestic manufacturing could to a degree, result in an increased demand for chemicals. However, on the other hand, any legislation in the USA which might negatively impact the actual flow of trade, could pose serious problems for chemical companies. Particularly for those producers who greatly depend on having open access to international markets or who might have plans to invest their resources outside of the USA. They could suffer as a result of such actions.

Europe

The recent move to boost the supply of money to stimulate economic activity in the Eurozone and the UK has unfortunately not resulted in a gain in demand for chemical companies or led to any significant growth. Furthermore, the referendum to leave the EU in June brought yet another cloud of uncertainty with it. With Article 50 set to be triggered by March 2017, the subsequent economic, political and legal implications may negatively affect industrial manufacturing activities.

Beyond this, there is a chance that the upcoming key elections in France, Italy and Germany may result in shift towards a more protectionist approach similar to what we have seen in the USA. This could have a seriously adverse effect on the ability for chemical companies to collaborate and continue to grow in the European Union.

Middle East

Over the next three years, the chemical industry will be the fastest growing sector in the Middle East. The region is currently in the midst of major economic restructuring. The individual countries have been frightened by the low oil prices and declared their willingness to work on reducing the dependency on fossil fuels. This is where the impetus driving the Saudi Vision 2030 lies.

An ambitious far-reaching plan, aimed at overhauling the Saudi economy by reducing the Kingdom's reliance on oil, the Saudi Vision 2030 is set to reframe the economic landscape of the Gulf region. Among other things, it seeks to increase Saudi Arabia's non-oil exports to 50% as a share of GDP, from the 16% of today.

This plan and similar ones which are in the process of development in the Middle East, also aim to support an increase in the local production of consumer and other business goods for both domestic and export markets. In view of this, chemicals companies will need to seek new ways of participating in the Middle East by supporting and facilitating the diversification and localization ambitions of this key region.

Asia

The Asia region accounts for approximately one third of the global demand for chemicals. Although the region's chemical industry has experienced fluctuating growth in the past few years, it still remained the industry leader, led by the chemical industries in both Japan and China.

China, in particular has an annual GDP growth rate of 6% which is twice that of the annual global GDP, making the Asia region one of the most promising chemical markets in the world. However, this 6% growth rate in China actually marks a significant decline compared with its rate a few years ago. The drop is a clear indication of a slowdown in the end markets of China's chemical industry which include construction, automotive and pharmaceuticals. These are all markets which had previously been accustomed to attaining years of double-digit expansion.

There is also an apparent structural shift underway as China's economy undergoes the transformation from being an export-driven country to one built on domestic consumption. Due to the overcapacity of basic commodities – and within certain value chains, inefficient manufacturing plants and processes – there is an increase in margin pressures among China's domestic chemical producers.

The need for strategic choices

Today's chemical industry is continually impacted by a wide spectrum of diverse issues and events – from geo-political risks and economic volatility to fluctuating customer demand and stricter regional policies – which together with the unstable landscape and results of the past few years are indicative of the new global hyper competitive environment that lies ahead for the chemical industry. It is one where companies are forced to strive for profitable growth in markets that have very often significant deficiencies and that offer little or no support.

Making sure to make the best strategic choices will be critical to the future of each organization – and the key to creating advantage and maintaining market position in the coming years. For many of the industry's established players, the next few years will be crucial to determining their share of the market. To surface as a leader in the industry, chemical companies must set priorities and focus their actions, but most importantly they will also need to identify and develop new approaches to how they operate and innovate.

Profiting from the positives & minimizing the negatives

Despite the fact that the forecast for the chemical industry is not that impressive, SONGWON's area of major activity, the polymer industry is still delivering a positive rate of growth. This means that while other players may struggle at the moment, with the general circumstances within the chemical industry, the situation for SONGWON is somewhat easier.

Nevertheless, the level of uncertainty and volatility in the global economy cannot be underestimated or disregarded. So, at SONGWON, we are taking actions to improve performances and reduce risks, while pursuing our ambition to be the supplier of choice in all the market segments. This involves developing a more balanced and extended business portfolio, diversifying our offering and seeking to enter new areas of business.

Confronted with such a volatile global economic and political landscape, SONGWON is supported by the opportunities provided by the segments where we operate due to their healthy, long-term demand and growth forecasts. We sincerely believe that the best way of minimizing the risks is to continue to work to improve the essential basics. By doing just that, we are also confident that SONGWON can profit from the "positives".

SONGWON's efforts are centered on:



Competitiveness & reliability of supply

By creating economic advantages through proprietary technology, economies of scale and backward integration, we maintain our competitive edge.



Extensive product portfolio

We already provide one of the broadest and most comprehensive and cost-effective ranges on the market. By developing and offering high-quality solutions for improved performance, we open the door to new markets and applications.



Focusing on customers' existing and future needs

Through listening closely to customers and consistently adding new products and solutions for high-end applications, SONGWON is providing customers with products that improve processing efficiencies and the return on their investment, as well as supporting industry growth.



Best-in-class & comprehensive customer support

By covering all service areas, ranging from customer service to logistics, from technical service to regulatory support, our customers are well taken care of. SONGWON also places great importance on regulatory issues and is using regulatory development to drive its innovation efforts.



Global reach, local execution

By having a global position supported by manufacturing facilities in all key areas of the world, SONGWON is able to execute business locally. It also enables our organization to minimize the risks of economic downturns, unfavorable currency developments in specific areas, and to capitalize on any existing growth opportunities at the same time.



International team of professionals

Our strong talented team of committed, ambitious and loyal people is the backbone of SONGWON's success. We continuously strengthen our organization with new key talents. Our people know that we consider them to be the company's real asset, and that we are committed to creating the best working conditions for all of them. This includes paying particular attention to improving, our already outstanding EH&S performance year over year.

We continued our development in 2016 by:

- opening our OPS manufacturing facility in Abu Dhabi, UAE (operational since January 2016)
 - commissioned the SONGWON QLF facility for OPS in Qingdao, China (operational since November 2016)
-

2016 HIGHLIGHTS

JVs

OPS plants in
Abu Dhabi (UAE)
& Qingdao (China)
officially opened

REACH

Provided 15500 SDS,
as well as TDS & RDS

HR

Successfully
integrated 113 new
people into the
organization

PRODUCTION

Increased AO capacity
and established a new
plant for the specialty
chemicals products

R&D

Developed & tested >10
new products to expand
the portfolio & assure new
business in the future

FROST & SULLIVAN

New Product
Innovation Award

EH&S

PM emissions
reduced by 27%
versus 2015

Sales Strategy

Forging ahead with customer-focused solutions

At SONGWON, we believe in and nurture long-term relationships with our customers and growing with them is embedded in our strategy. It is our ability to provide customers worldwide with professional, personalized service and support them with our high-quality solutions that has driven our growth and enabled us to become the global player SONGWON is today.

SONGWON has a solutions-focused and strategically positioned sales organization in place to ensure that both local and international customers receive the very best sales support in the market. Our experienced sales experts are fully equipped with the in-depth industry knowledge and capability required to identify, and provide guidance to help our customers solve their distinctive challenges, make precise technology decisions and differentiate their market space. SONGWON's sales team speaks the language of our customers and is driven to deliver the right solutions at the right time. Their commitment to service excellence truly sets SONGWON apart.

Building relationships and adapting to needs

Transparency has always been one of the key principles throughout our organization. It is also an important part of how our sales teams interact with both internal, as well as external stakeholders. Having an open dialogue is a win-win approach that gives our customers peace of mind and confidence in SONGWON. By expanding our understanding of their needs, we are able to align these needs with market demands and offer customers the utmost reliability. This is how we build our genuine long-term relationships at SONGWON.

Paving the way for further growth

As SONGWON has grown and evolved, so has the diversity of our business. In the past year, we have broadened our efforts beyond SONGWON's core competence and turned our focus to new areas of interest with above average growth prospects. This supports our aim to offer customers an even more balanced business portfolio. Our sales team has also grown, as well and strengthened their expertise in these new markets and business segments.

In 2016, our sales experts began furthering SONGWON's success in our new and expanded product areas:

- Long-term thermal stabilizers (LTTS)
 - Coatings stabilizer solutions
 - Thermoplastic polyurethanes (TPU)
 - Functional monomers
 - Electronic chemicals
 - Fuel & lubricant antioxidants
-

With these latest solutions, SONGWON has positioned itself to not only win an additional share of existing markets but to truly offer 360° solutions. Throughout 2016, we continued to reap the benefits of our customer-focused, solutions-oriented approach. Our sales team's committed collaboration with customers and dedication to our strategic initiatives, paid off with excellent results.

This year we supported our expansion into these new areas through:

Training

Providing ongoing market-relevant training forms the foundation for our successful sales organization. By exposing our experts to the variety of best practices in the different regions, markets and cultures they operate, ensures that they are always well-equipped to assist our customers.

Expansion

To further drive our successful entry into new markets, we expanded our distribution network. In line with SONGWON's selection policy, we chose our new distributors based on their expertise, strategic local market knowledge and their ability to reliably service our customers.

Collaboration

At the heart of initiating and developing new opportunities and identifying potential business is collaboration. Proactively encouraging and supporting the synergy between sales, our technical and business teams, as well as customers, particularly in new areas, is essential to our ability to provide customized solutions. It also drives our projects forward effectively and efficiently.

Sharing

We aim to share and enhance both our customers' and our teams' own understanding of the market by sharing industry knowledge and insights into local and global trends. We also help our customers to keep up with regulatory information and trends by providing, for example interactive information sessions and our REACH newsletters.

"SONGWON's strong sales organization is well-equipped to effectively engage with customers in new industrial segments and regions. By applying their expertise and identifying additional opportunities to diversify SONGWON's line of products and target markets, as well as offering customers ideal solutions, they will be key to growing the organization."

Philippe Schläpfer, Leader Performance Chemicals



230,000

During the 7 days of K 2016, approximately 230,000 visitors from more than 160 countries attended – 5.5% more than at K 2013.

Again this year, we attended relevant leading global industry conferences and trade shows. A key example was our participation at K 2016 in Düsseldorf, Germany – the world's largest international trade fair for plastics and rubber which takes place every three years. It was a great success and a very good platform to officially present our extended product portfolio.

Looking towards the future, we will build on the solid foundation we have laid this year by continuing to nurture customer relationships and deliver SONGWON's forward-thinking solutions. We also believe that our world-class sales team will play an even greater role in helping us to accomplish our target of moving from being a global additive supplier to a leading specialty chemicals company.

Product strategy and development

Business activity overview in 2016

This year, all four of our product groups made substantial progress and further established SONGWON's position in the market.

Placing emphasis on new-product development enables us to be both flexible and responsive to the ever-changing needs of today's plastics industry. At SONGWON, we also understand that being a diversified organization with a well-balanced portfolio is essential to our future. Expertly collaborating closely with customers to realize new product solutions and our innovation expertise are two of our greatest strengths. And we know that it is only by drawing upon these strengths that we can successfully capitalize on growth opportunities.

Aligned with this, our product strategy has always been directed at developing new products and solutions to fill gaps in our portfolio. With a straightforward approach, we focus on the products we believe will have the greatest value for customers, as well as demand in the market, and then we develop a basic strategy that allows us to maximize global sales.

In 2016, we made great progress with our latest product lines and solidified our leadership position for continued growth. Going forward, we will continue to focus on expanding and maximizing the possibilities within SONGWON's new industry segments and growing our sales in the coming years.

Polymer Stabilizers highlights

In 2016, SONGWON's polymer stabilizers delivered a very strong performance with a growth that exceeded the growth in the market. By focusing on maintaining an optimal balance between growth and profitability, we were able to achieve this solid financial result.

Although there were no major changes to SONGWON's polymer stabilizer portfolio in 2016, we remain committed to supporting industry growth and continued our ongoing pursuit of economy of scale for our large antioxidants.

Committed to SONGWON's goal of being the supplier of choice for our customers and a co-leader along the whole industry value chain, we continued our efforts to optimize our sales channels. This included



“By keeping a close eye on developments in the industry, identifying future market trends and anticipating customer requirements, we strive to build an optimized pipeline of products designed to meet our customers' application demands.”

further improving our service and partnering with new distributors. Once again in close cooperation with our strategic customers and leaders in the industry, we worked on the development of new innovative solutions for specific applications.

We are proud of the fact that our approach to product development was honored this year by Frost & Sullivan. SONGWON received the 2016 New Product Innovation Award for SONGXTEND® 1301. This innovative solution helps XPS producers master the latest challenges arising from the changes to flame retardants in the technology used in XPS.

Working with one of our customers, we were also successful in developing chlorine resistant packages for pipes and developed an initiative to reduce monomers in the final product for another. In addition to this, for several other customers, we were able to develop “purer products” to meet the Non-Intentionally Added Substances (NIAS) requirements.

We also expanded our foothold in China with the new SW-QLF JV now fully operational and staffed. Together we successfully took part at Chinaplas in April 2016, and the response in China so far has been very positive. In line with SONGWON's plans for growth, we will continue to add resources here to further strengthen our presence in this important region.

Tin Intermediates, PVC Stabilizers and Polymers (TPP) highlights

In TPP this year, we successfully launched a global strategy plan for our PVC stabilizers, tin and urethane business. The future direction and development for this will be set according to this internationally focused plan.

Most importantly, we delivered our 2016 target by 100% in volume and 101% in our TPP sales, and filled our sales in China through SW-QLF.

In line with SONGWON's aim to collaborate with partners and further our strategy, we signed a 5-year sales contract with one of our most important Japanese customers for tin intermediates. We also entered into a 5-year co-production agreement with a strategic partner for PVC stabilizers. Furthermore, we expanded our global coverage by entering strategically beneficial partnerships and we strengthened our tin intermediates position in China and the USA by promoting the use of tin intermediates in coatings applications such as automotive paints and glass.

Although we ceased our flocculants business which was no longer in line with the company's strategic directions, we increased PVC stabilizers and plasticizers sales in Korea by focusing on window profile applications with our Ca/Zn stabilizers. We also expanded our urethane business throughout South East Asia.

After the results this year, we are confident that we have really established a good basis for continued success in the TPP business at an international level.

Fuel and Lubricant antioxidants (F&LA) highlights

For F&LA, the main goal for 2016 was to enhance our product offering and service to SONGWON's base of global customers and continue helping them to meet their immediate and future challenges. We confirmed our place in the industry as a key supplier and strengthened SONGWON's reputation with our high service level standards, and also by building relationships with key people within the customer organizations and industries we targeted.

We were also successful in growing SONGWON's market share with our existing and expanded portfolio of solutions. Expanding our presence beyond our key customer base, we also increased investment in our production capabilities to anticipate the market demand in the coming years. The antioxidants within SONGWON's portfolio are an integral part of automotive and industrial lubricant formulations. With the even more highly stringent industry standards introduced in 2016 in Asia, Europe and the USA, we expect the healthy growth rate for antioxidants used within lubricant formulations to continue in the coming years.

We have positioned our manufacturing capability near our global Asian customers' production facilities and thereby ensured that SONGWON is well-aligned to increase capacity in conjunction with our customers' expected expansion plans. On the basis of this, we are confident that we can increase our already strong global antioxidant market share within the F&LA markets and continue to make strong sales in Asia – the region with the highest and largest growth.

We are currently evaluating the portfolio and looking for ways to successfully increase the breadth and depth of our offering in order to fortify our future market position on a global scale.



Specialty Chemicals highlights

SONGWON became a truly recognized specialty chemicals player in the coatings and electronics industries in 2016. For the past two years, we have been able to double our sales year-on-year on the back of major global account breakthroughs which brought significant sales after several product approvals were granted.

In 2016, by successfully developing and commercializing over 100 high quality products, we significantly enhanced SONGWON's competitiveness in this market segment and firmly established SONGWON's overall reputation as a new key player in both electronics and coatings.

Building on this and our success in sales, we are now looking to expand SONGWON's offering by bringing new, innovative products to the market. In connection with this, we have been very pleased with our relationship with Heraeus – a global technology group headquartered in Germany. Since June 2016, the collaboration with them during SONGWON's entry into the electronics sector has been excellent.

At the present time, we are deeply involved with customer specific developments, particularly in the electronics sector and are progressing well with these. In the near future, we expect to see several new innovative products emerging from these collaborations.

The new product lines, launched in 2016 have received excellent feedback from customers. Key coatings and electronics players have both been very keen to test and approve these products. Many of SONGWON's extended range of solutions are currently in the qualification stage with major global players across the world. The reactions to the initial results have been very positive.

This year, we also created excellent sales tools and promotional material to support our team in the field. Furthermore, to make sure that we have the best possible technical coverage, we made significant investments both in time and resources to train our sales experts and distribution partners. Also, to establish SONGWON's identity as a real player in our selected industries, we took part in ChinaCoat 2016 in Guangzhou, China for the first time and also attended many other global fairs.

Looking ahead, we will continue to fortify our portfolio by adding new products to our offering, as well as consolidating SONGWON's reputation in the industry as a dependable, high quality supplier. Through expanding our sales team with highly experienced experts and extending our global coverage by selecting strategically placed key specialized distributors, we will strengthen SONGWON's foothold in the industry.



In 2016, by successfully developing and commercializing over 100 high quality products, we significantly enhanced SONGWON's competitiveness in this market segment ...

Customer Service

Offering best-in-class support

In our dynamic, increasingly complex industry, staying ahead of the competition and keeping an eye on trends and developments is essential to success. At SONGWON, we differentiate ourselves by attracting the best people, offering innovative solutions but most importantly by fostering long-term partnerships with customers. We are passionate about understanding customers' business challenges and are driven to deliver state-of-the-art solutions that meet those challenges.

For us, saying that we believe in continually providing exceptional customer service and always going that extra mile for our customers are not just empty promises. At SONGWON, we mean what we say. In fact, everything we do is centered around doing our best to meet our customers' specific needs, surpassing their expectations and helping them to build their businesses by adding value.

Most importantly, by operating in a way that fosters trust and mutual respect, we strive to be the partner of choice in all of our business relationships. We ensure that each and every one of SONGWON's customers receives the highest levels of personalized care. We know that delivering best-in-class service is only possible through taking time to listen, as well as nurturing strong relationships. Furthermore, investing time in these relationships with customers can provide us with important insights into other business possibilities. Also, it often leads us to uncover new ways of meeting current industry demands and gives us opportunities for expanding the customer segments we cater for.

SONGWON has customers in more than 53 countries. Our expertise and ability to support them before, during and after they purchase our products contributes to their ongoing market success.

SONGWON's Customer Service Centers effectively apply global and regional best practices to meet local needs.


SONGWON has Customer Service Centers in:

- China*, Qingdao
 - India, Panoli
 - Japan, Tokyo
 - Korea, Seoul
 - Korea, Ulsan
 - Switzerland, Frauenfeld
 - UAE*, Dubai
 - USA, Houston
-

* SONGWON Industrial Group JV







“Procurement contributes significantly to SONGWON's strong performance, sustainability and strategic development. The team continuously works on making procurement processes more efficient, targeted and structured to create value for the entire Group, as well as strengthen our ability to grow along with our customers.”

Jongbai Kim, Head of the Korean Procurement team

Procurement

Contributing to competitiveness and profitability

As SONGWON has grown from a local supplier to a global leader, procurement has also grown beyond its traditional role of simply procuring materials, supplies, and services. Today, the procurement team's role is more closely aligned with SONGWON's global strategy and focused on delivering our corporate goals.

Procurement ensures that we can meet both the purchasing criteria of SONGWON's business expansion and our business responsibilities. Most importantly the team contributes to SONGWON's competitiveness and profitability by continually striving to establish a lasting competitive advantage with respect to costs, quality and service.

Procurement's approach is based on:

- addressing all savings possibilities
- incorporating customer needs, organizational goals and market conditions
- aiming to get the best product/service at the best value
- making decisions by analyzing facts and market intelligence
- being stringent but collaborative

Adding value through partnerships

In addition to being active in the strategic-planning process, by identifying opportunities, as well as threats within SONGWON's supply environment and monitoring continuous improvements, the team also adds value by securing partnerships and strategic alliances with suppliers. Over the years, procurement has established an exceptional international network of partners and suppliers, who ensure that SONGWON can offer customers optimal service and a competitive price/value ratio.

In order to align SONGWON's procurement with the organization's global expansion, we have invested in strengthening the team beyond Korea. SONGWON's procurement organization now has local team members in Europe, China and India which supports closer partnerships. Placing our people locally also enables us to strategically select the best suppliers and helps to guarantee the reliable and sustainable raw material resupply for SONGWON at the lowest possible cost.

Always aiming to promote relationships of mutual respect and professionalism, our procurement team is dedicated to the principles of open competition and fairness. Therefore, to support our global organization and operations in numerous countries, procurement selects suppliers on the basis of fair, pre-defined criteria.

At SONGWON, we have always sought to work with the most qualified suppliers who are committed to safely and reliably delivering quality goods and services on time and in line with SONGWON's standards. We expect our suppliers to have the same dedication to the highest sustainability, safety and ethical standards as SONGWON. In 2016, the team continued collaborating with suppliers to reduce SONGWON's ecological footprint by lowering energy consumption, reducing emissions and optimizing wastewater streams and chemical production processes.

Overcoming uncertainty

In order to make sound decisions in today's highly volatile and uncertain market conditions, it is essential for SONGWON's procurement team to have adequate information at hand at all times. This includes knowing which supplier can supply what quantities with what lead times.

Capitalizing on the information available, our procurement team delivered considerable savings and contributed to SONGWON's bottom line profit by taking advantage of market conditions, supply/demand imbalances, as well as favorable Forex conditions. They also successfully mitigated the difficult sourcing environment in 2016.

In 2016, the procurement team successfully mitigated the:

- high volatility and considerable price increases in oil dependent raw materials driven by economic recovery and political instability in the oil producing countries
 - strong increase in vegetable oil (e.g. palm kernel oil) due to climate changes and two consecutive storms ravaging the palm tree plantations in South East Asia
 - big increases in tin metal prices due to the political decisions made by the Indonesian government
-

Supply Chain

Securing supply reliability

We rely on our supply chain to meet the increasingly dynamic demands of our customers. Not only do they expect fast, reliable delivery of high-performance solutions, they also seek the fulfillment of their sustainability, safety and cost requirements. In today's global environment where volatility has become the norm, the agility and responsiveness of our supply chain is fundamental to our ability to successfully compete in the industries SONGWON serves. So, to ensure that we can provide our customers with the solutions they require exactly when they need them, we continually make sure that SONGWON's supply chain is equipped to rapidly respond to their fluctuating demands.

SONGWON's highly committed international supply & logistics (ISL) team is an essential part of the organization's business operations. Through best-in-class forecasting, demand management, planning and timely delivery, the team constantly seeks to maximize value. By combining an integrated and collaborative approach to business planning with solid supply chain best practices, ISL makes a significant contribution to the entire company.

Our supply chain competencies in logistics and warehouse management are also a proven key success factor and provide SONGWON with a strong basis for sustained competitive differentiation, as well as long-term market advantages.

Our Supply Chain organization:

- is based on a proven service model
 - acts quickly with high flexibility
 - goes the extra mile for SONGWON's customers
 - reaches globally but executes locally
 - focuses on the security of supply of raw materials
 - is equipped with state-of-the-art supply chain processes and tools
-

Extending our reach

SONGWON's global supply chain sits at the very center of our growth strategy, not as a one-way chain but as a network of various stages all dedicated to the highest standards of fulfilling our customers' requirements. In recent years, the organization's continued economic growth has subsequently led to more complexity for ISL. The number of our customers has also progressively increased and the team must now deal with more countries and regions, and a much wider variety of products and services. ISL's responsibilities also include meeting international supply chain regulations and they take pride in their ability to work collaboratively across all divisions and across all geographies with success.

In today's business landscape, market unpredictability has also increased and become a daily challenge. This has given rise to the need for our supply chain to become more flexible and able to respond to frequent surges in demand and supply.

One of ISL's most recent challenges relates to SONGWON's penetration of the fuel and lubricants industry. This new direction brought a dramatic increase in the need to ship liquid products around the world. In response, ISL quickly adapted and developed the necessary competencies and skills to enable them to stay ahead of the organization's growth and our global customers' expectations.

Meeting our responsibilities

In 2016, the ISL team continued to focus on understanding market dynamics and securing advantages for SONGWON, in terms of best-in-class logistics suppliers, good collaboration and developing key sustainability supply positions for SONGWON and our customers with respect to reducing our overall ecological footprint.

SONGWON's success is directly linked to our suppliers' ability to deliver the materials and services we need to manufacture and produce the quality products our customers expect from us. ISL seeks to build relationships with suppliers based on the principles of social responsibility.

We expect all of SONGWON's suppliers to adhere to the same high social, ethical, and environmental performance and safety standards that we demand of ourselves. ISL always make sure that suppliers working with us are aware of SONGWON's sustainability targets and share in our principles that encourage sustainable business standards.

This year, the team successfully mitigated the difficult environment affecting the logistics of transporting SONGWON's products to resupply our regional local warehouses and making sure our solutions were available when needed. They also ensured that our finished products were delivered in time at the lowest possible cost to meet our customers' growing environmental, sustainability, safety requirements and delivery times.

Building transparency and avoiding risks

For us, upgrading SONGWON's own technology and streamlining supply chain processes is critical to our ability to keep up with the latest developments. As a global player, our supply chain now spans many legal jurisdictions, industries, markets and cultures. For this reason, transparency has become vital to risk management and mitigation.

ISL's ability to access, learn from and act upon the information gained from visibility into the extended supply chain, places them in a better position to manage more effectively potential risks for SONGWON. Furthermore, not only does SONGWON require the most optimal levels of transparency but our customers are also demanding higher levels of transparency and reporting within their supply chains.

In August 2016, Hanjin Shipping Co., Korea's largest container line and the world's 7th largest container shipper went into receivership. The shipping company was one of SONGWON's key logistic providers. When the company collapsed in late August billions of dollars in cargo was stranded at sea and supply chains worldwide were disrupted. Thanks to ISL, SONGWON had ceased working with Hanjin two months before its bankruptcy and escaped the crisis.

“Having a flexible and responsive supply chain enables us to achieve consistent top- and bottom-line growth, build a sustainable future and create competitive value for SONGWON and for our customers.”

Daekeun (DK) Lim, International Supply Logistics Manager

Opportunities and challenges

In 2016, ISL was able to take advantage of the numerous global opportunities which arose:

The Korea China FTA – came into effect on December 20, 2015 and brought significant benefits. With China being the world's single largest importer of South Korean goods, the free trade agreement served to lower duties on goods, positively boost business exchange and bilateral trade which has ultimately led to expanded trade volume.

United Nations sanctions on Iran – were lifted in January 2016, opening the door for SONGWON to start shipping to Iran.

Panama Canal expansion – was completed and resumed operations on June 26, 2016. The expansion provides larger ships with a fast, cost-effective, all-water route from Asia to the major US East Coast ports.

Korea-Colombia FTA – became effective on July 15, 2016 allowing Korean companies greater access to the third largest market in Latin America. The agreement also brought immediate tariff eliminations and decreases which will be made over the next 10 years. Having the third largest population in South America, Colombia is regarded as one of the fastest expanding consumer markets in the region.

Global Application Community & Technical Service

Customer-centered development & expertise

At SONGWON, we have always focused on increasing our knowledge of what our customers' challenges are and sought ways of contributing to their success. In order to strengthen this commitment in 2016, we further expanded Global Application Community (GAC) and Technical Service.

Expanding our capabilities

SONGWON's GAC is responsible for bridging our well-established application development process with customers' needs. Leveraging its decades of experience with extensive industry knowledge, the team identifies possibilities and employs a creative approach to innovation to turn product development potential into reality.

In addition to new expertise coming on board, GAC began extending its application testing beyond polymer stabilizers to SONGWON's newest product lines. To support the expansion of these additional areas, a dedicated, multi-purpose GAC lab was established within SONGWON's new Maeam Technology Center in Korea. Equipped with the latest analysis and testing equipment, the lab was designed to meet the most challenging customer requirements.

Staying a step ahead

The ever-increasing speed of today's markets combined with safety and performance requirements becoming more challenging has resulted in customers demanding more than just a product to improve their compounding and production processes. Application support and help keeping up with industry rules and regulations is essential to them. In response to this, SONGWON's GAC always stays a step ahead and stands by ready to offer our customers the comprehensive support when they need it. For example, in 2016 GAC already identified and prioritized regulatory issues which will impact polymer stabilization in the next 10 to 15 years.

Competitive advantage through collaboration

Just over five years ago, we established a solid partnership with SABO, an Italian based producer of HALS which strengthened SONGWON's position in the light stabilizer arena. The partnership also brought together the R&D and applications capabilities. In 2016, together with SABO, GAC successfully launched the development of 3rd generation light stabilizers, which are suitable for LLDPE rotational molding applications. These and other light stabilization packages are providing both SONGWON and SABO access to new market segments.

GAC continued working hand-in-hand with SONGWON's Technical Service team and most importantly with customers. GAC's main aim is to find breakthrough solutions that improve our customers' products and give them a competitive advantage in the diverse industries they serve like consumer electronics, healthcare, building & construction, agriculture, transportation and automotive.

Using the information provided by SONGWON's sales or technical service teams on the needs of customers or market segments, GAC experts select the most interesting areas with potential and develop new platform concepts to match the demand. After the platform technology is established, the commercialization of individual products can be done together with sales and technical service.

Prize winning development by GAC & Technical Service

SONGXTEND® 1301 specially designed to protect new polymeric flame retardants (pFR) in extruded polystyrene (XPS) applications. As the 2nd generation stabilizer for this market, it maintains better molecular weight and color of XPS containing new polymeric flame retardants (pFR), as well as offering a broader processing window compared to the current state-of-the-art stabilizers on the market.

“Over the years, GAC and Technical Service's expertise and commitment to helping customers tackle new market requirements has become well-known in the industry. SONGWON's global organization and flat structure makes it possible for our teams to better understand and anticipate market needs, assess global megatrends and respond quickly to customer enquiries.”

Thomas Schmutz, Leader Global Technical Service & Application Development

Identifying opportunities & providing expert support

Technical Service makes a significant contribution to generating new business for SONGWON by identifying new market segments and the areas where existing products can be improved. This year, they extended their expertise and support to SONGWON's new application areas, lubricants and coatings.

The team also helps customers to reformulate and optimize their application performance. Furthermore, our Technical Service experts act as facilitators between SONGWON's customers, our sales people and our internal organization – Business Management, Manufacturing, R&D and the Global Application Community.

Working closely with GAC and SONGWON's customers, Technical Service's areas of focus in 2016 year were:

- **Driving customer specific projects** related to improving the processing stability of polyolefins, based on our broad range of phenolic antioxidants, solid phosphites and SONGXTEND® solutions
- **Further extending our product range** for PVC chain stoppers, after the successful launch of the liquid chain stopper SONGXTEND® 3501DW. This new development is currently in the process of test marketing with key customers
- **Broadening our offering** of light stabilizers by launching SABO®STAB UV 229 50PP for the high-end automotive market, which also meets the cost expectations of the Asian market
- **Implementing alternative solutions** for greenhouse film applications in markets like South America, Central America, the Middle East, India and North East Asia. This is being done in cooperation with our partner SABO, who develop alternative solutions to meet all the requirements in these regions

- **Building on our success** after receiving the Frost & Sullivan 2016 New Product Innovation Award for the proactive development of the stabilizer package, SONGXTEND® 1301 for the XPS application containing a new polymeric flame retardant. We are also well underway with projects in other markets like the Americas and China where the switch to the new polymeric flame retardant will also be taking place

Close to our customers

Being close to our customers enables us to be well-informed about the latest industry trends and conditions in which our customers operate. Equally, it is very important to us that SONGWON's customers know that they can count on us for outstanding technical support wherever they are located in the world.

In line with our strategy for growing SONGWON's image in China as a leader with vast knowledge and experience in the stabilization market, we extended our technical service to the region by establishing our JV QLF in Qingdao in 2016.

To ensure that our expertise is always close at hand, SONGWON has dedicated support centers based in 8 countries:

- China, Qingdao – **new**
 - Germany, Greiz
 - India, Mumbai
 - Japan, Tokyo
 - Kingdom of Bahrain, Manama
 - Korea, Ulsan & Suwon
 - Switzerland, Frauenfeld
 - USA, Houston
-

Research & Development (R&D)

Innovating and creating value for customers

R&D is the foundation on which SONGWON's history has been built. It is a driving force for profitable growth and key to the organization's continued future success. Over the years, our excellent R&D capabilities have played a major role in helping SONGWON to become the partner of choice for customers in the wide range of industries we serve.

However, at SONGWON we know that in today's ever more competitive, demanding and rapidly changing world, simply offering quality products is no longer enough to maintain a leadership position. We also understand how vital it is for us to constantly adapt to our customers' evolving needs. For this reason, in addition to striving every day to find leading edge solutions to bring to the marketplace, we also focus our efforts on continually improving our existing products and ensuring we create value.

Investing in the future

To serve the diverse requirements of our broad customer base and meet the demands of the market, we invest in our R&D each year to make sure that it has the necessary resources and conditions to develop new, advanced solutions. In 2016, SONGWON invested 4.5 Mio USD in a new Technical Excellence Center in Maeam, Korea. The center was designed and equipped especially for SONGWON's future R&D activities which include all our application areas, such as polymer stabilizers, flame retardants, coatings, lube additives, electronic materials, tin intermediates, PVC stabilizers and polymers.

We also ensured that R&D has what is needed to provide the essential strategic support, innovation and technology to other functions within SONGWON. To improve and support closer collaboration across SONGWON's business functions, R&D's internal structure was reorganized from 3 teams to 5. Also this year, 3 new experts came on board to help support all R&D activities.

Looking ahead, R&D will continue to concentrate on progressively improving and developing more efficient processes, as for example with polymer stabilizers, while supporting SONGWON's businesses with innovative products and competitive cost structures.

In 2016, R&D developed 10 new products which were successfully commercialized. They also established new processes for 8 products. As always, sustainability remains at the heart of all R&D's process and product development at SONGWON.

Forging new fields

In addition to improving the polymer stabilizer process, R&D focused its efforts on two main areas in 2016:

1) Developing products to expand our new product lines, lubricant additives and specialty chemicals

This year, we devoted 70% of SONGWON's R&D resources to our new product lines: lubricant antioxidants, functional monomers, coatings, and electronic materials which we believe will drive the future of the organization. As a result, in addition to the 10 products that were commercialized, we also successfully brought a new product into smooth production after only a short development period.

2) Further building R&D's technical strength and business focus as a core competency for the future

SONGWON has always been an R&D driven organization that has focused on innovation. In 2016, we have strengthened our R&D culture with education programs that support our aim of expanding SONGWON's product offering. By enabling the fusion of conventional and new technology, we have also solidified our R&D platform for the future.

Collaborating for innovation

From the very beginning, we have understood the value of sharing knowledge and leveraging expertise. This is the reason why we look for the most up-to-date knowledge and resources all over the world, and seek mutually beneficial, cooperation opportunities within the industry that help us realize our strategic ambitions.

In 2016, SONGWON joined forces with the Heraeus Group, based in Germany to develop and market high-end specialty chemicals for the electronics chemical industry. By combining our strong expertise in R&D and chemical manufacturing with Heraeus' technical capabilities and high reputation in this industry, both companies have broadened their access to the global electronics market and taken the business to a whole new level. R&D is also cooperating with leading institutes on the development of other new products.

Protecting innovation

Protecting our innovations is crucial to SONGWON's business success and patent strategy and investigation has become one of R&D's most important activities.

12 patents were registered and maintained in 2016

In addition, patent investigations were carried out during the entire year in order to ensure that the FTO exists in relation to all the new products and technologies that SONGWON's R&D team is in the process of developing.

"SONGWON's R&D vision is to 'share the chemistry and sell the value'. By leveraging our expertise, it is our goal to innovate and create, and further develop new business. Moving forward with SONGWON's new R&D business model, our plan is to become a sustainable organization whose target lies beyond just selling material to truly selling value."

Dongkyung (DK) Park, Leader Research & Development



“SONGWON's proven manufacturing excellence model and dedicated workforce, combined with our rigorous EH&S culture makes it possible for us to reliably produce the quality products our customers have come to expect. It also enables us to expand our manufacturing footprint and successfully enter new areas of business.”

Giacomo Sasselli, Leader Operations

Manufacturing Excellence

Committed to high-quality and reliable supply

Our excellence in manufacturing has been the foundation for SONGWON's continuing success, as well as future growth. Now more than ever, with global industry requirements becoming more demanding every year, customers rely on us for our manufacturing quality and high service standards. Therefore, sustaining our excellence in manufacturing is crucial to becoming, and remaining the supplier of choice for our customers.

At SONGWON, we are dedicated to ensuring that our high-performance solutions are always available when the industry needs them. To enable us to deliver products of superior quality and performance to our customers in the most efficient and environmentally responsible way possible, we invest in the latest technologies. Committed to exceeding environmental, health, and safety standards, we continually optimize our operations by implementing world-class manufacturing techniques and highly sustainable processes. Most importantly, to maximize SONGWON's profitability we also focus our efforts on cost reduction through improving our chemical yields and aiming to reduce the consumption of utilities wherever possible.

Since 2006, we have been steadily increasing our production capacity to correspond to the needs of the markets SONGWON serves. Part of our strategic approach to meeting emerging market requirements includes international expansion. Regularly investing in our facilities across the globe and adapting our manufacturing footprint is an ongoing process and supports us to secure our technological competitiveness, increase our capacity and ensure reliable supply.

Extending our manufacturing footprint

We strive to ensure that SONGWON can deliver the same technology to our global customers wherever they are located and take pride in our 9 world-class facilities: 3 in South Korea, 2 in China, 1 in Germany, 1 in USA, 1 in India, 1 in UAE.

One of our main priorities in 2016 was consolidating the production lines for SONGWON's new ranges of specialty chemicals. Integrated into our existing manufacturing sites, SONGWON's newest production lines, EDOT (3,4-Ethylene DiOxy Thiophene) and ELO (ELectrONic) are especially designed to overcome the challenges of producing much lower volumes of products with extremely high purity levels.

This year in manufacturing we:

- increased AO capacity and established a new plant for the specialty chemical products for the electronics industry in Maeam, Korea
- developed and plan to install FFS technology (Form, Feed, Seal) for packaging the final products, which will preserve sterility and lead to cost and waste reductions in Maeam, Korea
- improved the technology for our specialty AOs and the final quality of some of our tin derivatives in Ulsan, Korea
- continued our ongoing project smoothly to increase the thermoplastic polyurethane (TPU) capacity in Suwon, Korea
- started up the successful production of specialty chemicals for electronic applications, and developed functional monomers for the coatings industry in Panoli, India
- consolidated our OPS production and sales effectively in the Middle East at our plant in Abu Dhabi, UAE
- made customized packaging and new, non-dust physical AO forms available, and established a service hub for the Americas region in Houston, USA
- opened our latest state-of-the-art facility and officially started commercial production of OPS in Qingdao, China
- celebrated our 10th anniversary of expertise producing dust free polymer additive packages (OPS) in Greiz, Germany

SONGWON's manufacturing strategy is founded on:

- reliably supplying customers with exceptional product quality according to their needs
 - looking for continuous improvement and efficiency to achieve operational excellence
 - leveraging our know-how and assets to produce economies of scale
 - seeking sustainable solutions and being environmentally responsible
 - maintaining a clean, safe manufacturing environment
-



Maeam



Ulsan



Abu Dhabi

Suwon



Houston



Greiz



Panoli



Qingdao





“At SONGWON, QA is solidly embedded in our day-to-day operations, all the way from the first steps in the process to product delivery. With our new QMS, we can ensure that we can meet the highest quality standards and that all aspects of our business are as reliable as the performance of our products.”

Doug Excell, Leader Quality Assurance,
Regulatory & Best Practices

Quality Assurance (QA)

Committed to quality

As an industry leader, we are proud of our reputation for quality, service and helping our customers to overcome their challenges. With our globally positioned state-of-the-art facilities, technical know-how and extensive industry expertise, we provide a systematic approach to supporting the quality assurance (QA) efforts of our customers in all aspects of their operations by providing safe, high-quality products that are worthy of consumers' trust.

Responsible for ensuring the highest level of quality assurance, SONGWON's QA team plays a crucial role in the overall direction and success of the organization. They make sure that the objectives set are achieved and quality is assured. All of SONGWON's QA efforts are supervised at the highest level of our organization.

Sustaining high standards

Our deep commitment to sustaining high standards drives us to reach the maximum quality and service levels possible for all of SONGWON's global customers. Ever since SONGWON received its ISO certification in 1995, we have had a strict set of operating procedures in place, and our QA professionals regularly conduct extensive, well-documented quality control measures.

Furthermore, ISO certification demonstrates SONGWON's uncompromising focus on quality, and improving our operations so that we continue to consistently meet the increasing expectations and changing needs of our customers.

SONGWON and ISO

SONGWON was first awarded the ISO 9001:2008 certification in 1995. In 2016, Songwon Additive Technologies – Americas Inc. (OPS manufacturing) was included in the certificate.

ISO 9001:2008 certification helps to ensure that customers get consistent, good quality products and services by setting out the criteria for a quality management system (QMS). The criteria are based on several quality management principles which include: strong customer focus, processes, and continuous improvement.

To achieve certification, an organization must demonstrate that it:

- can consistently provide products or services that meet both its customers' and all the applicable regulatory requirements
- seeks to enhance customer satisfaction through the effective application of the system, including processes for continually improving the system, and the assurance that it conforms to customer and applicable regulatory requirements

At the moment, we are currently revising all the ISO procedures within SONGWON according to ISO 9001:2015 with the aim of completing the process by the end of 2017.

In order to comply with the most recent ISO standard's requirements, we need to plan and implement actions to address risks and opportunities. Addressing both risks and opportunities, establishes a basis for increasing the effectiveness of the QMS, achieving improved results and preventing negative effects.

Other important certifications

As a global leader, we endeavor to make sure that our products have the necessary certifications for each of our market segments. There are markets around the world that we would not be able to export to unless our products had certain certifications such as kosher or halal. Such markets include the Middle East, Indonesia, Malaysia and to some degree, Singapore. Furthermore, having these certifications can also help generate additional sales revenue by providing an avenue for gaining access to new markets and customers.

To receive kosher certification for a product, each ingredient, food additive and processing aid used in its production must also be kosher, meaning it complies with Jewish religious dietary law. SONGWON's main polymer stabilizers received Kosher Certification in 2014, and in 2016, SONGNOX® 1135 LQ, SONGNOX® 6260 and SONGNOX®DTBP-MA were also kosher certified.

This year, SONGNOX® 1135 LQ was also Halal Certified. Having products halal certified assures customers that each and every ingredient used in the product comes from a Halal origin, and that our products are manufactured under strict hygienic and sanitary conditions.

Keeping a close eye on quality

SONGWON's QA team is in the process of establishing a new QMS system and by keeping a close eye on its effectiveness, they can continually make improvements. At SONGWON, all QA processes are documented and evaluated through regular internal and external audits. Once a month, senior representatives from Business Management, Sales, Manufacturing and Supply Chain meet to discuss, analyze and evaluate any relevant quality issues that have arisen and share the notes from these meetings with others in the organization.

We take complaints very seriously at SONGWON and make sure that they are addressed immediately and traced in a Non-Conformance Report (NCR) with appropriate corrective actions. The QA complaint task force team also collects all internal, supplier and customer complaints and seeks ways of eradicating the root causes and resolving them as quickly as possible.

In 2016, we introduced an online complaint management system (CMS), which effectively handles both external, as well as internal complaints, and tracks the progress in real time. The new system also makes it possible for the QA team to easily access the complaint progress information. This provides more transparency and reduces the workload of those involved in the process. In addition, the system allows us to analyze the time required for each individual process step. This built-in statistical data gives us quick insight into trends and patterns relating to complaints which help us to avoid recurrence. Our new CMS is already proving to be valuable and we look forward to reporting concrete results in 2017.

SONGWON's CMS:

- effectively handles both internal and external complaints
 - tracks complaint progress in real time
 - creates more transparency
 - reduces workload
 - analyzes the time required for each process
 - provides built-in statistical data
 - helps to avoid complaint recurrence
-

SONGWON's memberships

- 1** SPE (Society of Plastics Engineers Korea)
www.spekorea.org
- 2** The Korean Chemical Society
www.kcsnet.or.kr
- 3** Korea Industrial Safety Association
www.safety.or.kr
- 4** European Light Stabilisers and Anti-Oxydants – ELISANA
www.elisana.org
- 5** Light Stabilisers and Antioxidants LiSAO – REACH Consortium
www.reachcentrum.eu
- 6** OrganoTin REACH Consortium
www.reachcentrum.eu
- 7** European Petrochemical Association – EPCA
www.epca.eu
- 8** Gulf Petrochemicals and Chemicals Association – GPCA
www.gpca.org.ae
- 9** American Fuel and Petrochemical Manufacturers – AFPM
www.afpm.org
- 10** Japan Hygienic PVC Association – JHPA
www.jhpa.jp
- 11** Japan Hygienic Olefin and Styrene Plastics Association – JHOSPA
www.jhospa.gr.jp
- 12** Korea Specialty Chemical Industry Association – KSCIA
www.kscia.or.kr
- 13** Korea Chemicals Management Association
www.kcma.or.kr





Our People



An exceptional group of individuals

Our employees are the very essence of our organization. SONGWON was built by an outstanding team of talented professionals with a deep commitment to providing the very best solutions and service to our customers. Our people are responsible for SONGWON's sustained success and they ensure that we have a constant competitive edge.

Working across the business and borders, our global team is united in their determination to collaborate and share their ideas, and expertise with the aim of exceeding our customers' expectations worldwide. Every individual is driven to succeed, not just for our business and for our customers but for themselves. SONGWON's people are a group of individuals who place the highest expectations on themselves and are committed to giving 100% to whatever they do. In addition, to the exceptional way they perform their daily tasks, they are always willing to improve and challenge both themselves and their colleagues to go the extra mile. It is this team spirit and sense of pride in being the best they can be that sets us apart as a best-in-class organization. SONGWON's employees make SONGWON special and contribute to the entrepreneurial spirit and collaborative culture that exists within the company.

Supporting our special team

We know that our people are the cornerstones of SONGWON's success and we treat them as such. SONGWON's HR philosophy is built around acknowledging the essential role each individual plays within our organization and the way they add value to everything. Therefore, apart from providing a safe and healthy place to work, we are dedicated to fostering a supportive working environment that values individual talents, encourages teamwork, and where every person feels valued, respected and able to contribute their best.

As an equal opportunities employer, we place great importance on treating all of our employees fairly and with great respect. In accordance with this, SONGWON offers competitive compensation and employee benefits.

To ensure that all of our people feel valued and supported we:

- Empower our employees to innovate, contribute and collaborate
 - Support innovative thinking and entrepreneurial team spirit at all levels
 - Encourage all of our people to express their ideas and opinions
 - Enable our employees to take responsibility and make decisions that contribute to SONGWON's growth
 - Value the diversity of our employees and the unique perspectives they bring
 - Endorse open and honest two-way communication that builds trust
 - Challenge each individual to grow, learn and develop their full potential
 - Acknowledge employees' efforts, hard work and achievements
-

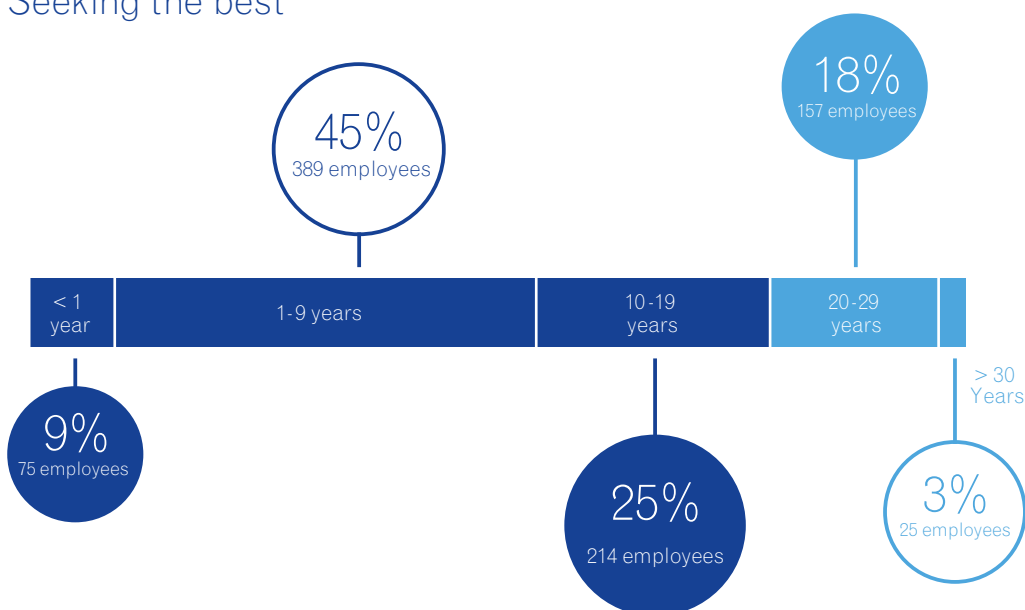
The strength of our diversity

As a global leader, we have a global workforce with a multi-cultural mindset. We value diversity and find it enriching. Coming from many different cultures and united by the same goal, our employees work very successfully with colleagues and customers from different parts of the world. Everyone within the SONGWON team treats one another with respect and exercises tolerance.

Most importantly, right at the very heart of our company is an inclusive culture in which colleagues feel like part of a family. In line with this, all of our policies and practices (such as parental or sick leave) focus on fostering diversity, respecting human rights, offering equal opportunities and supporting non-discrimination. And in compliance with regional and local laws and regulations, SONGWON is committed to providing a working environment which encourages people of all backgrounds and beliefs to work well together in the pursuit of excellence.

We have learned to harness our employees' diverse talents and take advantage of the varying perspectives and different ways of working. In our increasingly competitive, global marketplace, our diversity is a valuable strength and key contributor to SONGWON's success.

Seeking the best



SONGWON offers employees a truly international and dynamic environment where every individual has various possibilities to expand their horizons both professionally and personally. In addition to our aim of being the customers' supplier of choice, we direct our efforts to also being the employer of choice in our industry. For this reason, we seek to hire and retain the most talented, skilled and highly experienced people. To be the best, we need to attract and keep the best.

182 of our employees have been working at SONGWON for more than 20 years

We now have 860 employees across the globe – a strong team built upon years of experience, with each and every one pursuing excellence in everything they do. At SONGWON, it is our priority to continue to build and maintain our multicultural and motivated workforce by offering challenging opportunities in all areas of the organization to our self-motivated, customer-focused and talented individuals.

For this reason, wherever it is possible and in line with SONGWON's global HR policies, we always seek to hire from within our organization. To find the most suitable candidate for mid- to lower-level positions, we always look locally first and only if unsuccessful, do we broaden our search to other regions until we find the 'right' person for the job.

SONGWON gives individuals the chance to:

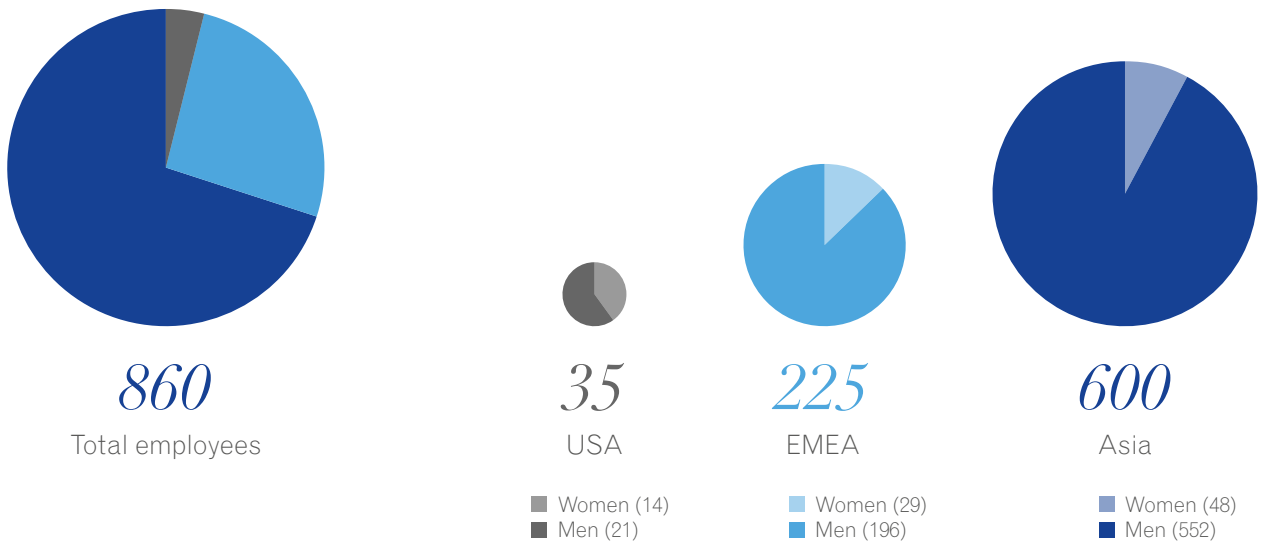
- work with people who are committed to doing their best – and to being the best
- become the experts at what they do and share this expertise
- shape and influence SONGWON's future
- earn the trust of our customers and contribute to their success

Supporting growth and development

At SONGWON, we believe that the best path to success is to take pride and contribute to exceptional results. We also understand that an integral part of employee satisfaction is personal development.

To help our employees achieve our strategic aims, SONGWON has a performance review system (PRS). The PRS aligns areas of work with SONGWON's goals and assesses the employees' performance against a clear set of leadership expectations. Above all it helps us to motivate and develop our people by providing employees both a context and purpose for their areas of work, and enabling them to clearly understand their contribution within SONGWON's global team. In line with our policy of fairness and respect, the main goal is to encourage a two-way feedback discussion between the manager and the employee that is fair and accurate, as well as developmental and inspiring.





Employee insight

Building skills through exchange

Sunha Park from our Maeam office in Korea took part in a 3-month exchange program in SONGWON's offices in Frauenfeld, Switzerland and Houston, USA.

"Participating in this exchange program was a wonderful experience for me with many advantages. Most importantly, I really improved my English by having to use it every day to communicate. Furthermore, I had the opportunity to establish a good relationship with all of my colleagues in Switzerland and the USA by getting to know them better and understanding their ways of working. On a more personal level, managing my life outside of my culture on my own in such different environments enabled me to grow as a person and gain more self-confidence."

Sunha Park, Controlling & Planning

In addition to offering people a dynamic international environment and the opportunity to work with colleagues and customers from many different cultures, SONGWON offers valuable on-the-job training. Apart from acquiring the hands-on experience they need to develop their skills, this practical training equips them with the knowledge they require to perform at the highest possible levels.

Over and above these, SONGWON's employees can also gain on-the-job experience through targeted trainings which are especially tailored to the needs of their specific job function. These are determined according to each individual's role and area of responsibility, and the type of training throughout the organization also according to the need. Furthermore, when SONGWON establishes any new policies, we conduct internal trainings across our entities in order to effectively implement them locally.

In 2016, we introduced English language and technical training exchange programs for key functions working closely together with group functions. We also launched our International Assignment Program aimed at:

- **bridging** our different cultures (Asian and Western)
- **motivating**, educating and further developing key employees with international experience
- **retaining** key employees

We expect these international assignments to bring real long-term benefits for the organization when the expatriate employees return to their own countries and share the experience and understanding they gained with others.

*Employee insight***Knowledge building and global perspective**

Jungdu Kim from our Ulsan office took part in technical trainings and meetings at our European Headquarters and visited the plant of one of SONGWON's partners.

"During my tour, I learned a great deal about SONGWON's global processes, the way Technical Service works in a European environment and how to lead successful customer meetings. I also gained a deeper understanding of global processes and acquired first-hand knowledge of our HALS products and their applications. Above all, the experience really expanded my horizon and has better prepared me for taking on my future role in the USA next year."

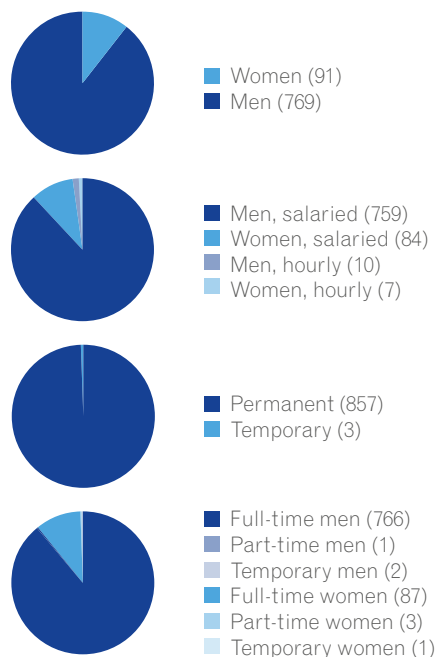
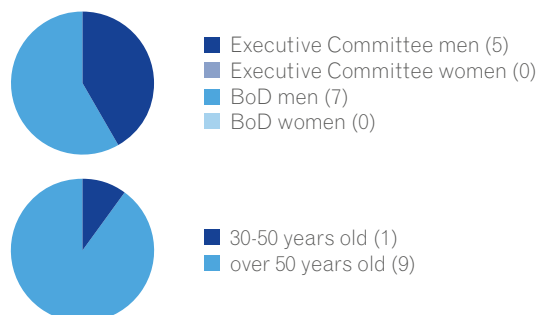
Jungdu Kim, Global Technical Service

Our investment in the development of our talented global team and the hiring of the best people in the industry will continue. In this way, we can make sure that SONGWON remains a consistently well-placed partner for our customers, with the ability to meet their future needs and support their success.

Maintaining the highest values and principles

We are thoroughly committed to acting honestly, fairly and in good faith with SONGWON's customers, suppliers, competitors, the public, as well as with our employees. For us, being a successful organization is not just about our performance and achievements; it's also about acting in a responsible, ethical and law-abiding way. It's important that our employees are engaged and feel proud of being a part of a company that has the highest standards of integrity and passionately protects its people, assets and reputation.

It is SONGWON's culture of responsibility towards each other and all our stakeholders that demonstrates our commitment to really living our values on a daily basis. SONGWON'S fundamental company values, ethical principles, compliance with laws, rules and regulations, as well as the guidelines and procedures for our organization are clearly summarized in SONGWON's comprehensive Code of Conduct.

860 Total work force**Executive Committee & BoD**

2 men and 2 women took parental leave during 2016 and returned back to work.

Employees	Leaving	Hiring
By gender		
Total	41	113
Men	40	100
Women	1	13
By age		
Total	41	113
Over 50 years old	6	7
From 30 to 50 years old	15	34
Under 30 years old	20	72
By region		
Total	41	113
Asia	24	54
Europe, Middle East & India	15	40
North & South America	2	19

Every SONGWON employee understands that they are personally responsible for complying with all applicable laws, directives, policies and regulations. We make sure that all of our employees are trained in and aware of SONGWON's values from the moment they become part of our team.

We are proud that once again in 2016, we had no incidents to report that go against our principles, such as corruption. And we also had no significant fines (of either monetary or non-monetary value) for non-compliance with laws and regulations.

Improvements in the pipeline

HR is playing an increasingly strategic role in driving SONGWON's business performance and success. To better align it with SONGWON's goals and increase its overall effectiveness, we are continuously looking at where we can optimize.

In accordance with this, SONGWON's HR began a move towards transformation in 2016 by:

- introducing a holistic approach to performance management that includes development conversations and differentiated performance assessments
- modernizing interview methods to make them more professional in order to discover the best talents
- developing and implementing an integrated Performance Tracking System
- launching new key staff mobility and rotation programs on a regional and global scale
- assessing skills and designed development plans for global leadership positions

Looking forward, we will continue to direct our efforts into significantly optimizing our HR processes and systems, with a special focus on:

- developing key people
- recruiting according to the "cultural fit"
- systematic onboarding
- integrated performance management
- records management systems

By improving these processes, we can ensure that SONGWON's local and global HR management professionals are valued partners to SONGWON's leaders across all the areas of the company.

Message from SONGWON's Global Human Resources Director, Beatrice Iuorno

For SONGWON's HR team, 2016 has been an exciting year. Our regional and global HR teams played an essential part in securing future success for the organization. HR at SONGWON is steered by its partnership with all areas of our business to create an environment where our employees can prosper and are able to deliver sustainable performance.

In 2016, all of HR's activities were in line with priorities set by SONGWON's Executive Board, and we successfully achieved a majority of our objectives, with the rest ongoing or close to completion.

In particular, we focused on the following priorities:

- attracting entrepreneurially minded professionals – approachable, creative and credible people with passion and expertise
- developing the competences of our key people in functional and management roles
- leveraging the Executive Board's leadership style in the upper management level
- instilling SONGWON's new core values

Plans for new activities were also determined this year and will form the strategic direction for HR in the coming years. There is still a lot of work for us to do but we are confident that we have the ability and commitment to successfully accomplish the goals we have set to achieve.

Nationalities newly hired in SONGWON Industrial Group



Corporate Social Responsibility	71
Regulatory Affairs & REACH	75
EH&S & Sustainability	79
Global Reporting Initiative Guidelines (GRI)	88
SONGWON's GRI G4 Content Index	94



Corporate Responsibility



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.

Corporate Social Responsibility

An integral part of who we are

To deliver the most advanced high-quality solutions and provide the best-in-class service for customers is our main objective. But there is much more to SONGWON than just that. First and foremost, we are highly committed to being a responsible company that is continually improving our ecological footprint, as well as taking care of our people and the communities we serve.

At SONGWON, Corporate Social Responsibility (CSR) is at the heart of our business and an integral part of who we are. We believe that performance and responsibility are inseparable. For us they belong side by side, and this belief is a key part of our culture. Our approach to CSR, and the way we conduct our business at SONGWON in general is founded on the values of passion, integrity, excellence, credibility and teamwork, and focused on understanding the needs of our customers and our communities.

We recognize that SONGWON's growth and long-term success depend on the overall health of the economy, the environment and society, and on a continual succession of diverse and highly talented people. CSR is a strategic thread that guides us in managing our impact on society, and contributes towards a more sustainable way of doing business. It ensures that we always consciously consider the direct and indirect impacts of our operations on all of SONGWON's stakeholders including our employees, partners, customers, suppliers and the local community.

CSR also directs us to adopt ethical and socially-responsible management approaches that support considerations relating to the environment. In harmony with this, we are dedicated to improving not only our performance and the consistently high quality of our broad range of products, but also how we do business. We continually look at optimizing the way we treat our people, the communities SONGWON serves and the environment around us. We work hard to reduce SONGWON's environmental impact and our key areas of focus are: increased energy efficiency, more effective waste management and a more efficient use of the resources available to us.

Fulfilling our sense of responsibility

Most importantly, we seek various ways to give something back to our local communities and address some of the wider issues that affect us as global citizens. Our commitment extends beyond the positive contribution that SONGWON's products make to support several different programs and initiatives that in their own way improve lives in our local communities.

Although health is a human right, some 400 million people around the world have no access to healthcare. For this reason, we support healthcare and human service efforts that enable people to lead better, healthier lives. In 2016, SONGWON supported the efforts of a number of healthcare initiatives and medical missions.

At the beginning of February, SONGWON financially supported Cambodian medical missions in Siem Reap, the capital city of the Siem Reap Province in northwestern Cambodia. In recent years, although the region's population has dramatically increased there has been no increase in the prosperity of its rural population. Thus, Siem Reap remains the second poorest province in Cambodia. The Cambodian medical missions enable medical professionals from Korea and other countries to go to Siem Reap and provide basic medical treatment and carry out necessary surgery free-of-charge to people in need there.

In October, SONGWON contributed to the Dr. Jang Gi-ryeo Surgery Mission which took place at the Hebron Medical Center in Phnom Penh, the capital of Cambodia. Despite being the capital of the country, there are many underprivileged people who have no access to healthcare. Our sponsorship supports medical experts from other countries, who are specialized in cancer treatment, to carry out cancer-related operations on local people who would otherwise not have had the possibility of receiving treatment at all. This mission is named after the renowned Korean surgeon, educator, and philanthropist, Dr. Jang Gi-ryeo and run by his grandson, Dr. Jang Yeogoo.

At SONGWON,
Corporate Social
Responsibility (CSR)
is an integral part
of our business.

SONGWON also supports a Dr. Jang Gi-ryeo memorial initiative of the Korean Blue Cross Medical Cooperative called “Healing Shoes” which helps children in need in Laos and Cambodia.

“I’ve never forgotten my responsibility for poor patients since the day I became a doctor. My life will be a successful one if I continue to remember my decision, but my life would be a failure if I forget it.”

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, he established many free medical clinics. In 1968, he also founded the Blue Cross Medical Cooperative – Korea’s first medical insurance union where membership cost less than a package of cigarettes.



“CSR forms the foundation of who we are and what we do every day. Being an industry leader, we embrace responsibility for the actions of our global organization, conduct our business in a socially and environmentally responsible manner and do our very best to ensure the well-being of people, as well as support the communities in which we operate.”

Jongho Park, Chairman of the Board

At SONGWON, we know that lives can be saved by ordinary people too. So, in addition to the already mentioned medical healthcare initiatives involving medical professionals, SONGWON also supports CPR Heroes – training courses that teach people how to perform cardiopulmonary resuscitation. CPR is a simple, valuable skill that saves lives.

In line with SONGWON's core values and belief that good health is also connected to well-being, we also seek to support organizations and activities that promote social and cultural progress.

One of these is the world's largest sports organization for people with intellectual disabilities: the Special Olympics. The organization has been transforming lives through the joy of sport since 1968, and today with over a million volunteers, it assists more than 4.7 million athletes in 169 countries.

The Special Olympics events bring a large, inclusive community of athletes, together with their supporters, families, coaches and volunteers. Although the athletes are at the center of it all, the events help people rediscover the magic of sports based on true Olympic ideals.

At SONGWON, we also have a heart for the initiatives taking place in our local communities. One of the events we sponsored in 2016 was a football tournament for youth near our headquarters in Frauenfeld, Switzerland.



Regulatory Affairs & REACH

Ensuring compliancy and supporting customers

SONGWON does business in a wide range of industries and countries and we are required to adhere to the various laws and regulations in all the regions we operate. Regulatory compliance is essential not only for our business but for our business partners, customers and shareholders. Therefore, as an integral part of our day-to-day operations, we consistently monitor all of our actions and business activities to make sure that SONGWON always remains fully compliant with all applicable laws and regulations.

One of our highest priorities is making sure that our global customers know that they can rely on SONGWON products to meet their environmental, health and safety goals with the confidence that each one complies with regulations. In addition, providing customers with expert support and assisting them to manage the complex aspects of regulatory compliance, registration and certification is a responsibility that we take very seriously.

Overall, the presumption exists that chemicals are toxic, unsafe and pollute the environment and there is a great deal of skepticism and scrutiny surrounding the chemical industry in general. For this reason, it is very important for the players in the industry to assume adequate responsibility by applying the right product stewardship measures. At SONGWON, we focus our efforts and put the resources needed in place to support our ongoing aim to develop and produce more efficient and safer chemical substances.

Sharing knowledge and expertise

As a leader in the industry, we also see it as our responsibility to provide information on topics that range from the most current industry standards and regulatory issues to technical and quality compliance. By anticipating future regulatory changes and working closely with customers, we are able to quickly adapt and ensure constant compliance.

At SONGWON, we are dedicated to regularly sharing our expertise and experience with our customers and to creating value for them and their businesses. One of the ways we do this is through our established newsletter. It contains the latest news on REACH (EU Regulation on Registration, Evaluation Authorization and Restriction of Chemicals) processes and requirements, upcoming deadlines, current

developments and achievements. We also provide regular updates on the substances registration process which enables customers to carry on with operations, secure in the knowledge that our products will be 100% compliant within REACH deadlines.

It has become general practice to provide customers with crucial product information such as the specification (CoA), a technical data sheet (TDS) and a safety data sheet (SDS). However, at SONGWON we go a step further and provide our customers with an additional regulatory data sheet (RDS). It not only outlines critical global product regulatory approval information but serves to highlight how much we really care about our customers' businesses.

Supporting customer compliance

This year, SONGWON's Regulatory Affairs team responded to over 160 enquiries from customers requesting regulatory and product safety information relating to our products.

In 2016, SONGWON continued to provide the key health and safety information on our products to those in the supply chain. As our portfolio grew, we produced over 130 SDSs for new products, created 1800 new SDSs (including translations) and updated over 200 existing SDSs (and more than 2100 translations). By the end of 2016, we had approximately 15500 SDSs for our products.

To help our global customers meet their EU REACH obligations, SONGWON provided over 1000 REACH Coverage Statements and Import Certificates for customers. We also have over 150 Regulatory Datasheets which enable our customers to quickly and easily assess the global regulatory status of our products for use in their own products or processes.

Furthermore, the Regulatory Affairs team gained approval in the EU for SONGNOX® PQ and approval for it in Australia.

They also initiated the EU REACH registration of:

- SONGNOX® L 670 (100-1000t/y)
- SONGNOX® 1098 (100-1000t/y)
- HI-SWELL™ 300L (100-1000t/y)
- SONGCURE® CS 819 (1-10t/y)



“In 2016, we successfully met our commitments to our customers and to SONGWON. The regulatory authorities allowed us to continue offering our products in the current regions we operate but also let us offer our latest products in new areas of business. With our global business activities increasing, it is more important than ever that we continue to conscientiously prepare for the future.”

Bob Campbell, Director of Global Regulatory Affairs

REACH and beyond

In addition to placing the highest priority on making sure SONGWON is in compliance with all relevant regulations, we also support regulators intervening and establishing new regulatory requirements such as REACH. As an organization that invests great care in the way we produce chemicals and their safe use, so that both people and the environment are protected, regulations such as REACH are a logical necessity. We understand that through REACH, we can make a positive contribution to our common future.

Korea's REACH regulations (K-REACH) came into effect as planned, at the beginning of January 2015. Similar to the EU's REACH regulations, it requires the mandatory registration and notification of manufactured and imported chemical substances, substances with potential to be hazardous to human health or the environment, and products containing hazardous substances. We, at SONGWON fully support the K-REACH objectives and are taking the appropriate steps to meet our obligations and ensuring the uninterrupted supply of our products made in Korea.

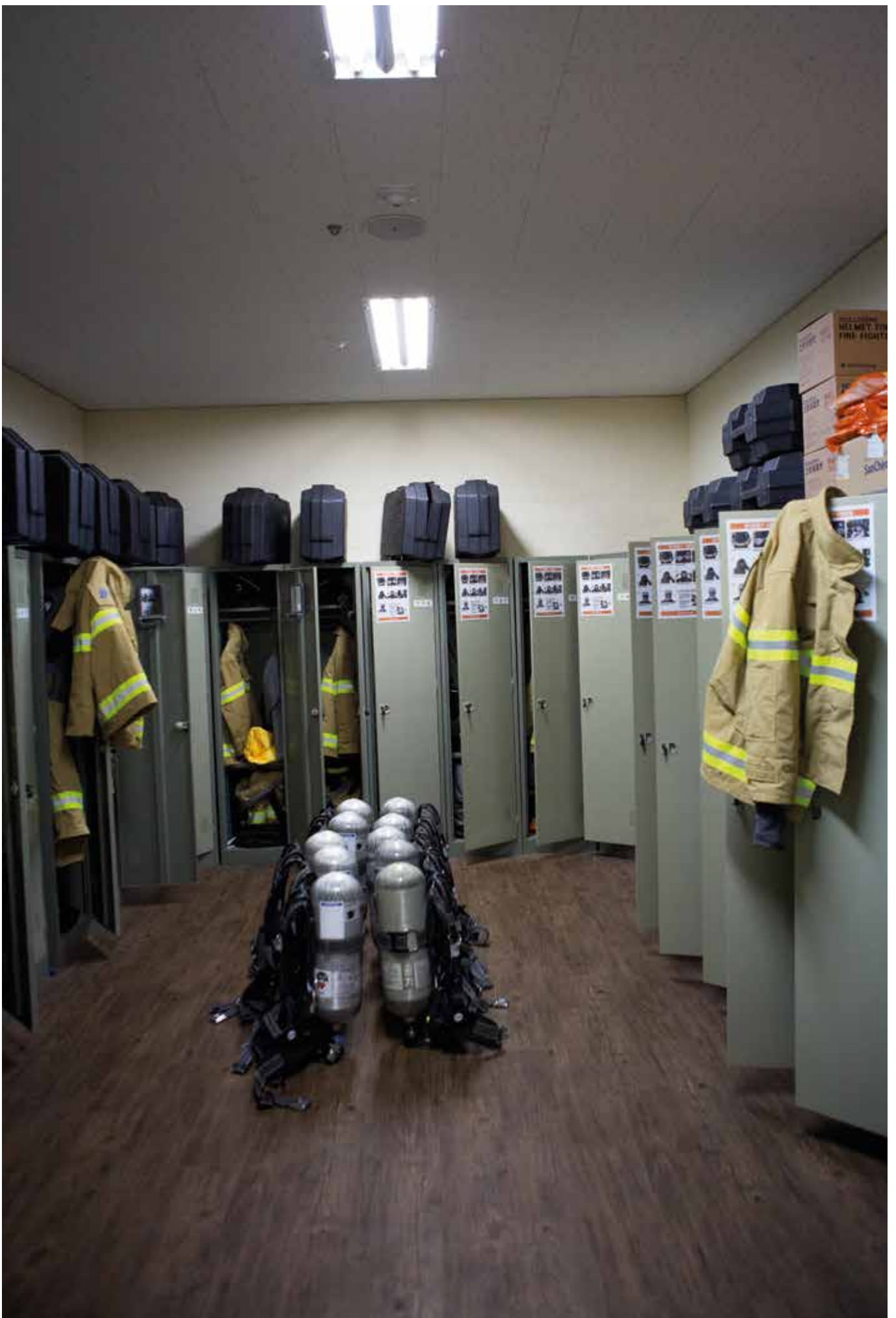
As we continue to expand our business internationally and enter new markets and industrial sectors, the regulatory and product stewardship climate continues to increase in intensity. Apart from the TSCA reform in the USA, new chemical control laws will soon be coming into play in South East Asia and new action proposals in Canada, Brazil and the EU are also on the horizon. For this reason, it is imperative that we keep a close eye on these developments to ensure that we are well-prepared and able to adapt to the changes.

Compliance culture

Within SONGWON, we have established a strong compliance culture that is driven to ensure that our business activities abide by global and regional standards, laws and regulations. This drive also instills a permanent awareness of responsibility to compliance in all our employees. Each employee takes compliance seriously and aims to be a good, ethical 'corporate citizen'. We all know that without compliance there is no trust, and without trust we cannot grow.

Regulatory Affairs activities in 2016:

- Effectively engaged where and when it was needed by:
 - actively participating in EU REACH Consortia and Industry Associations (e.g. ELiSANA; OrganoTin Consortia and others)
 - met with customers, suppliers and others to discuss product stewardship and regulatory topics of mutual interest
 - Preparing for the future by:
 - developing a UVA strategy based on regulatory status
 - reviewing our specialty chemicals registration status and developing a strategy
 - strengthening SONGWON's internal capabilities and knowledge in global regulatory affairs
 - Making tangible actions/improvements
 - monitoring EU imported volumes on a regular basis and reporting the results to the business team
 - implementing better budgeting and planning for future regulatory expenses and timelines
 - incorporating our stewardship and compliance activities into our existing business processes
 - Meeting new regulations
 - developing a harmonized global approach to combustible dust warnings
 - providing training and participating in conferences dealing with food contact regulations, chemical control laws and product stewardship
-



EH&S & Sustainability

Meeting our sustainability obligations

As an integral part of SONGWON's culture, sustainability is embedded in all aspects of our business and essential to the way we operate. For us, sustainability means meeting the needs of today without compromising the world of tomorrow. At SONGWON, we have always believed that how we go about our day-to-day business is as equally important as the results we achieve. For this reason, we focus on sustainably aligning all of SONGWON's businesses, structures, processes and systems. By responsibly managing our innovation, operations and our business activities, we also strive to meet the ever-changing demands of our markets, shareholders and the communities we serve.

We understand that sustainability requires collaboration. Therefore, we engage in a continuous dialogue and share our expertise with both our internal and external stakeholders. Working closely together with SONGWON's customers also enables us to develop sustainable products, applications and solutions that meet their sustainability requirements and help them to address a wide range of environmental issues. With 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, we are able to add value.

Our commitment to sustainability drives us to consider the economic, social and environmental impact of everything we do. Our strategic objective is to be an organization 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 generations.

Committed to EH&S

We understand that to be a sustainable organization able to create stakeholder value, we require not only environmental stewardship but also a safe, injury-free, healthy working environment. Safety, health and environmental protection lie at the center of our responsibility to our employees, customers and suppliers but also to the communities we serve.

In all of SONGWON's facilities, we have established environment, health and safety policies, procedures and performance standards that encompass much more than the minimum necessary for complying with laws and regulations. We make sure that they are proactively implemented which highlights SONGWON's commitment to sustainability leadership.

Our goal is to make constant progress in the areas of environmental protection, safety and health. Over the past decade, we have made significant headway in these areas and we look forward to continuing to build on this – worldwide. For us, this is a vitally important part of our overall sustainability strategy.

With our dedication to the long-term health and safety of everyone in our organization and protecting the environment in which we operate, we have driven tremendous improvement and increased the importance of EHS awareness across our entire global organization. All SONGWON employees are engaged and actively participating in identifying and managing risks, and continually seek ways to protect the environment and improve the health and safety of our operations.

We take our obligation to providing safe and healthy work environments for all of our stakeholders (employees, contractors, neighbors) seriously. In line with this, in 2016 we also made sure that it was a priority in our new manufacturing sites – in our OPS plant in Abu Dhabi and in our new state-of-the-art facility in Qingdao, Eastern China. We also focused on ensuring that our EH&S indicators were implemented. Being seen as a trustworthy organization with a high level of safety awareness and clear safety processes is of great importance to us. It remains a top priority and is a non-negotiable.

Achieving zero accidents

Accident-free manufacturing is only achievable when dedicated, safety-aware employees work in healthy and safe facilities. At SONGWON, we inherently believe that all accidents are preventable and that hazards can be safeguarded either physically or through safe working procedures. For us, achieving efficient production and preventing injuries belong together.

At SONGWON, every employee looks out for anything that could possibly threaten anyone's health, safety or wellbeing. Our people also focus their efforts on eliminating or controlling risks. It is our firm belief that world-class safety is achieved through a combination of having the right attitude, making the right decisions and carrying out the right actions. We place a high priority on addressing the root causes of workplace injuries, such as handling equipment incorrectly and encouraging safer behaviors such as following appropriate safety procedures and best practices.

In 2016, we carried out a complete assessment across all of our chemical manufacturing facilities, of potential worst case scenarios, as well as their consequent impacts and implications. Using the information, we then defined the appropriate risk reduction and mitigation actions.

This year, we also forged ahead with our efforts to raise EH&S awareness among all of our employees. We ensure that all of our staff receives proper training and extensive guidance on issues relating to health, safety and the environment. Every month in each of our plants, we conduct safety trainings, as well as give online lectures on safety relating to hazardous chemical management. We also make use of relevant chemical accident videos and EH&S materials created both internally and externally by official authorities.

Through these regular and intensive EH&S trainings and education, we aim not only to increase awareness of these critical issues among all the levels of our global organization, but we want to encourage a sense of responsible care and proactiveness throughout the company. Furthermore, all of SONGWON's managers continually emphasize EH&S awareness and responsibility as a top priority and this is also supported and stressed by SONGWON's top management.

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

Once again this year, we looked closely at and analyzed possible emergency scenarios with the aim of minimizing the risk, or at least reducing their potential impact. We have also continued our ongoing monthly simulations carried out by our internal fire brigade who are led by full time dedicated fire marshals. It is one of our most fundamental and effective risk minimizing tools.

In order to support our efforts, we invested in containment basins, remote controllable foam fire hydrants for potentially hazardous areas and special toxic and flame detectors to be placed not just in the tank farms but also in the control rooms and process lines.

Accident reporting

Any accidents occurring at SONGWON must be reported. We compile the accident report data in our global database and carefully classify any injuries that may have occurred according to the local laws and record-keeping criteria. Accident report data include all SONGWON Industrial Co., Ltd. employees, as well as any contractors operating in our plants.

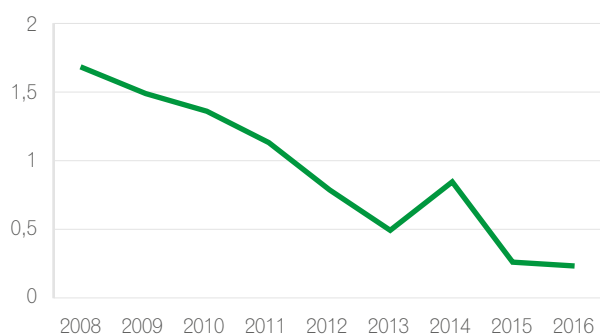
As a result of our plant operators' increased awareness and heightened focus on safe operations, the total recordable accidents steadily decreased over the past few years. In 2016, across all of SONGWON's manufacturing sites and including all SONGWON employees and contractors, we had 3 recordable accidents.

In 2016, we successfully concluded the large capital EH&S investments in two of SONGWON's main chemical sites in Korea (Ulsan and Maeam). The investments were made to support the achievement of state-of-the-art technical improvements in health, environmental, safety care and risk management optimization. We will continue the same efforts throughout the coming year in two of SONGWON's other plants, one in Korea (Suwon) and one in India (Panoli) and aim to achieve the same results sometime in 2018.

Additionally, we also continued our investigations and testing of possible optimized technical solutions for reducing any of the manual operations at SONGWON that could potentially still expose our operators to accidents or incidents. We've focused primarily on the operational areas: filter discharge, manual bagging, solid material unloading operations and have continued making started tangible improvements.

TRCR: Total Recordable Case Rate

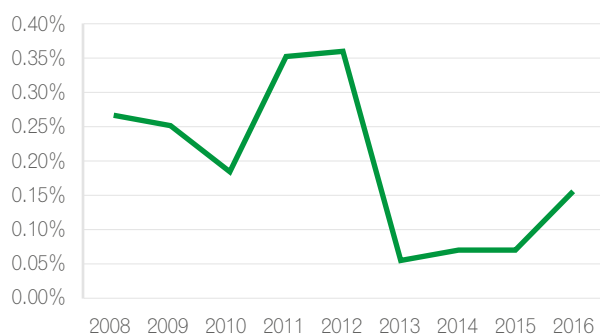
Recordable accidents *200.000 / total working hours



The Total Recordable Case Rate (TRCR) reached 0.24 in 2016 and we registered a 0.16% Total Lost Day Rate (LDR). There were no fatalities and we achieved, for the sixth continuous year, a zero Occupational Diseases Rate (ODR) and zero Absentee Rate (AR).

LDR: Lost Day Rate

total lost days/total worked hours



Environmental awareness

At SONGWON, we are dedicated to continually reducing the environmental impact of SONGWON's business activities. SONGWON's leadership team strives to ensure that we meet our long-standing commitment to contributing to a better world by supporting the development of processes that reduce SONGWON's overall carbon footprint, save energy and reduce emissions.

We have an established, rigorous program in place aimed at improving processes and increasing our competitiveness by lowering costs, as well as significantly reducing energy consumption, waste production and CO₂ emissions. In 2016, we directed our efforts to reducing our manufacturing technologies' pollution impact by significantly reducing the organic content in our wastewater and solid salts.

Pursuing our on-going EH&S performance improvement strategy, we have begun implementing the necessary technical improvements, in order to ensure that by 2019 SONGWON is in compliance with the recently introduced Korean EH&S rules.

In 2016, SONGWON received the ISO 14001 certification renewal for both the Ulsan and Maeam plant. ISO 14001 provides organizations with the framework for an effective environmental management system (EMS). It is an important certification for us because it proves that our EMS has been measured against a best practice standard and found to be compliant. It also shows customers and stakeholders that we are actively minimizing the environmental impacts of our organization's processes, products, and services.

Local authorities in Korea have also accepted our updated PSM (process safety management) upgrade level in our Maeam plant.

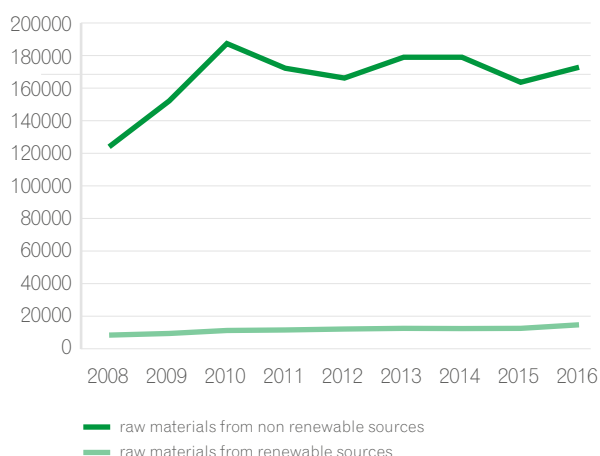
Materials

Raw materials

Although we always look for every opportunity to use raw materials from renewable sources, unfortunately only a few of the key raw materials SONGWON uses are available for sourcing in this way. The majority of the raw materials we require are oil derivatives or metals. The only raw materials available from renewable sources are stearic acid and stearyl alcohol. Both are derived from palm kernel oil and represent almost 8% of the total raw materials we use.

Used Raw Materials

in tons



Recycled materials

By applying a reverse reaction, we have successfully consolidated the technology to recover the raw materials that were previously disposed of as a final product in the organic wastes. Where the technology has been successful, we have achieved the double benefit of reducing the environmental impact and recycling ca. 8% of the material, which corresponds to approximately 3500 t/y, of the raw material that was used in the production.

Energy

On January 1, 2015, 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 tCO₂/year, installation > 25,000 tCO₂/year) with voluntary opt in. For SONGWON, participation is mandatory.

SONGWON's initiatives

Here is an overview of the initiatives that have resulted in providing energy-efficient or renewable energy-based products and services, as well as reducing our energy needs.

SONGWON engages in an energy consumption reduction program and this year one of the actions was incinerating all volatile organic compounds (VOC) produced in the plants. By doing this we are able to generate all the steam we need for our production process. This action reduces SONGWON's overall energy consumption and contributes to a cleaner, safer environment because it enables us to generate all the steam we need in the production process. Since 2012, we have had 3 incinerators in operation in 2013, we a new efficient steam generator based on the LNG use in our Maeam plant.

SONGWON also has several energy consumption reduction initiatives in place to improve the long-term efficiency of our operations and products. In 2016, the following initiatives enabled us to reduce SONGWON's total annual energy consumption for generating power by 29953 GJ (3%) compared to 2015:



optimizing the use of steam during the distillation step



partial recycling of washing solvents and mother liquors after the crystallization step



reusing the steam condensate for boiler feeder water



installing solar panels on the warehouse roof



using an inverter for saving electricity



direct recycling in crystallization of the solvents recovered from the final product drying step

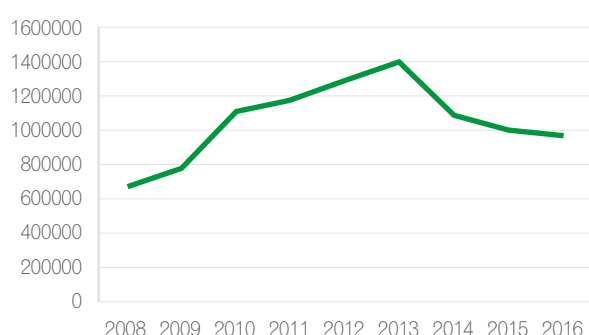


Direct energy consumption

SONGWON's direct energy consumption of almost 100% is in the form of natural gas. The majority is used for generating steam and heating oil and in 2016, we used 967517 GJ (gigajoules), which is in line with what we used in 2015.

Direct Energy Consumption

In GJ (gigajoules)

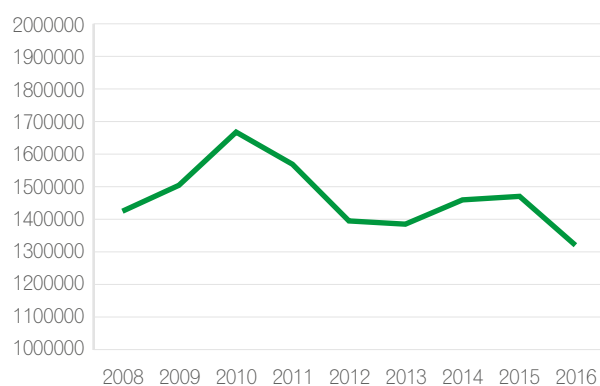


Indirect energy consumption

SONGWON also purchases electricity and steam (almost 70%) for our plants. Traditionally we purchase these from the local utility companies who are using renewable energy sources.

Indirect Energy Consumption

In GJ (gigajoules)



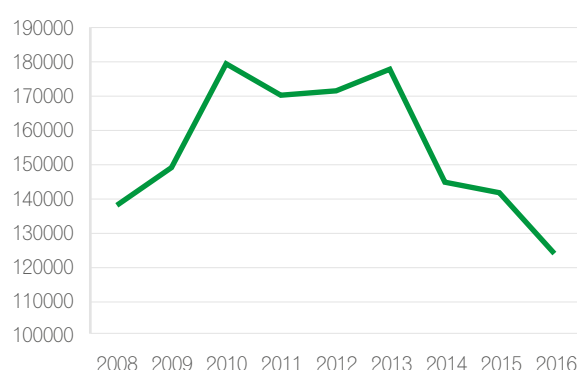
Emissions

Individual energy reduction measuring activities are not calculated singly and separate from each other in Korea but as follows:

Emission reduction = Emission allowance – Actual Emission (Unit: tCO₂eq/year)

Total GHG Emissions

in tCO₂eq/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 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 2016 by reducing the general greenhouse gas (GHG) by 13% compared to 2015. Once again, it is another good achievement which was made possible thanks to the purchase of steam generated from renewable energy and waste heat via an exothermic chemical reaction.

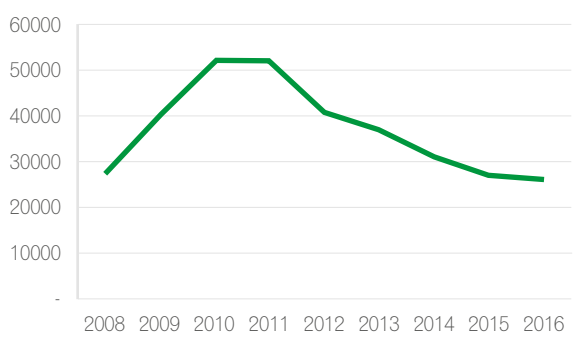
The data reported does include the direct emissions and the indirect emissions from our electricity and steam purchasing. However, there are no other indirect emissions to be recorded.

Significant air emissions

Nitrogen oxide (NOx), sulfur oxide (SOx) and particulate matter (PM) emissions are measured automatically by in-line analyzers in SONGWON's plants, and the values are sent in real-time to the relevant government agencies.

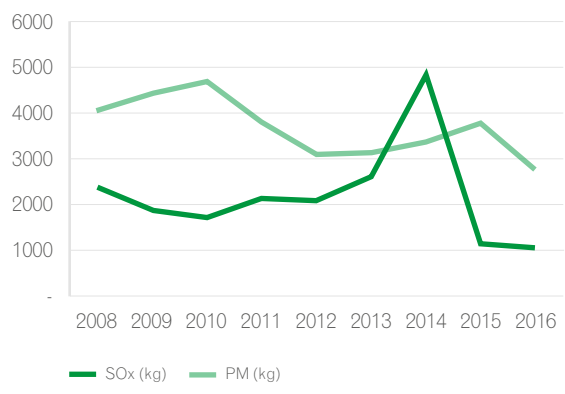
NOx

in kg



SOx and Particulate Matter

in kg



PM, NOx and SOx are generated by liquid waste incinerators. So, in 2015, we already slightly reduced the amount of liquid wastes through our production process development. In 2016, in response to the fact that most PM emissions occur from the dust collectors in the product packaging process, we shortened the bag filters replacement cycle. These actions enabled us to successfully achieve a very positive emissions reduction this year of (5% for NOx, 8% for SOx, 27% for PM).

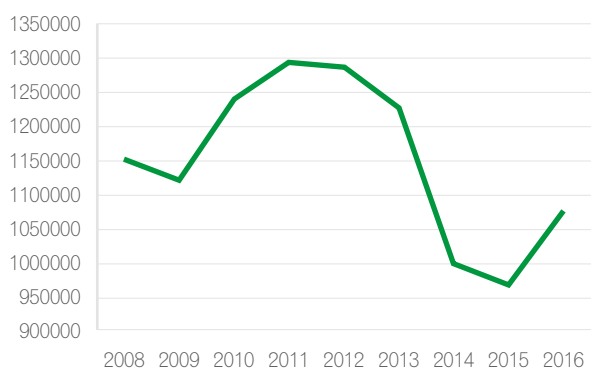
Water

Total water withdrawn by source

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

Water Withdrawn

in m³



"We dedicate all of our efforts to making SONGWON a first choice, responsible and sustainable supplier to our customers. Achieving this excellent rating from EcoVadis is a good sign that we are on the right track and moving in the right direction."

Olivier Keiser, Leader Procurement / International Supply

According to direct measurements made onsite, SONGWON total water consumption increased in 2016 by 11% compared to 2015. This was due to the production volume increase of DBTO DF which requires a greater amount of water to wash out the NaCl.

Furthermore, the exceptionally higher amount of NaCl content last year required more water usage than previously.

At the current time, the total volume of water that is recycled and reused at SONGWON's plants is almost 14% (102603 tons of water). This very positive achievement was the result of the Ulsan plant's incinerators producing 172187 tons of steam in 2016, as well as 102603 tons of water supplied via the high pressure steam condensate from the pumping trap of both the dialkyl phenol and the Maeam plant.

SONGWON receives excellent CSR recognition from EcoVadis

In March 2016, SONGWON achieved an EcoVadis gold recognition level for Corporate Social Responsibility (CSR). EcoVadis is an independent rating agency which is highly regarded around the world. Their evaluations are made using a methodology built on international CSR standards, including the Global Reporting Initiative, United Nations Global Compact and ISO 26000. To achieve such a high EcoVadis rating, is a valuable indicator of SONGWON's commitment to CSR, and highlights to the industry that we are a top performing supplier with regards to the Environment, Labor Practices, Fair Business Practices, and Responsible and Sustainable Procurement.

For more information, see: www.ecovadis.com

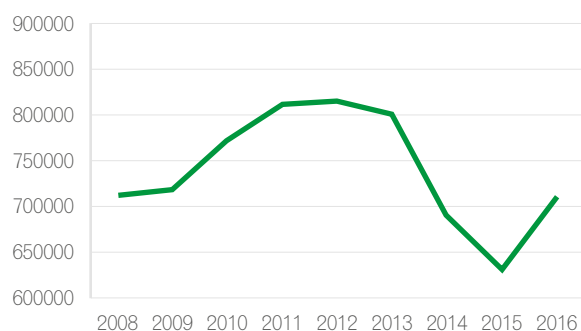
Effluents and Wastes

Total water discharged

All the water discharged by SONGWON's plants is conveyed to the central water treatment plant in their municipalities after being internally treated. It is there that the organic content reduced further and then released into the sea or discharged to a regional water treatment facility (e.g. as it is done in Panoli, India).

Total Water Discharged

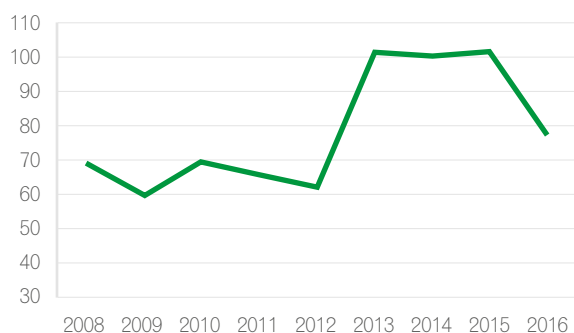
in m³



We greatly improved the quality of the water discharged in 2016 and thereby reduced the average COD (chemical oxygen demand) of SONGWON's manufacturing sites from 101 to 77 ppm. This decrease was achieved as a result of the outstanding 45% improvement of the average quality of the discharged water from our Panoli site in India.

Discharged Water Quality

COD (ppm)



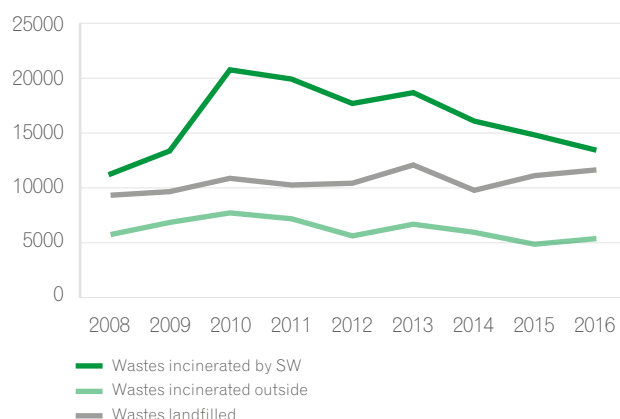
Other wastes

In 2016, SONGWON'S operations generated 23385 tons of hazardous wastes.

Approximately half of the liquid organic wastes are currently incinerated on site 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

Since 2008, SONGWON has had no spills to record or report, and also none in 2016.

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 2016, we have been in full compliance with all environmental rules and regulations and SONGWON received no fines.

Global Reporting Initiative Guidelines (GRI)

Reporting method

The Board members, the Executive Committee members 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 standards of the international Global Reporting Initiative (GRI). The current report follows the GRI's G4 Guidelines, 'in accordance' Core option (SONGWON's 2015 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

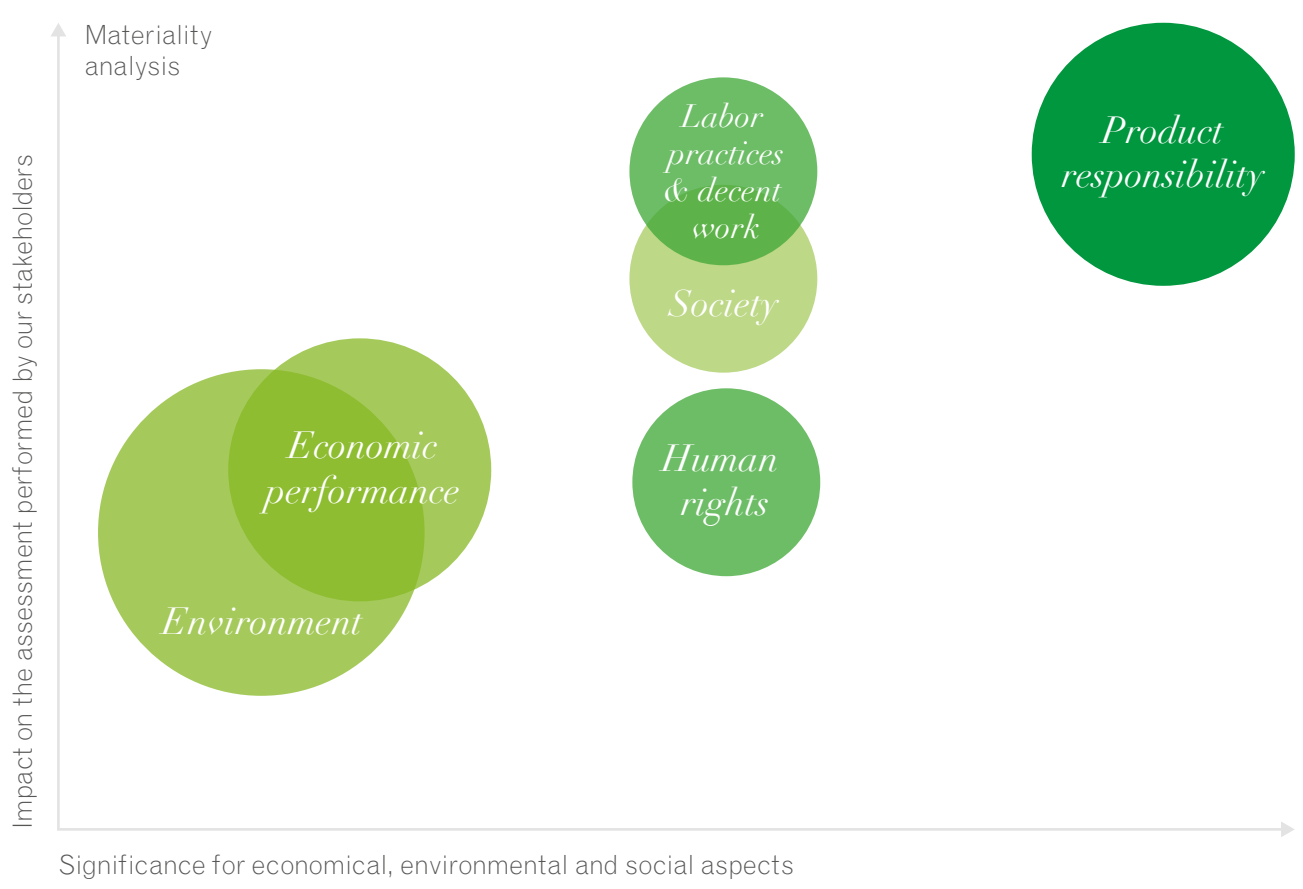
This analysis shows a condensed summary of all of the individually assessed indicators. The number of indicators per category is reflected in the size of the circles in the graph on the following page. The x-axis shows the significance of the respective category in relation to its economic, environmental 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:



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



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.



General standard disclosures

General standard disclosures	Page
Strategy and analysis	
G4-1	14, 79-81
Organizational Profile	
G4-3	22
G4-4	28, 202
G4-5	22
G4-6	22
G4-7	23
G4-8	24-27
G4-9	2
G4-10	62, 64, 65
G4-11	65
G4-12	46
G4-13	23, 46, 53
G4-14	30-32
G4-15	88-90, 92, 102
G4-16	59
Identified material aspects and boundaries	
G4-17	23, 206
G4-18	88-89
G4-19	89, 90, 92, 93
G4-20	88-90, 92, 93
G4-21	88-90, 92, 93
G4-22	205
G4-23	205

Stakeholder engagement

G4-24	103
G4-25	103
G4-26	103
G4-27	88, 89, 103

Report profile

G4-28	205
G4-29	205
G4-30	205
G4-31	205
G4-32	205
G4-33	101, 205

Governance

G4-34	100-103
-------	---------

Ethics and integrity

G4-56	65, 66, 102
-------	-------------

Specific standard disclosures

DMA and Indicators	Page	Omissions
Category: Economic		
Material aspect: Economic performance		
G4-DMA	90	
G4-EC1	2	
G4-EC2	30	
G4-EC3	166-170	

Category: Environmental

Material aspect: Materials

G4-DMA	81, 90
G4-EN1	82
G4-EN2	82

Material aspect: Energy

G4-DMA	82, 84, 90
G4-EN3	84
G4-EN4	84
G4-EN6	84

Material aspect: Water

G4-DMA	85, 86, 90
G4-EN8	85
G4-EN10	85

Material aspect: Biodiversity

G4-DMA	87, 92
G4-EN11	87

Material aspect: Emissions

G4-DMA	84, 85, 92
G4-EN15	84
G4-EN16	84
G4-EN19	84
G4-EN21	85

Material aspect: Effluents and waste

G4-DMA	87, 92
G4-EN22	87
G4-EN23	87
G4-EN24	87

Material aspect: Compliance

G4-DMA	87, 92
G4-EN29	87

Category: Social

Sub-category: Labor practices and decent work

Material aspect: Employment

G4-DMA	61-62, 64-66
G4-LA1	65
G4-LA3	65

Material aspect: Occupational health and safety

G4-DMA	79-81, 92
G4-LA6	80-81

Material aspect: Training and education	
G4-DMA	36, 62, 64-66
G4-LA10	62, 64-66

Material aspect: Diversity and equal opportunity	
G4-DMA	61, 67, 92
G4-LA12	65

Sub-category: Human rights

Material aspect: Non-discrimination	
G4-DMA	61, 93, 102
G4-HR3	102

Sub-category: Society

Material aspect: Anti-corruption	
G4-DMA	66, 93, 102
G4-SO4	102
G4-SO5	66, 102

Material aspect: Anti-competitive behavior	
G4-DMA	93, 102
G4-SO7	102

Material aspect: Compliance	
G4-DMA	93, 102
G4-SO8	102

Sub-category: Product responsibility

Material aspect: Product and service labeling	
G4-DMA	75, 77, 93
G4-PR3	75, 77

Material aspect: Compliance	
G4-DMA	57, 75, 77, 93
G4-PR9	93



Corporate Governance



Corporate Governance at SONGWON

Responsible management guided by integrity and transparency

Right from the founding of our organization, we have always been driven to go beyond just complying with our statutory obligations. For us, corporate governance is about managing all of our business affairs in the fairest and most transparent manner while building and maintaining valuable relationships with all of our customers, partners, investors and stakeholders. In line with this, we seek to continually ensure that SONGWON's performance is guided by integrity.

This responsible management approach has been a key factor to SONGWON's success and enabled us to build the highest levels of trust and create sustainable value throughout the organization's 51 years of operation. For us, maintaining a transparent, as well as legally and ethically sound corporate culture is the foundation for ensuring that we enhance value throughout our organization on a sustained basis. It also helps us to preserve and strengthen the trust that our employees, business partners and shareholders invest in us.

By placing the highest priority on responsible corporate governance in all of our day-to-day activities, enables us to meet the ever-increasing demand for information from both our national and international stakeholders. In this context, efficient and responsible decision-making and control processes oriented towards long-term corporate success are of central importance to all of our operations.

With circumspection and sound judgment, SONGWON's Executive Committee and Board of Directors (BOD) coordinates the interests of all of our shareholders and employees while managing opportunities and risks in a forward-looking and transparent manner. Both continually align their management and supervision with internationally recognized standards of good corporate governance.

Annual General Meeting

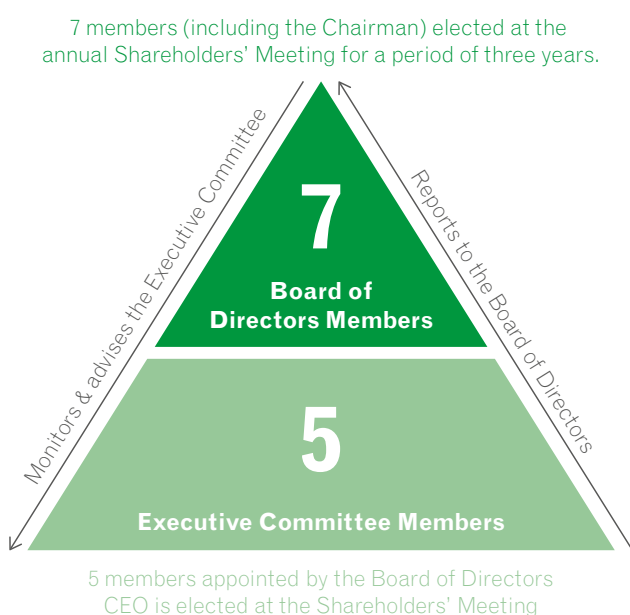
All shareholders are invited to attend the Annual General Meeting, held at SONGWON each year. It is at the meeting that decisions on matters concerning Songwon Industrial Co., Ltd. and the Group are made. Traditionally, the meeting deals with the annual report and financial accounts and shareholders are also invited to ask questions relating to the agenda of the meeting.

In addition, Korean law provides mechanisms for shareholders that require directors of companies to hold a shareholders' meeting and to propose resolutions submitted by the shareholders.

In 2016 the Annual General Meeting was held on March 18, 2016. During the course of this meeting, the annual report for the 2015 financial year was adopted together with the proposal for distributing profits. In addition, shareholders were asked by the SONGWON Group management to approve a newly proposed corporate structure as a significant further step towards achieving even more transparency and accountability.

The Board of Directors (BOD) and the Executive Committee

The SONGWON Group's new structure comprises:



- The newly elected Board of Directors of 3 executive members and 4 non-executive members who meet in person 4 times a year. The BOD supervises the decisions made by SONGWON's Executive Committee, which is responsible for making decisions relating to economic, environmental and social impacts. The BOD has also established an Audit Committee* and an HR Committee to better oversee the activities in these two key areas.
- The Executive Committee of 5 people who hold key managerial positions in the Group meet in person once every quarter and hold regular teleconferences. Their role is to manage all of SONGWON's business, create policies and make key decisions concerning the organization's strategy, investments and employees, with the exception of specific decisions which are reserved for the BOD under the Korean Company Act.

In instances such as this, the Executive Committee prepares its proposals and submits them to the BOD for final approval.

The positions of Chairman of Board and of the CEO have been separated. The larger BOD and clear separation between its responsibilities and those of the Executive Committee serves to further strengthen the Group's corporate governance by ensuring greater transparency, controls and accountability.

Chairman of the Board, Chief Executive Officer (CEO) & Executive Management

The Chairman of the Board is a non-executive Director who is elected at SONGWON's Annual Shareholders' Meeting. The CEO is the Chair of the Executive Committee and exercises ongoing control of the Group. The CEO manages according to the BOD's instructions, and in line with the division of responsibilities between the CEO and BOD as approved by the BOD.

Remuneration for members of SONGWON's highest governance body, senior managers, and executives (which include departure arrangements) is in line with the overall performance of the company including the social, economic and environmental results.

External auditors

At the Annual General Meeting, SONGWON's auditors are elected for a period of 3 years. SONGWON's current auditors are Ernst & Young. In order to remain well-informed about relevant issues concerning the accounts, reporting procedures and management of the Group's assets, both the BOD and the Executive Committee seek to work closely with the auditors.

* as per the IAA standard

Governance framework

At SONGWON, we are committed to maintaining the highest level of integrity and ethical standards in all of our operations. Our Vision and Mission Statements reflect this commitment and lie at the very heart of our transparent approach to business. To support this, we have clearly communicated both the Vision and Mission statements to all employees and released them publicly to all of our stakeholders worldwide.

A complete set of policies which relate to all aspects of our business activities also exists at SONGWON. Readily accessible to all employees, the policies outline our dedication to high ethical standards and our compliance with the applicable laws in the areas and regions we operate.

SONGWON's Code of Conduct is given to all employees when they are hired and has been made available on our website. The code provides essential guidance to SONGWON's workforce on how to apply basic principles in line with the organization's core values and 'safe, honest, trustworthy, professional, customer focused' culture. It also gives employees practical advice on how best to comply with laws and regulations and how to relate to SONGWON's customers, communities and colleagues. We have invested a great deal of effort in ensuring that our

Code of Conduct is in line with internationally agreed standards. We apply and strictly enforce all of our policies across the organization in all the regions.

Once again there were no incidents which go against our principles, such as e.g. corruption, anti-trust or discrimination in 2016. Furthermore, we have no significant monetary or non-monetary fines to report for non-compliance with laws and regulations.

Internal control

A fundamental aspect of SONGWON's corporate culture is internal control, which involves implementing a control system and follow up of all the Group's activities. In this way, we make sure that SONGWON's rules of business engagement are followed diligently with regard to external legislation and regulations, as well as internal guidelines and control documentation.

Identifying risks and then ensuring that they are managed effectively is also an important aspect of internal control. Minimizing the exposure to risk as far as possible, while making sure that desired opportunities are capitalized upon at the same time, is our main goal.





The Group is organized in such a way as to meet the requirements for effective internal control. Our working methods are characterized by organizational transparency and a clear division of responsibilities. The Group also has the necessary financial and business reporting systems in place which are important control instruments that enable us to achieve true and fair consolidated financial reporting.

Internal group reports are compiled once a month, using well-established procedures, and then presented in a document which includes extensive analysis. There are a number of people from the Group's departments and company levels working on the quarterly and annual accounts. The results are summarized, reviewed and then approved by the management team, the Executive Committee and the BOD.

In order to make sure that the highest levels of corporate governance prevail in the event of a conflict of interest arising, the member concerned will abstain from voting on the issues relating to the conflict of interest. SONGWON is not aware of any conflicts of interests arising or could have arisen during 2016.

Clear communication

We sincerely believe that effective internal communication is essential to achieving SONGWON's business and strategic objectives. For this reason, we encourage all employees to promote and contribute to an open, effective and transparent communication environment.

All communication and consultation with SONGWON's stakeholders may take place as face-to-face meetings, group meetings, team briefings, meetings with union representatives, announcements, emails, letters, memos, notices and telephone calls.

We decide which communication and/or consultation method is most appropriate depending on the nature of the topic involved.

Identifying stakeholders

As part of the communication process, stakeholders are identified by each individual site and business operation.

All the content within this document has been put together by taking into consideration the feedback and recommendations of all our stakeholders relating to the reported topics and their importance.



Financial Statements





TABLE OF CONTENTS

Introduction to the consolidated Financial Statements	109
Independent Auditors' Report	110
Consolidated statements of financial position	112
Consolidated statements of comprehensive income	114
Consolidated statements of changes in equity	116
Consolidated statements of cash flows	118
1. Corporate information	120
2. Summary of significant accounting policies	126
3. Significant accounting judgments, estimates and assumptions	142
4. Standards issued but not yet effective	143
5. Segment information	146
6. Property, plant and equipment	148
7. Investment properties	150
8. Intangible assets	151
9. Impairment testing of goodwill and intangibles with indefinite lives	153
10. Investments accounted for using the equity method	156
11. Available-for-sale financial investments	157
12. Other financial assets	158
13. Inventories	159
14. Trade and other receivables	160
15. Other current assets	161
16. Cash and cash equivalents	161
17. Issued capital and reserves	162
18. Interest-bearing loans and borrowings	164
19. Pensions liability	166
20. Other long-term employee-related liabilities	172
21. Other financial liabilities	175
22. Trade and other payables	175
23. Additional information on financial instruments	176
24. Commitments and contingencies	184
25. Assets pledged as collateral and guarantees	187
26. Operating profit and other income / expenses	188
27. Income tax expenses	191
28. Earnings per share	194
29. Cash flow statement	195
30. Related party disclosures	196
31. Events after the reporting period	199



INTRODUCTION TO THE CONSOLIDATED FINANCIAL STATEMENTS

On the following pages (112-199), consolidated financial statements for the year 2016 are presented. The financial statements disclosed are prepared according to the Korean International Financial Reporting Standards ("K-IFRS") and represent the one as submitted for approval to the annual general shareholders' meeting taking place on March 24, 2017 in Ulsan, Korea.

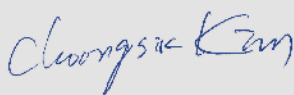
While the management of the Group is responsible for the preparation and presentation of the financial statements, the independent Group auditor is responsible for expressing an opinion on these financial statements. The report on the consolidated financial statements – issued by our Group auditor, Ernst & Young Han Young – can be found on pages (110-111).



Jongho Park
Chairman of the Board



Yung-Ku Ha
Non-Executive Board Member



Chongsik Kim
Executive Board Member



Okkeun Kim
Standing Auditor



Hans-Peter Wüest
Group CFO & Executive
Board Member

INDEPENDENT AUDITORS' REPORT



Ernst & Young Han Young
Taeyoung Building, 111, Yeouigangwon-ro,
Yeongdeungpo-gu, Seoul 07241 Korea
Tel: +82 2 3787 6600
Fax: +82 2 783 5890
ey.com/kr

Independent auditors' report

The Shareholders and Board of Directors Songwon Industrial Co., Ltd. and its subsidiaries

We have audited the accompanying consolidated financial statements of Songwon Industrial Co., Ltd. (the "Company") and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statements of financial position as at December 31, 2016 and 2015, and the consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with Korean International Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the Republic of Korea. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

A member firm of Ernst & Young Global Limited



Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Songwon Industrial Co., Ltd. and its subsidiaries as at December 31, 2016 and 2015, and its financial performance and cash flows for the years then ended in accordance with Korean International Financial Reporting Standards.

Ernst & Young Han Young

February 22, 2017

This audit report is effective as at February 22, 2017, the independent auditors' report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the date of the independent auditors' report to the time this report is used. Such events and circumstances could significantly affect the accompanying consolidated financial statements and may result in modifications to this report.

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

as at December 31, 2016 and 2015

		2016	2015
Assets	Notes	Million KRW	Million KRW
Non-current assets		481,445	483,786
Property, plant and equipment	6, 24, 25	431,484	432,496
Investment properties	7, 25	3,549	3,562
Intangible assets	8, 9	27,252	34,688
Investments accounted for using the equity method	10	6,552	4,662
Available-for-sale financial investments	11, 23.2	1,473	1,473
Other non-current financial assets	12	7,198	2,121
Deferred tax assets	27	3,937	4,784
Current assets		348,078	362,595
Inventories	13	155,735	169,123
Trade and other receivables	14	121,709	109,822
Income tax receivables		540	223
Other current assets	15	3,609	3,926
Other current financial assets	12	17,185	11,099
Cash and cash equivalents	16, 23.2	49,300	68,402
Total assets		829,523	846,381

Equity and liabilities

Equity		354,189	316,413
<i>Non-controlling interests</i>		<i>-2,237</i>	<i>1,944</i>
<i>Equity attributable to owners of the parent</i>		<i>356,426</i>	<i>314,469</i>
Issued capital	17	12,000	12,000
Capital surplus	17	24,361	24,361
Reserves	17	26,919	26,751
Retained earnings		290,544	250,000
Accumulated other comprehensive income	17	2,602	1,357
Non-current liabilities		174,691	94,128
Interest-bearing loans and borrowings	18, 23.2, 24, 25	112,220	29,551
Pension liability	19	12,848	19,252
Other long-term employee-related liabilities	20	4,445	3,006
Other non-current financial liabilities	21	110	484
Other non-current liabilities		43	42
Deferred tax liabilities	27	45,025	41,793
Current liabilities		300,643	435,840
Interest-bearing loans and borrowings	18, 23.2, 24, 25	188,907	332,773
Trade and other payables	22, 23.2	99,662	76,142
Other current financial liabilities	21	638	4,877
Other current liabilities		3,782	1,576
Income tax payable		7,654	20,472
Total liabilities		475,334	529,968
Total equity and liabilities		829,523	846,381

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

as at December 31, 2016 and 2015 (see Note 2.3)

	2016	2015
	Thousand USD	Thousand USD
Assets		
Non-current assets	398,541	400,478
Property, plant and equipment	357,183	358,020
Investment properties	2,938	2,949
Intangible assets	22,559	28,715
Investments accounted for using the equity method	5,424	3,859
Available-for-sale financial investments	1,219	1,219
Other non-current financial assets	5,959	1,756
Deferred tax assets	3,259	3,960
Current assets	288,139	300,156
Inventories	128,916	140,000
Trade and other receivables	100,751	90,910
Income tax receivables	447	185
Other current assets	2,988	3,250
Other current financial assets	14,226	9,188
Cash and cash equivalents	40,811	56,623
Total assets	686,680	700,634
Equity and liabilities		
Equity	293,197	261,926
Non-controlling interests	-1,852	1,609
Equity attributable to owners of the parent	295,049	260,317
Issued capital	9,934	9,934
Capital surplus	20,166	20,166
Reserves	22,283	22,144
Retained earnings	240,512	206,950
Accumulated other comprehensive income	2,154	1,123
Non-current liabilities	144,610	77,919
Interest-bearing loans and borrowings	92,895	24,462
Pension liability	10,636	15,937
Other long-term employee-related liabilities	3,680	2,488
Other non-current financial liabilities	91	401
Other non-current liabilities	36	35
Deferred tax liabilities	37,272	34,596
Current liabilities	248,873	360,789
Interest-bearing loans and borrowings	156,378	275,470
Trade and other payables	82,500	63,030
Other current financial liabilities	528	4,037
Other current liabilities	3,131	1,305
Income tax payable	6,336	16,947
Total liabilities	393,483	438,708
Total equity and liabilities	686,680	700,634

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

for the year ended December 31, 2016 and 2015

		2016	2015 (restated*)
	Notes	Million KRW	Million KRW
Sales of goods	5	694,326	654,421
Cost of sales*		-516,277	-515,242
Gross profit		178,049	139,179
Selling and administration costs*	26.2	-101,699	-89,789
Operating profit		76,350	49,390
Other income*	26.3	15,699	20,436
Other expenses*	26.4	-12,898	-11,996
Share of result from investments accounted for using the equity method	10	710	653
Finance income*	26.7	14,409	24,094
Finance expenses*	26.6	-30,658	-37,738
Profit before tax		63,612	44,839
Income tax expenses	27	-21,368	-16,194
Profit for the year		42,244	28,645
Other comprehensive income, net of taxes			
Net other comprehensive income to be reclassified to profit or loss in subsequent periods		1,099	4,060
(Loss) / gain on valuation of interest rate swaps	17.4	-134	86
Exchange differences on translation of foreign operations	17.4	1,233	3,974
Net other comprehensive income not to be reclassified to profit or loss		-530	-3,479
Re-measurement (losses) on defined benefit plans	17.4	-530	-3,479
Total other comprehensive income, net of taxes		569	581
Total comprehensive income		42,813	29,226
Profit of the year attributable to:			
Owners of the parent		43,239	29,783
Non-controlling interests		-995	-1,138
Profit for the year		42,244	28,645
Total comprehensive income attributable to:			
Owners of the parent		43,954	30,392
Non-controlling interests		-1,141	-1,166
Total comprehensive income		42,813	29,226
Earnings per share		KRW	KRW
Basic / diluted, profit for the year attributable to ordinary equity holders of the parent	28	1,802	1,241

* see note 2.4 on page 127 for further details

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

for the year ended December 31, 2016 and 2015 (see Note 2.3)

	2016	2015
	Thousand USD	Thousand USD
Sales of goods	574,764	541,730
Cost of sales	-427,375	-426,518
Gross profit	147,389	115,212
Selling and administration costs	-84,186	-74,327
Operating profit	63,203	40,885
Other income	12,996	16,917
Other expenses	-10,667	-9,930
Share of result from investments accounted for using the equity method	588	541
Finance income	11,928	19,945
Finance expenses	-25,380	-31,242
Profit before tax	52,658	37,116
Income tax expenses	-17,689	-13,404
Profit for the year	34,969	23,712
Other comprehensive income, net of taxes		
<i>Net other comprehensive income to be reclassified to profit or loss in subsequent periods</i>	<i>910</i>	<i>3,361</i>
(Loss) / gain on valuation of interest rate swaps	-111	71
Exchange differences on translation of foreign operations	1,021	3,290
<i>Net other comprehensive income not to be reclassified to profit or loss</i>	<i>-439</i>	<i>-2,880</i>
Re-measurement (losses) on defined benefit plans	-439	-2,880
Total other comprehensive income, net of taxes	471	481
Total comprehensive income	35,440	24,193
Profit of the year attributable to:		
Owners of the parent	35,793	24,654
Non-controlling interests	-824	-942
Profit for the year	34,969	23,712
Total comprehensive income attributable to:		
Owners of the parent	36,385	25,158
Non-controlling interests	-945	-965
Total comprehensive income	35,440	24,193
Earnings per share	USD	USD
Basic / diluted, profit for the year attributable to ordinary equity holders of the parent	1,491	1,027

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

for the year ended December 31, 2016 and 2015

	Attributable to owners of the parent						Non-controlling interests	Total equity
	Issued capital	Capital surplus	Reserves	Retained earnings	Accumulated OCI	Total		
Notes	17	17	17	17, 19	17		1.2.4	
	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
As at January 1, 2015	12,000	24,361	26,607	225,280	-2,731	285,517	3,110	288,627
Profit for the period	—	—	—	29,783	—	29,783	-1,138	28,645
Gain on valuation of interest rate swaps, net of tax	—	—	—	—	86	86	—	86
Exchange differences on translation of foreign operations, net of tax	—	—	—	—	4,002	4,002	-28	3,974
Re-measurement loss on defined benefit plans, net of tax	—	—	—	-3,479	—	-3,479	—	-3,479
Total comprehensive income	—	—	—	26,304	4,088	30,392	-1,166	29,226
Dividends	—	—	—	-1,440	—	-1,440	—	-1,440
Appropriation to reserves	—	—	144	-144	—	—	—	—
As at December 31, 2015	12,000	24,361	26,751	250,000	1,357	314,469	1,944	316,413
As at January 1, 2016	12,000	24,361	26,751	250,000	1,357	314,469	1,944	316,413
Profit for the period	—	—	—	43,239	—	43,239	-995	42,244
Loss on valuation of interest rate swaps, net of tax	—	—	—	—	-134	-134	—	-134
Exchange differences on translation of foreign operations, net of tax	—	—	—	—	1,379	1,379	-146	1,233
Re-measurement loss on defined benefit plans, net of tax	—	—	—	-530	—	-530	—	-530
Total comprehensive income	—	—	—	42,709	1,245	43,954	-1,141	42,813
Acquisition of non-controlling interests	—	—	—	-317	—	-317	-3,785	-4,102
Disposal of non-controlling interests	—	—	—	—	—	—	745	745
Dividends	—	—	—	-1,680	—	-1,680	—	-1,680
Appropriation to reserves	—	—	168	-168	—	—	—	—
As at December 31, 2016	12,000	24,361	26,919	290,544	2,602	356,426	-2,237	354,189

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

for the year ended December 31, 2016 and 2015 (see Note 2.3)

	Attributable to owners of the parent						Non-controlling interests	Total equity
	Issued capital	Capital surplus	Reserves	Retained earnings	Accumulated OCI	Total		
	Thousand USD	Thousand USD	Thousand USD	Thousand USD	Thousand USD	Thousand USD	Thousand USD	Thousand USD
As at January 1, 2015	9,934	20,166	22,025	186,487	-2,261	236,351	2,574	238,925
Profit for the period	—	—	—	24,654	—	24,654	-942	23,712
Gain on valuation of interest rate swaps, net of tax	—	—	—	—	71	71	—	71
Exchange differences on translation of foreign operations, net of tax	—	—	—	—	3,313	3,313	-23	3,290
Re-measurement loss on defined benefit plans, net of tax	—	—	—	-2,880	—	-2,880	—	-2,880
Total comprehensive income	—	—	—	21,774	3,384	25,158	-965	24,193
Dividends	—	—	—	-1,192	—	-1,192	—	-1,192
Appropriation to reserves	—	—	119	-119	—	—	—	—
As at December 31, 2015	9,934	20,166	22,144	206,950	1,123	260,317	1,609	261,926
As at January 1, 2016	9,934	20,166	22,144	206,950	1,123	260,317	1,609	261,926
Profit for the period	—	—	—	35,793	—	35,793	-824	34,969
Loss on valuation of interest rate swaps, net of tax	—	—	—	—	-111	-111	—	-111
Exchange differences on translation of foreign operations, net of tax	—	—	—	—	1,142	1,142	-121	1,021
Re-measurement loss on defined benefit plans, net of tax	—	—	—	-439	—	-439	—	-439
Total comprehensive income	—	—	—	35,354	1,031	36,385	-945	35,440
Acquisition of non-controlling interests	—	—	—	-262	—	-262	-3,133	-3,395
Disposal of non-controlling interests	—	—	—	—	—	—	617	617
Dividends	—	—	—	-1,391	—	-1,391	—	-1,391
Appropriation to reserves	—	—	139	-139	—	—	—	—
As at December 31, 2016	9,934	20,166	22,283	240,512	2,154	295,049	-1,852	293,197

CONSOLIDATED STATEMENTS OF CASH FLOWS

for the year ended December 31, 2016 and 2015

		2016	2015
	Notes	Million KRW	Million KRW
Profit for the year		42,244	28,645
Adjustments of non-cash items	29	63,847	46,804
Changes in operating assets and liabilities	29	23,798	10,344
Interest received		1,184	427
Receipt of dividends		7	25
Payment of income tax		-30,308	-706
Net cash flow from operating activities		100,772	85,539
Proceeds from sale of property, plant and equipment	6, 29	149	674
Proceeds from sale of investment property	7, 29	—	34,409
Proceeds from sale of intangible assets	8, 29	—	223
Proceeds from sale of investments using equity method	10, 29	—	32
Purchase of property, plant and equipment	6	-23,292	-24,700
Purchase of intangible assets	8	-415	-260
Investment in a joint-venture	10	-1,579	-1,377
Increase of other financial assets		-11,319	-3,430
Dividends received from investments using equity method	10	461	545
Net cash flow from investing activities		-35,995	6,116
Proceeds from borrowings (current)		474,861	684,949
Repayment of borrowings (current)		-662,860	-752,666
Proceeds from interest-bearing borrowings (non-current)		123,763	9,179
Repayment of interest-bearing borrowings (non-current)		—	-72
(Decrease) / increase in other financial liabilities		-4,604	1,690
Interest paid		-10,541	-14,404
Dividends paid	17	-1,680	-1,440
Cash payments to non-controlling interests		-3,630	—
Net cash flow from financing activities		-84,691	-72,764
(Decrease) / increase in cash and cash equivalents		-19,914	18,891
Net foreign exchange difference		812	4,119
Cash and cash equivalents at January 1	16	68,402	45,392
Cash and cash equivalents at December 31	16	49,300	68,402

CONSOLIDATED STATEMENTS OF CASH FLOWS

for the year ended December 31, 2016 and 2015 (see Note 2.3)

	2016	2015
	Thousand USD	Thousand USD
Profit for the year	34,969	23,712
Adjustments of non-cash items	52,853	38,744
Changes in operating assets and liabilities	19,700	8,563
Interest received	980	353
Receipt of dividends	6	21
Payment of income tax	-25,089	-584
Net cash flow from operating activities	83,419	70,809
Proceeds from sale of property, plant and equipment	124	558
Proceeds from sale of investment property	–	28,484
Proceeds from sale of intangible assets	–	185
Proceeds from sale of investments using equity method	–	26
Purchase of property, plant and equipment	-19,281	-20,447
Purchase of intangible assets	-344	-215
Investment in a joint-venture	-1,307	-1,140
Increase of other financial assets	-9,371	-2,839
Dividends received from investments using equity method	382	451
Net cash flow from investing activities	-29,797	5,063
Proceeds from borrowings (current)	393,090	567,001
Repayment of borrowings (current)	-548,716	-623,058
Proceeds from interest-bearing borrowings (non-current)	102,451	7,598
Repayment of interest-bearing borrowings (non-current)	–	-60
(Decrease) / increase in other financial liabilities	-3,811	1,399
Interest paid	-8,726	-11,924
Dividends paid	-1,391	-1,192
Cash payments to non-controlling interests	-3,005	–
Net cash flow from financing activities	-70,108	-60,236
(Decrease) / increase in cash and cash equivalents	-16,486	15,636
Net foreign exchange difference	674	3,411
Cash and cash equivalents at January 1	56,623	37,576
Cash and cash equivalents at December 31	40,811	56,623

1. CORPORATE INFORMATION



1.1 THE COMPANY

SONGWON Industrial Group (the “Group”) consists of the parent company Songwon Industrial Co., Ltd. (the “Company”) and its consolidated subsidiaries as listed below. The Company was incorporated on December 15, 1965 under the law of the Republic of Korea to engage in the manufacture and commercial sale of antioxidants, stabilizers and polyurethane. The Company’s main manufacturing plants are located in Ulsan, Maeam and Suwon, all in Korea and in Ankleshwar, India. The address of the registered office (Songwon Industrials Co., Ltd.) can be found at the end of the annual report.

The Company listed its common shares on the Korea Exchange in June 1977 pursuant to the provisions of the Korean Securities and Exchange Act.

1.2 SCOPE OF CONSOLIDATION

1.2.1 CHANGES IN THE SCOPE OF CONSOLIDATION

As of December 31, 2016, the scope of consolidation for the consolidated financial statements encompasses 9 entities (2015: 15 entities). Additionally, two entities are classified as joint ventures (2015: 2 entities) and accounted for using the equity method.

In the course of 2016, following the changes in the legal structure of the Group and the scope of consolidation have taken place:

- merger of Songwon International-India Pvt. Ltd. into Songwon Specialty Chemicals-India Pvt. Ltd.
- acquisition of all non-controlling interest in Songwon Additive Technologies AG by Songwon Holdings AG
- disposal of 18.5% shareholdings in Songwon Polysys Additives LLC by Songwon Additive Technologies AG to PanGulf Holding Company W.L.L. without loss of control
- liquidation of Songwon Trading Co., Ltd.
- liquidation of Songwon Chemicals Co., Ltd.
- merger of Songwon Additive Technologies AG into Songwon Holdings AG
- merger of Songwon Holdings AG into Songwon International AG
- merger of Songwon Additive Technologies-Americas Inc. into Songwon International-Americas Inc.

The consolidated financial statements include the financial statements of the Company and of the subsidiaries listed in the following table. The table also includes joint ventures which are accounted for using the equity method.

		2016		2015	
		December 31		December 31	
Consolidated entities	Location	Status	Interest	Status	Interest
Songwon Industrial Co., Ltd.	Korea	Parent		Parent	
Songwon International-Japan KK	Japan	Subsidiary	100%	Subsidiary	100%
Songwon China Ltd.	Hong Kong	Subsidiary	100%	Subsidiary	100%
Songwon Trading Co., Ltd.	China	—	—	Subsidiary	100%
Songwon Chemicals Co., Ltd.	China	—	—	Subsidiary	100%
Songwon International-India Pvt. Ltd.	India	—	—	Subsidiary	100%
Songwon Specialty Chemicals-India Pvt. Ltd.	India	Subsidiary	100%	Subsidiary	100%
Songwon International-Americas Inc.	USA	Subsidiary	100%	Subsidiary	100%
Songwon Holdings AG	Switzerland	—	—	Subsidiary	100%
Songwon International AG	Switzerland	Subsidiary	100%	Subsidiary	100%
Songwon Additive Technologies AG	Switzerland	—	—	Subsidiary	75%
Songwon ATG GmbH	Germany	Subsidiary	100%	Subsidiary	75%
Songwon Additive Technologies-Americas Inc.	USA	—	—	Subsidiary	75%
Songwon International Middle East FZE (former: Songwon Additive Technologies-Middle East FZE)	UAE	Subsidiary	100%	Subsidiary	75%
Songwon Polysys Additives LLC (former: Polysys Additive Technologies-Middle East LLC)	UAE	Subsidiary	55.5%	Subsidiary	55.5%

Entities accounted for using the equity method (joint ventures)

Songwon Baifu Chemicals (Tangshan) Co., Ltd.	China	Joint Venture	30%	Joint Venture	30%
Qingdao Long Fortune Songwon Chemical Co., Ltd.	China	Joint Venture	50%	Joint Venture	50%

1.2.2 SUMMARIZED STATEMENTS OF FINANCIAL POSITION AND COMPREHENSIVE INCOME OF SUBSIDIARIES

The summarized statements of financial position and comprehensive income of subsidiaries are as follows:

	Total assets	Total liabilities	Total equity	Sales revenue	Net income	Total
2016 as at December 31	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
Songwon Industrial Co., Ltd.	799,009	412,663	386,346	561,119	56,445	56,243
Songwon International-Japan KK	27,834	23,068	4,766	85,481	708	708
Songwon China Ltd.	3,279	5	3,274	—	672	672
Songwon Trading Co., Ltd.	—	—	—	—	-422	-422
Songwon Chemicals Co., Ltd.	—	—	—	—	-79	-79
Songwon Specialty Chemicals-India Pvt. Ltd.	35,492	15,373	20,119	14,981	1,105	1,105
Songwon International-Americas Inc.	54,463	51,789	2,674	142,899	-958	-958
Songwon International AG	155,645	65,978	89,667	182,602	-14,786	-15,249
Songwon ATG GmbH	8,252	1,778	6,474	7,281	1,119	1,119
Songwon International Middle East FZE	8,658	8,303	355	36,117	225	225
Songwon Polysys Additives LLC	23,742	26,759	-3,017	8,602	-2,304	-2,304

2015 as at December 31

Songwon Industrial Co., Ltd.	797,433	465,650	331,783	548,661	43,249	40,221
Songwon International-Japan KK	23,682	19,814	3,868	67,836	779	779
Songwon China Ltd.	5,143	1,882	3,261	9,696	1,964	1,964
Songwon Trading Co., Ltd.	1,696	598	1,098	8,859	5	5
Songwon Chemicals Co., Ltd.	2,475	226	2,249	2,797	546	546
Songwon International-India Pvt. Ltd.	1,646	153	1,493	3,610	105	105
Songwon Specialty Chemicals-India Pvt. Ltd.	35,796	32,414	3,382	13,756	-1,268	-1,248
Songwon International-Americas Inc.	61,456	59,088	2,368	146,591	-1,380	-1,380
Songwon International AG	105,901	75,631	30,270	191,191	-3,699	-4,085
Songwon ATG GmbH	6,938	1,502	5,436	6,837	1,035	1,035
Songwon Additive Technologies-Americas Inc.	5,345	4,126	1,219	2,352	-248	-248
Songwon International Middle East FZE	12,608	12,492	116	30,923	753	753
Songwon Polysys Additives LLC	21,966	22,583	-617	9	-2,989	-2,989



1.2.3 INTEREST IN JOINT VENTURES

In August 2015, the Group disposed of its interest in joint venture Chemservice Asia Co., Ltd., Korea. In the same month the Group established the joint venture Qingdao Long Fortune Songwon Chemical Co., Ltd., located in Qingdao, China. 50% of the established entity belongs to the Group and is involved in the production of One Pack System Blends. Furthermore, the Group has a 30% interest in Songwon Baifu Chemicals (Tangshan) Co., Ltd., which is determined to be a jointly controlled entity involved in the production of thioesters. The determination was driven by contractually agreed sharing of control in regard to relevant activities, which require the unanimous consent of the control-sharing parties.

The summarized statements of financial position and comprehensive income of joint ventures (accounted for using the equity method) are as follows:

Statement of financial position	Cash and cash equivalents	Total current assets	Total non-current assets	Current financial liabilities	Total current liabilities	Non-current financial liabilities	Total non-current liabilities	Equity	Carrying amount
	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	2,518	8,026	6,558	3,336	3,665	—	—	10,919	3,276
Qingdao Long Fortune Songwon Chemical Co., Ltd.	1,740	5,313	773	3,305	3,314	—	—	2,772	1,386
December 31, 2015	4,258	13,339	7,331	6,641	6,979	—	—	13,691	4,662
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	1,631	7,678	7,333	1,913	2,180	—	—	12,831	3,849
Qingdao Long Fortune Songwon Chemical Co., Ltd.	2,802	13,151	3,216	7,482	7,482	3,479	3,479	5,406	2,703
December 31, 2016	4,433	20,829	10,549	9,395	9,662	3,479	3,479	18,237	6,552

Statement of comprehensive income	Revenue	Depreciation & Amortization	Interest income	Interest expense	Profit before tax	Income tax expenses	Profit for the year	Other comprehensive income	Total comprehensive income
	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
Chemservice Asia Co., Ltd.	—	—	—	—	12	-1	11	—	11
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	18,846	-69	3	-103	2,831	-711	2,120	333	2,453
Qingdao Long Fortune Songwon Chemical Co., Ltd.	1,320	-4	2	—	30	-8	22	-4	18
December 31, 2015	20,166	-73	5	-103	2,873	-720	2,153	329	2,482
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	21,204	-59	5	-64	4,457	-1,114	3,343	103	3,446
Qingdao Long Fortune Songwon Chemical Co., Ltd.	17,626	-100	7	-120	-704	118	-586	62	-524
December 31, 2016	38,830	-159	12	-184	3,753	-996	2,757	165	2,922

All joint ventures are measured using the equity method. All operations are continuing. The financial statements of all joint ventures have the same reporting dates as the Group. In 2016, dividends of 461 Million KRW were received from Songwon Baifu Chemicals (Tangshan) Co., Ltd. (2015: 545 Million KRW), see Note 10.

1.2.4 NON-CONTROLLING INTERESTS

1.2.4.1 TRANSACTIONS WITH NON-CONTROLLING INTERESTS

Purchase of non-controlling economic interests in Songwon Additive Technologies AG, Switzerland (merged with Songwon Holdings AG on September 5, 2016, which later merged with Songwon International AG on December 6, 2016):

On April 30, 2016, the Group purchased an additional 25% of the economic interest in Songwon Additive Technologies AG, Switzerland. This thereby increased the equity stake from 75% as of December 31, 2015 to 100% as of December 31, 2016. The consideration of 4,102 Million KRW was determined for the non-controlling shareholders. The amount recorded as non-controlling interests in the Group's equity amounted to 3,785 Million KRW. The effect of changes in the ownership interest of Songwon Additive Technologies AG on the equity attributable to owners of the Group during the year is summarized as follows:

	Million KRW
Cash consideration paid to non-controlling shareholders	-4,102
Carrying value of the additional interest in Songwon Additives Technologies AG	3,785
Decrease in parent's equity	-317

Disposal of interest in Songwon Polysys Additives LLC, United Arab Emirates, without loss of control:

On April 30, 2016, the Group disposed of a 18.5% economic interest out of the 74% economic interest held in Songwon Polysys Additives LLC, United Arab Emirates, at a consideration of 745 Million KRW. The carrying amount of the non-controlling economic interests in Songwon Polysys Additives LLC on the date of disposal was 745 Million KRW (representing 18.5% interest). This resulted in an increase in non-controlling economic interests of 745 Million KRW. No changes arose in equity attributable to owners of the parent as 18.5% were indirectly acquired by SONGWON in the course of purchase of non-controlling economic interests in Songwon Additive Technologies AG, Switzerland on the same date (increase of interest in Songwon Polysys Additives LLC from 55.5% to 74%). The effect of changes in the ownership interest of Songwon Polysys Additives LLC on the equity attributable to owners of the Group during the year is summarised as follows:

	Million KRW
Carrying amount of non-controlling interests disposed of	-745
Consideration received from non-controlling interests	745
Decrease in parent's equity	—

No transactions with non-controlling interest with regards to acquisitions or disposals took place during the reporting period 2015.

1.2.4.2 INTEREST OF NON-CONTROLLING INTERESTS

The Group has one subsidiary (Songwon Polysys Additives LLC, United Arab Emirates) with non-controlling interests representing an ownership of 44.5% as of December 31, 2016.

In 2015, the Group had one subsidiary (Songwon Additive Technologies AG, Switzerland) with non-controlling interests representing ownership of 25% as of December 31, 2015. Within the Additive Technologies subgroup, there were non-controlling interests of 26% in Songwon Polysys Additives LLC. The net loss attributable to the non-controlling interests for the year 2016 is -995 Million KRW (2015: net loss of -1,138 Million KRW). Summarized cash flow information of the partly owned subsidiaries is as follows:

	2016 Million KRW	2015 Million KRW
Operating cash flow	-5,092	209
Investing cash flow	-236	-4,218
Financing cash flow	5,292	1,032
Net cash flow	-36	-2,977

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

2.1 BASIS OF PREPARATION

The financial statements of the Group have been prepared in accordance with Korean International Financial Reporting Standards ("K-IFRS") established adopting International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) in accordance with Item 1 of the 1st Clause of Article 13 of External Audit Law.

The financial statements have been prepared on a historical cost basis, except for certain items, such as financial instruments, which are mentioned separately in the following accounting principles. The financial statements are presented in Korean won (KRW) and all values are rounded to the nearest million (000,000), except when otherwise indicated.

The Group maintains its official accounting records in Korean won and prepares statutory financial statements in the Korean language in conformity with K-IFRS. In the event of any differences in interpreting the financial statements or the independent auditor's report thereon, the Korean version, which is used for regulatory reporting purposes, shall prevail.

2.2 BASIS OF CONSOLIDATION

The consolidated financial statements comprise the financial statements of the Group and its subsidiaries as of December 31, 2016. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Specifically, the Group controls an investee if, and only if, the Group has:

- Power over the investee (i.e. existing rights that give it the current ability to direct the relevant activities of the investee)
- Exposure or rights to variable returns from its involvement with the investee
- The ability to use its power over the investee to affect its returns

When the Group has less than a majority of the voting or similar rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including:

- The contractual arrangement with the other vote holders of the investee
- Rights arising from other contractual arrangements
- The Group's voting rights and potential voting rights

The Group re-assesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control. Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when it loses control of the subsidiary. Assets, liabilities, income and expenses of a subsidiary acquired or disposed of during the year are included in the statement of comprehensive income from the date that the Group gains control until the date that it ceases to control the subsidiary.

Profit or loss and each component of other comprehensive income (OCI) are attributed to the equity holders of the parent of the Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance. When necessary, adjustments are made to the financial statements of subsidiaries to align their accounting policies with the Group's accounting policies. All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full on consolidation.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

2.3 CONVENIENCE TRANSLATION INTO UNITED STATES DOLLAR AMOUNTS

The Parent Company operates primarily in KRW and its official accounting records are maintained in KRW. The US dollar amounts provided in the financial statements represent supplementary information solely for the convenience of the reader. All amounts in Won are expressed in US dollars at the rate of KRW 1,208.02 to USD 1, the exchange rate in effect on December 31, 2016. Such a presentation is not in accordance with generally accepted accounting principles, and should not be construed as a representation that the amounts in Won shown could be readily converted, realized or settled in US dollars at this or at any other rate.

2.4 RESTATEMENT OF THE PRIOR YEAR FIGURES IN THE STATEMENT OF COMPREHENSIVE INCOME

In order to harmonize the accounting treatment of taxes and duties on sales across the Group, a decision was taken in 2016 to reclassify the accumulated taxes and duties of 1,290 Million KRW from selling and administration costs into cost of sales. For the same period 2015, the amount of taxes and duties is total 1,401 Million KRW. This leads to higher costs of sales and lower gross profit, as well as lower selling and administration costs in the previous year. Operating profit and other positions in the statement of comprehensive income are not impacted; net profit and earnings per share remain unchanged.

There has been a change in the booking method of foreign currency translation gains and losses within the operational income and expense and financial income and expense beginning with the second quarter 2016. The prior year reclassification within the operational income and expense amounts to 21,202 Million KRW for the financial year 2015. The prior year reclassification within the financial income and expense amounts to 18,686 Million KRW for 2015. The reclassifications have no impact on EBIT and other positions in the statement of comprehensive income, net profit and earnings per share remain unchanged.

2.5 BUSINESS COMBINATIONS AND GOODWILL

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at acquisition date fair value and the amount of any non-controlling interest in the acquiree. For each business combination, the acquirer measures the non-controlling interest in the acquiree – either at fair value, or at the proportionate share of the acquiree's identifiable net assets. Acquisition costs incurred are expensed and included in administrative expenses.

In business combinations achieved in stages, any previously held equity interest in the acquiree is re-measured to its acquisition date fair value.

Any contingent consideration to be transferred by the acquirer will be recognized at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration, which is deemed to be an asset or liability, will be recognized in profit or loss.

Goodwill is initially measured at cost being the excess of the aggregate of the consideration transferred and the amount recognized for non-controlling interest over the net identifiable assets acquired and liabilities assumed. If this consideration is lower than the fair value of the net assets of the subsidiary acquired, the difference is recognized in profit or loss.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the Group's cash-generating units that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

2.6 INTEREST IN JOINT ARRANGEMENTS

Joint ventures

A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint venture. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control. The considerations made in determining joint control are similar to those necessary to determine control over subsidiaries.

The Group's investments in its joint ventures are accounted for using the equity method. Under the equity method, the investment in a joint venture is initially recognized at cost. The carrying amount of the investment is adjusted to recognize changes in the Group's share of net assets of the joint venture since the acquisition date.

The statement of profit or loss reflects the Group's share of the results of operations of the joint venture. Any change in OCI of those investees is presented as part of the Group's OCI. In addition, when there has been a change recognized directly in the equity of a joint venture, the Group recognizes its share of any changes, when applicable, in the statement of changes in equity. Unrealized gains and losses resulting from transactions between the Group and the joint venture are eliminated to the extent of the interest in the joint venture.

The aggregate of the Group's share of profit or loss in a joint venture is shown on the face of the statement of profit or loss outside operating profit, and represents profit or loss after tax and non-controlling interests in the subsidiaries of the joint venture.

The financial statements of the joint venture are prepared for the same reporting period as the Group. When necessary, adjustments are made to align the accounting policies with those of the Group.

At each reporting date, the Group determines whether there is objective evidence that the investment in the joint venture is impaired. If there is such evidence, the Group calculates the amount of impairment as the difference between the recoverable amount of the joint venture and its carrying value. It then recognizes the loss as "Share of profit of a joint venture" in the statement of profit.

Upon loss of significant influence over the joint venture, the Group measures and recognizes any retained investment at its fair value. Any difference between the carrying amount of the joint venture – upon loss of significant influence or joint control – and the fair value of the retained investment and proceeds from disposal is recognized in profit or loss.

Joint operations

A joint operation is defined as an arrangement in which the parties with joint control have rights to the assets and obligations for the liabilities relating to that arrangement. In respect of its interest in a joint operation, a joint operator must recognize all of its assets, liabilities, revenues and expenses, including its relative share of jointly controlled assets, liabilities, revenue and expenses.

The considerations made in determining joint control are similar to those necessary to determine control over subsidiaries.

2.7 FOREIGN CURRENCY TRANSLATION

The financial statements are presented in Korean won, which is the parent company's functional currency. Each entity in the Group determines its own functional currency, and items included in the financial statements of each entity are measured using that functional currency.

Transactions in foreign currencies are initially recorded by the Group companies at their respective functional currency rates prevailing at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are retranslated at the functional currency spot rate of exchange ruling at the reporting date. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates as of the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined.

The assets, including goodwill and liabilities of foreign subsidiaries, where the functional currency is other than the Korean won, are translated using the exchange rate at the end of the reporting period, while the statements of income are translated using average exchange rates during the period. Differences arising from such translations are recognized within equity and reclassified to net income when the gain or loss on disposal of the foreign subsidiary is recognized.

2.8 PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment is valued at cost less accumulated depreciation and accumulated impairment losses. Such costs include the cost of replacing part of the property, plant and equipment and borrowing costs for long-term construction projects, if the recognition criteria are met. Other repair and maintenance costs are recognized in the income statement as incurred. If the costs of certain components of an item of property, plant and equipment are significant in relation to the total cost of the item, they are accounted for and depreciated separately.

Depreciation expense is recognized using the straight-line method. The following useful lives are assumed:

Land	No depreciation
Buildings	18-54 years
Structures	6-39 years
Machinery	10-20 years
Other	1-10 years

Residual values and useful lives are reviewed annually and, if expectations differ from previous estimates, adjusted accordingly.

The gain or loss arising from derecognition of a property, plant or equipment shall be determined as the difference between the net disposal proceeds and the carrying amount of the asset. It shall be recognized in the income statement when the asset is derecognized.

2.9 INTANGIBLE ASSETS

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is its fair value as at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and accumulated impairment losses.

Intangible assets with useful finite lives are amortized over the useful economic life and assessed for impairment whenever there is an indication that the intangible asset may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at least at the end of each reporting period. Changes in the expected useful life or the expected consumption pattern of future economic benefits embodied in the asset are accounted for by changing the amortization period or method as appropriate, and are treated as changes in accounting estimates. The amortization expense on intangible assets with finite lives is recognized in the income statement under cost of sales, selling and administration costs in the expense category that is consistent with the function of the intangible assets.

Intangible assets with indefinite useful lives (such as goodwill and memberships) are not amortized but are tested for impairment annually either individually, or at the cash-generating unit level. The assessment of indefinite life is reviewed annually to determine whether the indefinite life continues to be supportable. If not, the change in useful life from indefinite to finite is made on a prospective basis.

Gains or losses arising from derecognition of an intangible asset are measured as the difference between the net disposal proceeds and the carrying amount of the asset and are recognized in the income statement when the asset is derecognized.

Intangible assets with finite useful lives are amortized using the straight-line method with the following useful lives:

Software	3-10 years
Industrial rights	10 years
Useful lives of items recognized in business combinations	Over its useful life between 5-9 years
Customer relationships	5-9 years
Non-compete agreements	6 years
Process technologies	5-6 years

2.10 INVESTMENT PROPERTY

The Group classifies the property to earn rentals or for capital appreciation, or both, as investment properties which are accounted for using a cost model. The same accounting policies that are applied to property, plant and equipment are used for their accounting treatment, with the exception of their classification and presentation.

2.11 LEASES

The determination of whether an arrangement is, or contains, a lease is based on the substance of the arrangement at inception date, whether fulfillment of the arrangement is dependent on the use of a specific asset or assets, and the arrangement conveys a right to use the asset, even if that right is not explicitly specified in an arrangement.

Group as a lessee

Finance leases, which transfer substantially to the Group all the risks and benefits incidental to ownership of the leased item, are capitalized at the commencement of the lease at the fair value of the leased property or, if lower, at the present value of the minimum lease payments. Lease payments are apportioned between finance charges and reduction of the lease liability, so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are recognized in finance costs in the income statement.

A leased asset is depreciated over the useful life of the asset. However, if there is no reasonable certainty that the Group will obtain ownership by the end of the lease term, the asset is depreciated over the shorter of its estimated useful life and the lease term.

Operating lease payments are recognized as an operating expense in the income statement on a straight-line basis over the lease term.

Group as a lessor

Leases in which the Group does not transfer substantially all the risks and benefits of ownership of the asset are classified as operating leases. Initial direct costs incurred in negotiating an operating lease are added to the carrying amount of the leased asset and recognized over the lease term on the same basis as rental income. Contingent rents are recognized as revenue in the period in which they are earned. The Group has not entered into finance lease agreements as a lessor.

2.12 IMPAIRMENT OF NON-FINANCIAL ASSETS

The Group reviews non-financial assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If any indication exists, or when annual impairment testing for assets, such as membership is required, the Group estimates the asset's recoverable amount. Recoverability of assets is measured by the comparison of the carrying amount of the asset to the recoverable amount, which is the higher of the asset's value in use and its fair value less costs to sell. If assets do not generate cash inflows that are largely independent of those from other assets or groups of assets, the impairment test is not performed at an individual asset level, instead, it is performed at the level of the cash-generating unit (CGU) that the asset belongs to.

Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In determining fair value less costs to sell, recent market transactions are taken into account, if available. If no such transactions can be identified, an appropriate valuation model is used.

For assets excluding goodwill, an assessment is made at each reporting date as to whether there is any indication that previously recognized impairment losses may no longer exist or may have decreased. If such an indication exists, the Group estimates the asset or cash-generating unit's recoverable amount. A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognized for the asset in prior years. Such a reversal is recognized in the income statement.

The following criteria are also applied in assessing impairment of specific assets:

Goodwill

Goodwill is tested for impairment annually as of December 31, as well as whenever there are events or changes in circumstances (triggering events), which suggest that the carrying amount may not be recoverable. Goodwill is carried at cost less accumulated impairment losses.

For the purpose of impairment testing, goodwill acquired in a business combination is allocated to the (groups of) cash-generating unit(s) that is expected to benefit from the synergies of the business combination. If the carrying amount of the cash-generating unit(s), to which the goodwill is allocated, exceeds its recoverable amount, an impairment loss on goodwill is recognized. The recoverable amount is the higher of the cash-generating unit(s) fair value less costs to sell and its value in use. Impairment losses relating to goodwill cannot be reversed in future periods.

Intangible assets with indefinite useful lives

Intangible assets with indefinite useful lives are tested for impairment annually as of December 31 either individually, or at the cash-generating unit level, as appropriate and when circumstances indicate that the carrying value may be impaired.

2.13 BORROWING COSTS

Borrowing costs directly attributable to the acquisition, construction or production of an asset that accordingly require a substantial time period to prepare for their intended use or sale are capitalized as part of the cost of the respective assets.

2.14 INVENTORIES

Inventory is valued at the lower of the acquisition or production cost and net realizable value, cost being generally determined on the basis of a weighted average. Production costs comprise direct material, labor and applicable manufacturing overheads, including depreciation charges based on normal operating capacity. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and selling expenses.



2.15 CASH AND CASH EQUIVALENTS

Cash and cash equivalents in the statement of financial position comprise cash at banks, as well as on hand and short-term deposits with a maturity of three months or less.

2.16 PROVISIONS

A provision is recognized when the Group has a present legal or constructive obligation as a result of a past event. It is probable that an outflow of economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. If the effect is material, provisions are recognized at present value by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money.

2.17 PENSIONS AND OTHER LONG-TERM EMPLOYMENT BENEFITS

Pensions

The Group operates three defined benefit pension plans: one in Korea, one in Switzerland and one in India. The cost of providing benefits under the defined benefit plan is determined using the projected unit credit method.

Re-measurements, comprising actuarial gains and losses, the effect of the asset ceiling, excluding net interest and the return on plan assets (excluding net interest), are recognized immediately in the statement of financial position with a corresponding debit or credit to retained earnings through OCI in the period in which they occur. Re-measurements are not reclassified to profit or loss in subsequent periods.

Past service costs are recognized in profit or loss on the earlier of:

- The date of the plan amendment or curtailment
- The date that the Group recognizes restructuring-related costs

Net interest is calculated by applying the discount rate to the net defined benefit liability or asset. The pension expenses are recognized in the income statement under cost of sales and selling and administration costs.

Other long-term employment benefits

The parent company also implements a bonus plan based on a prescribed quantity of gold and entitling compensated vacation to long-term employees. The bonus plan accounting policies are mostly the same as the defined benefit plan, except that re-measurements are recognized immediately in profit or loss.

2.18 TAXES

Current income tax

Current income tax assets and liabilities for the current period are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted, or substantively enacted, at the reporting date in the countries where the Group operates and generates taxable income.

Deferred tax

Deferred tax is provided using the liability method on temporary differences at the reporting date between the tax basis of assets and liabilities and their carrying amounts for financial reporting purposes.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- Where the deferred tax liability arises from the initial recognition of goodwill, or of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit, nor taxable profit or loss.
- In respect of taxable temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, where the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred tax assets are recognized for all deductible temporary differences. The carry forward of unused tax credits and unused tax losses is, to the extent of the probability that taxable profit will be available against which the deductible temporary differences. The carry forward of unused tax credits and unused tax losses can be utilized, except:

- Where the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss.
- In respect of deductible temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized.

The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized. Unrecognized deferred tax assets are reassessed at each reporting date and recognized to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date.

Deferred tax relating to items recognized outside profit or loss is recognized outside profit or loss. Deferred tax items are recognized in correlation to the underlying transaction, either in other comprehensive income or directly in equity.

Deferred tax assets and deferred tax liabilities are offset if a legally enforceable right exists to set off current tax assets against current income tax liabilities and the deferred taxes relate to the same taxable entity and the same taxation authority.

2.19 REVENUE RECOGNITION

Revenue is recognized to the extent of the probability that the economic benefits will flow to the Group and the revenue can be reliably measured. Revenue is measured at the fair value of the consideration received or receivable, taking into account contractually defined terms of payment and excluding taxes or duty. The following specific recognition criteria must also be met before revenue is recognized:

Sale of goods

Revenue from the sale of goods is recognized when the significant risks and rewards of ownership of the goods have passed to the buyer.

Interest income

For all financial instruments measured at amortized cost and interest-bearing financial assets classified as available for sale, interest income or expense is recorded using the effective interest rate (EIR), which is the rate that exactly discounts the estimated future cash payments or receipts through the expected life of the financial instrument or a shorter period, where appropriate, to the net carrying amount of the financial asset or liability. Interest income is included in finance income in the income statement.

Rental income

Rental income arising from operating leases on investment properties is accounted for on a straight-line basis over the lease terms and included in revenue due to its operating nature.

Dividends

Revenue is recognized when the Group's right to receive the payment is established.

2.20 FINANCIAL INSTRUMENTS

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Financial assets

All financial assets are recognized initially at fair value plus, in the case of investments not at fair value through profit or loss, directly attributable transaction costs apply. Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the marketplace (regular way trades) are recognized on the trade date i.e. the date that the Group commits to purchase or sell the asset.

The subsequent measurement of financial assets depends on their classification as follows:

- at fair value through profit or loss
- held to maturity
- loans and receivables
- all other financial assets are classified as "available-for-sale"

The Group determines the classification of its financial assets at initial recognition.

Financial assets at fair value through profit or loss

Financial assets at fair value through profit or loss include financial assets held for trading and financial assets designated upon initial recognition at fair value through profit or loss. Financial assets are classified as held for trading if they are acquired for the purpose of selling or repurchasing in the near term. This category includes derivative financial instruments entered into by the Group that are not designated as hedging instruments in hedge relationships as defined by K-IFRS 1039. Derivatives, including separated embedded derivatives, are also classified as held for trading unless they are designated as effective hedging instruments. Financial assets at fair value through profit and loss are carried in the statement of financial position at fair value with changes in fair value recognized in finance income or finance costs in the income statement.

The Group has not designated any financial assets upon initial recognition as at fair value through profit or loss.

Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. After initial measurement, such financial assets are subsequently measured at amortized cost using the effective interest rate method (EIR), less impairment. Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included in finance income in the income statement. The losses arising from impairment are recognized in the income statement in finance costs.

Held-to-maturity investments

Non-derivative financial assets with fixed or determinable payments and fixed maturities are classified as held-to-maturity when the Group has the positive intention and ability to hold it to maturity. After initial measurement, held-to-maturity investments are measured at amortized cost using the effective interest method, less impairment. As for loans and receivables above the EIR, amortization is included in finance income in the income statement. The losses arising from impairment are recognized in the income statement in finance costs.

Available-for-sale financial investments

Available-for-sale financial investments include equity and debt securities. Equity investments classified as available-for-sale are those which are neither classified as held for trading nor designated at fair value through profit or loss. Debt securities in this category are those which are intended to be held for an indefinite period of time and which may be sold in response to needs for liquidity or in response to changes in the market conditions.

After initial measurement, available-for-sale financial investments are subsequently measured at fair value, with unrealized gains or losses recognized as other comprehensive income in the available-for-sale reserve until the investment is derecognized, at which time the cumulative gain or loss is recognized in other income or, determined to be impaired at which time the cumulative loss is reclassified to the income statement in finance costs and removed from the available-for-sale reserve.

Derecognition of financial assets

A financial asset (or where applicable a part of a financial asset or part of a Group of similar financial assets) is derecognized when:

- The rights to receive cash flows from the asset have expired.
- The Group has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a pass-through arrangement; and either (a) the Group has transferred substantially all the risks and rewards of the asset, or (b) the Group has neither transferred, nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

When the Group has transferred its rights to receive cash flows from an asset or has entered into a pass-through arrangement and has neither transferred, nor substantially retained all of the risks and rewards of the asset, nor transferred control of the asset, the asset is recognized to the extent of the Group's continuing involvement in the asset. In that case, the Group also recognizes an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that the Group has retained. Continuing involvement that takes the form of a guarantee over the transferred asset is measured at the lower of the original carrying amount of the asset and the maximum amount of consideration that the Group could be required to repay.

Impairment of financial assets

Further disclosures relating to impairment of financial assets are also provided in the following notes:

- Note 3: Significant accounting judgments, estimates and assumptions
- Note 14: Trade and other receivables

The Group assesses, at each reporting date, whether there is objective evidence that a financial asset or a group of financial assets is impaired. An impairment exists if one or more events that has occurred since the initial recognition of the asset (an incurred 'loss event'), has an impact on the estimated future cash flows of the financial asset or the group of financial assets that can be reliably estimated. Evidence of impairment may include indications that the debtors or a group of debtors is experiencing significant financial difficulty, default or delinquency in interest or principal payments, the probability that they will enter bankruptcy or other financial reorganization and observable data indicating that there is a measurable decrease in the estimated future cash flows, such as changes in arrears or economic conditions that correlate with defaults.

Financial assets carried at amortized cost

For financial assets carried at amortized cost, the Group first assesses whether objective evidence of impairment exists individually for financial assets that are individually significant, or collectively for financial assets that are not individually significant. If the Group determines that no objective evidence of impairment exists for an individually assessed financial asset, whether significant or not, it includes the asset in a group of financial assets with similar credit risk characteristics and collectively assesses them for impairment. Assets that are individually assessed for impairment and for which an impairment loss is, or continues to be, recognized are not included in a collective assessment of impairment.

Available-for-sale financial investments

In the case of equity investments, objective evidence would include a significant or prolonged decline in the fair value of the investment below its cost – a 'significant decline' is evaluated against the original cost of the investment and a 'prolonged decline' against the period in which the fair value has been below its original cost. In the case of debt instruments, impairment is assessed based on the same criteria as financial assets carried at amortized cost. However, the amount recorded for impairment is the cumulative loss measured as the difference between the amortized cost and the current fair value, less any impairment loss on that investment previously recognized in the income statement.

Financial liabilities

All financial liabilities are recognized initially at fair value and in the case of loans and borrowings, including directly attributable transaction costs. The measurement of financial liabilities depends on their classification as follows:

- Financial liabilities at fair value through profit or loss
- Loans and borrowings

The Group determines the classification of its financial liabilities at initial recognition.

Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Financial liabilities are classified as held for trading if they are acquired for the purpose of selling in the near term. This category includes derivative financial instruments entered into by the Group that are not designated as hedging instruments in hedge relationships. Gains or losses on liabilities held for trading are recognized in the income statement. The Group has not designated any financial liabilities upon initial recognition as at fair value through profit or loss.

Loans and borrowings

After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortized cost using the effective interest rate (EIR) method. Gains and losses are recognized in the income statement when the liabilities are derecognized, as well as through the effective interest rate method amortization process. Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included in finance costs in the income statement.

Derecognition

A financial liability is derecognized when the obligation under the liability is discharged, cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability and the difference in the respective carrying amounts, is recognized in the income statement.

Offsetting of financial instruments

Financial assets and financial liabilities are offset and the net amount reported in the consolidated statement of financial position if, and only if, there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, or to realize the assets and settle the liabilities simultaneously.

Derivative financial instruments and hedge accounting

The Group uses derivative financial instruments, such as forward currency contracts and interest rate swaps, to hedge its foreign currency risks, interest rate risks and commodity price risks. Such derivative financial instruments are initially recognized at fair value on the date on which a derivative contract is entered into, and are subsequently re-measured at fair value. Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.

Cash flow hedges

Any gains or losses arising from changes in the fair value of derivatives are taken directly to the income statement, except for the effective portion of cash flow hedges which is recognized in other comprehensive income. Amounts recognized as other comprehensive income are transferred to the income statement when the hedged transaction affects profit or loss, such as when the hedged financial income or financial expense is recognized.

If the forecast transaction or firm commitment is no longer expected to occur, the cumulative gain or loss previously recognized in equity is transferred to the income statement. If the hedging instrument expires or is sold, terminated or exercised without replacement or rollover, or if its designation as a hedge is revoked, any cumulative gain or loss previously recognized in other comprehensive income remains in other comprehensive income until the forecast transaction or firm commitment affects profit or loss.

The Group applies cash flow hedge accounting for interest rate swap contracts.

2.21 NEW AND AMENDED STANDARDS AND INTERPRETATIONS

The accounting policies adopted are consistent with those of the previous financial year, except for the following amendments to K-IFRS effective as of January 1, 2016 and as adopted by the Group:

K-IFRS 1114 Regulatory Deferral Accounts

K-IFRS 1114 is an optional standard that allows an entity, whose activities are subject to rate regulation, to continue applying most of its existing accounting policies for regulatory deferral account balances upon its first-time adoption of K-IFRS. Entities that adopt K-IFRS 1114 must present the regulatory deferral accounts as separate line items on the statement of financial position and present movements in these account balances as separate line items in the statement of profit or loss and OCI. The standard requires disclosure of the nature of, and risks associated with, the entity's rate regulation and the effects of that rate regulation on its financial statements. Since the Group is an existing K-IFRS preparer and is not involved in any rate-regulated activities, this standard does not apply.

Amendments to K-IFRS 1111 Joint Arrangements: Accounting for Acquisitions of Interests

The amendments to K-IFRS 1111 require that a joint operator accounting for the acquisition of an interest in a joint operation, in which the activity of the joint operation constitutes a business, must apply the relevant K-IFRS 1103 principles for business combinations accounting. The amendments also clarify that a previously held interest in a joint operation is not re-measured on the acquisition of an additional interest in the same joint operation, while joint control is retained. In addition, scope exclusion has been added to K-IFRS 1111 to specify that the amendments do not apply when the parties sharing joint control, including the reporting entity, are under common control of the same ultimate controlling party. The amendments apply to both the acquisition of the initial interest in a joint operation and the acquisition of any additional interests in the same joint operation, and are prospectively effective for annual periods beginning on or after January 1, 2016, with early adoption permitted. These amendments do not have any impact on the Group as there has been no interest acquired in a joint operation during the period.

Amendments to K-IFRS 1016 and K-IFRS 1038: Clarification of Acceptable Methods of Depreciation and Amortization

The amendments clarify the principle in K-IFRS 1016 and K-IFRS 1038 that revenue reflects a pattern of economic benefits that are generated from operating a business (of which the asset is part), rather than the economic benefits that are consumed through use of the asset. As a result, a revenue-based method cannot be used to depreciate property, plant and equipment, and may only be used in very limited circumstances to amortize intangible assets. The amendments are effective prospectively for annual periods beginning on or after January 1, 2016, with early adoption permitted. These amendments do not have any impact on the Group as it has not used a revenue-based method to depreciate its non-current assets.

Amendments to K-IFRS 1016 and K-IFRS 1041 Agriculture: Bearer Plants

The amendments change the accounting requirements for biological assets that meet the definition of bearer plants. Under the amendments, biological assets that meet the definition of bearer plants will no longer be within the scope of K-IFRS 1041 Agriculture. Instead, K-IFRS 1016 will apply. After initial recognition, bearer plants will be measured under K-IFRS 1016 at accumulated cost (before maturity) and using either the cost model or revaluation model (after maturity). The amendments also require that produce that grows on bearer plants will remain in the scope of K-IFRS 1041 measured at fair value less costs to sell. For government grants related to bearer plants, K-IFRS 1020 Accounting for Government Grants and Disclosure of Government Assistance will apply. The amendments are applied retrospectively and do not have any impact on the Group as it does not have any bearer plants.

Amendments to K-IFRS 1027: Equity Method in Separate Financial Statements

The amendments will allow entities to use the equity method to account for investments in subsidiaries, joint ventures and associates in their separate financial statements. Entities already applying K-IFRS and electing to change to the equity method in its separate financial statements will have to apply this change retrospectively. The amendments are effective for annual periods beginning on or after January 1, 2016, with early adoption permitted. These amendments do not have any impact on the Group's consolidated financial statements.

Annual Improvements 2012-2014 Cycle

These improvements are effective for annual periods beginning on or after January 1, 2016. They include:

K-IFRS 1105 Non-current Assets Held for Sale and Discontinued Operations

Assets (or disposal groups) are generally disposed of either through sale or distribution to owners. The amendment clarifies that changing from one of these disposal methods to the other would not be considered a new plan of disposal, rather it is a continuation of the original plan. There is, therefore, no interruption of the application of the requirements in K-IFRS 1105. This amendment must be applied prospectively. These amendments do not have any impact on the Group as no assets were classified as held for sale and no operations were discontinued in 2016.

K-IFRS 1107 Financial Instruments: Disclosures

Servicing contracts

The amendment clarifies that a servicing contract that includes a fee can constitute continuing involvement in a financial asset. An entity must assess the nature of the fee and the arrangement against the guidance for continuing involvement in K-IFRS 1107 in order to assess whether the disclosures are required. The assessment of which servicing contracts constitute continuing involvement must be done retrospectively. However, the required disclosures would not need to be provided for any period beginning before the annual period in which the entity first applies the amendments. These amendments do not have any impact on the Group.

K-IFRS 1019 Employee Benefits

The amendment clarifies that market depth of high quality corporate bonds is assessed based on the currency in which the obligation is denominated, rather than the country where the obligation is located. When there is no deep market for high quality corporate bonds in that currency, government bond rates must be used. This amendment must be applied prospectively. The Group adopted the amendments in 2016 accordingly.

K-IFRS 1034 Interim Financial Reporting

The amendment clarifies that the required interim disclosures must either be in the interim financial statements or incorporated by cross-reference between the interim financial statements and wherever they are included within the interim financial report (e.g., in the management commentary or risk report). The other information within the interim financial report must be available to users on the same terms as the interim financial statements and at the same time. This amendment must be applied retrospectively. These amendments do not have any impact on the Group.

Amendments to K-IFRS 1001 Disclosure Initiative

The amendments to K-IFRS 1001 clarify, rather than significantly change, existing K-IFRS 1001 requirements. The amendments clarify:

- The materiality requirements in K-IFRS 1001.
- That specific line items in the statement(s) of profit or loss and OCI and the statement of financial position may be disaggregated.
- That entities have flexibility as to the order in which they present the notes to financial statements.
- That the share of OCI of associates and joint ventures accounted for using the equity method must be presented in aggregate as a single line item, and classified between those items that will or will not be subsequently reclassified to profit or loss.

Amendments to K-IFRS 1110, K-IFRS 1112 and K-IFRS 1028 Investment Entities: Applying the Consolidation Exception

The amendments address issues that have arisen in applying the investment entities exception under K-IFRS 1110 Consolidated Financial Statements. The amendments to K-IFRS 1110 clarify that the exemption from presenting consolidated financial statements applies to a parent entity that is a subsidiary of an investment entity, when the investment entity measures all of its subsidiaries at fair value.

Furthermore, the amendments to K-IFRS 1110 clarify that only a subsidiary of an investment entity that is not an investment entity itself and that provides support services to the investment entity is consolidated. All other subsidiaries of an investment entity are measured at fair value. The amendments to K-IFRS 1028 Investments in Associates and Joint Ventures allow the investor, when applying the equity method, to retain the fair value measurement applied by the investment entity associate or joint venture to its interests in subsidiaries.

K-IFRS 1011 Construction Contract and K-IFRS 2115 Agreements for the Construction of Real Estate

The amendments require additional disclosures of information on construction contracts when the percentage of work completed is measured based on the ratio of the total costs incurred to date to the total estimated contract costs, and the contract revenue exceeds 5% of the preceding year's total revenue. The amendments are effective for annual periods beginning on or after January 1, 2016, and require prospective application in the year in which an entity adopts it for the first time. These amendments are not relevant for the Group as it did not enter into any construction contract during the current period.

3. SIGNIFICANT ACCOUNTING JUDGMENTS, ESTIMATES AND ASSUMPTIONS

The preparation of the Group's financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent liabilities, at the end of the reporting period. However, uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of the asset or liability affected in future periods. The key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date, which have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are described below.

Notes	Description	Nature of estimation
6, 7, 8, 9	Impairment of non-financial assets / goodwill	Impairment exists when the carrying value of an asset or cash-generating unit exceeds its recoverable amount, which is the higher of its fair value less costs to sell and its value in use. The determination of the recoverable amount of a cash-generating unit involves the use of estimates by management. The fair value less costs to sell calculation is based on available data from binding sales transactions in an arm's length transaction of similar assets or observable market prices less incremental costs for disposing of the asset. The value in use calculation is based on a discounted cash flow model. The cash flows are derived from the expectations for the next three to five years and do not include restructuring activities that the Group is not yet committed to or significant future investments that will enhance the asset's performance of the cash-generating unit being tested. The recoverable amount based on the value in use is most sensitive to the discount rate used for the discounted cash flow model (WACC), as well as the expected future cash-inflows and the growth rate used for extrapolation purposes. The recoverable amount based on the fair value less cost to sell is most sensitive to the market prices, premiums and the estimate of cost to sell. These estimates, including the methodologies used, can have a material impact on the fair value and ultimately, the amount of any goodwill impairment.
8	Customer relations	Customer relations are depreciated over their estimated useful life. The estimated useful life is based on estimates of the time period during which this intangible asset generates cash flows, as well as historic empirical data concerning customer loyalty. Calculation of the present value of estimated future cash flows includes essential assumptions, especially of future sales. In addition, discounting is based on assumptions and estimations concerning business-specific capital costs, which are themselves dependent on national risks, and additional risks resulting from the volatility of the respective business.
19, 20	Pension and other employment benefits	The cost of defined benefit pension plans and other similar long-term employee benefits, and the present value of the pension obligation are determined using actuarial valuations. An actuarial valuation involves making various assumptions, which may differ from actual developments in the future. These include the determination of the discount rate, future salary increases, mortality rates and future pension increases. Due to the complexity of the valuation, the underlying assumptions and its long-term nature, a defined benefit obligation is highly sensitive to changes in these assumptions.
27.2	Deferred tax assets	Deferred tax assets are recognized for all unused tax losses to the extent that it is probable that taxable profit will be available against which the losses can be utilized. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and the level of future taxable profits together with future tax planning strategies.
23	Fair value of financial instruments	Where the fair value of financial assets and financial liabilities recorded in the statement of financial position cannot be derived from active, their fair value is determined using valuation techniques including the discounted cash flow model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. The judgments include considerations of inputs, such as liquidity risk, credit risk and volatility. Changes in assumptions about these factors could affect the reported fair value of financial instruments.

4. STANDARDS ISSUED BUT NOT YET EFFECTIVE

The standards and interpretations that are issued, but not yet effective, up to the date of issuance of the Group's financial statements are disclosed below. The Group intends to adopt these standards, if applicable, when they become effective.

K-IFRS 1109 Financial Instruments

The KASB issued the final version of K-IFRS 1109 Financial Instruments that replaces K-IFRS 1039 Financial Instruments: Recognition and Measurement and all previous versions. K-IFRS 1109 brings together all three aspects of the accounting for financial instruments project: classification and measurement, impairment and hedge accounting. K-IFRS 1109 is effective for annual periods beginning on or after January 1, 2018, with early application permitted. Except for hedge accounting, retrospective application is required but providing comparative information is not compulsory. For hedge accounting, the requirements are generally applied prospectively, with some limited exceptions. The Group plans to adopt the new standard on the required effective date. The impact on its consolidated financial statements is as follows:

In connection with the adoption of K-IFRS 1109, the Group has not yet undertaken any update on its internal control processes or a change in the accounting system related to the reporting of financial instruments, and has not been able to analyze the financial impact of the new standard on the financial statements; however, the general impacts on the financial statements are as follows:

(1) Financial asset classification and measurement

The new K-IFRS 1109 requires a financial instrument to be classified and measured subsequently at amortized cost, fair value through other comprehensive income (FVOCI), or fair value through profit or loss (FVTPL), on the basis of the holder's business model and instrument's contractual cash flow characteristics as shown below. The requirements should be applied to an entire financial asset, even if it contains an embedded derivative. That is, in contrast with the requirements of K-IFRS 1039, a derivative embedded within a hybrid (combined) contract containing a financial asset host is not accounted for separately.

Business model	Contractual cash flow characteristics	
	Composed solely of principal and interest	For other cases
Purpose of collecting contractual cash flows	Measured at amortized cost (*1)	Measured at FVTPL (*2)
Purpose of collecting and selling contractual cash flows	Measured at FVOCI (*1)	
Purpose of selling, others	Measured at FVTPL	

(*1) can be designated at FVTPL in order to get rid of or reduce accounting mismatch (cannot cancel)

(*2) can be designated at FVOCI in case of equity securities not for held-for-trading purpose (cannot cancel)

The requirements in K-IFRS 1109 to classify financial assets measured at amortized costs or at FVOCI are stricter than K-IFRS 1039, and thus, the proportion of financial assets measured at FVTPL may increase, which may lead to a rise in profit or loss volatility at the adoption of K-IFRS 1109.

(2) Financial liabilities classification and measurement

In K-IFRS 1109, fair value changes of financial liabilities at FVTPL attributable to changes in credit risk of the liability shall be presented in other comprehensive income not in profit or loss. Amounts presented in other comprehensive income shall not be subsequently transferred to profit or loss. However, the new standard allows the recognition of the full amount of changes in the fair value in profit or loss only if the presentation of the changes in the liability's credit risk in other comprehensive income would create or enlarge an accounting mismatch in profit or loss.

The fair value changes of financial liabilities designated at FVTPL that were previously recognized as profit or loss in K-IFRS 1039 will partially be recorded as other comprehensive income and thus profit or loss related to the evaluation of financial liabilities may decrease.

(3) Impairment: financial assets and contract assets

In K-IFRS 1039, impairment is recognized only when there is objective evidence of impairment based on the incurred loss model. In the new K-IFRS 1109, impairment of debt instruments, lease bonds, contract assets, loan commitments and financial guarantee contracts that are measured at amortized costs or at FVOCI is recognized based on the expected credit loss (ECL) impairment model.

K-IFRS 1109 outlines a 'three-stage' model for impairment based on changes in credit risk since initial recognition. Loss allowance is measured based on the 12-month ECL or life-time ECL which allows early recognition of credit loss compared to the incurred loss model of K-IFRS 1039.

	Classification	Loss allowance
Stage 1	Assets with no significant increase in credit risk since initial recognition (*1)	12-month ECL: Expected credit losses that result from default events that are possible within 12 months after the reporting date.
Stage 2	Assets with significant increase in credit risk since initial recognition	Lifetime ECL: expected credit losses that result from all possible default events over the expected life of the financial instrument.
Stage 3	Credit-impaired assets	

(*1) Low credit risk at the end of reporting period may be considered as no significant increase in credit risk. In K-IFRS 1109, only the accumulated changes in the life-time ECL after initial recognition are taken into account as loss allowance in case credit is impaired at initial recognition of financial assets.

(4) Hedge accounting

The new K-IFRS 1109 maintains mechanics of hedge accounting (fair value hedge, cash flow hedge, overseas operations net investment hedge) as set forth in K-IFRS 1039. However, unlike requirements in K-IFRS 1039 that are too complex and strict, K-IFRS 1109 is more practical, principle-based and less strict and focuses on the entity's risk management activities. Also, K-IFRS 1109 allows broader range of hedged items and hedging instruments. Under K-IFRS 1039, a hedge is assessed to be highly effective only if the offset is in the range of 80-125 percentage by performing numerical test of effectiveness. In K-IFRS 1109, such requirements are alleviated. Transactions not qualifying for hedge accounting requirements of K-IFRS 1039 may now qualify for hedge accounting under K-IFRS 1109, resulting in less volatility in profit or loss.

K-IFRS 1115 Revenue from Contracts with Customers

K-IFRS 1115 establishes a five-step model to account for revenue arising from contracts with customers. Under K-IFRS 1115, revenue is recognized at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer. The new revenue standard will supersede all current revenue recognition requirements under K-IFRS.

Either a full retrospective application or a modified retrospective application is required for annual periods beginning on or after January 1, 2018. Early adoption is permitted. The Group plans to adopt the new standard on the required effective date using the modified retrospective method. During 2016, the Group performed a preliminary assessment of K-IFRS 1115, which is subject to changes arising from a more detailed ongoing analysis.

The new standard K-IFRS 1115 applies to all revenue arising from contracts with customers and replaces K-IFRS 1011 Construction Contracts, K-IFRS 1018 Revenue, K-IFRS 2113 Customer Loyalty Programmes and relevant interpretations.

The principles in K-IFRS 1115 are applied using the following five steps:

1. Identify the contract(s) with a customer
2. Identify the performance obligations in the contract
3. Determine the transaction price
4. Allocate the transaction price to the performance obligations in the contract
5. Recognize revenue when (or as) the entity satisfies a performance obligation

As at December 31, 2016, the Group has not yet undertaken any update on its internal control processes or a change in the accounting system in relation to the adoption of K-IFRS 1115, and has not been able to analyze the impact of the adoption of K-IFRS on the financial statements. The Group will be analyzing the financial impact of the adoption of K-IFRS 1115 by the end of the 3rd quarter of 2017 and disclose the results in the notes to the financial statements for the 3rd quarter of 2017. The general impacts on the Group's consolidated financial statements are as follows:

Amendments to K-IFRS 1007 Statement of Cash Flows: Disclosure Initiative

The amendments to K-IFRS 1007 Statement of Cash Flows are part of the IASB's Disclosure Initiative and require an entity to provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes. On initial application of the amendment, entities are not required to provide comparative information for preceding periods. These amendments are effective for annual periods beginning on or after January 1, 2017, with early application permitted. Application of the amendments will result in additional disclosures provided by the Group.

Amendments to K-IFRS 1012 Recognition of Deferred Tax Assets for Unrealised Losses

The amendments clarify that an entity needs to consider whether tax law restricts the sources of taxable profits against which it may make deductions on the reversal of that deductible temporary difference. Furthermore, the amendments provide guidance on how an entity should determine future taxable profits and explain the circumstances in which taxable profit may include the recovery of some assets for more than their carrying amount. Entities are required to apply the amendments retrospectively. However, on initial application of the amendments, the change in the opening equity of the earliest comparative period may be recognized in the opening retained earnings (or in another component of equity, as appropriate), without allocating the change between opening retained earnings and other components of equity. Entities applying this relief must disclose that fact. These amendments are effective for annual periods beginning on or after January 1, 2017 with early application permitted. If an entity applies the amendments for an earlier period, it must disclose that fact. These amendments are not expected to have any impact on the Group.

Amendments to K-IFRS 1102 Classification and Measurement of Share-based Payment Transactions

The IASB issued amendments to K-IFRS 1102 Share-based Payment that address three main areas: the effects of vesting conditions on the measurement of a cash-settled share-based payment transaction; the classification of a share-based payment transaction with net settlement features for withholding tax obligations; and accounting where a modification to the terms and conditions of a share-based payment transaction changes its classification from cash settled to equity settled.

5. SEGMENT INFORMATION

For management purposes, SONGWON Industrial Group is organized into one main operating segment. All of the Group's activities are interrelated, and each activity is dependent on the others. Accordingly, all significant operating decisions are based upon analysis of the Group as one segment. The results from this operating segment are equivalent to the financial statements of the Group as a whole.

The Group is operating worldwide and therefore, discloses geographic segment information.

5.1 PRODUCT INFORMATION

	2016	2015
	Million KRW	Million KRW
Alkylphenols and Intermediates	1,956	1,872
Plasticizers	8,991	7,977
Polyester Diols	10,333	12,001
Polymer Stabilizers (AOX and UVs)	478,403	450,643
Polyurethanes	43,026	44,592
PVC Stabilizers	45,860	46,381
SAP and Flocculants	9,146	12,316
Tin Intermediates	79,494	71,235
Others	17,117	7,404
Total sales of goods per consolidated income statement	694,326	654,421

5.2 GEOGRAPHIC INFORMATION

Revenue from external customers

	2016	2015
	Million KRW	Million KRW
Korea	187,353	189,784
Rest of Asia	166,526	139,759
Europe	148,395	149,167
North and South America	144,278	136,693
Australia	2,212	2,855
Middle East and Africa	45,562	36,163
Total sales of goods per consolidated income statement	694,326	654,421

The revenue information above is based on the location of the customer. Despite the material Korean home market, all other countries have been summarized within regions. Therefore, no country revenues are disclosed separately. The Group is not recognizing more revenue than 10% of total revenue from one customer during the reporting periods.

Non-current assets

	2016	2015
	Million KRW	Million KRW
Korea	395,583	397,411
Rest of Asia	22,836	23,581
Europe	20,313	25,675
North and South America	4,584	5,072
Middle East and Africa	18,969	19,007
Total	462,285	470,746

Non-current assets for this purpose consist of property, plant and equipment, investment properties and intangible assets.



6. PROPERTY, PLANT AND EQUIPMENT

	Land	Buildings	Structures	Machinery	Other	Construction in progress	Total
Cost	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
At January 1, 2015	147,934	65,493	63,955	431,695	17,426	20,847	747,350
Additions	—	20	—	83	902	22,313	23,318
Disposals	-30	-42	-49	-3,612	-1,521	-109	-5,363
Reclassification	—	2,838	89	17,268	364	-20,559	—
Net exchange differences	—	65	—	233	129	1,227	1,654
At December 31, 2015	147,904	68,374	63,995	445,667	17,300	23,719	766,959
Additions	—	225	12	44	1,228	24,479	25,988
Disposals	—	—	—	-2,485	-965	—	-3,450
Reclassification	—	16,774	1,634	19,522	331	-38,271	-10
Net exchange differences	—	-21	-1	79	1	610	668
At December 31, 2016	147,904	85,352	65,640	462,827	17,895	10,537	790,155

Depreciation and impairment

At January 1, 2015	—	-16,086	-28,106	-256,834	-11,720	—	-312,746
Depreciation charge for the year	—	-1,746	-3,136	-20,219	-1,305	—	-26,406
Disposals	—	17	41	3,168	1,506	—	4,732
Net exchange differences	—	—	—	6	-49	—	-43
At December 31, 2015	—	-17,815	-31,201	-273,879	-11,568	—	-334,463
Depreciation charge for the year	—	-2,297	-3,110	-20,483	-1,495	—	-27,385
Disposals	—	—	—	2,338	939	—	3,277
Net exchange differences	—	-20	—	-32	-48	—	-100
At December 31, 2016	—	-20,132	-34,311	-292,056	-12,172	—	-358,671

Net book value

At December 31, 2016	147,904	65,220	31,329	170,771	5,723	10,537	431,484
At December 31, 2015	147,904	50,559	32,794	171,788	5,732	23,719	432,496

No impairment of fixed assets has been recognized in 2016 or in 2015. Non-cash transactions amounting to 5,085 Million KRW (2015: 2,388 Million KRW) are included in the additions for year ending 2016.

Capitalized borrowing costs

Borrowing costs, which are directly attributable to the acquisition or production of a qualified asset, are capitalized as part of the cost of that asset. No borrowing costs have been capitalized during the 2016 and 2015 financial years.

Finance leases

There are no assets held under leasing agreements, which may be considered as an asset purchase in economic terms (finance lease), in the Group. Payment on leased assets defined as “operating lease” and having a rental character are expensed over the lease period.

Contractual commitments and pledged assets

A pledged asset is an asset that is transferred to a lender for the purpose of securing debt. The lender of the debt maintains possession of the pledged asset, but does not have ownership unless a default occurs (see Note 25). For contractual commitments to purchase property, plant and equipment, refer to Note 24.3.



7. INVESTMENT PROPERTIES

Cost	Land Million KRW	Buildings Million KRW	Structures Million KRW	Total Million KRW
At January 1, 2015	24,570	9,253	381	34,204
Disposals	-21,294	-8,760	-349	-30,403
Net exchange differences	1	6	—	7
At December 31, 2015	3,277	499	32	3,808
Net exchange differences	2	6	—	8
At December 31, 2016	3,279	505	32	3,816

Depreciation

At January 1, 2015	—	-2,759	-164	-2,923
Depreciation charge for the year	—	-95	-6	-101
Disposals	—	2,635	148	2,783
Net exchange differences	—	-5	—	-5
At December 31, 2016	—	-224	-22	-246
Depreciation charge for the year	—	-15	-1	-16
Net exchange differences	—	-4	-1	-5
At December 31, 2016	—	-243	-24	-267

Net book value

At December 31, 2016	3,279	262	8	3,549
At December 31, 2015	3,277	275	10	3,562

Investment properties are stated at cost less any accumulated depreciation and impairment losses, if any. The same useful lives have been used as for property, plant and equipment.

	2016 Million KRW	2015 Million KRW
Rental income	18	1,111
Operational expenses	34	614

Songwon Industrial Co., Ltd. owns an office building in Busan which is subleased. The fair value of the office building amounts to 5,000 Million KRW. Songwon Japan KK also owns an object which is subleased. The fair value of the building and land is 45 Million KRW.

Furthermore, Songwon Industrial Co., Ltd. disposed investment properties in July 2015 which consisted of land (book value: 21,294 Million KRW), buildings (net book value: 6,125 Million KRW) and structures (net book value: 201 Million KRW).

Disclosure of pledged assets can be found in Note 25.

8. INTANGIBLE ASSETS

	Industrial rights	Software	Memberships	Customer relationships	Non-compete contracts	Capitalization process technology	Goodwill	Construction in progress	Total
Cost	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
At January 1, 2015	2,640	2,639	1,077	29,437	13,813	4,793	39,456	1,369	95,224
Additions	64	71	—	—	—	—	—	125	260
Disposals	-64	-230	-225	—	—	—	—	-8	-527
Reclassifications	32	—	—	—	—	—	—	—	32
Net exchange differences	—	45	—	1,954	999	144	2,168	—	5,310
At December 31, 2015	2,672	2,525	852	31,391	14,812	4,937	41,624	1,486	100,299
Additions	—	208	2	—	—	—	—	206	416
Disposals	-119	—	—	—	—	—	—	-331	-450
Reclassifications	776	—	—	—	—	-1,116	—	—	-340
Net exchange differences	—	39	-1	960	126	-3	3,266	—	4,387
At December 31, 2016	3,329	2,772	853	32,351	14,938	3,818	44,890	1,361	104,312

Amortization and impairment

At January 1, 2015	-875	-2,111	—	-12,450	-8,890	-694	-28,752	—	-53,772
Amortization charge for the year	-260	-261	—	-3,937	-2,377	-949	—	—	-7,784
Impairment for the year	—	—	—	—	—	-224	—	—	-224
Disposals	31	232	—	—	—	—	—	—	263
Net exchange differences	—	-21	—	-986	-758	-22	-2,307	—	-4,094
At December 31, 2015	-1,104	-2,161	—	-17,373	-12,025	-1,889	-31,059	—	-65,611
Amortization charge for the year	-333	-201	—	-3,900	-2,442	-729	—	—	-7,605
Disposals	71	—	—	—	—	—	—	—	71
Reclassifications	—	—	—	—	—	340	—	—	340
Net exchange differences	1	-19	—	-487	-471	-23	-3,256	—	-4,255
At December 31, 2016	-1,365	-2,381	—	-21,760	-14,938	-2,301	-34,315	—	-77,060

Net book value

At December 31, 2016	1,964	391	853	10,591	—	1,517	10,575	1,361	27,252
At December 31, 2015	1,568	364	852	14,018	2,787	3,048	10,565	1,486	34,688

The intangible assets (except for goodwill and memberships) are amortized over a finite useful life. The goodwill items consist of items acquired in a business combination. In the financial years 2016 and 2015, no business combination took place that led to a capitalization of intangible assets. The intangible assets with indefinite useful lives are tested for impairment on an annual basis. An impairment test was carried out for goodwill and membership items on the basis of calculated value in use. For further details of the impairment test, see Note 9.

8.1 DETAILS OF INDIVIDUALLY SIGNIFICANT INTANGIBLE ASSETS

Description	Remark	2016	2015	Remaining life
		December 31 Million KRW	December 31 Million KRW	
Industrial rights	REACH	1,206	1,531	5.0 years
Industrial rights	1330 Technology	652	–	9.1 years
Membership	New Seoul Country	778	778	Indefinite
Goodwill	Acquisition of Songwon International AG (former: Songwon Holdings AG)	2,076	2,023	Indefinite
Goodwill	Acquisition of ATG Additive Technology Greiz GmbH	4,708	4,756	Indefinite
Goodwill	Acquisition of Songwon Polysys Additives LLC	133	130	Indefinite
Goodwill	Acquisition of Business SeQuent Scientific Limited	3,658	3,656	Indefinite
Intangible assets acquired in a business combination	Customer relationships	10,531	14,018	2.6 years, 3.0 years
Intangible assets acquired in a business combination	Non-compete contracts	–	2,787	n/a
Intangible assets acquired in a business combination	Capitalization process technologies	1,517	3,048	2.6 years
Construction-in-progress	REACH	1,361	1,486	n/a
Significant intangible assets total		26,620	34,213	

9. IMPAIRMENT TESTING OF GOODWILL AND INTANGIBLES WITH INDEFINITE LIVES

9.1 IMPAIRMENT TEST ON GOODWILL AND INTANGIBLE ASSETS WITH INDEFINITE USEFUL LIFE

Goodwill acquired through business combinations and memberships with indefinite useful lives has been allocated to the cash-generating units (CGUs) according to their business activities. Goodwill acquired in a business combination is allocated to each cash-generating unit expected to benefit from the synergies of the business combination. The goodwill acquired during the acquisition of Songwon International AG, Songwon ATG GmbH, Songwon Polysys Additives LLC, as well as memberships is allocated to the CGU comprising the acquired entities and the parent company, which correspond almost to the entire Group. The goodwill resulting from the business acquisition of SeQuent Scientific Limited was allocated to the distinct CGU of Songwon Specialty Chemicals-India Pvt. Ltd., India (SWCI-IN).

The allocation of the goodwill and intangible assets with indefinite useful life to the cash generating unit is as follows:

	2016 December 31 Million KRW	2015 December 31 Million KRW
Goodwill of Songwon Specialty Chemicals-India Pvt. Ltd., India (SWCI-IN)	3,658	3,656
Goodwill of the rest of the Group (main CGU)	6,917	6,909
Memberships with indefinite useful lives of the rest of the Group (main CGU)	778	778
Total tested goodwill and intangible assets with indefinite useful lives	11,353	11,343

The Group performed its annual impairment test in December 2016 and 2015. The recoverable amount of the CGUs – to which goodwill and intangible assets with indefinite lives are allocated – has been determined based on its value in use, calculated using the discounted cash flow (DCF) model.

As of December 31, 2016, the recoverable amount of the main CGU (rest of the Group) equals 764,492 Million KRW (2015: 900,157 Million KRW). The recoverable amount of the CGU of Songwon Specialty Chemicals-India Pvt. Ltd., India amounts to 26,268 Million KRW or 1,474 Million INR (2015: 33,644 Million KRW or 1,889 Million INR).

There is no impairment loss recognized during 2016 according to the impairment test on goodwill and memberships. As of the measurement date, the recoverable amount based on the value in use in 2016 exceeded the carrying amount of the relevant CGUs.

9.2 KEY ASSUMPTIONS USED IN CALCULATION OF VALUE IN USE

The calculation of the CGU value in use reflects the future cash flows for the next three years for the main CGU and for the next five years for SWCI-IN discounted to the present value at the weighted average cost of capital (WACC) and an estimated residual value. The projected cash flows for the main and SWCI-IN CGUs are estimated on the basis of the Budget 2017 and the Business Plan 2017-2021 respectively, as approved by management and mid-term assumptions. For the free cash flows extending beyond the detailed planning period, a terminal value was computed by capitalizing the normalized cash flows using a constant growth rate. The long-term growth rate is in line with blended long-term inflation expectations for relevant countries.

In addition, a market risk premium of 6.00% (2015: 6.00%) and a small cap premium of 3.58% (2015: 3.74%) were applied for the calculation of the WACC.

The key assumptions underlying the calculation are as follows:

Parameters for the determination of the recoverable amount of the CGU	Description
Average annual growth	Average annual growth is calculated on the basis of mid-term assumptions.
WACC	WACC is calculated using the Capital Asset Pricing Model (CAPM). The latter comprises the weighted cost of own equity and of external borrowing costs. The application of WACC pre-tax and WACC post-tax results in the same value in use.
Long-term growth rate	Long-term growth rate is calculated on the basis of expected inflation rates for currencies of relevant countries.

Parameters for the determination of the recoverable amount of the main CGU	2016	2015
Average annual growth	3.00%	2.50%
Pre-tax WACC	12.94%	13.15%
Post-tax WACC	10.42%	10.86%
Long-term growth rate	2.50%	2.58%

Parameters for the determination of the recoverable amount of the CGU of SWCI-IN	2016	2015
Average annual growth	8.14%	4.39%
Pre-tax WACC	19.62%	18.84%
Post-tax WACC	15.73%	15.55%
Long-term growth rate	4.67%	4.54%

The following changes in material assumptions led to a situation where the value in use equals the carrying amount:

Parameters for the determination of the recoverable amount of the CGU	Sensitivity analysis main CGU (rest of the Group)	Sensitivity analysis SWCI-IN
Average annual growth	0.00%	7.85%
Pre-tax WACC	15.16%	20.25%
Post-tax WACC	12.10%	16.26%
Long-term growth rate	0.00%	3.77%



10. INVESTMENTS ACCOUNTED FOR USING THE EQUITY METHOD

The changes in the interest in joint ventures are summarized as follows:

	As of January 1	Additions	Share of result from equity method revaluation	Dividends	Disposals	Exchange rate effect	As of December 31
2016	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	3,276	—	1,003	-461	—	31	3,849
Qingdao Long Fortune Songwon Chemical Co., Ltd.	1,386	1,579	-293	—	—	31	2,703
Total	4,662	1,579	710	-461	—	62	6,552

2015

Chemservice Asia Co., Ltd.*	15	—	6	—	-21	—	—
Songwon Baifu Chemicals (Tangshan) Co., Ltd.	3,085	—	636	-545	—	100	3,276
Qingdao Long Fortune Songwon Chemical Co., Ltd.	—	1,377	11	—	—	-2	1,386
Total	3,100	1,377	653	-545	-21	98	4,662

* Disposal of interest in the joint venture Chemservice Asia Co., Ltd., Korea in 2015



11. AVAILABLE-FOR-SALE FINANCIAL INVESTMENTS

Description	2016 December 31				2015 December 31			
	Number of shares	% to equity	Cost	Book value	Number of shares	% to equity	Cost	Book value
			Million KRW	Million KRW			Million KRW	Million KRW
Ulsan Broadcasting Corp.	180,000	3.00%	900	900	180,000	3.00%	900	900
Jin Yang Development	900	0.01%	450	450	900	0.01%	450	450
Chemtura Corporation	4,527	—	123	123	4,527	—	123	123
Total			1,473	1,473			1,473	1,473

Investments in equity instruments that do not have a quoted market price in an active market, and whose fair value cannot be reliably measured, are measured at cost.

Impairment on available-for-sale financial investments

For available-for-sale financial investments, the Group assesses at each reporting date whether there is objective evidence that an investment or a group of investments is impaired. In the case of equity investments classified as available-for-sale, objective evidence would include a significant or prolonged decline in the fair value of the investment below its cost.

Based on these criteria, the Group did not identify any impairment on available-for-sale investments as of December 31, 2016 and 2015.

12. OTHER FINANCIAL ASSETS

Description	2016		2015	
	December 31		December 31	
	Non-current	Current	Non-current	Current
	Million KRW	Million KRW	Million KRW	Million KRW
Bank deposits (> 3 months)	5,223	2,881	1,851	3,741
Loans	1,739	14,000	–	7,000
Derivative financial assets (Note 23)	–	–	–	214
Guarantee deposits	236	304	270	144
Total	7,198	17,185	2,121	11,099

12.1 LOANS

Details of loans as of December 31, 2016 and 2015 are as follows:

Description	Annual interest rate (%)	2016	Annual interest rate (%)	2015
		December 31		December 31
		Million KRW		Million KRW
Loans to related party (see note 30)	3.00	14,000	3.50	7,000
Loans to related party (see note 30)	7.06	1,739	–	–
Total		15,739		7,000

12.2 OTHER FINANCIAL ASSETS PLEDGED AS COLLATERAL

The bank deposits pledged as collateral in connection with interest-bearing loans and borrowings as of December 31, 2016 and 2015 are as follows:

	2016	2015
	December 31	December 31
Bank deposits – current (Thousand USD)	3,017	2,485

13. INVENTORIES

Description	2016	2015
	December 31 Million KRW	December 31 Million KRW
Raw materials and supplies	22,999	21,383
Work in progress	267	193
Finished goods	109,064	122,187
Goods in transit	23,228	25,030
Consignment stocks	177	330
Total inventories at the lower of cost and net realizable value	155,735	169,123

As of December 31, 2016, inventory write-off amounted to 1,924 Million KRW for raw materials and finished goods (December 31, 2015: 2,455 Million KRW).



14. TRADE AND OTHER RECEIVABLES

	2016 December 31 Million KRW	2015 December 31 Million KRW
Description		
Trade and notes receivable (net) – third parties	113,546	102,845
Trade and notes receivable (net) – related parties	4,840	2,657
Other receivable (net) – third parties	2,969	3,401
Other receivable (net) – related parties	158	373
Accrued income – third parties	137	310
Accrued income – related parties	59	236
Total	121,709	109,822

Other receivable third parties include customs, rental income and others.

The movements of the allowance for doubtful receivables are as follows:

	Individually impaired Million KRW	Collectively impaired Million KRW	Total Million KRW
January 1, 2015	-408	-52	-460
Charge for the year	-736	-1	-737
Utilized	200	–	200
Unused amounts reversed	601	11	612
December 31, 2015	-343	-42	-385
Charge for the year	-458	-475	-933
Utilized	49	–	49
Unused amounts reversed	88	42	130
December 31, 2016	-664	-475	-1,139

The aging analysis of trade and other receivables is as follows:

Description	Total Million KRW	Neither past due, nor impaired Million KRW	Past due, but not impaired				
			< 30 days Million KRW	31-90 days Million KRW	91-120 days Million KRW	121-180 days Million KRW	> 180 days Million KRW
December 31, 2016	121,709	109,947	8,038	2,431	898	395	–
December 31, 2015	109,822	101,105	7,376	965	223	101	52

See Note 23.3.2 on credit risk of trade receivables, which discusses how the Group manages and measures credit quality of trade receivables that are neither past due, nor impaired.

15. OTHER CURRENT ASSETS

Other current assets as of December 31, 2016 and 2015 consist of the following:

Description	2016	2015
	December 31 Million KRW	December 31 Million KRW
Advance payments	730	993
Prepaid expenses	2,803	2,854
VAT refundables	76	79
Total	3,609	3,926

16. CASH AND CASH EQUIVALENTS

Description	2016	2015
	December 31 Million KRW	December 31 Million KRW
Cash on hand	101	66
Bank accounts	43,960	63,152
Time deposit (< 3 months)	5,239	5,184
Total	49,300	68,402

Cash at banks earns interest at floating rates based on daily bank deposit rates. Time deposits are made for varying periods of between one day and three months, depending on the Group's immediate cash requirements, and earn interest at the respective short-term deposit rates.

17. ISSUED CAPITAL AND RESERVES

17.1 SHARE CAPITAL

In accordance with the Articles of Incorporation, the company is authorized to issue 100,000,000 shares of common stock with a par value of 500 per share. As of December 31, 2016 and 2015, the company issued 24,000,000 shares of common stock with a carrying value of 12,000 Million KRW.

17.2 CAPITAL SURPLUS

As of December 31, 2016 and 2015, the company's capital surplus amounts to 24,361 Million KRW. It comprised paid-in capital in excess of par value of 20,065 Million KRW and gain on disposal of treasury stock of 4,296 Million KRW.

17.3 RESERVES

Description	2016	2015
	December 31	December 31
	Million KRW	Million KRW
Legal reserve	1,104	936
Asset revaluation surplus	25,815	25,815
Total	26,919	26,751

Legal reserves

In accordance with the Korean Commercial Code, an amount equal to at least 10% of cash dividends is required to be appropriated as a legal reserve until the reserve equals 50% of paid-in capital. The legal reserve may not be utilized for cash dividends, but may only be used to offset a deficit, if any, or be transferred to capital. Appropriation to the legal reserve from retained earnings, pursuant to the approval of the General Meeting of Shareholders during 2016 and 2015, amounted to 168 Million KRW and 144 Million KRW, respectively.

Asset revaluation reserve

The Group revalued certain parts of its property, plant and equipment in accordance with the Korean Asset Revaluation Act on January 1, 1984 and January 1, 1999, resulting in a revaluation surplus of 2,884 Million KRW and 64,277 Million KRW, respectively. An asset revaluation surplus amounting to 62,343 Million KRW, net of related revaluation tax, was credited to capital surplus. As of December 31, 2016 and 2015, the asset revaluation surplus is 25,815 Million KRW. The asset revaluation surplus of 23,312 Million KRW and 13,216 Million KRW were utilized in disposition of accumulated deficit pursuant to the approval of the stockholders on March 6, 2009 and March 7, 2008, respectively. The asset revaluation surplus may not be utilized for cash dividends, but may only be used to offset a deficit, if any, or be transferred to capital.

Dividends

Dividends approved by the shareholders are as follows:

Description	2016	2015
	December 31 Million KRW	December 31 Million KRW
Subject to the year	2015	2014
Dividends on ordinary shares in KRW	1,680,000,000	1,440,000,000
Number of shares	24,000,000	24,000,000
Dividends per share in KRW	70	60

17.4 ACCUMULATED OTHER COMPREHENSIVE INCOME

Accumulated other comprehensive income, net of tax, as of December 31, 2016 and 2015 is composed of the following:

Description	2016	2015
	December 31 Million KRW	December 31 Million KRW
Exchange differences on translation of foreign operation	2,784	1,405
Interest rate swaps	-182	-48
Total	2,602	1,357

Details of other comprehensive income for the year ended December 31, 2016 and 2015 are as follows:

Description	2016	2015
	Million KRW	Million KRW
Pre-tax amounts		
(Loss) / gain on valuation of interest rate swaps	-188	86
Exchange differences on translation of foreign operations	1,233	3,974
Re-measurement losses on defined benefit plans	-611	-4,432
Pre-tax amounts total	434	-372
Tax effects		
Gain on valuation of interest rate swaps	54	—
Re-measurement gains on defined benefit plans	81	953
Tax effects total	135	953
Net amounts		
(Loss) / gain on valuation of interest rate swaps	-134	86
Exchange differences on translation of foreign operations	1,233	3,974
Re-measurement losses on defined benefit plans	-530	-3,479
Net amounts total	569	581

18. INTEREST-BEARING LOANS AND BORROWINGS

Interest-bearing loans and borrowings as of December 31, 2016 and 2015 are as follows:

Description	2016	2015
	December 31 Million KRW	December 31 Million KRW
Long-term borrowings	112,220	29,551
Non-current loans and borrowings	112,220	29,551
Current portion of long-term borrowings	23,720	115,211
Current portion of long-term bonds	—	10,000
Short-term borrowings	165,187	207,562
Current loans and borrowings	188,907	332,773
Total	301,127	362,324

Details of long-term borrowings as of December 31, 2016 and 2015 are as follows:

Banks	Description	Annual interest rate (%)	2016	2015
			December 31 Million KRW	December 31 Million KRW
Woori Bank	General Loan	3MCD+1.90	54,000	35,215
Korea Development Bank	General Loan	1.75-3.28	12,053	54,175
Busan Bank	General Loan	MOR+1.52	9,000	9,018
KEB Hana Bank	General Loan	3MCD+1.57	37,333	29,161
Kyong Nam Bank	General Loan	MOR+1.90	8,997	—
Korea Standard Chartered Bank	General Loan	3.98	—	9,018
KEB Abu Dhabi	General Loan	2.00	5,798	—
Polysys Industries LLC	General Loan	6.50	5,211	4,286
Pan Gulf Holding Company W.L.L.	General Loan	6.50	3,548	3,889
Sub-total			135,940	144,762
Less current portion			-23,720	-115,211
Non-current portion			112,220	29,551

Details of privately placed bonds as of December 31, 2016 and 2015 are as follows:

Banks	Issuance date	Maturity date	Annual interest rate (%)	2016	2015
				December 31 Million KRW	December 31 Million KRW
Kyong Nam Bank (see Note 23.1.2)	04.04.2013	04.04.2016	3MCD+2.27	—	10,000
Sub-total				—	10,000
Less short-term bonds				—	—
Less current portion				—	10,000
Non-current portion				—	—

Details for short-term borrowings are as follows:

Banks	Description	Annual interest rate (%)	2016	2015
			December 31 Million KRW	December 31 Million KRW
Woori Bank	General & trade loans	1.77-2.74	32,629	44,971
KEB Hana Bank	General & trade loans	2.30-3.40	7,727	47,237
Korea Development Bank	General & trade loans	1.57-3.18	79,227	51,772
Busan Bank	Trade loans	2.80	9,882	6,985
Kyong Nam Bank	Trade loans	2.47-3.48	25,722	44,758
NRW Bank	General loan	6.03	—	73
NH Bank	General loan	3.52	10,000	10,000
KEB Abu Dhabi	General loan	2.00	—	1,766
Total			165,187	207,562

19. PENSIONS LIABILITY

Pension plan	2016	2015
	Million KRW	Million KRW
Korean	5,315	12,691
Swiss	7,508	6,541
Indian	25	20
Total	12,848	19,252

The Group has three defined benefit pension plans: one in Korea, one in Switzerland and one in India.

The following tables summarize the components of net benefit expense recognized in the income statement, and the funded status and amounts recognized in the statement of financial position for the respective plans.



19.1 DEFINED BENEFIT OBLIGATION

Changes in the defined benefit obligation:

	Korean plan Million KRW	Swiss plan Million KRW	Indian plan Million KRW	Total Million KRW
Defined benefit obligation as of January 1, 2015	42,178	25,568	203	67,949
Pension cost charged to profit or loss				
Service cost	3,587	1,280	21	4,888
Interest	1,614	275	16	1,905
Sub-total included in profit or loss	5,201	1,555	37	6,793
Benefits (paid) / received	-1,495	1,841	-26	320
Re-measurement gains / (losses) in OCI				
Actuarial changes arising from changes in demographic assumptions	1	–	–	1
Actuarial changes arising from changes in financial assumptions	2,512	10	-19	2,503
Experience adjustments	953	674	-3	1,624
Sub-total included in OCI	3,466	684	-22	4,128
Employee contributions	–	571	–	571
Plan amendment	–	84	–	84
Exchange differences	–	1,767	7	1,774
Defined benefit obligation as of December 31, 2015	49,350	32,070	199	81,619
Pension cost charged to profit or loss				
Service cost	4,119	1,444	8	5,571
Interest	1,647	254	16	1,917
Sub-total included in profit or loss	5,766	1,698	24	7,488
Benefits (paid)	-644	-3,725	-6	-4,375
Re-measurement gains / (losses) in OCI				
Actuarial changes arising from changes in demographic assumptions	–	323	–	323
Actuarial changes arising from changes in financial assumptions	-595	518	12	-65
Experience adjustments	–	-128	-12	-140
Sub-total included in OCI	-595	713	–	118
Employee contributions	–	717	–	717
Exchange differences	–	-29	1	-28
Defined benefit obligation as of December 31, 2016	53,877	31,444	218	85,539
Weighted average duration 2015 (years)	10.65	16.80	8.90	
Weighted average duration 2016 (years)	10.16	18.30	9.42	

19.2 PLAN ASSETS

Changes in the fair value of plan assets:

	Korean plan Million KRW	Swiss plan Million KRW	Indian plan Million KRW	Total Million KRW
Fair value of plan assets as of January 1, 2015	28,836	20,367	38	49,241
Pension cost charged to profit or loss				
Interest	1,094	219	3	1,316
Administration expenses	—	-39	—	-39
Sub-total included in profit or loss	1,094	180	3	1,277
Benefits (paid) / received	-1,502	1,841	-26	313
Re-measurement gains / (losses) in OCI				
Return on plan assets (excluding amounts included in interest expense)	-569	256	9	-304
Sub-total included in OCI	-569	256	9	-304
Employer contributions	8,800	894	153	9,847
Employee contributions	—	571	—	571
Exchange differences	—	1,420	2	1,422
Fair value of plan assets as of December 31, 2015	36,659	25,529	179	62,367
Pension cost charged to profit or loss				
Interest	1,216	201	14	1,431
Administration expenses	—	-60	—	-60
Sub-total included in profit or loss	1,216	141	14	1,371
Benefits (paid)	-631	-3,725	-6	-4,362
Re-measurement gains / (losses) in OCI				
Return on plan assets (excluding amounts included in interest expense)	-682	189	—	-493
Sub-total included in OCI	-682	189	—	-493
Employer contributions	12,000	1,098	6	13,104
Employee contributions	—	717	—	717
Exchange differences	—	-13	—	-13
Fair value of plan assets as of December 31, 2016	48,562	23,936	193	72,691

The Group expects to contribute a comparable amount as in 2016 to its defined benefit pension plan in 2017.

19.3 NET PENSION LIABILITY

Changes in the net defined benefit liability are as follows:

	Korean plan Million KRW	Swiss plan Million KRW	Indian plan Million KRW	Total Million KRW
Defined net benefit obligation as of January 1, 2015	-13,342	-5,200	-165	-18,707
Pension cost charged to profit or loss				
Service cost	-3,587	-1,280	-21	-4,888
Administration expenses	—	-39	—	-39
Net interest	-520	-56	-13	-589
Sub-total included in profit or loss	-4,107	-1,375	-34	-5,516
Benefits (paid)	-7	—	—	-7
Re-measurement gains / (losses) in OCI				
Actuarial changes arising from changes in financial assumptions	-2,512	-10	19	-2,503
Actuarial changes arising from changes in demographic assumptions	-1	—	—	-1
Return on plan assets (excluding amounts included in net interest expense)	-569	256	9	-304
Experience adjustments	-953	-674	3	-1,624
Sub-total included in OCI	-4,035	-428	31	-4,432
Employee contributions	—	—	—	—
Employer contributions	8,800	894	153	9,847
Plan amendment	—	-84	—	-84
Exchange differences	—	-348	-5	-353
Defined net benefit obligation as of December 31, 2015	-12,691	-6,541	-20	-19,252
Pension cost charged to profit or loss				
Service cost	-4,119	-1,444	-8	-5,571
Administration expenses	—	-60	—	-60
Net interest	-431	-53	-2	-486
Sub-total included in profit or loss	-4,550	-1,557	-10	-6,117
Benefits received	13	—	—	13
Re-measurement gains / (losses) in OCI				
Actuarial changes arising from changes in financial assumptions	595	-518	-12	65
Actuarial changes arising from changes in demographic assumptions	—	-323	—	-323
Return on plan assets (excluding amounts included in net interest expense)	-682	189	—	-493
Experience adjustments	—	128	12	140
Sub-total included in OCI	-87	-524	—	-611
Employee contributions	—	—	—	—
Employer contributions	12,000	1,098	6	13,104
Exchange differences	—	16	-1	15
Defined net benefit obligation as of December 31, 2016	-5,315	-7,508	-25	-12,848

The re-measurement losses recognized in the statement of comprehensive income were losses of -530 Million KRW (2015: losses of -3,479 Million KRW), net of tax. The total amount at December 31, 2016 of accumulated loss included in retained earnings is -21,854 Million KRW (2015: accumulated loss of -21,324 Million KRW), net of tax.

The principal assumptions used in determining pension benefit obligations for the Group's plans are shown below:

	Determining net expense		Determining pension benefit obligation	
	2016 %	2015 %	December 31, 2016 %	December 31, 2015 %
Discount rate				
Korean plan	3.40%	3.90%	3.50%	3.40%
Swiss plan	0.65%	0.80%	0.65%	0.80%
Indian plan	7.05%	7.80%	7.05%	7.80%
Future salary increases				
Korean plan	5.00%	5.00%	5.00%	5.00%
Swiss plan	2.00%	2.00%	2.00%	2.00%
Indian plan	10.00%	10.00%	10.00%	10.00%

A quantitative sensitivity analysis for significant assumptions as of December 31, 2016 is as follows:

Discount rate	Sensitivity level	Impact on net defined benefit obligation
	Change	Million KRW
Korean plan	+1.00%	-5,035
	-1.00%	5,912
Swiss plan	+0.25%	-939
	-0.25%	996
Indian plan	+1.00%	-208
	-1.00%	241
Salary increase		
Korean plan	+1.00%	5,761
	-1.00%	-5,013
Swiss plan	+0.25%	146
	-0.25%	-144
Indian plan	+1.00%	240
	-1.00%	-208

The sensitivity analysis above has been determined based on a method that extrapolates the impact on defined benefit obligation as a result of reasonable changes in key assumptions occurring at the end of the reporting period.



20. OTHER LONG-TERM EMPLOYEE-RELATED LIABILITIES

Other long-term employee-related liabilities consist of the following:

Description	2016	2015
	December 31	December 31
	Million KRW	Million KRW
Other long-term employee benefits – Korea	2,053	1,779
Other long-term employee benefits – Others	222	125
Share-based payment-related liability	2,170	1,102
Total other long-term employee-related liabilities	4,445	3,006

20.1 OTHER LONG-TERM EMPLOYEE BENEFITS – KOREA

The parent company implements a bonus plan based on a prescribed quantity of gold and entitling compensated vacation to long-term employees. Accounting policies of the bonus plan are mostly the same as that of the defined benefit plan, except that all the past service cost and actuarial variances are recognized immediately in profit or loss.

Description	Million KRW
As of January 1, 2015	1,737
Current service cost	198
Interest cost	65
Re-measurement losses	-78
Total payment	-143
As of December 31, 2015	1,779
Current service cost	192
Interest cost	53
Re-measurement gains	159
Total payment	-130
As of December 31, 2016	2,053

	2016	2015
	December 31	December 31
Discount rate	3.10%	3.10%
Compensation increase	5.00%	5.00%
Compensation per day for vacation	KRW 56,000 - 181,760	KRW 63,360 - 173,600
Rate of increase in gold price	5.60%	5.20%
Gold price per 3.75 gram	KRW 175,000	KRW 159,000

20.2 OTHER LONG-TERM EMPLOYEE BENEFITS – OTHERS

The remaining other long-term employee benefits refer to legally established termination benefits of Group companies located in United Arab Emirates of 151 Million KRW (December 31, 2015: 82 Million KRW) and to expenses for the defined contribution plan of Songwon Specialty Chemicals-India Pvt. Ltd. of 71 Million KRW (December 31, 2015: 43 Million KRW).

20.3 SHARE-BASED PAYMENT RELATED LIABILITY

On March 31, 2013, the Group granted virtual stock options to eligible employees of subsidiaries according to the Virtual Stock Option and Long-term Incentive Plan ("LTIP"). The virtual stock options granted are an entitlement in money, and are neither a stock, nor any other listed or unlisted security and do not grant any right to physically acquire stocks. Settlement of options exercised is in cash only. Upon exercise, SONGWON shall pay the receiver the greater of the difference between the fair market value at the exercise date (listed stock price of Songwon Industrial Co., Ltd.) minus the strike price or 0 (zero). The virtual stock options, granted under the LTIP, are subject to a vesting period of two to four years during which the receiver of the options must be continuously employed by the Group.

The fair value of options, granted as of December 31, 2016 and 2015, was estimated using the following assumptions:

	2016	2015
Dividend yield	0.41%	0.41%
Expected volatility	45.00%	45.00%
Risk-free interest rate	1.80%	2.16%
Weighted average expected life of share options (years)	4.7	5.2
Model used	Binomial tree	Binomial tree

The carrying amount of the liability relating to the LTIP as of December 31, 2016 was 2,170 Million KRW (December 31, 2015: 1,164 Million KRW). 37,650 share options vested as of December 31, 2016 and 14,375 vested as of December 31, 2015.

The expense for employee services received during the year 2016, recognized in the statement of comprehensive income, amounted to 1,094 Million KRW (2015: 944 Million KRW). There were no cancellations and modifications to the awards during the years 2016 and 2015.

Movements during the year

The following table illustrates the number and weighted average exercise prices (WAEP) of, and movements in, share options during the reporting period:

	2016 December 31		2015 December 31	
	Number	KRW	Number	KRW
Outstanding as of January 1	323,300	9,738	215,800	10,349
Granted during the year	143,250	11,215	129,000	8,120
Forfeited during the year	-29,750	10,512	-21,500	9,924
Exercised during the year	-18,300	11,118	—	—
Expired during the year	—	—	—	—
Outstanding as of December 31	418,500	11,270	323,300	9,738
Exercisable as of December 31	52,025	11,023	19,875	11,900

The weighted average remaining contractual life for the share options, outstanding as of December 31, 2016, was 8.0 years (December 31, 2015: 8.4 years). The weighted average fair value of options granted during the reporting period was 8,441 KRW (2015: 10,380 KRW).

The exercise price for options outstanding at the end of the reporting period was 8,120 KRW – 14,550 KRW (2015: 8,120 KRW – 11,900 KRW).

21. OTHER FINANCIAL LIABILITIES

Other financial liabilities as of December 31, 2016 and 2015 are as follows:

Description	2016 December 31		2015 December 31	
	Non-current Million KRW	Current Million KRW	Non-current Million KRW	Current Million KRW
Other specific payables	–	–	483	–
Long-term deposits received	2	–	1	–
Derivative liabilities (see Note 23)	108	128	–	276
Accrued interest expenses	–	508	–	4,599
Unpaid dividends	–	2	–	2
Total	110	638	484	4,877

22. TRADE AND OTHER PAYABLES

Description	2016 December 31 Million KRW	2015 December 31 Million KRW
Trade payables	48,183	40,207
Trade payables (related parties)	1,071	1,519
Other accounts payables	21,716	17,951
Other accounts payables (related parties)	79	–
Other accounts payables (share-based payment related)	–	62
Withholdings	1,150	1,101
Accrued expenses	27,417	15,281
Guarantee deposits	46	21
Total	99,662	76,142

Trade and other payables do not bear interest and usually become due within 30-60 days.

23. ADDITIONAL INFORMATION ON FINANCIAL INSTRUMENTS

23.1 DERIVATIVES FINANCIAL INSTRUMENTS

Description	2016 December 31		2015 December 31	
	Assets	Liabilities	Assets	Liabilities
	Million KRW		Million KRW	
Forward foreign exchange contracts (current portion)	–	–	214	228
Interest rate swaps (current portion)	–	128	–	48
Interest rate swaps (non-current portion)	–	108	–	–
Total	–	236	214	276

23.1.1 CURRENCY FORWARDS

As of December 31, 2016, there are no currency forward contracts which the Group entered into in order to hedge the risk of foreign exchange rate fluctuation of assets denominated in foreign currencies.

Currency forward contracts which the Group entered into in order to hedge the risk of foreign exchange rate fluctuation of assets denominated in foreign currencies, as of December 31, 2015 are as follows:

2015

As of December 31

Contractual party	Position	Contract amount	Maturity dates	Contracted exchange rate (KRW)
Kyong Nam Bank	Sell	EUR 10,500,000	15.01.2016 – 15.12.2016	1,302.30 – 1,319.50
Woori Bank	Sell	JPY 1,524,000,000	15.01.2016 – 16.12.2016	9.5835 – 9.7138

23.1.2 INTEREST RATE SWAPS

As of December 31, 2016 and 2015 the Group has entered into the following interest rate swap contracts:

2016

As of December 31

Description	Bonds contract	Interest rate swap contract
Contract date	08.03.2016	08.03.2016
Maturity date	08.05.2019	08.05.2019
Contract amount	40,000 Million KRW	40,000 Million KRW
Fixed interest rate	n/a	3.48%
Floating interest rate	3MCD+1.90%	3MCD+1.90%
Contract date	08.03.2016	08.03.2016
Maturity date	08.05.2019	08.05.2019
Contract amount	60,000 Million KRW	60,000 Million KRW
Fixed interest rate	n/a	3.30%
Floating interest rate	3MCD+1.57%	3MCD+1.57%

2015

As of December 31

Description	Bonds contract	Interest rate swap contract
Contract date	04.04.2013	23.06.2013
Maturity date	04.04.2016	04.04.2016
Contract amount	10,000 Million KRW	10,000 Million KRW
Fixed interest rate	n/a	5.35%
Floating interest rate	3MCD+2.27%	3MCD+2.27%

The Group applies cash flow hedge accounting on interest rate swap; in 2016, there was an interest rate swap designated as cash flow hedge. The balances included in accumulated other comprehensive loss are 182 Million KRW as of December 31, 2016 and 48 Million KRW as of December 31, 2015 (see Note 17.4), net of income tax.

23.2 FAIR VALUES

Set out below is a comparison by class of the carrying amounts and fair value of the Group's financial instruments carried in the financial statements:

Description	Carrying amount		Fair value	
	2016 December 31 Million KRW	2015 December 31 Million KRW	2016 December 31 Million KRW	2015 December 31 Million KRW
Financial assets at fair value through profit and loss	–	214	–	214
Other financial assets (Derivatives)	–	214	–	214
Thereof current	–	214	–	214
Loans and receivables	195,392	191,230	195,392	191,230
Other financial assets	24,383	13,006	24,383	13,006
Thereof current	17,185	10,885	17,185	10,885
Thereof non-current	7,198	2,121	7,198	2,121
Trade and other receivables	121,709	109,822	121,709	109,822
Thereof current	121,709	109,822	121,709	109,822
Cash and cash equivalent	49,300	68,402	49,300	68,402
Thereof current	49,300	68,402	49,300	68,402
Available-for-sale financial assets	1,473	1,473	1,473	1,473
Thereof non-current	1,473	1,473	1,473	1,473
Total	196,865	192,917	196,865	192,917
Financial liabilities at fair value through profit and loss	–	228	–	228
Other financial liabilities (Derivatives)	–	228	–	228
Thereof current	–	228	–	228
Financial liabilities at fair value through OCI	236	48	236	48
Other financial liabilities (Derivatives)	236	48	236	48
Thereof current	128	48	128	48
Thereof non-current	108	–	108	–
Financial liabilities measured at amortized costs	401,301	443,551	401,301	443,551
Interest-bearing loans and borrowings	301,127	362,324	301,127	362,324
Thereof current	188,907	332,773	188,907	332,773
Thereof non-current	112,220	29,551	112,220	29,551
Other financial liabilities	512	5,085	512	5,085
Thereof current	510	4,601	510	4,601
Thereof non-current	2	484	2	484
Trade and other payables	99,662	76,142	99,662	76,142
Thereof current	99,662	76,142	99,662	76,142
Total	401,537	443,827	401,537	443,827

The fair value of the financial assets and liabilities are included at the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.

The following methods and assumptions were used to estimate the fair values:

- Cash and cash equivalent, trade receivables, other receivables, trade payables and other current liabilities approximate their carrying amounts largely due to the short-term maturities of these instruments.
- Fair value of available-for-sale financial assets is derived from quoted market prices in active markets, if available.
- Fair value of unquoted available-for-sale financial assets is estimated using appropriate valuation techniques (see Note 23.2.1).

23.2.1 FAIR VALUE

The Group uses the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique:

Description	Valuation technique
Level 1	Quoted (unadjusted) prices in active markets for identical assets or liabilities
Level 2	Other techniques for which all inputs, which have a significant effect on the recorded fair value, are observable either directly or indirectly
Level 3	Techniques which use inputs that have a significant effect on the recorded fair value that are not based on observable market data



As of December 31, 2016 and 2015, the Group held the following financial instruments carried at fair value on the statement of financial position:

Description	December 31, 2016	Level 1	Level 2	Level 3
Assets measured at fair value	Million KRW	Million KRW	Million KRW	Million KRW
Available-for-sale financial assets	123	123	—	—
Chemtura Corporation	123	123	—	—

Liabilities measured at fair value

Financial liabilities at fair value through profit or loss	—	—	—	—
Derivatives	—	—	—	—
Financial liabilities at fair value through OCI	236	—	236	—
Derivatives	236	—	236	—

Description	December 31, 2015	Level 1	Level 2	Level 3
Assets measured at fair value	Million KRW	Million KRW	Million KRW	Million KRW
Financial assets at fair value through profit or loss	214	—	214	—
Derivatives	214	—	214	—
Available-for-sale financial assets	123	123	—	—
Chemtura Corporation	123	123	—	—

Liabilities measured at fair value

Financial liabilities at fair value through profit or loss	228	—	228	—
Derivatives	228	—	228	—
Financial liabilities at fair value through OCI	48	—	48	—
Derivatives	48	—	48	—

During the reporting periods ending December 31, 2016 and 2015 there were no transfers between Level 1 and Level 2 fair value measurements. For the financial assets and financial liabilities for which the fair value is disclosed (see Note 23.2) the carrying amount is a reasonable approximation of fair values and is measured using Level 3 measurement methods, except for cash and cash equivalent.

23.3 FINANCIAL RISK MANAGEMENT OBJECTIVES AND POLICIES

The Group's principal financial liabilities comprise loans and borrowings, trade and other payables and other financial liabilities. The main purpose of these financial liabilities is to finance the Group's operations. The Group has trade accounts and other accounts receivables, cash and cash equivalents, and other financial assets that arrive directly from its operations. The Group also holds available-for-sale investments and enters into derivative transactions and applies hedge accounting for cash flow hedges if applicable.

The Group is exposed to market, credit and liquidity risks. The Group's management oversees the management of these risks through appropriate risk assessment and monitoring activities to minimize their effects.

23.3.1 MARKET RISK

Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices. Market prices comprise two types of risk:

- Interest rate risk
- Foreign currency risk

Financial instruments affected by market risk include loans and borrowings, deposits, available-for-sale investments and derivative financial instruments. The sensitivity analyses in the following sections relate to the positions at 31 December in 2016 and 2015.

Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. The Group's exposure to the risk of changes in market interest rates relates primarily to its interest-bearing loans and borrowings, as well as bank deposits with floating interest rates.

The Group's exposure to the risk of changes in market interest rates relates substantially to its interest-bearing loans and borrowings with floating interest rates, which makes the Group exposed to cash flows risk. Responsively, the Group is minimizing the risk partially through interest rate swap contracts, or choosing the most favorable financing instruments by switching to the loans with more favorable conditions or improving the Group's credit rating.

Interest rate sensitivity

The following table demonstrates the sensitivity to a reasonably possible change in interest rates. The Group's exposure to the risk of changes in market interest rates relates primarily to the Group's interest-bearing loans and borrowings, as well as bank deposits with floating interest rates. With all other variables held constant, the Group's profit before tax is affected through the impact on floating rate borrowings as follows:

	Increase/(decrease) in %	Effect on profit before tax Million KRW
2016	1.00	-1,302
	-1.00	1,302
2015	1.00	-1,787
	-1.00	1,787

Foreign currency risk

The Group's exposure to the risk of changes in foreign exchange rates relates primarily to its operating activities. The risk of foreign exchange primarily relates to US Dollars (USD), Euro (EUR), Swiss Francs (CHF), Japanese Yen (JPY), Chinese Yuan Renminbi (CNY), United Arab Emirates Dirham (AED) and to Indian Rupee (INR).

Foreign exchange risks arise when commercial transactions, recognized assets or liabilities are denominated in a currency that is not the entity's functional currency.

The objective of the management of foreign currency risk is to maximize the value of the firm through minimizing the fluctuation of net profit and uncertainty arising from the fluctuation in foreign currency. To accomplish this, the Group uses a strategy to accord the collection terms of receivables and payment terms of payables denominated in USD considering the similar volume of exports and imports. In regard to EUR and JPY, the Group manages the risk through currency forward contracts.

Foreign currency sensitivity

The Group carries out a sensitivity analysis for the dominant foreign currencies: US Dollars (USD), Euro (EUR), Swiss Francs (CHF), Japanese Yen (JPY), Chinese Yuan Renminbi (CNY), United Arab Emirates Dirham (AED) and Indian Rupee (INR). The assumed possible currency fluctuations are based on historical observations and future prognoses. Incorporated into calculations are the financial instruments. The following table demonstrates the sensitivity of consolidated net profit before tax to a reasonably possible shift in exchange rates related to financial instruments held in the balance sheet. Assuming that the other variables are constant and only the foreign exchange rate changes by 10%, the impacts on net profit for the years ended on December 31, 2016 and 2015 are as follows:

Currency	2016 December 31		2015 December 31	
	10% increase Million KRW	10% decrease Million KRW	10% increase Million KRW	10% decrease Million KRW
USD	674	-674	276	-276
EUR	-591	591	-2,236	2,236
JPY	-3	3	121	-121
CNY	-232	232	3	-3
CHF	28	-28	277	-277
AED	34	-34	-269	269
INR	1,149	-1,149	1,148	-1,148
Total	1,059	-1,059	-680	680

The Group's exposure to foreign currency changes for all other currencies is not material.

23.3.2 CREDIT RISK

Credit risk is the risk that a counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss. The Group is exposed to credit risk from its operating activities (primarily for trade receivables) and investing activities.

The Group maintains a policy to keep a trade relationship only with customers with a high credit rating, assessed by credit assessment considering their financial position, past experience of defaults and other indicators of default. If a customer's credit rating worsens, the Group sets an individual credit limit on that customer and intensively manages the credit risk. In addition, the Group minimizes the credit risk by maintaining the exposure to the credit risk at an insignificant level through ongoing management, including periodical reviews on all the customers.

The Group is also exposed to credit risk with regard to bank deposits, as well as cash and cash equivalents in which the maximum exposure to credit risk at the reporting date is the carrying value. The exposure to the related credit risk, however, is relatively restricted because the Group maintains relationships with financial institutions with high credit ratings.

23.3.3 LIQUIDITY RISK

Liquidity risk is the risk that the Group will encounter difficulty in meeting obligations associated with financial liabilities due to the unfavorable economy of the industry or financial market.

The Group manages its liquidity risk through its own strategy and plans, which consider the maturity of financial instruments and expected operating cash flows and include a policy to map out the maturity of financial assets and liabilities.

In addition, the Group maintains credit facilities with the banks to respond to an unexpected shortage in liquidity. The Group manages funding schedules and ongoing review procedures, considering the appropriate mix of long-term and short-term loans and borrowings, to maintain consistency and flexibility in obtaining liquidity and stable financing in response to expansion of the business.

The details of the maturity profile of the Group's financial liabilities, excluding financial derivative instruments, based on contractual undiscounted payments as of December 31, 2016 and 2015 are as follows (based on contractual undiscounted payments):

	Less than a month	1 to 3 months	3 to 12 months	1 to 5 years	> 5 years	Total
2016	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
As of December 31						
Interest-bearing loans and borrowings	22,685	43,890	122,332	112,220	–	301,127
Other financial liabilities	435	75	–	2	–	512
Trade and other payables	59,274	39,217	1,171	–	–	99,662
Total	82,394	83,182	123,503	112,222	–	401,301

	Less than a month	1 to 3 months	3 to 12 months	1 to 5 years	> 5 years	Total
2015	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW	Million KRW
As of December 31						
Interest-bearing loans and borrowings	10,696	180,308	141,769	29,551	–	362,324
Other financial liabilities	683	802	3,116	484	–	5,085
Trade and other payables	54,387	18,256	3,499	–	–	76,142
Total	65,766	199,366	148,384	30,035	–	443,551

23.3.4 CAPITAL MANAGEMENT

The capital managed by the Group is identical to the total amount of equity presented in the consolidated statement of financial position. The primary objective of the Group's capital management is to ensure its continued ability to provide consistency for its equity shareholders through a combination of capital growth and distribution. In order to achieve this objective, the Group monitors its gearing to balance risk and returns at an acceptable level, and also maintains a sufficient funding base to enable the company to meet its working capital and strategic investment needs. To maintain or adjust the capital structure, the company may adjust the dividend payment to shareholders, return capital to shareholders or issue new shares, considering not only the short-term position, but also its long-term operational and strategic objectives. At Group level, the debt ratio is reviewed regularly. The debt-equity ratio as of December 31, 2016 and 2015 is 134% and 167%, respectively.

On a monthly basis, all subsidiaries have to report key performance indicators, which also include capital management information.

24. COMMITMENTS AND CONTINGENCIES

24.1 CONTINGENT LIABILITY

There are no current proceedings, such as lawsuits, claims, investigations and negotiations due to product liability, mercantile law, environmental protection, health and safety etc., which could have a significant influence on business operations, the Group's financial position or income.

24.2 OPERATING LEASE COMMITMENTS

The Group has entered into commercial leases on certain motor vehicles, items of machinery and offices. These leases have duration between 1 and 30 years with a renewal option included in some contracts. There are no restrictions placed upon the Group by entering into these leases. Future minimum rentals payable under non-cancellable operating leases as of December 31, 2016 and 2015 are as follows:

Description	2016	2015
	December 31 Million KRW	December 31 Million KRW
Within one year	-2,121	-1,573
After one year, but not more than five years	-3,956	-3,430
More than five years	-752	-894
Total	-6,829	-5,897

24.3 OTHER COMMITMENTS

As part of its ordinary business, the Group could enter into various contractual commitments for the purchase of tangible fixed assets and intangible assets, as well as investment and promotion properties. As of December 31, 2016, commitments to purchase property, plant and equipment, as well as raw materials amounting to 22,121 Million KRW (December 31, 2015: 7,681 Million KRW) were entered.

The Group has provided one blank promissory note to Hanwha Chemical Co., Ltd. as security on supply contracts.

One check and one promissory note, which the Group received from KEB Hana Bank, are outstanding as of December 31, 2016 due to bankruptcy declared by the check's issuers.

Details of the Group's available short-term credit line facilities (excluding general loans) as of December 31, 2016 are as follows:

Description	Currency	Credit limit	Used	Unused
USANCE and L/C for import	Thousand USD	31,400	7,600	23,800
D/A and D/P trade loans	Thousand USD	123,500	58,589	64,911
	Million KRW	32,000	15,722	16,278
Trade loans	Million KRW	20,000	—	20,000
Secured loan of credit sales	Million KRW	11,000	6,005	4,995
L/G for import	Thousand USD	1,000	—	1,000
Other foreign currency guarantees	Thousand USD	7,400	6,400	1,000
Total	Total Million KRW	63,000	21,727	41,273
Total	Total Thousand USD	163,300	72,589	90,711

For the replacement of the syndicated loan which matured in March 2016 and was repaid, new loans of totally 120,000 Million KRW were received from the banks. No covenants were agreed on the loans received.



25. ASSETS PLEDGED AS COLLATERAL AND GUARANTEES

Details of property, plant and equipment, and investment properties pledged by the Group as collateral for interest-bearing loans and borrowings as of December 31, 2016 and 2015, expressed in the maximum value registered to Korean court, are as follows:

		2016		2015
Pledged to	Pledged assets	December 31		December 31
Property, plant and equipment and Investment properties (Joint collateral in connection with syndicated loan)		Currency	Million KRW / Thousand USD	Million KRW
Woori Bank	Land, buildings, investment properties and machinery	KRW	—	242,000
KEB Hana Bank	Land, buildings, investment properties and machinery			
Busan Bank	Land, buildings, investment properties and machinery			
Korean Standard Chartered Bank	Land, buildings, investment properties and machinery			
Property, plant and equipment (Joint collateral in connection with long-term loan)				
Busan Bank	Land, buildings and machinery	KRW	30,000	—
		USD	24,000	—
Kyong Nam Bank	Land, buildings and machinery	KRW	18,000	—
Property, plant and equipment (Collateral for other than syndicated loan or long-term loan)				
Korea Development Bank	Land, buildings, investment properties and machinery	KRW	57,000	57,000
Woori Bank	Land, buildings and machinery	KRW	120,000	—
KEB Hana Bank	Land, buildings and machinery	KRW	60,000	—
Total		KRW	285,000	299,000
		USD	24,000	—

No other items of property, plant and equipment are pledged as a collateral for interest-bearing loans and borrowings as of December 31, 2016 (December 31, 2015: 74 Million KRW).

The Group has received payment guarantees amounting to 317,753 Million KRW and 64,160 Thousand USD provided by Jongho Park, Chairman of the Board of Directors of the Group, in connection with the Group's borrowings from banks as of December 31, 2016.

For further details regarding other financial assets pledged as collateral, see Note 12.2.

26. OPERATING PROFIT AND OTHER INCOME / EXPENSES

26.1 RESEARCH AND DEVELOPMENT EXPENSES

Research and development expenses of 3,049 Million KRW (2015: 2,906 Million KRW) are recorded in the income statement. Development expenses are not capitalized because the conditions for capitalization have not been met.

26.2 SELLING AND ADMINISTRATION COST

	2016	2015 (restated*)
Description	Million KRW	Million KRW
Sales-related costs	-28,005	-31,292
Personnel expenses	-45,302	-34,364
Travelling and entertainment	-6,524	-5,053
Depreciation and amortization	-7,878	-7,892
Impairment of intangible assets	—	-224
Administration expenses	-7,587	-6,568
Bad debt loss	-803	-125
Others	-5,600	-4,271
Total	-101,699	-89,789

* see note 2.4 on page 127 for further details

26.3 OTHER INCOME

	2016	2015 (restated*)
Description	Million KRW	Million KRW
Fee income	95	95
Miscellaneous income	2,966	2,135
Gains on foreign exchange transaction	8,117	6,880
Gains on foreign exchange translation	4,484	2,549
Gain on disposal of property, plant and equipment, and investment property	19	7,666
Rental income (third parties)	18	1,111
Total	15,699	20,436

* see note 2.4 on page 127 for further details

26.4 OTHER EXPENSES

	2016	2015 (restated*)
Description	Million KRW	Million KRW
Miscellaneous expenses	-1,827	-1,653
Loss on disposal of property, plant and equipment, and investment property	-42	-834
Loss on disposal of intangible assets	-379	-41
Loss on foreign exchange transaction	-8,412	-7,347
Loss on foreign exchange translation	-2,238	-2,121
Total other expenses	-12,898	-11,996

* see note 2.4 on page 127 for further details

26.5 EXPENSES CLASSIFIED BY NATURE

	2016	2015 (restated*)
Description	Million KRW	Million KRW
Purchased material	-368,664	-370,635
Freight and logistic costs	-26,290	-28,497
Energy costs	-31,329	-38,296
Personnel expenses	-99,989	-82,790
Depreciation, amortization and Impairment	-35,028	-34,505
Foreign exchange losses	-10,650	-9,105
Other expenses	-58,924	-53,199
Total	-630,874	-617,027
Thereof recorded in cost of sales	-516,277	-515,242
Thereof recorded in selling and administration costs	-101,699	-89,789
Thereof recorded in other expenses	-12,898	-11,996
Total	-630,874	-617,027

* see note 2.4 on page 127 for further details

26.6 FINANCE EXPENSES

Description	2016	2015 (restated*)
	Million KRW	Million KRW
Interest on borrowings	-11,173	-15,518
Total interest expenses	-11,173	-15,518
Loss on foreign exchange	-16,971	-20,051
Loss on derivative transaction	-2,260	-1,706
Loss on valuation of derivatives	—	-228
Bank charges	-254	-235
Total finance expenses	-30,658	-37,738

* see note 2.4 on page 127 for further details

26.7 FINANCE INCOME

Description	2016	2015 (restated*)
	Million KRW	Million KRW
Gain on foreign exchange	12,019	21,196
Gain on derivative transaction	1,311	1,937
Gain on valuation of derivatives	—	214
Gain on disposal of available for sale securities in investment	—	11
Interest on loans and receivables (third parties)	559	476
Interest on loans and receivables (related parties)	514	235
Other	6	25
Total finance income	14,409	24,094

* see note 2.4 on page 127 for further details

26.8 NET GAINS AND LOSSES OF THE CLASSES OF FINANCIAL INSTRUMENTS

Net gains or losses (excluding bank charges) on the classes of the financial instruments for the year ended December 31, 2016 and 2015 are as follows:

Description	2016	2015 (restated*)
	Million KRW	Million KRW
Financial assets measured at fair value through profit or loss	-949	218
Loans and receivables	-1,014	2,311
Available-for-sale financial assets	-26	47
Financial liabilities measured at amortized cost	-14,006	-15,985
Total	-15,995	-13,409
Finance expenses	-30,658	-37,738
Finance income	14,409	24,094
Bank charges	254	235
Total	-15,995	-13,409

* see note 2.4 on page 127 for further details

27. INCOME TAX EXPENSES

The major components of income tax expense for the years ended December 31, 2016 and 2015 are as follows:

27.1 CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

	2016	2015
Description	Million KRW	Million KRW
Current income tax charge	-17,087	-21,334
Adjustments in respect of current income tax of previous year	-142	64
Deferred income taxes relating to changes of temporary differences, net	-3,885	3,951
Deferred income taxes relating to tax loss carry forwards	-389	178
Deferred income taxes related to changes in tax rate	—	-6
Deferred income taxes recognized directly to other comprehensive income	135	953
Income tax expense reported in the income statement	-21,368	-16,194

	2016	2015
Description	Million KRW	Million KRW
Accounting profit before income tax	63,612	44,839
At parent company's statutory income tax rate of 23.60% (2015: 23.41%)	-15,014	-10,497
Increase / (decrease) in income taxes resulting from:		
Adjustments in respect to current income tax of previous years	-142	64
Non-temporary differences	-553	-431
Tax credits	632	79
Non-deductible expenses	-1,120	-580
Tax audit	-1,431	—
Effect of different tax rates in tax jurisdiction	-2,246	-1,763
Other (reassessment of impaired deferred tax assets, etc.)	-1,494	-3,066
At the effective income tax rate 33.59% (2015: 36.12%)	-21,368	-16,194

27.2 DEFERRED TAX

Deferred tax relates to the following:

Description	Consolidated statements of financial position		Consolidated statements of comprehensive income	
	2016	2015	2016	2015
	December 31 Million KRW	December 31 Million KRW	Million KRW	Million KRW
Pension obligation	790	2,077	-1,401	-813
Other long-term employment benefits	567	448	119	41
Trade receivables	36	36	—	36
Inventories	2,872	2,814	58	688
Fixed assets	-13,554	-20,564	7,010	1,133
Loss / gain on revaluation of land	-27,283	-21,699	-5,584	3,212
Other current financial assets	—	52	-52	52
Other current assets	16	50	-34	55
Accrued income	-17	-56	39	-50
Prepaid expenses	—	—	—	-92
Other current financial liabilities	347	186	161	17
Other current provisions	48	94	-46	7
Intangible assets	-537	-1,201	664	616
Gain / loss on interest rate swap	—	109	-109	-4
Losses available for offsetting against future taxable income	256	645	-389	178
Investments in subsidiaries	-4,629	—	-4,629	—
Deferred tax (expense) / income			-4,193	5,076
Net deferred tax liabilities	-41,088	-37,009		

Reflected in the statement of financial position as follows:

Deferred tax assets	3,937	4,784
Deferred tax liabilities	-45,025	-41,793

The Group offsets tax assets and liabilities if, and only if, it has a legally enforceable right to do so, and the deferred tax assets and deferred tax liabilities relate to income taxes levied by the same tax authority.

Reconciliation of deferred tax liabilities, net:

	2016	2015
Description	Million KRW	Million KRW
Opening balance as of January 1	-37,009	-42,908
Tax income during the period recognized in total comprehensive income	-4,112	6,030
Exchange differences	33	-131
Closing balance as of December 31	-41,088	-37,009

Expecting sufficient taxable income, the Group recognized deferred income tax assets to the extent of future taxable income. For the following deductible temporary differences, no deferred tax assets as of December 31, 2016 and 2015 were recognized:

	2016	2015
Description	Million KRW	Million KRW
Temporary differences related to investments in subsidiaries	3,260	1,742
Total	3,260	1,742

Expected timing of expiration of recognized, tax loss carry forwards and tax credit carry forwards as of December 31, 2016 and 2015 are as follows:

	Recognized deferred tax assets	
2016	Tax loss carry forwards	Tax credit carry forwards
As of December 31	Million KRW	Million KRW
less 1 year	—	—
1-5 years	—	—
5 years and later	256	—
Total	256	—

2015		
As of December 31	Million KRW	Million KRW
less 1 year	—	—
1-5 years	—	—
5 years and later	645	—
Total	645	—

28. EARNINGS PER SHARE

Basic earnings per share amounts are calculated by dividing net profit for the year attributable to ordinary equity holders of the parent company by the average number of ordinary shares outstanding during the year. There is no difference between basic and diluted earnings per share in 2016 and 2015.

The following reflects the income and share data used in the basic per share computations:

Description	2016	2015
	KRW	KRW
Net profit attributable to ordinary equity holders of the parent	43,238,976,682	29,782,964,616
Weighted average number of ordinary shares	24,000,000	24,000,000
Earnings per share (basic / diluted)	1,802	1,241

29. CASH FLOW STATEMENT

Cash and cash equivalents in the statement of cash flow are equal to those in the statement of financial position.

The Group's statement of cash flow is prepared using the indirect method. The adjustments to the net profit for the period of the non-cash and non-operating items, and changes in operating assets and liabilities for the years ended December 31, 2016 and 2015 are as follows:

		2016	2015
Description	Notes	Million KRW	Million KRW
Adjustments of non-cash items			
Depreciation and impairment of property, plant and equipment	6	27,385	26,406
Depreciation of investment properties	7	16	101
Amortization and impairment of intangible assets	8	7,605	8,008
Loss / (gain) on disposal of property, plant and equipment, net		24	-43
(Gain) on disposal of investment property, net		—	-6,789
Loss on disposal of intangible assets, net	8	379	41
(Gain) on disposal of investment accounted using the equity method, net		—	-11
Share of result from investments accounted for using the equity method	10	-710	-653
Finance expenses		13,225	14,649
Finance income		-5,445	-11,099
Income tax expenses	27	21,368	16,194
Total		63,847	46,804

Description	2016	2015
	Million KRW	Million KRW
Changes in operating assets and liabilities		
Trade receivables	-9,174	7,856
Other receivables	995	-1,258
Other current assets	53	232
Other current financial assets	214	105
Inventories	14,885	5,158
Trade payables	6,796	-422
Other payables	12,767	2,327
Other current financial liabilities	-283	342
Other current liabilities	2,561	-650
Pension liabilities	-6,432	-4,301
Other long-term employment benefits	1,416	955
Total	23,798	10,344

30. RELATED PARTY DISCLOSURES

The following table provides the total amount of transactions that have been entered into with related parties for the relevant financial year and balances as per year-end:

Related party	Description	2016	2015
		Million KRW	Million KRW
Jongho Park, Chairman of the Board of Directors	Finance income	453	235
Songwon Baifu Chemicals (Tangshan) Co., Ltd. (Joint Venture)	Cost of sales	-13,354	-12,866
Chemservice Asia Co., Ltd. (Joint Venture)	Selling and administration costs	–	-36
	Other operating income	–	36
Qingdao Long Fortune Songwon Chemical Co., Ltd. (Joint Venture)	Sales of goods	9,903	2,428
	Selling and administration costs	-595	–
	Other operating income	169	–
	Finance income	61	–
Total	Sales of goods	9,903	2,428
	Cost of sales	-13,354	-12,866
	Selling and administration costs	-595	-36
	Other operating income	169	36
	Finance income	514	235

Related party	Description	2016	2015
		December 31 Million KRW	December 31 Million KRW
Jongho Park, Chairman of the Board of Directors	Trade and other receivables	54	236
	Other current financial assets	14,000	7,000
Songwon Baifu Chemicals (Tangshan) Co., Ltd. (Joint Venture)	Trade and other payables	1,071	1,519
Qingdao Long Fortune Songwon Chemical Co., Ltd. (Joint Venture)	Other non-current financial assets	1,739	–
	Trade and other receivables	5,003	3,030
	Trade and other payables	79	–
Total	Other non-current financial assets	1,739	–
	Trade and other receivables	5,057	3,266
	Other current financial assets	14,000	7,000
	Trade and other payables	1,150	1,519

A long-term loan of 10 Million CNY (1,739 Million KRW) was granted to Qingdao Long Fortune Songwon Chemical Co., Ltd. in the third quarter 2016.

30.1 THE ULTIMATE PARENT

Songwon Industrial Co., Ltd. is the ultimate Parent based and listed in Korea.

30.2 TERMS AND CONDITIONS OF TRANSACTIONS WITH RELATED PARTIES

Outstanding balances at the year-end are unsecured, interest free and settlement occurs in cash. There have been no guarantees provided or received for any related party receivables or payables. For the year ended December 31, 2016, the Group has not recorded any impairment of receivables relating to amounts owed by related parties (2015: None). This assessment is undertaken each financial year through examining the financial position of the related party and the market in which the related party operates.

30.3 TRANSACTIONS WITH KEY MANAGEMENT PERSONNEL

In the 2016 reporting period, the Group granted a loan of 14,000 Million KRW to the Chairman of the Board of Directors of the Group, Jongho Park at usual market conditions.

30.4 COMPENSATION OF KEY MANAGEMENT PERSONNEL OF THE GROUP

Description	2016	2015
	Million KRW	Million KRW
Short term employee benefits	14,930	11,332
Post-employment benefits	921	816
Other long-term benefits	2,713	917
Share-based payments	304	401
Total compensation paid to key management personnel	18,868	13,466

The amounts disclosed in the table are the amounts recognized as an expense during the reporting period related to key management personnel. Key management personnel are those persons with authority and responsibility for planning, directing and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of that entity.

30.5 OTHER RELATED PARTIES

Other related parties are Songwon Moolsan Co., Ltd. (Korea) which has significant influence on the Group due to the interest held in the share capital of the parent company of 23.88%. Further, the subsidiary of Songwon Moolsan Co., Ltd., Kyungshin Industrial Co., Ltd., which holds interest in the share capital of the parent company of 9.15%, is identified as a related party to the Group.



31. EVENTS AFTER THE REPORTING PERIOD

The consolidated financial statements for the year ended December 31, 2016 were approved by the Board of Directors of the parent company on January 31, 2017.

Otherwise, no significant events occurred during the period from the statement of financial position date, up to the date upon which the annual consolidated financial statements were issued.

SONGWON's Brands	202
About this Report	205
Forward Looking Statements	205
SONGWON's Contacts	206



Final Overview



SONGWON's Brands

SONGNOX®

OPS Blends

SONGCAT™

Organo-Tin
Intermediates

SONGSORB®

Light Stabilizers

SONGNOX®

Stabilizers

SONGXTEND®

Stabilizer Solutions

© Registered trademarks of Songwon Industrial Co., Ltd.
™ Trademarks of Songwon Industrial Co., Ltd.

All of SONGWON's trademarks and product line brand names used in conjunction with SONGWON's business operations are registered (®) with the U.S. Patent and Trademark Office, and registered or subject to pending trademark applications (™) with the registries of many foreign countries, and/or are protected by common law.

Accordingly, SONGWON intends to keep its filings current and seek protection for new trademarks or product names on a country-by-country basis consistent with its business needs. All other trademarks, service marks, logos and trade names referenced in any of SONGWON's material are the property of their respective owners.

SONGSTAB™

Acid Scavengers &
PVC Stabilizers

SONGSTOMER™

TPU Grades

SONGCIZER™

Plasticizers

SONGCURE®

Photoinitiators

HI-THANE™

Polyurethanes

HI-SWELL™

Super Absorbent
Polymers

SONGSTAR™

Polyester
Diols



About this Report

This is the most recent annual report of the SONGWON Industrial Group, giving all of our stakeholders a comprehensive overview of SONGWON's economic, environmental and social performance in 2016 (FY January-December 2016). It succeeds the previous SONGWON Annual Report 2015, published in March 2016.

SONGWON's Corporate Sustainability Report includes updates to the previous report that reflect data through end-of-year 2016 unless otherwise specified. Data for this report has been measured according to industry standard measurement methods unless otherwise stated. There are no significant changes in the scope, boundary or measurement methods applied in the report.

Restatements of information provided in earlier reports are disclosed separately.

SONGWON Industrial Group Structure and its countries of operations define the boundary for this report within the reporting period unless otherwise stated.

This Report follows the GRI's G4 Guidelines, 'in accordance' Core option. SONGWON does not currently engage an external agency or organization to audit its GRI responses.

Our Financial Statements are audited by a third party, the Group auditor, Ernst & Young.

Forward Looking Statements

This annual report contains forward-looking statements concerning the future plans, strategies and performance of the SONGWON Group. These statements reflect the views, expectations and assumptions of the SONGWON Group management based on the current information available at the date of publication. Such statements are subject to various known and unknown factors, risks and uncertainties that may cause the actual future results, financial situation, development or performance of the company to differ from the expectations expressed in the annual report. The company assumes no liability whatsoever to update these statements or to confirm them to future events or developments.

For more information about this report, please contact:

[Songwon International AG](#)

Phone: +41 52 635 00 00

Fax: +41 52 635 00 01

E-mail: marketing@songwon.com

SONGWON's Contacts

Songwon Industrial Co., Ltd.

83, Jangsaengpo-ro
Nam-Gu 44781
Ulsan, Korea

Songwon International AG

Walzmühlestrasse 48
CH-8500 Frauenfeld,
Switzerland

Songwon International-Americas, Inc.

1311 W Parkwood Ave
Friendswood, TX 77546
USA

Songwon International – Japan K.K.

Nishi-Shinbashi 1chome Kawate building 8F
room 801 Nishi-Shinbashi 1-5-8
Minato-ku, 105-0003 Tokyo, Japan

Songwon China Ltd.

Unit 02, 21st Floor, Tower II
Admiralty Centre,
No.18 Harcourt Road
Hong Kong, China

Songwon Baifu Chemicals (Tangshan) Co., Ltd.

Tangshan Nanpu Development Zone
South to Ronghua Road
Tangshan, China

Songwon Industrial Co. Ltd.

Regional Office South East Asia
34-01, Jalan Molek 1/28, Taman Molek,
81100 Johor Bahru,
Malaysia

Songwon International – Middle East FZE

Representative Office Bahrain
Suite 706, 7th Floor, Trust Tower
Building 125, Road 1702, Diplomatic Area Manama,
Kingdom of Bahrain

Songwon-ATG GmbH

Nideggener Strasse 213
DE-52349 Düren,
Germany

Songwon Additive Technologies – Middle East FZE

Dubai Airport Free Zone
Building 6EB, Office No. 250
P.O. Box 371467, Dubai, UAE

Songwon Polysys Additives LLC

KHIA8-32B
Kizad (Khalifa Industrial Zone Abu Dhabi)
P.O. Box 137134, Abu Dhabi, UAE

Songwon Specialty Chemicals – India Pvt. Ltd.

Plot No. 26 & 268
GIDC Industrial Estate, Panoli
Ankleshwar, Bharuch
Gujarat – 394116, India

Qingdao Long Fortune Songwon Chemical Co., Ltd.

No.3 Haiwan Road, Xinhe Eco-Chemical Science
and Technology Industry Base,
Shandong Province
Qingdao City 266000, China

www.songwon.com

For further information, please go to:
www.songwon.com

