

# 2018

## CORPORATE SOCIAL RESPONSIBILITY ANNUAL REPORT



**Powerchip Semiconductor Manufacturing Corp.**

## About the Report

"2018 Corporate Social Responsibility (CSR) Report for Powerchip Semiconductor Manufacturing Corporation" is the first CSR report of Powerchip Semiconductor Manufacturing Corporation (hereinafter referred to as "PSMC" or "the Company"). The content of the report is provided and prepared by all units of the entire company. The report is formulated according to the "Core" of the GRI Sustainability Reporting Standards published by the Global Reporting Initiative (GRI). The report information prepared and disclosed has been approved by the internal unit of the PSMC.

The CSR is prepared and published each year to respond any relating issues concerning stakeholders. The sustainable plans of PSMC will be transparently disclosed in hoping to drive more positive changes for the society.

## Report Scope and Boundary

The reporting period is January 1, 2018 to December 31, 2018. The Report is published in December 2019 and the boundary of the report includes the 12-inch plants (formally Powerchip Technology Corporation) and the 8-inch plants (formally Maxchip Electronics Corporation) which are located in the Hsinchu Science-based Industrial Park. The content of the report covers aspects on the implementations and practices of economy, environment and society that concern stakeholders.

Note1 In accordance with the publicly released information, only the financial report of the 8-inch plants is disclosed.

Note2 For other issues concerning economy, environment and society - P1/2 and P3 plants are within the scope of disclosure of the 12-inch plants. The scope of disclosure of the 8-inch plants is 8A (8AD included). 8B plant was officially put into operation 2019; therefore, it is not disclosed in this report.

## Editorial Basis and Guiding Principles

The content structure of the Report is based on the GRI standards and the AA1000 Accountability Principles (AA1000AP). To identify the sustainability aspects and decision orders through the substantial analyzing mode that stakeholders focus on in order to analyze the environmental protection the Report discloses, as well as the relevant strategies, goals and measures, also labor behavior, human rights and social impact. The Report is prepared based on the following guidelines. The following principles and initiatives are taken as references:

- Global Reporting Initiative, GRI and GRI Standards
- "Sustainable Development Goals (SDGs)" by the United Nations
- AA1000 AccountAbility Principles (AA1000AP)
- ISO 26000 Guidance on Social Responsibility (ISO 26000)
- United Nations Global Compact (UNGC)

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# Message from the COO

Message from the Chairman / Message from the General Manager

## Message from the Chairman

In order to integrate resources effectively and focus on foundry, Powerchip Technology (Powerchip) - the parent company of Powerchip Semiconductor Manufacturing Corporation (PSMC) - has completed adjusting the structure of the enterprise in May 2019, and transferred all of its 3 12-inch fabs, relating businesses and assets to Powerchip Semiconductor Manufacturing Corporation. After the combination, PSMC has a total of 3 12-inch plants, 2 8-inch plants and nearly 7000 employees, knowing the bigger the scale of the business, the more influence it is on both the industry and society. Aside from balancing the interest of stakeholders, society and enterprises, PSMC hopes to set an example using the experiences in operating business to build a model of sustainable development and integrate with the society to create the positive circle of shared prosperity.

With the intense relationship of the US-China trade conflict and international financial markets becoming more volatile, 2018 has been a turbulent year. Even though there have been many challenges, with the hard work of all the PSMC employees, the revenue of 2018 reached NT\$7.64 billion - a significant increase of 22% compared to the previous year which is an average gross profit margin of 26%, a growth of 6% compared to the previous year. The annual net profit amounted to NT\$970 million, a significant increase of 66% compared to the previous year, creating an exceptional performance.

Following the successful transformation of business and organization, PSMC will continue to put memories, logic process technology and experiences to good use to vigorously work with international manufacturers targeting foundry markets for artificial intelligence (AI), automotive and industrial memories, medical precision chips and power components, power management chips to provide capacities as a means to fulfill the needs of world-class customers. At the same time, through technology improvement and equipment investment, the Company will also continue to improve water recovery rate and manufacturing water efficiency to become the first semiconductor plant in the Park to make a promise of a more than 85% process water recovery rate, showing the action of the Company's commitment towards sustainability.

We adapt forward-looking planning and precise execution in operating, in the hope for business to grow and profit. We look after the interests of our employees and shareholders while continuing to strengthen our mechanisms including Powerchip Foundation, public welfare groups and Employees' Welfare Committee as well as advancing our cultural tastes and offer our ability to help those in need. In recent years, we have been supporting the local agricultural farming and purchased 29 280 kg of orange gift boxes. We also take part in activities such as "333 No Plastic" and "Plant a Tree to Save our Planet" to promote friendly environment and enforce the concept "make our society beautiful by engaging in public welfare activities with technology". We give our assistance and care in the community and through the Powerchip Environmental Protection Foundation we hope to show the symbiotic relationship between enterprises and the environment in a bid to fulfill social responsibilities.

In the future, we will face challenges with a cautious and perseverant attitude as always. We believe that, on the road of making a profit, the best way for enterprises to create growth momentum is to share the fruit result with employees, shareholders, partners and society. With a positive and honest attitude, we will face, continue and handle all the problems and challenges as we always do. We also firmly believe that sharing is a must in order to become a good corporate in operating sustainably.

Chairman

*Frank Huang*







## Message from the General Manager

I am delighted with the publication of the "2018 PSMC Corporate Social Responsibility Report". Following the adjustment of enterprise structure, our company's parent company Powerchip, has transformed as an investment holding company. And PSMC will focus on the foundry business with pure assets, financial structure and clear positioning of production and sales. As a global leading manufacturer in the semiconductor field, we create profit for our shareholders while taking responsibilities for employees, customers, suppliers, economy, environment and society. We disclose relevant information in the Report in the hope to help all of the stakeholders understand our commitments and efforts, and demonstrate our emphasis and determination to implement the corporate social responsibility and sustainable development of Powerchip.

We have set our operating goal to become a "world-class leading technology company with competitiveness and stable profitability". With careful strategic layouts, strong financial planning and precise execution, we have had excellent results in the foundry market, creating stable profitability and contributing cash to the operation of the business. The Company believes that other than the basic requirements of making profit and creating economic interest for an enterprise, the practice of social responsibilities is a more important philosophy. Therefore, we will use diverse development strategies and management models to turn external challenges into new business opportunities. In addition to making profits for shareholders, we will create more value for all stakeholders to reduce the impact on the society, environment and economy from production and operation and try our best to fulfill responsibilities as a corporate citizen.

Lastly, I would like to offer my gratitude to the partners who have grown together with us along the way. We will do our utmost to operate business and reward all stakeholders with actual operational performance. For our customers, we will research and develop all types of product technologies to satisfy different requirements of the customers for their production planning and strengthen their trust in us. For our investors, we will improve our performance and increase the stability for profit making and reduce investment risk for shareholders in an effort for them to increase their willingness to have long-term investment with us. For our employees, we will do our best to protect their interests, health and safety and provide encouragement in a regular basis. We also provide excellent and healthy workplace to attract more talents. For our suppliers, we implement every product plan in a bid help our suppliers satisfy our requirements for all materials and components and reduce their operational risk of production and inventory. We are fully committed with the concept "giving back to society what it gives us" and practice our corporate social responsibilities continuously. We also welcome and look forward to any suggestions; these suggestions are what make us strong, enabling us the ability to share and contribute.



The General Manager

*Brian Hsieh*



# MESSAGE FROM THE COO

## Footprint of the Company Growth and 2018 Result and Performance on Sustainability



Smooth communication on Sustainable Development

137

A questionnaire covering 7 topics concerning stakeholders were collected.

38

A questionnaire covering the impact of all representatives of departments were collected.

20

To identify significant sustainability topics.



Active innovation and stable growth

None

2018 - corruption

None

2018 - major violations of PSMC within all operating locations

63 incidents

2018 - PSMC patent certificates obtained

22%

2018 - PSMC revenue growth compared to the previous year

66%

2018 - PSMC net income for the period growth compared to the previous year

66%

2018 - PSMC earnings per share growth compared to the previous year

44%

2018 - PSMC employee wages and benefits growth compared to the previous year

5,332%

2018 - the increase of tax paid by PSMC to the government compared to the previous year

2%

2018 - PSMC scored 91 for the overall customer satisfaction, an increase from last year

None

2018 - major information security incidents at PSMC





Optimized energy and care for the environment

<b>Achieved</b>	2018 - PSMC's target to save 1% of energy
<b>27%</b>	2018 - reduce the use of paper
Above <b>85%</b>	2018 - PSMC's water recovery rate
<b>None</b>	2018 - disciplinary actions taken at PSMC by environmental protection authorities
<b>Down 3.13%</b>	2018 - PSMC's GHG emission intensity rate compared to 2017
<b>Low</b>	2018 - unit capacity of fluorinated gases and indirect energy produced by PSMC compared to the previous year and peer industries
<b>95%</b>	2018 - PSMC's efficiency of volatile organic compounds removal was better than the required regulation which is 90%.
Reduced by <b>6%</b>	Waste output per unit wafer area of PSMC in 2018 compared to 2017.
Increased by <b>5%</b>	2018 - PSMC's waste re-use rate compared to 2017



Friendly care and interest share

<b>100%</b>	2018 - response rate of PSMC's communication platform "Partners' words"
<b>0.45%</b>	2018 - total new entry rate of PSMC increased compared to 2017
<b>2.1% / 1.1%</b>	2018 - turnover rate at the 12-inch plants and 8-inch plants are lower compared to 2017
<b>100%</b>	2018 - all employees at the Company received performance evaluation on a regular basis
<b>1,626 employees</b>	2018 - human rights protection training received
<b>5.6%</b>	2018 - reinstatement rate of the 12-inch plants increased compared to 2017
<b>16.7%</b>	2018 - retention rate of the 8-inch plants increased compared to 2017
<b>94.9%</b>	2018 - annual training course satisfaction survey
<b>0</b>	2018 - injury rate at the 12-inch plants and the severity of injury rate

# MESSAGE FROM THE COO

## The Company's Growth Footprint and Achievement



- 1994** — December Powerchip Technology Corporation is founded.(Powerchip)
- 1995** — March Ground is broken for eight-inch fab (Fab 8A).
- 1996** — October Powerchip commences mass production of 0.40um 16Mb DRAM.
- 1997** — ISO 9001 obtained
- 1998** — ISO 14001 obtained
- 2000** — July Ground is broken for First 12-inch fab (Fab P1).  
December Powerchip commences mass production of 0.18um 64Mb DRAM and start DRAM FDY.
- 2002** — November Fab P1 commences mass production.  
OHSAS 18001 obtained
- 2003** — October Ground is broken for second 12-inch fab (Fab P2).  
SONY Green Partner obtained
- 2004** — April Powerchip begins wafer foundry business in its 12-inch fab.
- 2005** — March Fab P2 commences operation.  
ISO/TS 16949 obtained
- 2006** — February Powerchip licenses AG-AND Flash Memory Technology from Renesas Technology Corporation.
- 2007** — September Powerchip begins wafer foundry business in its 8-inch fab.

### Powerchip Technology Corporation

- February commences mass production of 0.18um LCD driver IC.
- TOSHMS obtained
- March commences mass production of 0.18um IMC (MCU)LCD driver IC.
- December Powerchip commences mass production of 40nm 16Gb Flash.
- January commences mass production of 0.18um Power IC.
- December 40nm 16Gb NAND Flash receives 20th Taiwan Excellence Award.
- April commences mass production of 90nm LCD Driver IC.
- May commences mass production of 0.18um Power MOSFET.
- June Powerchip establishes DRAM foundry agreement with Kingston and successfully transforms into a professional foundry company; establishes new business model.
- July 500V HV MOSFET starts shipping to Jap.IDM.
- August Powerchip licenses 25nm DRAM Technology from Micron.

### Maxchip Electronics Corporation(Maxchip)

- April Powerchip spins off Fab 8A as Maxchip Electronics Corp.
- ISO 9001/TS 16949 obtained
- ISO 14001/OHSAS 18001 obtained

**2009**

**2008**

**2010**

**2010**

**2011**

**2012**

**2012**

**2013**

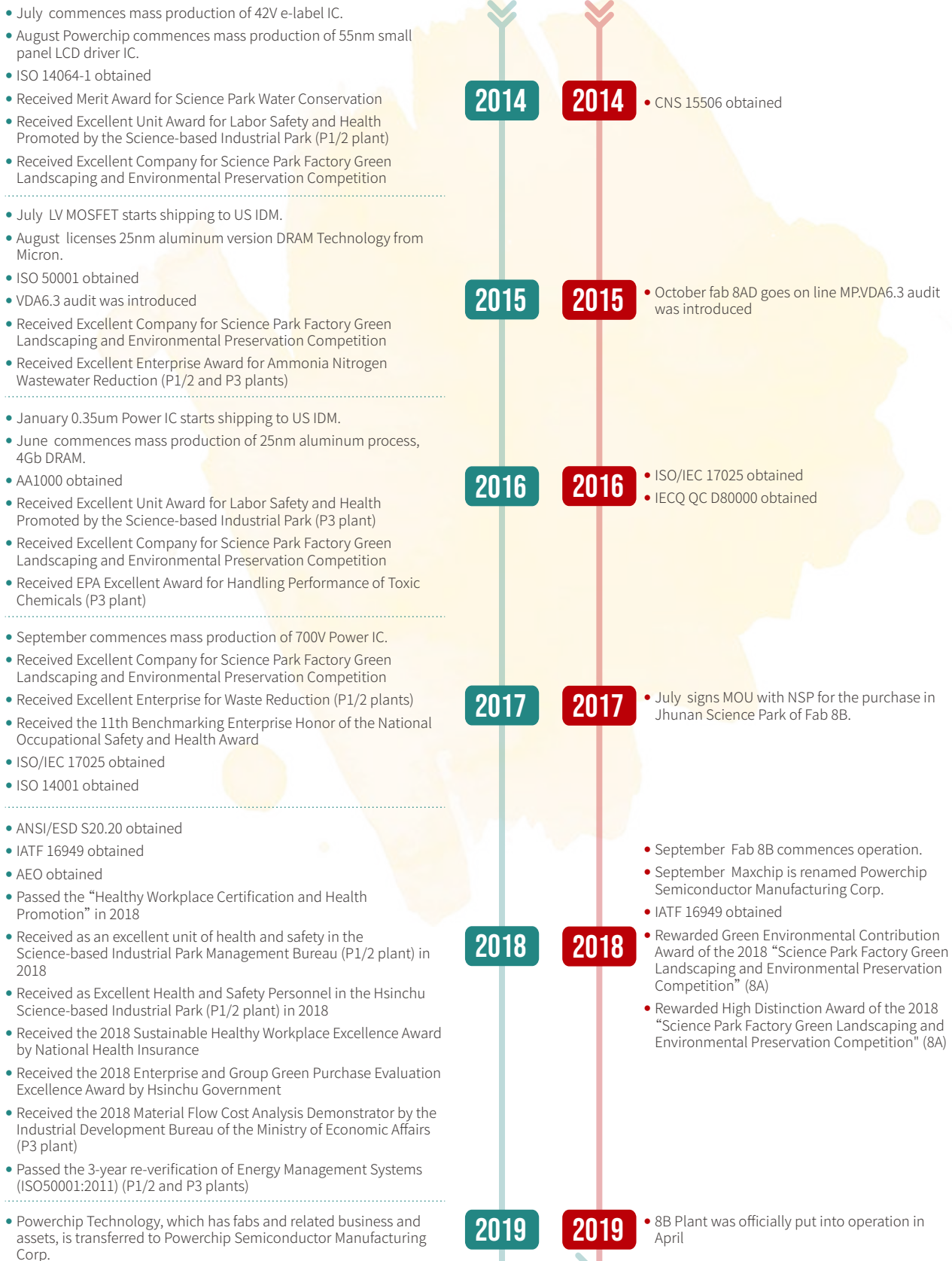
**2013**

- TOSHMS obtained

- SONY Green Partner obtained

- ISO 14064-1 obtained





Transfer of  
Powerchip  
plant P1/2  
and P3)

**Powerchip Technology Corporation**  
Transformation into a holding company

**Powerchip Semiconductor**  
Manufacturing Corporation

# UN SUSTAINABLE DEVELOPMENT GOALS

## UN Sustainable Development Goals

Through the Report PSMC shares with stakeholders our economic, environmental and social commitments and efforts. At the same time, we also focus on the international sustainable development trends and respond the UN's "Sustainable Development Goals (SDGs)" with the operation results that we work hard on. We connect our company's core ability to deepen the various tasks taken in sustainable development and enforce the SDGs to promote inclusive economic growth, social development and environmental protection sustainably in a bid to work together to achieve global sustainable development goals.

There are 17 SDG goals and 169 detailed targets, which will be used in the future as the main topics of development issues from 2016 to 2030. PSMC's 10 goals as to respond to the SDGs.

Aspects	To correspond with SDGs	PSMC's actions in sustainability
 <p>Product technology development</p>		<p><b>Goal 8</b></p> <p>Promote inclusive and sustainable economic growth and achieve productive employment in all aspect so that everyone has a good job</p> <p>Our compatible logic process and memory process foundry capacity allocation are beneficial to the Company's flexible production capacity allocation during the cycle of fluctuation. The allocation helps to increase capacity utilization, allowing the Company to maintain a better and stable profit in comparison to the same foundry industries.</p>
		<p><b>Goal 9</b></p> <p>Build a strong foundation to promote inclusive and sustainable industries and at the same time being innovative rapidly.</p> <p>Through the industry's innovate "Open Foundry" mode, we are allowed to offer customers with seamless product planning from 8-inch to 12-inch wafers and create a competitive foundry service.</p>
 <p>Product technology development</p>		<p><b>Goal 4</b></p> <p>We ensure education and training that is equal, fair and high-quality; we also promote life-long learning.</p> <ul style="list-style-type: none"> <li>• Right followed by hiring new bloods, we conduct human rights education and training on personal rights, environment safety, information security and Labor Act. The course satisfaction of 2018 is 94.9%.</li> <li>• In the process of talents development and training, employees should continuous seek for organizational and personal needs. Employees should not be limited by gender but review themselves from time to time to be ready for various necessary training programs in order to improve the knowledge and skills of their career development.</li> <li>• Our security personnel must receive education on human rights each year. The content of the course includes relevant regulations such as personal rights, labor freedom, wages, working hours, prohibition of discrimination and freedom of assembly and cases of related affairs.</li> </ul>
 <p>Environmental protection optimization</p>		<p><b>Goal 6</b></p> <p>Ensure that everyone can enjoy water, clean environment and its sustainable management</p> <p>We keep on improving the water recovery rate and manufacturing water efficiency through technology improvement and equipment investment. We are the first semiconductor plant in the Park to make a promise of the manufacturing water rate of more than 85% (each drop of water is being used approximately 3 times)</p>
		<p><b>Goal 7</b></p> <p>Ensure that everyone is able to afford reliable, sustainable as well as modern energy</p> <p>We keep on trying to reduce the energy that is required in order to make production. We estimate to put up solar panel installations with the capacity of 307,000 watts (accounting for approximately 0.2% of the entire plant's power usage), which will reduce emissions released by carbon by 228,000 kg.</p>



Aspects	To correspond with SDGs	PSMC's actions in sustainability
 Environmental protection optimization		<p><b>Goal 13</b></p> <p>Adapt emergency measures in order to respond to climate change and its impact</p> <p>Set up a BCM Crisis Management Organization and establish management plans and recovery plans on certain crisis as well as conducting themed trainings each year.</p>
		<p><b>Goal 15</b></p> <p>Protect, maintain and promote sustainable use of territorial ecosystems. Manage forests sustainably to fight desertification, put a stop and reverse land degradation and help stop the loss of biodiversity.</p> <ul style="list-style-type: none"> <li>• We have been promoting to our employees to use less paper since February 2018. We hope to replace the use of paper with electronic equipment and improve our systematic operations (application/enquiry/reading) to reach the goal of reducing the use of paper. In 2018, the Company has reduced paper consumption by approximately 27%.</li> <li>• Our Health Club has been promoting the "333 No Plastic" since 2017. The Club goes to Baoshan Dam to pick up rubbish after work to make our environment better and also to prevent the dam from getting polluted by rubbish.</li> <li>• "Old Tree Fostering Home" - we move trees that are going to be chopped off for reasons such as building constructions to an appropriate land and proper care and arrangements will also be made.</li> </ul>
 Social care contribution		<p><b>Goal 2</b></p> <p>End property in all forms</p> <ul style="list-style-type: none"> <li>• "Rice and Shoes" - a total of 670 bags of rice were raised (NT\$183,700) as well as the donation of NT\$18,250 for buying shoes for children in remote areas.</li> <li>• "Huashan Social Welfare Foundation - 2018 Love Elderly" - a total of 291 of our employees took part in this meaningful event and donated NT\$242,550 which saw the elderly with warm and appropriate daily care.</li> <li>• "World Peace Association - 2018 You can Help Save the Hungry Children" - a total of 235 of our employees took part in this meaningful event and donated NT\$206,450 which ensured that the children have a breakfast every day. Money raised was also used to buy the children stationeries for schoolwork.</li> </ul>
		<p><b>Goal 5</b></p> <p>Realize gender equality and empower all women</p> <p>"Modern Women's Foundation - 2018 Meet Amo; Share the Love" - a total of 210 of our employees took part in this meaningful event and donated NT\$137,000 which helped more abused mothers and children rebuild their new life!</p>
		<p><b>Goal 8</b></p> <p>Promote inclusive and sustainable economic growth and achieve productive employment in all aspect so that everyone has a good job</p> <ul style="list-style-type: none"> <li>• When we are recruiting, we follow government regulations. There will be no treatment difference in regards of race, skin color, gender, gender identity, marital status, age, nationality, and physical and mental disabilities.</li> <li>• The employees and workers hired by the Company are based on the regulations. In order to protect children's physical and mental development, we do not employ children under the age of 16.</li> </ul>



# 01

## Chapter

# Sustainable management

1.1 Company Profile / 1.2 Development Strategies and Goals /  
1.3 Identification and Communication of Stakeholders / 1.4 Identification and Management of Major Topics

## 1.1 Company Profile

Powerchip Semiconductor Manufacturing Corporation (original name: Maxchip Electronics Corp.). In April 2008, the 8-inch plants of Powerchip Technology was divided and established. Originally focusing on production of DRAM, the parent company decided retrieve from the standard DRAM market in 2012. In 2013, the Company transformed to a professional foundry. With customized operating flexibility, high efficiency and diversified process management and the self-developed "Open Foundry" service strategy that is widely recognized by customers, the Company also offers customers with a competitive advantage in the market.

To be able to focus on professional foundry and clear industry positioning, Powerchip Group has re-constructed its enterprise in May 2019. The relevant operations and assets of 3 12-inch fabs have been transferred to Powerchip Semiconductor Manufacturing Corporation (PSMC) by Powerchip Technology Corporation. Powerchip has been transformed into a holding company.

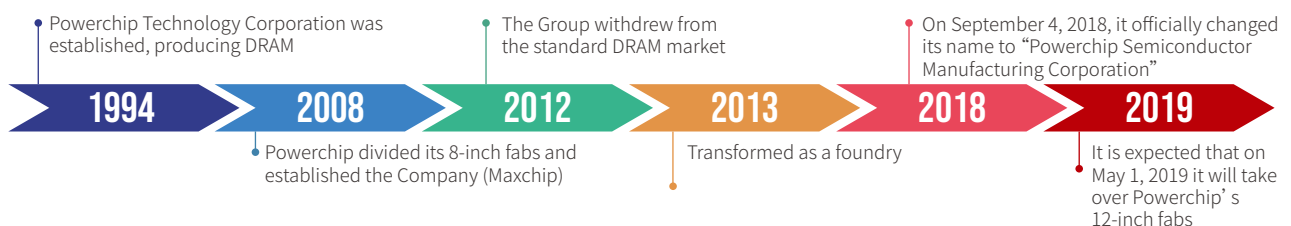
### Company Profile

Company name	• Powerchip Semiconductor Manufacturing Corporation
Date of incorporation	• 2008
Date of listing/stock code	• Stocks are publicly issued as of December 2019.
Major products	• Foundry
Chairman	• Frank Huang
Number of employees	• 6,900 (at the end of December 31, 2018)
Capital	• NT\$31.05 billion
Operating revenue	• NT\$7.64 billion
Operating location	• The head office: No. 18, Lihsin 1st Rd, Hsinchu Science Park, Hsinchu, 200, Taiwan. There are 2 8-inch fabs and 3 13-inch fabs in Hsinchu Science-based Industrial Park.

### Focus on foundry

At the moment, the Company has 2 8-inch and 3 12-inch fabs and 6,900 employees. We offer 3 foundry services in advanced memories, customized logic integrated circuits and discrete components. We will continue operating with Open Foundry from chip design and manufacturing services to equipment and capacity sharing. According to different customers and different requirements, we can jointly build a close and flexible operation mechanism.

We persist on improving technologies, strict quality control and high-efficient manufacturing, and will continue promoting international cooperation strategies, introduce top end technology, develop our own technologies in order to strongly and steadily expand the market. We are committed to providing professional foundry services and build a win-win situation with our customers. We hope to accumulate competitive advantages in this fast-changing high-tech industry and become a steadily profitable world-class semiconductor company.



## External involvement

PSMC is in a semiconductor industry that is changing rapidly. Aside from improving its production technology, the first-hand industry trends must be acquired. We also participate in various associations to maintain exchanges and information exchange with other industries.

Organization names	Identity
The Institute of Internal Auditors-Chinese Taiwan	Member
Taiwan Semiconductor Industry Association	Director
Taiwan Computer Audit Association	Member
Taipei Computer Association	Member
The Allied Association for Science Park Industries	Director

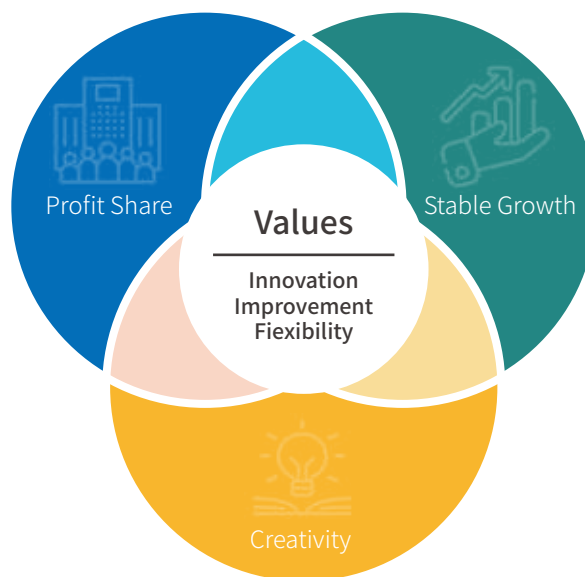
## 1.2 Development Strategies and Goals

It is our expertise to grasp memories and logic manufacturing process technology. With the advanced technology and capacity, we provide a range of diverse DRAM products, high-capacity flashes, LCD driver chips and power management, CMOS image sensors and foundry services for information, communication and consumer electronics markets.

With the booming of new applications, such as Internet of Things (IOT) and Artificial Intelligence (AI), PSMC has a chance to seize future market opportunities, and shall continue to promote international cooperation strategies, introduce top-end technologies and stabilize investment expansion in an effort to accumulate competitive advantages in the rapid-changing high-tech industry, becoming a semiconductor production and sales service provider that wins jointly with customers, employees, shareholders and society.

Expectations	Improving technologies, serving customers and becoming a world-class semiconductor company that profits stably.
Mission	Efficient management teams established, providing customers with the best products and services while improving people's quality of life and bringing the maximum interests to investors (shareholders and employees)
Corporate culture	Innovation, improvement and flexibility
Management strategies	<ol style="list-style-type: none"> <li>1. Enhance the R&amp;D and foundry opportunities, building a long-term win-win mechanism.</li> <li>2. Accumulate multiple manufacturing process capabilities; develop foundry manufacturing process platforms for logical and special products and memories.</li> <li>3. Develop R&amp;D technology strength while proactively grasping low-cost complete advantages.</li> <li>4. We are committed to developing world-leading advanced technologies, especially integrated technologies that involve logic and memory products.</li> <li>5. Focus on new opportunities of computing memories, precision medicine, special memory, diversified top-end sensors, automotive ICs, AIoT and AR/VR.</li> <li>6. We continue to enforce the investment in semiconductor manufacturing bases in Taiwan while focusing on the growth of the Mainland semiconductor market and localization trends as a means to maximize benefits.</li> </ol>
Business philosophy	<div> <div> <b>Society-profit sharing</b>  We share profits with employees, shareholders, customers and vendors. </div> <div> <b>Company-steady growth</b>  We follow the industry and market trends to ensure continuous, steady growth of the enterprise </div> <div> <b>Employee-active innovation</b>  We develop new products and technologies actively, particularly the innovation of the work method, to increase our competitiveness. </div> </div>

The Company has integrated the 3 values of corporate culture into the core of its business philosophy with an aim to become an enterprise that share its prosperity with society while following the "Code of Conduct-Responsible Business Alliance, RBA Version 6.0" (formally known as the EICC). We fulfill the Company's obligations in looking after employees, health and safety, environment, ethics and management systems. We also do our utmost to ensure that the society is developing sustainably.



## 1.3 Identification and Communication of Stakeholders

We conduct stakeholder identification here at PSMC. In order to achieve sustainable development and long-term operation, we use the five principles of the AA1000 SES standards as references to identify key stakeholders of the Company. These include: employees, customers, investors (shareholders), suppliers, competent authorities, contractors, and neighboring factories/neighbors.

### Response to stakeholders

Stakeholders	The importance of stakeholders	Concerns	Channels and frequency of communication	Response from the Company
Employees	Employees are the Company's most valuable assets; they are also the trustworthy in terms of promoting production proposals. The Company continues to look after employees in workplaces so that employees can work with a healthy body and mind. It will allow the Company to improve its competitiveness and create a win-win situation between employees and management.	Economic performance Customer privacy Occupational safety and health (prevention of occupational diseases)	<ol style="list-style-type: none"> <li>1. Announcement on the Company's website and enquiry is available (at any time)</li> <li>2. Partners' words/employee care network (at any time)</li> <li>3. Quarterly meetings (quarterly)</li> <li>4. Complaints hotline (at any time): to receive, assist and handle questions from employees.</li> <li>5. Labor-management meetings (quarterly), welfare meeting (quarterly): provide suggestions to the Company and conduct a solution.</li> <li>6. Employee feedback (at any time) and suggestion box set up</li> <li>7. Occupational Safety, Health and Environmental Protection Committee meetings (quarterly)</li> <li>8. Interview with doctors regarding occupational diseases (quarterly)</li> </ol>	<ol style="list-style-type: none"> <li>3.1 Semiconductor Industry And Foundry Services</li> <li>3.3 Customer Relations Management</li> <li>5.1 Talents Recruitment and Retention</li> <li>5.4 Employee Health Management</li> </ol>
Customers	Customers' satisfaction and suggestions are what make us strive better and grow. We persist on improving technologies, strict quality control and high-efficient manufacturing, and we are committed to providing professional foundry services!	Intellectual property rights Product service and R&D innovation Customer privacy	<ol style="list-style-type: none"> <li>1. Customer service phone number/mailbox (at any time).</li> <li>2. Customer satisfaction survey (annually).</li> <li>3. Participate in exhibitions of relevant products, directly get hold of customers and direction of the market development (any time).</li> <li>4. Visitations to customers by employees from marketing business department (any time).</li> </ol>	<ol style="list-style-type: none"> <li>3.2 Economic Performance And Technological Innovation</li> <li>3.3 Customer Relations Management</li> </ol>





Stakeholders	The importance of stakeholders	Concerns	Channels and frequency of communication	Response from the Company
Investors (shareholders)	The entire capital of the Company's is provided by shareholders and investors; therefore it is the Company's basic responsibility to protect their interests.	Economic performance Business Integrity Market status (salary level)	<ol style="list-style-type: none"> <li>1. Announce operating overview information (monthly) and financial statements on a regular basis.</li> <li>2. Shareholders meeting (annually): annual financial reports prepared according to regulations.</li> <li>3. Investor section established on its official website (instantly) Financial information, stock information, annual reports.</li> <li>4. Shareholder contact window and mail box set up (at any time).</li> <li>5. Spokespersons contact window set up (at any time).</li> </ol>	<ol style="list-style-type: none"> <li>1.1 Company Profile</li> <li>1.2 Development Strategies and Objectives</li> <li>2.1 Organizational Structure</li> <li>2.2 Business Integrity</li> </ol>
Suppliers	As a global professional management group, aside from strengthening competitiveness by managing our own product quality, we must also be committed to sustainable supply chain management. Via supplier management measures, initial assessment new suppliers, existing suppliers' sampling audit/evaluation, we maintain the quality of the supply chain.	Economic performance Business Integrity Product service and R&D innovation	<ol style="list-style-type: none"> <li>1. Supplier conferences (from time to time)</li> <li>2. Supplier evolution (bi-annually)</li> <li>3. E-Supplier system (at any time)</li> </ol>	<ol style="list-style-type: none"> <li>2.2 Business Integrity</li> <li>3.1 Semiconductor Industry And Foundry Services</li> <li>3.2 Economic Performance And Technological Innovation</li> <li>3.4 Supply Chain Management</li> </ol>
Competent authority	The competent authority is the supervisor of the relevant regulations for a company to operate its business. Law-abiding governance is a company's most important corporate social responsibility.	Market status (salary level) Anti-corruption Emissions (air pollution management)	<ol style="list-style-type: none"> <li>1. Maintain a good relationship with the competent authority and participate in the conferences and seminars that the competent authority holds (at any time).</li> <li>2. Regulation identification to management system (at any time).</li> <li>3. Official correspondence, proposal discussion, public information (at any time).</li> <li>4. Take care in the functional organization and operation that the Park and Hsinchu Science Park Bureau, Ministry of Science and Technology set up (at any time).</li> </ol>	<ol style="list-style-type: none"> <li>2.1 Organizational Structure</li> <li>2.2 Business Integrity</li> <li>4.2 Pollution Prevention</li> </ol>
Contractors	Contractors are the manufacturers who the Company works with in business promotion and engineering quality; they also share the Company's prosperities.	Economic performance Business Integrity Customer privacy	<ol style="list-style-type: none"> <li>1. Contractor evaluation (annually).</li> <li>2. Contractor Meeting (quarterly).</li> <li>3. Toolbox meetings (daily).</li> </ol>	<ol style="list-style-type: none"> <li>2.2 Business Integrity</li> <li>3.2 Economic Performance And Technological Innovation</li> <li>3.3 Customer Relations Management</li> </ol>
Neighboring plant/neighbors	Any operating areas within the park are our neighbors and we keep good communication and contact with neighboring factories/neighbors within the Park. We also maintain the safety and environment at the Park.	Waste water Waste Water	<ol style="list-style-type: none"> <li>1. Weekday talks and telephone communication (at any time).</li> <li>2. Company's website (at any time).</li> <li>3. Take part in group activates or seminars (at any time).</li> <li>4. Take part in external association operations (at any time).</li> </ol>	<ol style="list-style-type: none"> <li>4.2 Pollution Prevention</li> <li>4.2.2 Waste Water Treatment</li> <li>4.2.3 Regeneration and Removal of Resources</li> </ol>

## 1.4 Identification and Management of Major Topics

We listen and respond any issues concerning stakeholders. Through the substantial analysis in the process of preparing the CSR report, we hope to identify the sustainability issues concerning stakeholders via the systematic analyzing model. The issues are the reference basis for the information disclosure of the Report which will be beneficial for all stakeholders to communicate effectively. The analysis of major aspects of the Report have been divided to the following 5 steps:



#### Identify stakeholders

Based on the internal discussion and feedback of various department supervisors and our colleagues; we also used the CSR reports of the peer industry when they identified stakeholder group as a reference to identify employees, customers, investors (shareholders), suppliers, competent authorities, contractors, and neighboring factories/neighbors as the Company's 7 major stakeholders.

#### Collect issues on sustainability and Inductive theme

Issues collected are mainly external and internal sources. External source includes GRI Standards. The issued are based upon the 33 topics set by GRI Standards then include the issues and standards that concern the international and compile them into a list. A representative team of stakeholders will go through the list and make a preliminary list of concerns. Internal source is the feedback of discussion from the sustainable management organization which is summarized into 43 topics.



#### Understand the Issues

In 2018, we tried to understand issues that were concerning all stakeholders via a survey; we also conducted a survey on our senior executives in order to evaluate the impact of each issue on the Company's operation. In 2018, a total of 175 surveys were analyzed. Among these, 137 surveys about the concerns of stakeholders were collected. A total of 38 surveys about the impact were collected.

#### Identification result of major topics

We made analysis and concerning aspect orders on the scores of the concerns of stakeholders and impact level regarding sustainable management of senior supervisors. After discussing with the internal employees and senior supervisors, 20 major topics of PSMC have been determined for 2018.



#### Review and discussion

Based upon the aspects of the major concerns identified this year, we have disclosed our management policy. We will continue to strive better on our management and disclose relevant information in the CSR report.



#### Major topics

- |  |  |
|--|--|
| 1. Economic performance  | 11. Product service and R&D innovation                               |
| 2. Business Integrity  | 12. Information disclosure   |
| 3. Waste water   | 13. Anti-corruption  |
| 4. Socio-economic regulations compliance                             | 14. Occupational safety and health (occupational disease prevention) |
| 5. Waste   | 15. Labor relationship   |
| 6. Emissions (air pollution emission management)                     | 16. Water  |
| 7. Occupational safety and health (occupational disaster prevention) | 17. Emissions (greenhouse gas emissions)                             |
| 8. Intellectual property rights                                      | 18. Energy (energy consumption reduction)                            |
| 9. Regarding environmental protection regulations compliance         | 19. Labor relationship   |
| 10. Customer privacy   | 20. Training and education   |

#### Secondary Topics

- |  |   |
|--|---|
| 21. Evaluation of the supplier environment | 31. Child labor   |
| 22. Anti-competitive behavior              | 32. Diversity of employees and their fair opportunities |
| 23. Market status (salary level)           | 33. Local community                                     |
| 24. Energy (energy consumption control)    | 34. Biodiversity  |
| 25. Social assessment of suppliers         | 35. Freedom of assembly and group consultation          |
| 26. Health and safety of customers         | 36. Non-use of conflict minerals                        |
| 27. Non-discrimination                     | 37. Security practice                                   |
| 28. Marketing and labeling                 | 38. Material  |
| 29. Forced or compulsory labor             | 39. Indirect economic impact                            |
| 30. Energy (energy consumption control)    | 40. Human rights assessment                             |
|  | 41. Indigenous rights                                   |
|  | 42. Procurement practices                               |
|  | 43. Public policy                                       |



## Boundary Explanation of Major Topics

Major Topics	Boundary of Impact of All Aspects				Corresponding Chapters Management Policy and Relevant Contents
	The Internal of The Company	Customers	Suppliers	Contractors	
Economic performance	●				3. Innovative technologies
Business integrity	●				2.2 Business Integrity
Intellectual property rights	●				3.2 Economic Performance And Technological Innovation
Product service and R&D innovation	●				3.2 Economic Performance And Technological Innovation
Information disclosure	●				1. Sustainable management
Anti-corruption	●				2.2 Business Integrity
Energy (energy consumption reduction)	●				4.1 Energy Resource Management
Water	●				4.1 Energy Resource Management
Emissions (air pollution emission management)	●				4.2 Pollution Prevention
Emissions (greenhouse gas emissions)	●				4.1 Energy Resource Management
Waste water	●				4.2 Pollution Prevention
Waste	●				4.2 Pollution Prevention
Regarding environmental protection regulations compliance	●	●	●	●	4.2 Pollution Prevention
Occupational safety and health (occupational disaster prevention)	●		●	●	5.4.2 Safe Workplace for Employees
Occupational safety and health (occupational disease prevention)	●		●	●	5.4.1 Health Management and Promotion of Employees
Labor relationship	●				5.1 Talents Recruitment and Retention
Labor relationship	●				5.2 Welfare Policies
Customer privacy	●				3.3 Customer Relations Management
Training and education	●		●	●	5.3 Talents Development and Training
Socio-economic regulations compliance	●	●	●	●	2.2 Business Integrity

## Major Topics and Sustainable Development Goals

With extensive corporate governance, pursuit of mutual interests of stakeholders, commitment to promoting environmental protection and energy saving and the spirit to contribute to society, we value our promises. We continue to focus on various new issues as well as the change of trends in order to adjust our promises regarding social responsibilities. So that our promises can cover all aspects comprehensively and we will use the promises as goals and directs to fulfill corporate social responsibilities.

Aspects	Major Topics	GRI Code Specific Topics	2018 Management Policies	2018 Execution Results	Mid and Long-term Strategies
Economic aspect	Business Integrity	Socio-economic regulations compliance Anti-corruption Business integrity (custom issue) Information disclosure	<ul style="list-style-type: none"> <li>Establish "Professional Code of Conduct" and "Code of Business Gifts and Entertainment".</li> <li>Email and announcements on the website are being used to inform all employees the promotion of anti-corruption and business ethics.</li> <li>Based on internal control system and accounting system, the internal audit unit and external accountants will conduct a review on a regular basis. The result of the review will be reported to the board of directors as a means to enforce business integrity.</li> </ul>	<ul style="list-style-type: none"> <li>No occurrence of corruption.</li> <li>No major violations at all operating locations of PSMC</li> </ul>	<ul style="list-style-type: none"> <li>Continue to comply with the legal requirements of all business areas.</li> <li>Strengthen integrity education and training for our employees</li> </ul>
	Continue to profit	Economic performance Intellectual property rights Product service and R&D innovation	<ul style="list-style-type: none"> <li>"Enterprise Patent System (E.P.S)" and "Intellectual Property Management Measures" are complied with to promote the "Open Foundry" mode.</li> <li>Online courses to improve our colleagues' relevant laws and knowledge regarding intellectual properties.</li> <li>Internal patent proposals are reviews by the Intellectual Property Committee.</li> <li>Business management meetings and performance review meetings are held on a regular basis.</li> </ul>	<ul style="list-style-type: none"> <li>In 2018, the Company has obtained 63 certifications.</li> <li>In 2018, the Company's revenue grew by 22% compared to the previous year.</li> </ul>	The goal of proposals on R&D and innovation patents in 2019 is double compared to 2018. Through patent research and development and technological innovation, we offer customers more advanced and comprehensive solutions in order to stabilize orders.



Aspects	Major Topics	GRI Code Specific Topics	2018 Management Policies	2018 Execution Results	Mid and Long-term Strategies
Environmental aspect	Energy resources	Water Energy (energy consumption reduction) Emissions (greenhouse gas emissions)	<ul style="list-style-type: none"> <li>Establish energy policies and introduce international management systems including SO 50001, ISO 14001, ISO 14064-1; formulate measures on energy-saving, water and carbon reduction, and set goals.</li> <li>Special management unit will conduct statistics each month on electricity and water consumption. Energy, water resource consumption, greenhouse gas checks and reduction will also be controlled.</li> <li>An internal/external management system will be audited each year; checks and correction will be conducted on execution status of the overall system operation.</li> <li>Regular management review meeting are held so that everyone can review and make correction, achieving the goal of continuous improvement.</li> </ul>	<ul style="list-style-type: none"> <li>In 2018, unit capacity of chlorine gas and indirect energy produced by Powerchip was 0.552kg CO<sub>2</sub>e/cm<sup>2</sup>, lower than 0.779kgCO<sub>2</sub>e/cm<sup>2</sup> which is the average of the peer industries in the same year.</li> <li>In 2018, the overall intensity of greenhouse gas (GHG) emissions decreased by 3.13%.</li> <li>In 2018, the process water recovery rate is above 85%</li> </ul>	<ul style="list-style-type: none"> <li>process water recovery rate shall reach the goal - <math>\geq 85\%</math></li> <li>Energy reduction by 1% each year</li> <li>The reduction plan of greenhouse gas goal is in compliance with the government laws</li> </ul>
	Pollution prevention	Waste water Waste Emissions (air pollution emission management) Regarding environmental protection regulations compliance	<ul style="list-style-type: none"> <li>Establish environmental and safety policies and introduce international management systems such as ISO 14001. Formulate "Environmental and Safety, Fire Regulations Collection and Identification Measures" and "Prevention Measures for Plant Environmental Pollution".</li> <li>Set up dedicated personnel to operate and monitor various pollution prevention facilities.</li> <li>Relevant education and training is carried out to raise our colleges' awareness of environmental protection.</li> <li>According to the internal management review procedures, a PDCA effective evolution is carried out each year for emissions management.</li> </ul>	<ul style="list-style-type: none"> <li>In 2018, our company did not receive any disciplinary from environmental protection authorities.</li> <li>Our company's efficiency of volatile organic compounds removal reached 95%, higher than the required regulation which is 90%.</li> <li>Waste output per unit wafer area decreased by 6% compared to 2017.</li> <li>Waste water re-use rate increased by 5% compared to 2017.</li> </ul>	<ul style="list-style-type: none"> <li>The operation of our company is in line with the environmental regulations</li> <li>Air pollution: reduce VOC emissions.</li> <li>Wastewater: reduce wastewater discharge</li> <li>Waste: recovery rate increases by 1% each year</li> <li>Local communities: no complaints.</li> </ul>



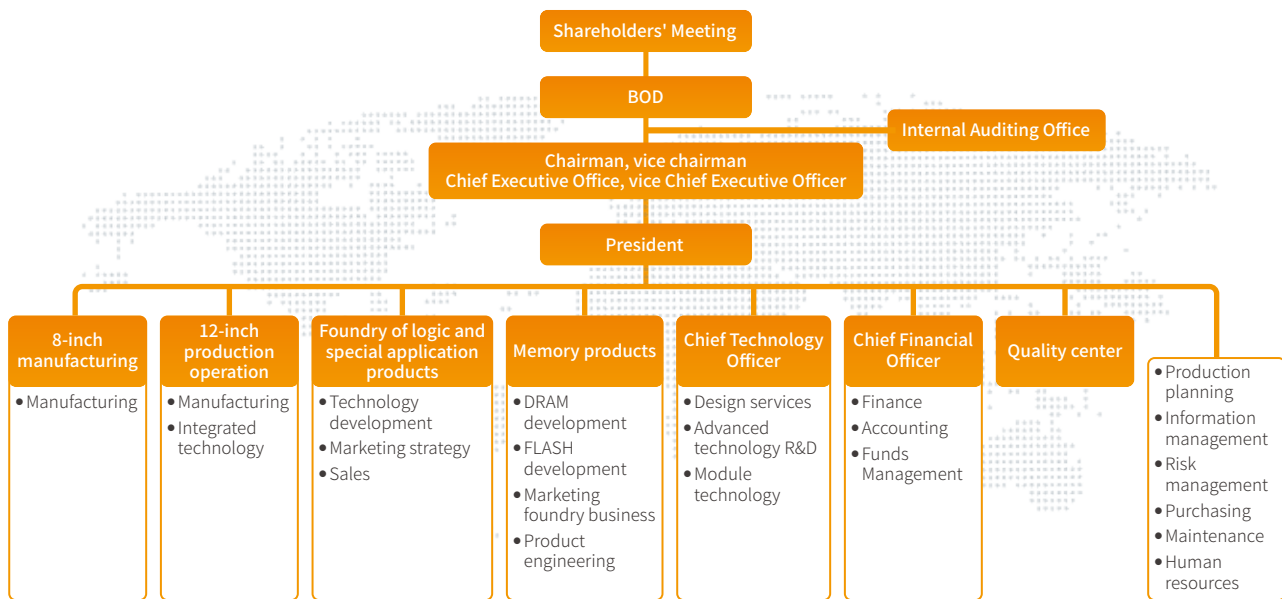


Aspects	Major Topics	GRI Code Specific Topics	2018 Management Policies	2018 Execution Results	Mid and Long-term Strategies
Social aspect	Customer privacy	Customer privacy	<ul style="list-style-type: none"> <li>Formulate "Information Security Policy" and "Information Safety Management Measures" to regulate measures relating to the Company.</li> <li>Information security is being promoted each year and discussion on information security issues are discussed on a regular basis.</li> <li>Emphasize the importance of using less paper to reduce the risk of paper information security management</li> <li>QBM management review meetings are held bi-annually to make appropriate adjustments.</li> </ul>	<ul style="list-style-type: none"> <li>In 2018, we scored 91 on the Customer Satisfaction Survey.</li> <li>In 2018, no major information security incidents occurred</li> </ul>	By building a management system to comply with international rules so that confidential information is completely protected, gaining comprehensive trust from customers.
	Friendly workplace	Labor relationship Labor relationship Training and education	<ul style="list-style-type: none"> <li>Formulate diverse communication platforms including "Work Rules", "Prevention Measures for Sexual Harassment in the Workplace", "Education and Training Measures", "Education and Training Procedures for Employees", and establish "Partners' Words".</li> <li>Labor management meetings and labor representative elections are held in all plants</li> <li>Regularly review responding status of the communication platforms as well as education and training implementation through management review meetings.</li> </ul>	<ul style="list-style-type: none"> <li>Total new entry rate increased by 0.45% compared to 2017</li> <li>Turnover rate decreased compared to 2017.</li> <li>Reinstatement rate of the 12-inch plants increased by 5.6% compared to 2017; retention rate of the 8-inch plants increased by 16.7% compared to 2017</li> <li>Smooth communication between labor and management, achieving harmonious relationship.</li> </ul>	Build healthy labor-management relationship that allows our colleagues and the company to grow together; offer our colleagues career development platforms and comprehensive training mechanism.
	Safe environment	Occupational safety and health (Occupational disaster prevention) Occupational safety and health (prevention of occupational diseases)	<ul style="list-style-type: none"> <li>Set up occupational safety and health management system "OHSAS18000" and CNS-15506 (TOSHMS)</li> <li>Hold safety and health meetings relating to environmental protection issues with labor representatives on a regular basis.</li> <li>Conduct an environmental safety and health audit internally/externally bi-annually to review and make correction on the implementation of overall system operations.</li> <li>Review meetings on environmental safety and health are held quarterly to review and make correction jointly, achieving the goal of continuous improvement.</li> </ul>	<ul style="list-style-type: none"> <li>"Promotion of Occupational Safety and Health Excellent Personnel Award" of Ministry of Labor.</li> <li>"Healthy Workplace Sustainability Award" of Ministry of Health and Welfare</li> <li>The work injury rate and work injury severity rate for both 12-inch plants and 8-inch plants are both 0.</li> <li>The total injury index is less than 1/3 of the injury index of peer industry.</li> </ul>	<ul style="list-style-type: none"> <li>Obtained occupational safety and health management system reversion verification ISO45001 and CNS45001</li> <li>The total injury index is less than 1/3 of the injury index of peer industry.</li> <li>To achieve zero major environmental protection of labor safety incidents and enhance environmental safety as well as emergency responding ability to reduce the operation losses caused by accidents in plants.</li> <li>Reduction of the cardiovascular disease of 10% for the next 10 years has reduced by 2% after the promotion of health.</li> <li>No pain at work leads healthy lifestyles.</li> </ul>

# 02 Chapter Integrity Governance

2.1 Organizational Structure / 2.2 Business Integrity / 2.3 Risk Management

## 2.1 Organizational Structure



The governance structure of the Company has set up board of directors and supervisors, and the board of directors is composed of directors. All members of the board of directors and supervisors are voted by all shareholders. The responsibilities of the directors are to establish the Company's vision for the future, strategies, operations, budget planning as well as planning the Company's mid-long term development direction while supervising the Company's operation plans and execution. It is the duty of the supervisors to monitor the implementation of our business and the diligence of the director and manager. The supervisors must also monitor the enforcement of our internal control system to diminish our financial crisis and business risk.

The Company's board of directors consists of 9 directors and 3 supervisors who responsibilities are operations, development and supervising. All of our directors and supervisors are professionals with experienced background which is great help for operation planning and strategy planning. The Company has established Professional Norms which has regulations for conflicts of interest and there are also regulations for conflicts of interest in our Board of Director Meeting Rules. For meeting matters, those who have interest regarding themselves or their representative legal persons, may not engage in discussions and voting. Relevant avoidance situations are stated in the minutes.

The management team is consisted of professional managers hired and approved by the board of directors. All of the managers have professional qualifications and are extremely experienced in industries. The managers are responsible for the Company's daily operations and management. As for economic, social and environmental aspects, the Deputy General Manager of Finance and Accounting, Deputy General Manager of Administration and related senior managers make decisions and report regularly to the board of directors meeting.

The Company's board of directors and supervisors are all voted by all shareholders. In consideration of the diversified policies status and development needs, we select director candidates based on their professional background, education (experience), integrity, profession or relevant professional qualification and experiences. We consider those candidates who have diverse background and points of view on aspects such as gender, age, nationality and culture. Qualified candidates with experiences are what board of directors seeks for to improve the overall professional knowledge and skills as an effort to achieve the ideal goal of corporate governance. Directors and managers are arranged to take part in courses relating to economy, society and environment every year.



## 2.2 Business Integrity



### Integrity management

Regulation compliance is basic for a corporate to be sustainable. Failed to effectively manage regulations and corruption bring negative impact to the Company's image and operation. We have established relevant rules and demand our employees to follow the ethical standards when conducting business; and make our stakeholders aware of our ethical standards. These rules are what help the Company to fulfill social responsibilities and to operate with integrity.

#### Issues Covered

#### Socio-Economic Regulations Compliance, Anti-Corruption and Information Disclosure



Rules

- Establish "Professional Norms", "Directors and Managers Code of Conduct", "Employee Code of Conduct" and "Code of Business Gifts and Entertainment" and ask the board of directors, management and all colleagues to strictly follow the ethical standards and implement the promise of business integrity.
- In order to implement business integrity to build effective accounting system and internal control system, the internal audit unit and external accountants which are commissioned by the Company will carry out regular reviews.



Goals

- No occurrence of corruption.
- No violation of regulations.



Execution

- Establish Professional Promotion Committee that receives anonymous or named emails from employees and outsiders and handle the cases that have been reported to have violated the Professional Norms.
- Email and announcements on the website are being used to inform all employees the promotion of anti-corruption and business ethics.
- Audit Office conducts audits on various operations relating to internal control system on a regular basis or from time to time.



Management

- For those who violates the Professional Rules, the Committee reports to the president and (or) the chairman depending on the seriousness of the matter and it will be handled and (or) sent to the judicial unit according to the Company's Personnel Norms.
- Results of the self-assessment of all units and subsidiaries, any deficit in the internal control or improvement for abnormality found in ordinary audits are reported to the board of directors by the Company's audit office.
- Based on internal control system and accounting system, the internal audit unit and external accountants will conduct a review on a regular basis. The result of the review will be reported to the board of directors as a means to enforce business integrity.

### Professional Norms

In order for the employees to comply with ethical standards when conducting business and that our stakeholders understand the Company's ethical standards, PSMC has specially formulated the "Professional Rules" and "Code of Business Gifts and Entertainment". We explain the integrity principles to the new recruits when we carry out the training for new bloods before they start work with us. They should faithfully execute all Company business and it is forbidden to have any improper engagement with other manufacturers. Ordinarily, emails and the Company's website are used to promote anti-corruption and integrity business. These rules are what help the Company to fulfill social responsibilities and to operate with integrity.

The Company's Professional Promotion Committee has standing members whose reasonability is to handle cases that have been reported against an employee to have violated the professional Rules from employees and outsiders. If an employee is found to have violate the Professional Rules, other employees and outsiders can use the forms of anonymous or named email (if wished to be anonymous, a non-company email may be used) to report to the Company's Professional Promotion Committee email (ethic@powerchip.com). Employees can also make a report on the company's internal website page.

The Company will ensure the confidentiality and anonymity of the intently of the reporter and personnel who take part in the investigation of violation of the Professional Rules in case of a retaliation. For those who violate the Professional Rules, the Committee reports to the president and (or) the chairman depending on the seriousness of the matter and it will be handled and (or) sent to the judicial unit according to the Company's Personnel Rules. There was no occurrence of corruption in 2018 or reports of violations of the Professional Rules.

### Internal Control

The Company has followed the "Criteria Governing Establishment of Internal Control Systems by Public Reporting Companies" to formulate internal control system and established Audit Office. For any deficit found in the internal control system, the appropriate management, board of directors and supervisor must be consulted with and the deficits must be tracked for improvement to ensure to achieve the goals of the effect and efficiency of operations (goals including profit, performance and asset safety) as well as if the report is reliable prompt, transparent and in compliance with relevant specifications and regulations.

All units and subsidiaries of the Company conduct an internal control system self-assessment at least once a year. The Audit Office reviews the self-assessment reports of all units and subsidiaries. Together with the deficits found in the internal control system as well as the improvement for abnormality will be the main basis for the board of directors and president to evaluate the effectiveness of the overall internal control system, and a statement will be made in regards of the internal control system.

The Company has issued a valid statement on February 12, 2019 and August 26, 2019 for the design and execution of the internal control system for 2018 and July 1, 2018 to June 30, 2019, respectively. The Company's 2018 regulation compliance is as follows:

Human Rights Compliance	Anti-competitive behavior	Regulations Relating to the Company
<ul style="list-style-type: none"> <li>✓ Labor Standards Act compliance</li> <li>✓ No child labor used</li> <li>✓ No discrimination involved</li> <li>✓ No violation of aboriginal rights</li> <li>✓ No violation of freedom of assembly and association</li> <li>✓ No forced labor</li> </ul>	<ul style="list-style-type: none"> <li>✓ No anti-competitive behavior involved</li> <li>✓ No antitrust incident</li> <li>✓ No Monopolies</li> </ul>	<ul style="list-style-type: none"> <li>✓ No violation of the Company Act</li> <li>✓ No violation of the Business Act</li> <li>✓ No violation of Securities and Financial Law</li> <li>✓ No corruption involved</li> </ul>

※ In 2018, there were no major violations at all operating locations



## 2.3 Risk Management

### Operational Risk Diagnosis

We use the operational impact analysis method to identify the Company's key operations and the possible impact these operations may cause and establish a goal of operation recovery time.

We analyze these key operations using operation impact. Through risk assessment chart, we analyze the potential threats, weakness and consequences of these hazards individually within operations and understand the control measures of the existing prevention and detection. Then according to the seriousness level of the analysis level chart, occurrence analysis chart, risk level judgment standards to determine and grasp the operating risks and establish risk control policies to reduce risks.

Operational risk diagnosis is made by the joint evaluation and diagnosis of all units; these include plant affairs, risk management, manufacturing, engineering, automation, information management, property management, purchasing, sales, production management, finished products, finance, human resources, and quality customer service.

### Financial risks

(1) The impact and future countermeasures of changes in interest rate, exchange rates and inflation on the Company's profit or loss:

#### 1. Interest rate changes

The Company holds fixed and floating rate loans at the same time. The Company observes and analyzes the impact on interest rate changes of the financial market on the cash flow generated by the Company's loans at all times, and make countermeasures depending to actual needs.

#### 2. Exchange rate changes

Since the Company's capital expenditures and manufacturing costs are mostly paid in non-Taiwan currency such as USD and JPY and its revenue is mainly in USD, big fluctuations in exchange rate may have negative impact on the Company. The Company adopts natural hedging and complies with forward exchange contracts to avoid exchange rate risks according to the changes of the exchange rate market, actual position and capital status.

#### 3. Inflation

The Company has not been significantly affected by inflation; the Company keeps an eye on the market inflation at all times and has good interactive relationship with suppliers and customers in order to avoid the impact inflation might have on the Company's profit or loss.

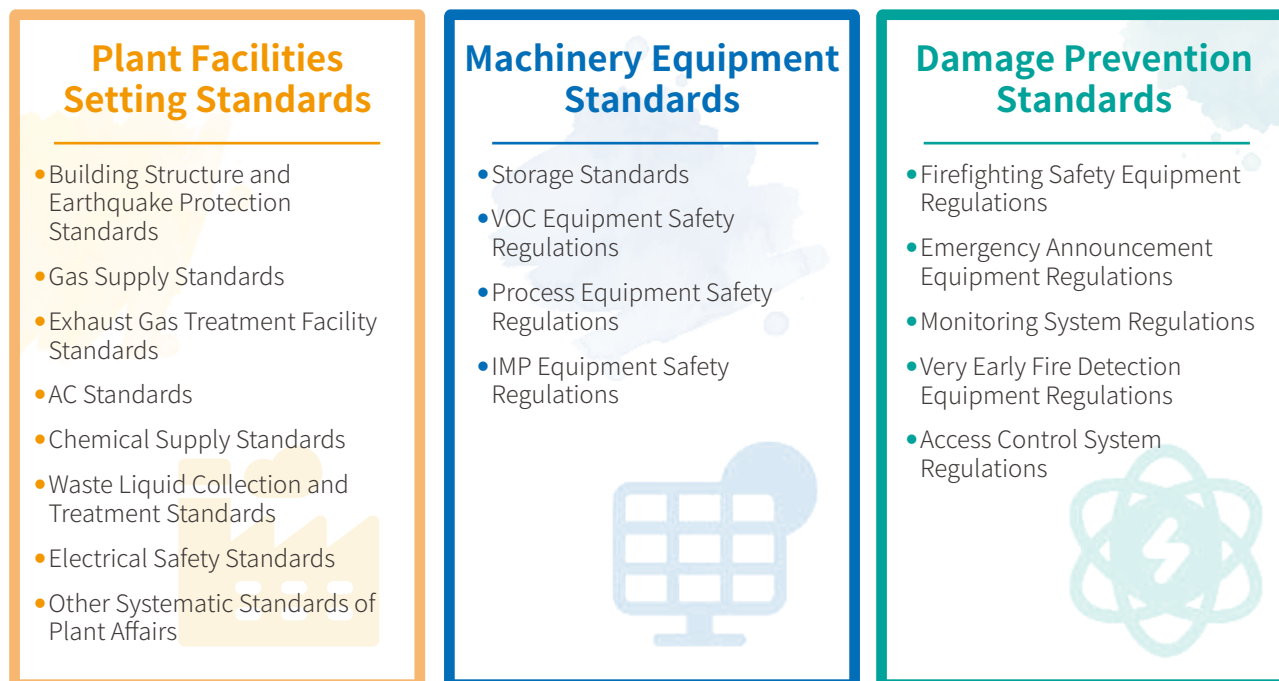
(2) The main reasons and future countermeasures on policies, profit or loss for engaging in high-risk, high-leverage investments, loaning funds to others, endorsements/guarantees and derivatives:

1. The Company has formulated "Operational Procedures for Loaning Funds to Others", "Operational Procedures for Endorsements/Guarantees and "Procedures for the Acquisition or Disposal of Assets" as basis for the Company to follow. Until the date of publications of the public report, the Company has not engaged in high-risk, high-leverage investments, loaning funds to others and endorsements/guarantees.

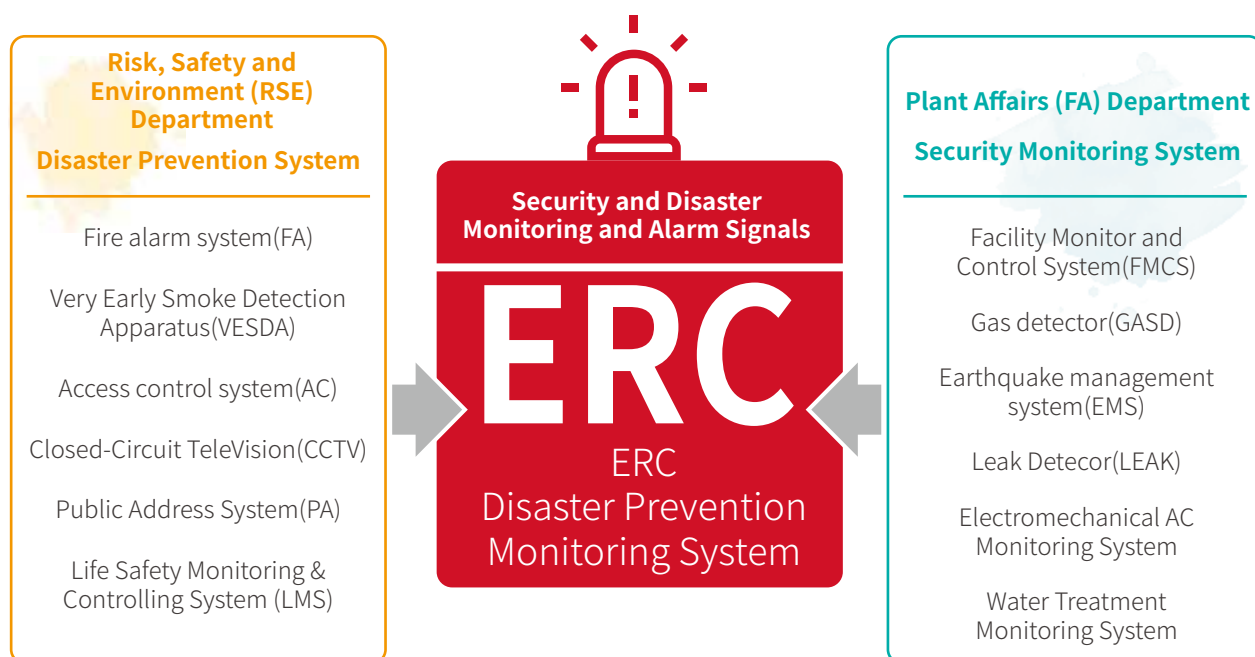
2. The Company's derivatives transactions are mainly based on the forward exchange rate hedging operations of the USD that has been exchanged into NTD and JPY in order to avoid the risks caused by the foreign currencies and liabilities due to exchange rate fluctuations; the relevant transactions are also for hedging purposes. The "Procedures for the Acquisition or Disposal of Assets" are strictly followed as a basis for engaging in derivatives. Therefore, there are no significant risks to the Company.

## Security Monitoring

The hardware facilities used in the Company's daily production are in compliance with the domestic and foreign regulations as well as the actual conditions of various plants. Security standards of plant machinery and equipment are compiled jointly by the professionals of Risk Department; according to the standards, the industrial safety risks are controlled from the source.



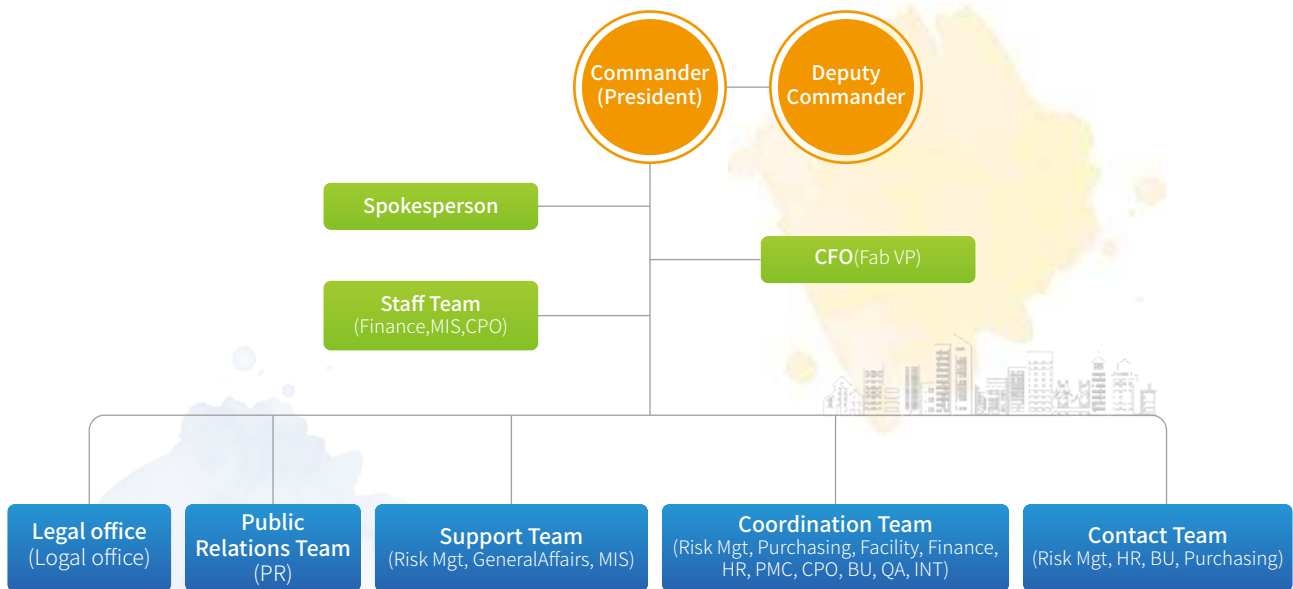
Furthermore, the Company has set up ERC and with an integrated monitoring system; it can grasp the details of the incident and properly handle it promptly. Not only can it minimize personnel injury and reduce environmental pollution but also greatly reduce equipment loss, increasing the ability for the plant to recover.



## Continuous Operation Management

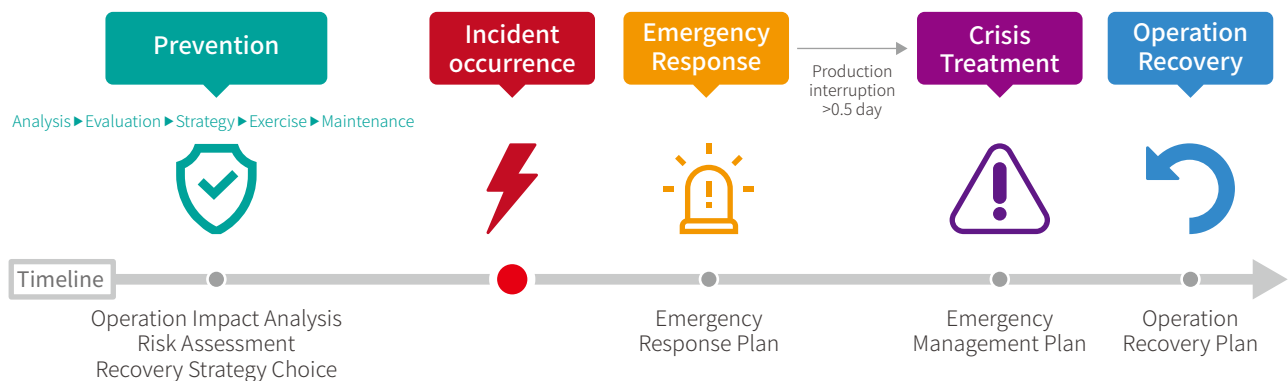
PSMC is an enterprise that pursues sustainable operations. To ensure that the Company does not cause operation interruption in the event of major incident or crisis and minimize the loss of property, employee lives, corporate image, customers and investors, the Company has management plans handling crisis systematically.

BCM Crisis Management Organization



To ensure normal operations in the shortest time in the event of major incident or crisis, the Company has formulated crisis management plans and recovery plans on certain crisis such as: power and water shut-down for long period of time, severe fires, destructive earthquakes, climate changes, interruption of raw material supplies, shortage of labor, hacking of the information system and key equipment malfunctioning; themed exercises are carried out each year.

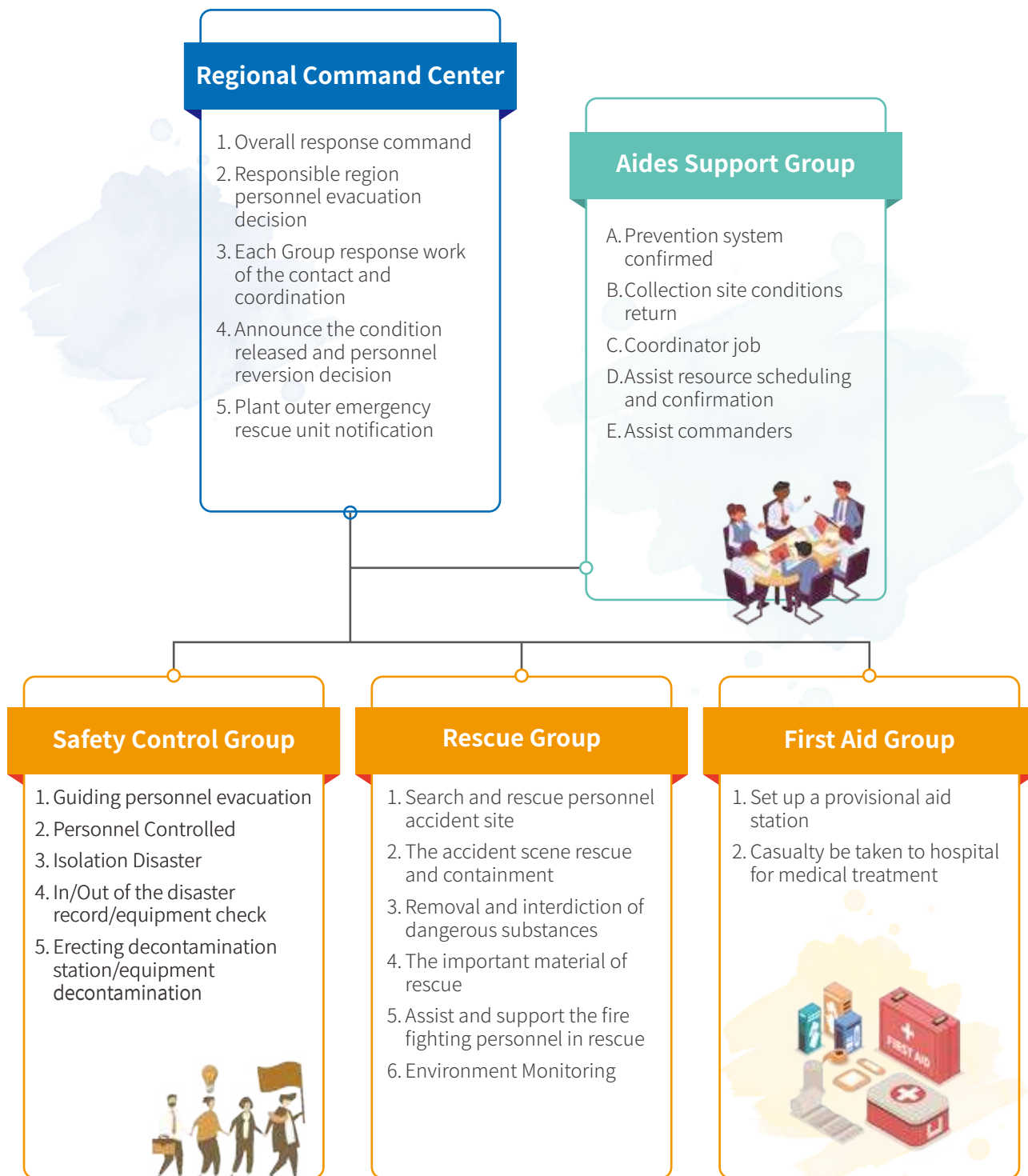
1. Plant accident
2. Plant supply system
3. Information system
4. External supply chain



## Emergency Response

The Company uses correct and effective emergency measures in case of an emergency to minimize the personal injury, property damage and impact on the environment caused by an accident. "Plant Disaster Emergency Response Measures" have been specially formulated and training courses have been given to an emergency response team; department response exercise and a compressive (inter-department) emergency response exercise in plants are both carried out at least once a year; emergency response exercise is carried out once a year for the general personnel.

Regional Emergency Response Team Organization Chart







ERT training



Fire drill



Poison disaster drill



Evacuation drill



# 03 Chapter Innovative technologies

3.1 Semiconductor Industry and Foundry Services / 3.2 Economic Performances and Technology Innovation  
3.3 Customer Relations Management / 3.4 Supply Chain Management



## Management for continuous profit

PSMC is in the high-tech industry. To be able to profit steadily is our basic requirement in terms of sustainability. We are also committed to creating maximum benefits for shareholders and stakeholders. We maintain technological advantages to create stable profits and set the company's sustain operation as the most important goal.

### Issues Covered

Economic performances, intellectual property rights, production services and R&D innovation



#### Rules

"Enterprise Patent System (E.P.S) and "Intellectual Property Management Measures" are complied with. Through patent research and development and technological innovation, we offer customers more advanced and comprehensive solutions in order to stabilize orders.



#### Goals

- Annual operation management target: diverse product technologies and high-gross profit production and sales portfolios. Advanced manufacturing technology to increase profit (including 5G, automotive, big data, AIoT).
- Short-term goals: Proposals on R&D and innovation patents is double compared to 2018.



#### Execution

- Establish Intellectual Property Office – responsible for the protection of intellectual properties. Through recoding e-learning courses, we hope to increase our colleagues' knowledge relating to the regulations regarding intellectual property and receive complete protection for the R&D results through patent layout.
- Establish Technology Development Center – responsible for process technology R&D of various product lines and to promote the "Open Foundry" mode.
- Establish Strategy Planning Office – responsible for formulating the direction of the Company's operations and customer development.



#### Management

- To combine the Company's strategic considerations and operating goals and continue to improve patent management system, optimize the patent portfolio and thorough maintenance costs, the Intellectual Property Review Committee reviews then selects innovative proposals and proposals that can be used for the industry from patent proposals made internally. The selected proposals will be applied for patent externally.
- Hold regular business management meetings and performance review meetings; set operation management goals as well as the related necessary measures to be taken.

### 3.1 Semiconductor Industry and Foundry Services

#### 3.1.1 Promote "Open Foundry" mode – innovative services thinking

In addition to providing a full line of its own foundry technology platform, the Company makes good use of its long-term accumulated wafer manufacturing technologies and experiences and has developed the unique Open Foundry mechanism. Open Foundry provides diversified working models including product, equipment, production management and design services. We jointly develop technology platforms with our customers and help them enhance their cost competitiveness.

▲ foundry ● customer ◎ cooperation

	Product design	Process develop	Equipment	Operation Mgt.
Generic Foundry	●	▲	▲	▲
Open Foundry	▲ / ●	▲ / ● / ◎	▲ / ●	▲

#### Current Open Foundry Technologies&Products

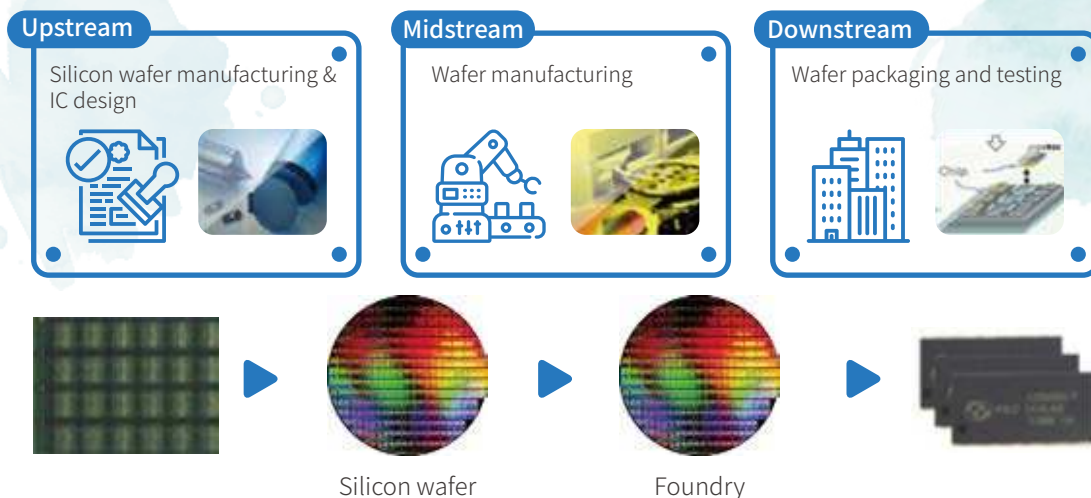
*Power Management IC, PMIC	*LCD Driver IC
*CMOS Image Sensor, CIS	*SLC NAND Flash
*Integrated Memory Chip, IMC	*Low Power DRAM
*IGBT, Power MOS (Discrete Device)	

#### 3.1.2 Industry Overview

According to World Semiconductor Trade Statistics (WSTS), the output value of global semiconductor market in 2018 came at approximately USD468.8 billion, a 14% increase in revenue compared to 2017. The annual growth of memories reached 27%, driving overall growth. In 2019, due to the economic cycle and many uncertainties in the world, the international research institution IC Insight estimates that the global semiconductor market will grow slightly by 3%. The main growth momentum will come from sensor, microprocessors and logic.

In recent years, IDM's large plants have increased their proportion of outsourced foundries under the consideration of capital expenditure and cost reduction which helps the revenue performance of foundries. According to the estimation of the international research institutions IC Insight and IHS, the annual revenue of pure foundry would grow by approximately 5% in 2018. In the future, the pure foundry output value has an expected growth of 6% in 2019, which is better than the overall semiconductor industry.

#### Semiconductor process



Through the industrially innovative "Open Foundry" mode, we offer our customers seamless product planning from 8-inch to 12-in wafers. According to the customer needs and we jointly develop manufacturing technology and help design chips to improve products in order, enhancing the partnership with customers. At the same time, we use the existing memory R&D and manufacturing experience and proactively develop various types of logic and memory integrated chips in order to build the most competitive foundry services that are different from other foundries.

The focus of the future technology R&D will be based on the existing foundation. We will continue to develop different logic and memory foundry process technology platforms in order to provide customers with the best foundry services. We also hope to stay in line with world-class manufacturers in logic foundry and memory foundry process technology.

### 3.1.3 Logic IC Chips Foundry Business

The Company provides customized logic IC professional foundry services with advanced technologies. Our biggest aim is to effectively shorten customers' production process and enhance customers' competitive advantage. Aside from the continuous development in advanced processes, we will establish a professional process platform and develop silicone intellectual property. We will also focus on the world-class factories and import their special technologies to manufacture in our Company, assisting our customers to develop and mass produce new-generation products.

Logic IC Foundry Services
TFT-LCD Driver IC
Power Management IC
Image Sensor IC
Integrated Memory Chip
RF Chip
Bio-tech Chip

At the same time, in response to the changing industry and the flexibility of the Company, in the future, aside from providing commissioned services including capacity, manufacturing and design, the Company will also provide the concept of diverse foundry mode (Open Foundry) as operation management, creating a win-win situation with customers.

#### ■ Display Driver IC Process

With reference to the requirements of high-resolution, fast signal transmission panels (4K UD TV), the 8-inch fabs have completed the setting of high-voltage (18V & 13.5V) platform with core voltages from 3.3V to 1.8V, and have begun mass-production successfully. With the next generation of ultra-high-resolution (8K TV), the Company will develop a high-frequency signal transmission interface, with advanced core voltages from 1.8V to 1.2V, and accelerate the regrowth of HVGX and promote the CIP for Zero Defect program.

In addition to the continuous improvement of the 12-inch plants on small-sized display drive IC foundry processes and the transfer platforms with special specification that are different from the existing technology, the Company has constructed 80/90nm technologies with the same specifications as the industry, providing diversified foundry technology to our customers. Furthermore, with the screen development of mobiles being full screen, branded customers continue to optimize the narrow design which also drives the TDDI IC (Touch with Display Driver) market. The 80- nm process technology developed by the Company is mainly for TDDI application, which is currently in the process of being mass-produced.

Also, the 55- nm HV process platform which the Company self-developed, used in TDDI and OLED driver ICs, is currently in the stage of production trail. The platform is expected to be mass-produced in the second half of 2019. The 40nm HV process platform is expected to be mass-produced in 2020. With this platform, we hope to attract more customers in the high-end drive IC market and foundry business.

#### ■ Power Management IC Process

In order to expand to fulfill customers' broad product needs, the 8-inch fabs provide the most comprehensive foundry platform in the industry. The mass-production of the 0.18-micron DNW BCD has been complete and the high-performance 0.18-micron EPI BCD 6V/9V-100 platform has been developed. The platform is used in white energy-saving appliances, Internet of Things (IoT) and wearable devices as well as providing 4K TV the backlight power management.



The 12-inch plants use the 0.18-micron technology to produce dozens of different types of power management products and import automotive product application for well-known customers. The Company is one of the very few foundries in the world that is able to provide 12-inch BCD (Bipolar-CMOS-DMOS).

#### ■ Image Sensor IC Manufacturing Process

Currently, the Company use the 0.11-micron technology to produce high-resolution image sensing (CIS , CMOS Image Sensor) chips for well-known customers. The technology is used in foundry products including security camera lenses, Sat Navs and machine vision applications. The existing technology is FSI with Pixel size reaching  $1.0\mu\text{m}^2$ ; the next development goal is  $0.85\mu\text{m}^2$ .

In addition, the Company has self-developed CIS color filter and micro lens manufacturing process to provide customers with more comprehensive CIS chip foundry services. The company has also co-developed an innovative biochip with customers. The product is used for DNA sequencing. The 4-million-pixel biochips have been verified by the US FDA in 2018 and are being mass-produced. The process of the biochips with 40 million pixels is still under development.

#### ■ Memory Integrated Memory Chip Manufacturing Process

The 8-inch plants are in the process of the 0.11-micron 1.5V\_3.3V/5V process embedded Flash process development. The products are used for 32bit MCU, IoT and Smart cards (Easy Card, ATM card, Health and Insurance Card).

The 12-inch plants work with well-known international manufacturers and use the 0.14-micron process technology to provide customers foundry services. The technology is used in NFC (Near Field Communication), RFID (Radio Frequency Identification), MCU and Power Management IC. It has been mass-produced since 2016.

For a long period of time, the IMC technology and the manufacturing ability of the Company have been recognized by world's large manufacturers in the world. The Company is currently self-developing the 55nm IMC2.0 (integrated memory chip) platform which is expected to be mass-produced in 2020. We hope to increase customers' competitive and gain more customers in markets of MCU, IoT, Smart card, SIM card and Bluetooth customers. We are in the planning of the 40nm IMC platform.

### 3.1.4 Memory Wafer Foundry Business

With the developments of the IoT and AI, came many different and diverse semiconductor requirements, from the Cloud to the Edge end. As the trend of terminal electronic products moving towards the direction that is more functional, thin and energy saving, chip designs have become increasingly complex. Among them, in response to the requirements, the Company has developed new types of AI Memory for neural network computing system such as In-Memory Computing (IMC) or WOW (Wafer on Wafer). These products are the highlight to the Company's industrial position in providing memory foundry to our customers to fulfill different customized needs which also meet the new development trend of the industry.

The Company's Flash products aims at mobile device, consumer electronic and industrial application markets, providing products that are low-power to save energy and highly reliable. With the dive of the functions of mobile phone being more diversified, low-capacity NAND Flash and low-power DRAM have become the main memory solution in the entry-level mobile phone market. Furthermore, the recent new applications such as wireless Bluetooth earphones or AMOLED have also created more NOR Flash demands.

Our company is the only company in Taiwan with advanced DRAM and NAND Flash/NOR Flash. We will continue to develop a new generation of memory system process, maintain cost competitive advantages and work with our customers to provide diversified and high-quality memories.

Foundry for Memories
DRAM
NAND Flash / NOR Flash

#### ■ DRAM Manufacturing Process

The Company has been working on the manufacturing process of Low Power DRAM (LPDRAM) for many years. Many domestic and foreign customers have already tapped out LPDRAM products of the 30nm DRAM foundry platform. Aside from the niche DRAM products of foundry, it is also being widely used on consumer fields including IoT, Stack IC, LCOS.

In addition, the first DDR4 products of the most advanced 25nm of DRAM foundry are being mass-produced. Currently there are more than 15 25nm foundry developments being invested. Our company's DRAM technology is also moving towards the development of the next generation of 2y nanotechnology. With the application growth of the AI, IoT, virtual reality (VR) and augmented reality (AR), AI memory chips will be trial-produced and will drive more diversified needs for DRAM applications.

#### ■ Flash Memory Manufacturing Process

On the aspect of NAND Flash, the Company mainly promotes the 40nm low density SLC 1.8V and 3.3V Dual voltage NAND Flash which are highly reliable. The reading and writing can reach more than 100K and the debug capability can reach 1bit ECC. The subsequent 28nm SLC NAND Flash technology platform is being trial-produced. 2Gb will be mass-produced in 2019 and 4Gb will be mass-produced in 2020.

On the aspect of NOR Flash, other than the mass-production of the 90nm meter for many years, the 48nm NOR Flash technology platform is being trial-produced. It is expected to be mass-produced in 2020.

## 3.2 Economic Performances and Technology Innovation

### 3.2.1 Profit Overview

The market research agency Gartner has released that in 2018, global semiconductor market had a production value of USD476.7 billion, a growth of 13.4% compared to the previous year. The production value of pure foundry market has reached USD59 billion. The demand of the 8-inch foundry market that the Company focuses on still continued to exceed the supply in 2018. Looking back to the operation status in 2018, with the support of our customers and hard work of our employees, revenue and profit have hit a new high with the annual revenue reaching NT\$7.64 billion, a whopping increase of 22% compared to the revenue of the previous year. The annual average profit margin came at 26%, a growth of 6% compared to the previous year. The annual net profit came at NT\$970 million, a big growth margin of 66% compared to the previous year.

In order to effectively integrate the recourses of the Group and focus on the foundry business, the Company has acquired the relevant operations on May 1st 2019 and assets of the 3 12-inch fabs from the parent company Powerchip Technology Corporation (Powerchip). After combination, the Company owns 3 12-inch fabs, 2 8-inch fabs with nearly 7000 employees. In the future, the Company will be positioned as a professional foundry with its own unique product technology and continue to promote international cooperation strategies, import top-end technologies, develop our own technologies and steadily expand the market. We hope to accumulate competitive advantages in this fast-changing high-tech industry and become a professional foundry supplier that creates win-win situations with customers.

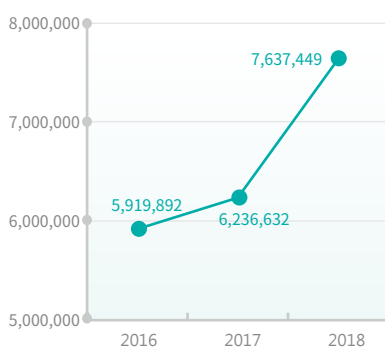
Followed by the combination of the assets and relevant operations of Powerchip, we have successfully entered the list of top ten global foundries. The Company will continue to offer foundry services of memory and logic products. We believe that the Company's operations will improve and profits will increase year by year and continue to move forward from the field of foundry.



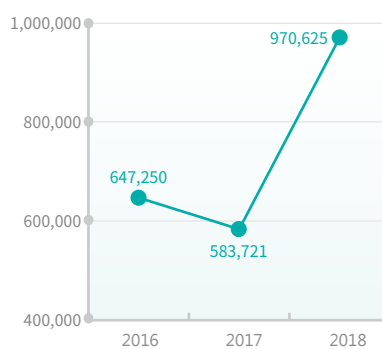
(Unit: NT\$ thousand)

Year	Item	2016	2017	2018	Growth of 2018 Compared to 2017
Operating revenue		5,919,892	6,236,632	7,637,449	22.46%
Gross profit		1,325,394	1,227,165	1,999,718	62.95%
Operating profit/loss		715,270	631,168	1,068,572	69.30%
Non-operating income and expenses		(68,691)	(17,997)	8,477	-
Profit before tax		646,579	613,171	1,077,049	75.65%
Profit of continuing operations		647,250	583,721	970,625	66.28%
Net income (loss)		647,250	583,721	970,625	66.28%
Other comprehensive income for the period (net income after tax)		23,803	43,063	12,552	-
Total comprehensive income for the period		671,053	626,784	983,177	56.86%
Net income attributable to parent		649,436	595,046	985,928	65.69%
Net income attributable to non-controlling interests		(2,186)	(11,325)	(15,303)	-
Total comprehensive income attributable to parent		673,239	638,109	998,480	56.47%
Total comprehensive income attributable to non-controlling interests		(2,186)	(11,325)	(15,303)	-
Earnings per share		1.46	1.34	2.22	65.67%
Employee wages and benefits		2,024,002	2,137,898	3,087,991	44.44%
Payment of shareholders' dividends (cash)		169,380	-	-	-
Payment of government taxes		11,929	2,636	143,185	5,331.90%

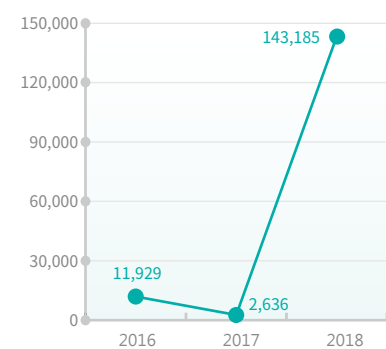
Operating revenue



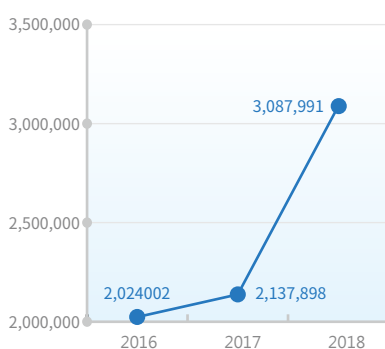
Net income (loss)



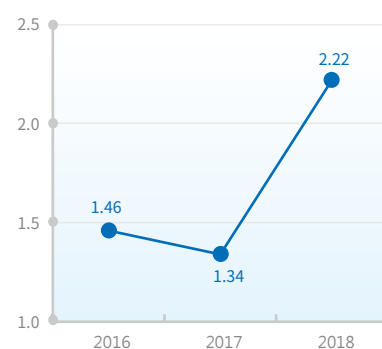
Payment of government taxes



Employee wages and benefits



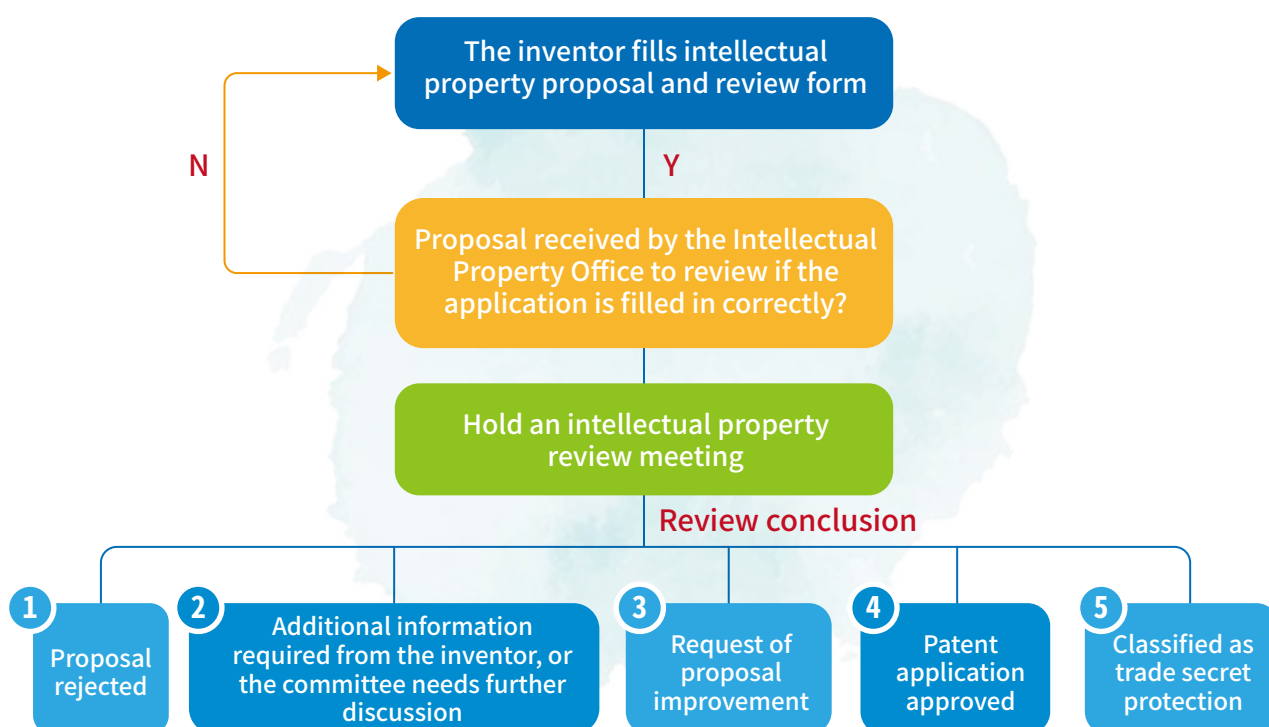
Earnings per share



## 3.2.2 Intellectual Property Protection

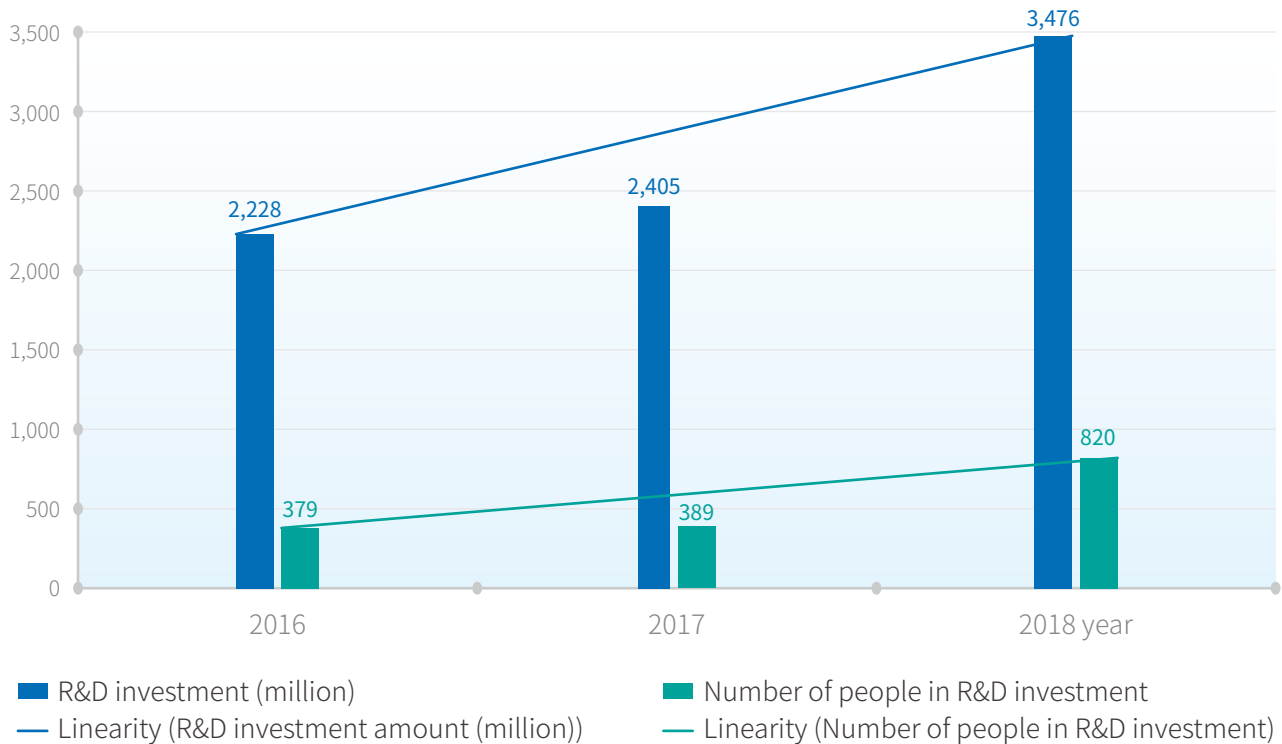
PSMC is in the high-tech industry that needs its own technologies to be able to maintain the freedom of operations. We ensure our R&D results are fully protected by applying for patents and it also enhances competitive advantage. The Company has established an Intellectual Property Office to manage matters regarding intellectual properties. The Office formulates strategic plans for the management of intellectual property capital based on the patent layout and combines the Company's strategy considerations and operation goals. The Office also continues to improve the intellectual property management system and optimizes intellectual property portfolios and thoroughly maintains costs to implement the output, management and application of intellectual properties in order to ensure the leading technical position.

To enhance the management of the intellectual property rights, the Company has specially formulated the "Management Measures for Intellectual Property Rights". We encourage our employees to contribute their ideas and put forward new invention proposals of relevant technologies regarding R&D, production and operations. Through certain internal procedures, decisions will be determined to apply for patents, trademarks, trade secrets or other intellectual property rights to enrich the Company's intellectual properties. Procedure chart of intellectual property proposals:



The Company continues to invest in innovative R&D and patents and enhances the power of the capital of knowledge. Through the recorded e-learning courses, the Company hopes to increase our colleagues' knowledge relating to the regulations regarding intellectual properties. We also encourage proposals on new technologies and new ideas. The inventor will be given a bonus after the proposal has been approved and will be granted a reward after obtaining a patent, creating a culture of internal innovation and R&D. The patent R&D team is composed of R&D personnel. The team establishes goals of internal proposals and external applications each year. "Patent Management System" has also been established to control and review procedures to maintain its quality of patents through the technical review committee's strict management.

Number of people in R&D investment and R&D expenses over the years



In 2018, there were 136 internal patent proposals. After being reviewed by the Intellectual Property Committee, 59 proposals that are innovative and able to be used in the industry have been selected to apply for patent externally. To increase patent activity, the Intellectual Property Office plans patent application strategies through patent application systems of different countries, demanding the best protection for the Company's new technologies. In 2018, we have applied for 46 patents; we have been certified 63 patents in total.

As of 2018, PSMC has applied for over 1,000 patents, with 799 still within the term of patent rights. Among these, Taiwan has granted 311 patents, with 35 still ending. United States has granted 345 patents, with 11 pending. Furthermore, there are patents applied in Japan, Korean and China. 799 patents have been approved, with 170 still pending. In the future, the Company will still continue to actively apply for patents to protect the intellectual property rights of the Company, improve product image and also protect the rights of customers. The patents are also used as a basis for interactive authorization with other manufacturers.



## 3.3 Customer Relations Management



### Management for Customer Relations

We care about the satisfaction of our customers regarding our products and services. We can continue to improve, gain customers' trust and stabilize our relationship via feedback on customer satisfaction.

#### Issues Covered

#### Customers' Health and Safety, and their Privacy



Rules

- Build various management systems such as ISO 9001, IATF 16949, ISO 14001, OHSAS 18001, EAC, RoHS, and SONYGP to ensure interests relating to our customers/stakeholders.
- Formulate "Information Security Policy" and "Information Security Management Measures". It is our dedication to protect information, documents relating to our customers through strictly control of records of the Company's internal system, ensuring that customer privacy is fully protected. In addition, for approval and activation of the operation authorization of internal personnel, it will be handled according to the relevant operational regulations of the systems.



Goals

- Improve customer satisfaction and maintain the score of 85.
- No occurrence of information security



Execution

- Establish Green Project Organization - responsible for evaluating the health and safety of products and services.
- Establish Customer Service Department - responsible for handling customer enquires and feedback. Carry out regular customer satisfaction surveys.
- Establish Information Security Committee - responsible for formulating and implementing the Company's security control operations. The Committee holds meetings regularly to discuss and resolve issues relating to information security, covering aspects on human resources, physical security, and information security. When major changes or an incident involving information security occur, an extraordinary meeting is held for discussion.
- We have been promoting to our employees to use less paper since February 2018. We hope to replace the use of paper with electronic equipment and improve our systematic operations (application/enquiry/reading) to reach the goal of reducing the use of paper and more effectively reduce the risk of paper documents in the management of information security.
- Information Security Office is responsible for the promotion of information security. All of our colleagues must participate in the "Information Security Management Measures" course each year.
- As of 2018, the Company has launched a trade secret control project internally to enforce various software and hardware control measures.



Management

- The Customer Service Department analyzes the status of customers whose score for customer satisfaction is lower than KPI each month. The analysis is reviewed by senior managers at the annual management review meeting, and management policy is adjusted depending on the situation.
- The Information Security Committee regular discusses issues relating to information security and when major changes or an incident involving information security occur, a meeting is held by the Committee for discussion of adjustments of operation.
- QBM management review meetings are held bi-annually. Management goals are appropriately adjusted according to the satisfaction of customers.

### 3.3.1 System Certification And Customer Satisfaction

#### ■ System Certification

With our advanced technologies, we offer foundry services to our customers. In addition to the continuous improvement of manufacturing processes, we also strictly monitor our quality of production. Through implementing various management systems, we control each production with detail. Not only do we comply with international regulations, we also ensure that the products and services meet customer needs.



The Company has established a Green Project Organization that conducts a management review meeting bi-annually to ensure that all products and services have been healthily and safely evaluated, and are in compliance with the ISO 9001, IATF 16949, ISO 14001, OHSAS 18001, REACH, RoHS and SONY GP. So far, we have not received any complaints from customers regarding harmful substances.

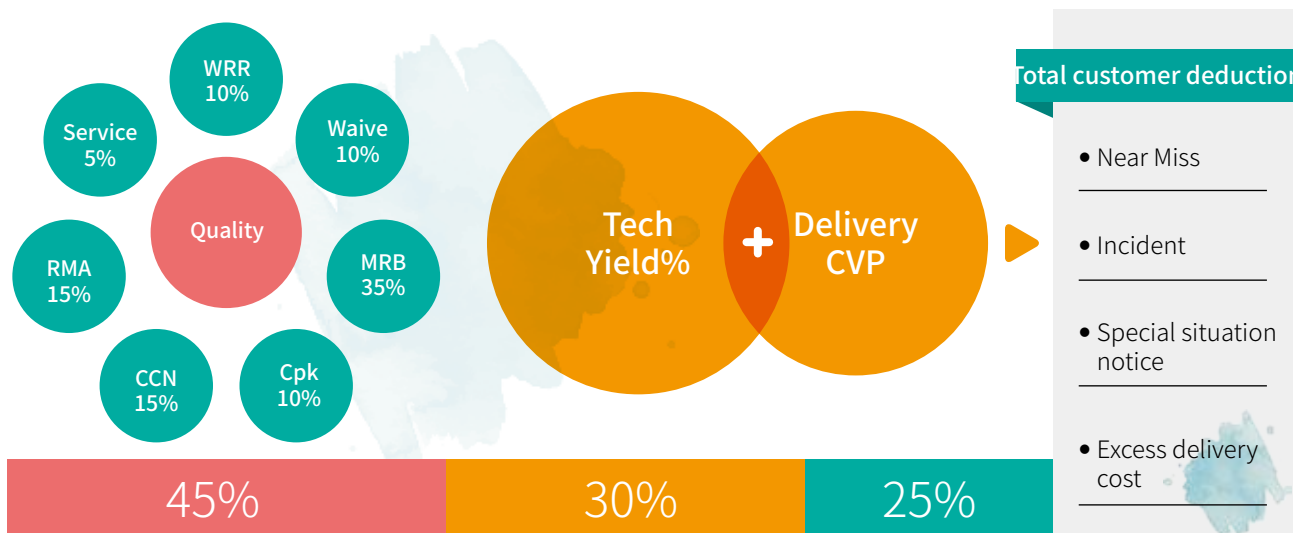
Moreover, in order to get hold of customers' opinions, the Company has established straightforward communication channels. Customers can have direct feedback regarding product or service issues through email or Voice of the Customer (VOC) system.

## Customer Recognition

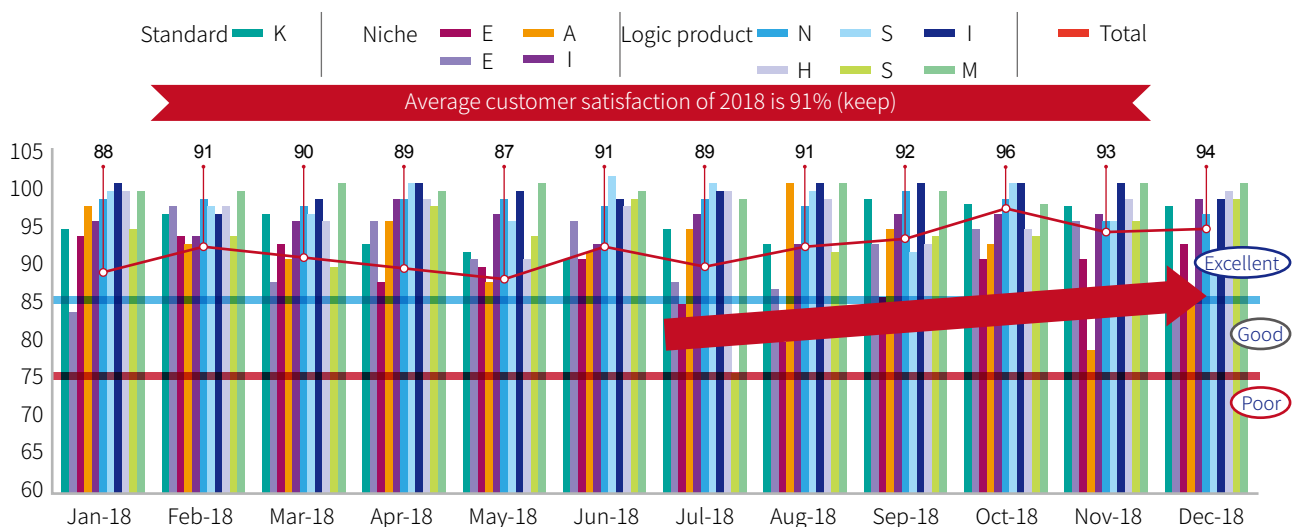
We care deeply about voices from customers end and we are willing to find solutions together. Other than the dedicated department (dedicated personnel/hotline) that is convenient for customers' instant contact, we also hold regular meetings to have face-to-face discussion with our customers. We send out surveys to help customers respond to questions and keep track of customer issues at all times to solve issues with customers in the shortest possible time. Records relating to the issues will be submitted to the business performance meetings and give feedback to the management. The content and result of the 2018 customer satisfaction survey are as follows:

1. Target/product category/ scoring item: 11 customers have been invested (average of production season >2000) product category covers logic foundry products of niche/standard, DRAM and Driver IC/Power/CI. Rating was made for quality, technology, and delivery.
2. Survey method: self-evaluation monthly; opinions of customers will be given quarterly.
3. 2018 survey results and explanation: average overall customer satisfaction is 91% (increased by 2% compared to the previous year), which is "excellent".
  - (1) The number of Material Review Board (MRB) cases was about the same as last year (15 cases).
  - (2) Order fill rate increased by 7% compared to the previous year.
  - (3) Overall yield increased by 2% compared to the previous year

Scoring method:



Customer satisfaction:



### 3.3.2 Customer Privacy and Information Security

The Company is classified as a technology-intensive company. We know that our competitiveness is built on the security foundation of intellectual properties so, the "Information Security Policies" has been established by the Company internally (to ensure that the information assets the Company owns and delivers to customers/partners are secure in order to protect the interest of our customers and stakeholders) and "Information Security Management Measures" to regulate the Company's relevant measures to protect important information including trade secrets, intellectual properties and at the same time protecting information relating to our customers. All information and documents between the Company and customers are strictly controlled and monitored by an internal system. For approval and activation of the operation authorization of internal personnel, it will be handled according to the relevant operational regulations of the systems.

In terms of the implementation of information security management, it is a little difficult to control the use of paper substantially. Because of the recent evaluation and improvement of environmental protection concepts, we have begun to implement a plan to use less paper in February, 2018. We hope to replace the use of paper with electronic equipment and improve our systematic operations (application/enquiry/reading) to reach the goals of reducing the use of paper and implementation of environmental protection, energy saving and carbon reduction policies and strengthen information protection. By the end of 2018, the monthly paper consumption was about 220,000 sheets, comparing the 300,000 sheets of paper consumed in the beginning of 2018 - 80,000 sheets of paper less monthly which was a significant paper reduction performance. In 2018, about 27% of paper was reduced. We use actions to respond to environmental protection and continue to implement energy conservation and carbon reduction. We also effectively reduce risks regarding information security management with the reduction of paper.

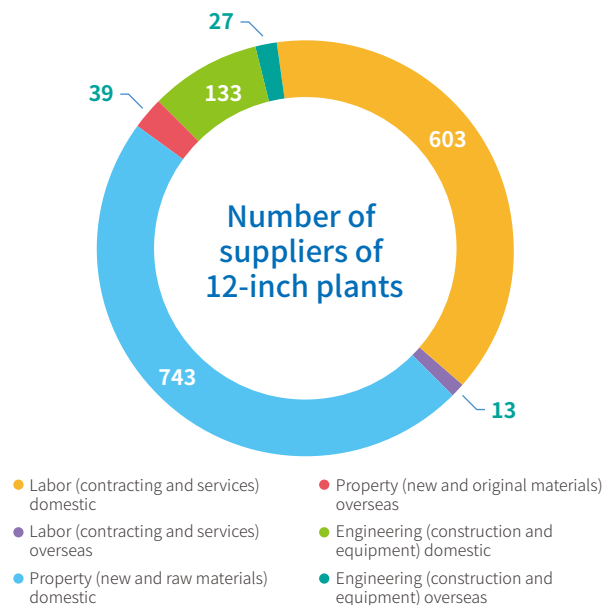
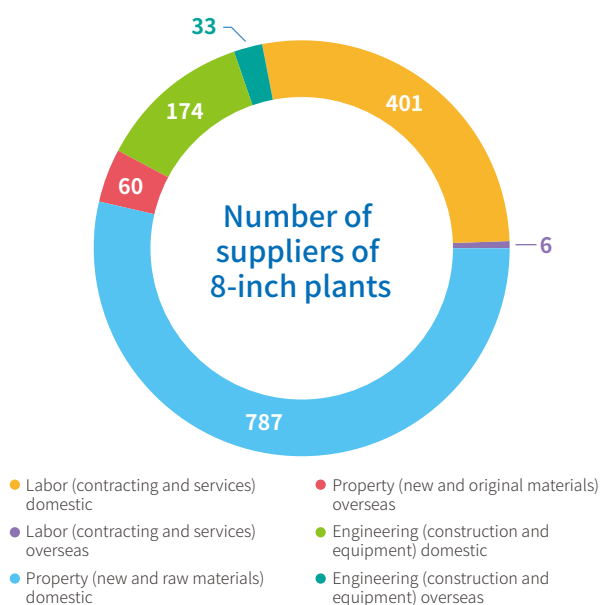
According to "Information Security Policies", Information Security Committee" is composed by the representatives appointed by all relevant units who are responsible for formulating and implementing the Company's security control operations. The Committee holds meetings regularly to discuss and resolve issues relating to information security, covering aspects on human resources, physical security, and information security. When major changes or an incident involving information security occur, an extraordinary meeting is held for discussion. Each year, through education and training, and internal announcements, we continue to conduct promotion and talks with our colleagues about information security in order to enforce information security policies. In 2018, we held 4 types of information security education and training courses. Employees participated in the courses according to the planning so that the concept and knowledge of information security are deepened distributed to the managers and our colleagues.

Course name	Object
How do Corporate Protect Trade Secrets – From 20 Cases	Managers above Deputy Chief Manager
Introduction of Trade Secrets Act and Practices	Division and Department managers with authority
Promotion Powerchip Information Security Control Measures	Division and Department managers with authority
Promotion Powerchip Information Security Control Measures	Our Colleagues

Since 2018, the Company has launched trade secret control project to strengthen access control and monitoring, information system access management and access record storage and review, and strictly control of personnel access and data access (such as, prohibiting the use of private storage devices in the Company, the installation of monitoring software in the computers the Company distributes, personal mobile phone with cameras and controlling software, access to the Company to implement security checks) so that the Company can avoid any improper accesses, tampers, and prevent theft or leakage of trade secrets and intellectual properties. Moreover, all of our colleagues must participate in the "Information Security Management Measures" course each year in order to strengthen the Company's internal information security awareness and ensure information security.

## 3.4 Supply Chain Management

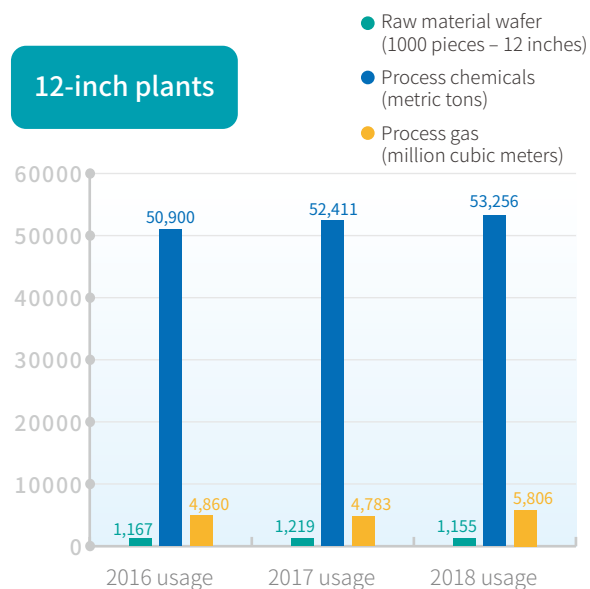
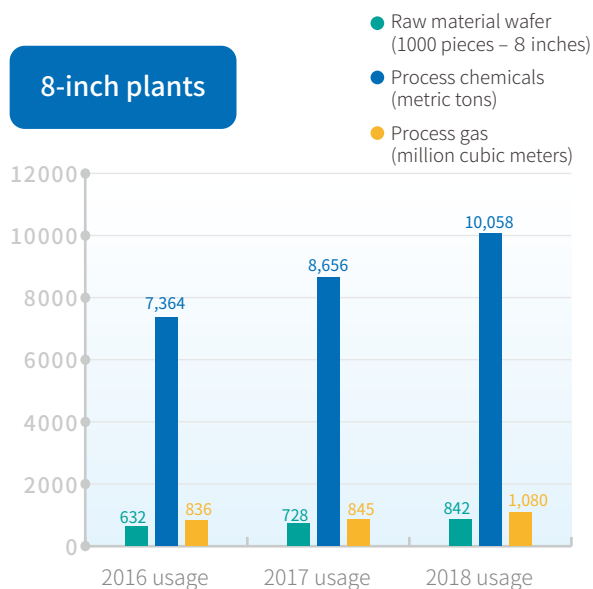
The Company's procurement is divided into three categories: labor, property and engineering. Suppliers are mainly domestic manufacturers, and the local procurement accounts for 79.62% of the total procurements.



### Raw Materials Management

The raw materials the Company uses for production are non-renewable materials. The following table shows the amount of raw materials used. It is increased with the annual increase of production.

#### Usage of Raw Materials

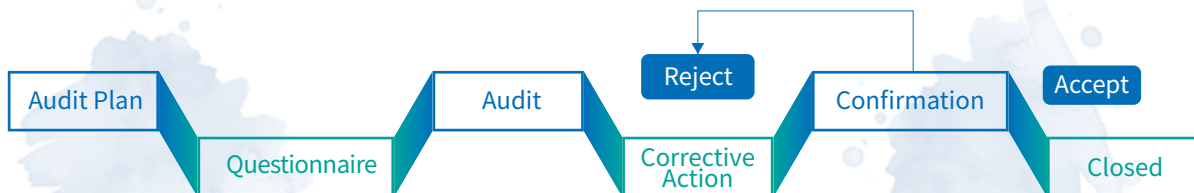




#### ■ Supplier audit

According to the Company's "Spare Parts /Material Supplier Management Procedure", new suppliers are required to fill in a preliminary survey. disciplinary records by competent authorities regarding environmental protection, occupational safety and health, fire control will also be included in the evaluation. Existing cooperative manufacturers are based on raw material supplier management method and contractor management methods. According to the sampling frequency of historical engagement, raw material manufacturers are evaluated bi-annually; contractors are evaluated annually. If manufacturers are involved in major social or environmental protection violation, the cooperation will be terminated and such manufacturer will be eliminated from the Company's list. In 2018, a total of 166 suppliers were evaluated, 135 contractors were evaluated. No manufacturers have been eliminated or removed due to violation.

In order to ensure the effectiveness of the supplier's quality system, the Company selects the auditing suppliers based on the "Supplier Audit Details" and "Component Supplier Audit Details". An audit is carried out to production wafer suppliers at least once a year; An audit is carried out suppliers of far materials or key spare components at least once every 3 years, and a supplier audit plan for the following year is proposed at the end of each year. The contents of the audit refer to the requirements of the ISO/IATF provisos and the special audit items of individual materials, including material characteristics, abnormal event, re-examination of previous deficits and horizontal deployment which are carried out by trained and qualified auditors. The entire audit plan, relevant documents and records of individual audits, including audit report, improvement for deficits, and supporting documents and records, are handled between the Company's eAuditing system and suppliers. The cases may only be closed after confirmation by the audit team.



# 04

## Chapter

# Environmentally Friendly

4.1 Energy Resource Management / 4.2 Pollution control  
4.3 Environmental Health and safety Promotion and Education

## 4.1 Energy Resource Management



### Energy Resource Management policy

There has been power and water shortages in recent years in Taiwan, if not properly managed, they may affect production and face risks in relevant regulations in the future. By managing greenhouse gas (GHG) emissions effectively, our company's cost risks can be lowered and our product competitiveness on sustainable issues can be increased.

#### Covered issues

Energy (reduction of energy consumption), water, emissions (green greenhouse gas emissions)



Norms

- PSMC is a professional company that provides foundry service. By formulating energy policy, it can continue to increase the efficiency of energy and water resources. We comply with our country's energy regulations and international energy conservation and carbon reduction trends in order to effectively maintain management system. We are a company that strives to reduce energy consumption to lower the impact climate change may cause, fulfilling corporate social responsibility.
- Introduce international management systems especially ISO 50001, ISO 14001 and ISO 14064-1 and formulate "GHG Emission Reduction Management Measures" and "Operational Measures for GHG Emission Inventory and Verification".
- The Science Park requires recycling rate process water of more than 85% for semiconductor plants and that they meet the 1% energy saving requirement for large energy users.



Targets

- Comply with the energy saving target management plan for large energy users and continue the 1% energy saving target as well as following the energy saving targets and execution plans stipulated in Article 9 of the Energy Administration Act
- The Company does its best in managing water with the goal of achieving the maximum benefit with the least amount of water usage, allowing the Company to continue production using limited water resources. We also follow the water recovery rate to reach the target  $\geq 85\%$  which is formulated by the government.
- In 2020, solar panel power generation system is expected to be installed at the Company's 8A plant which will allow the Company to generate zero-carbon renewable energy for its own plant. 307 kilowatts of solar panel capacity are expected to be installed, and carbon emissions are expected to be reduced by 228,000 kilograms.



Execution

- A team of energy management will be established and it reports the energy consumption status of the plant to the plant manager on a regular basis. It will also make an application of the energy consumption to the Bureau of Energy.
- Dedicated personnel of plant affairs have been established for monitoring and controlling water consumption; it also makes a water application to the Hsinchu Science Park Bureau (HSPB).
- GHG inventory and reduction administration team have been establish to monitor GHG emission status.



Management

- According to the internal management review procedures of ISO 14001, ISO 14064-1 and ISO 50001, the Company conducts effective evaluation using PDCA procedures.

#### 4.1.1 Energy Management

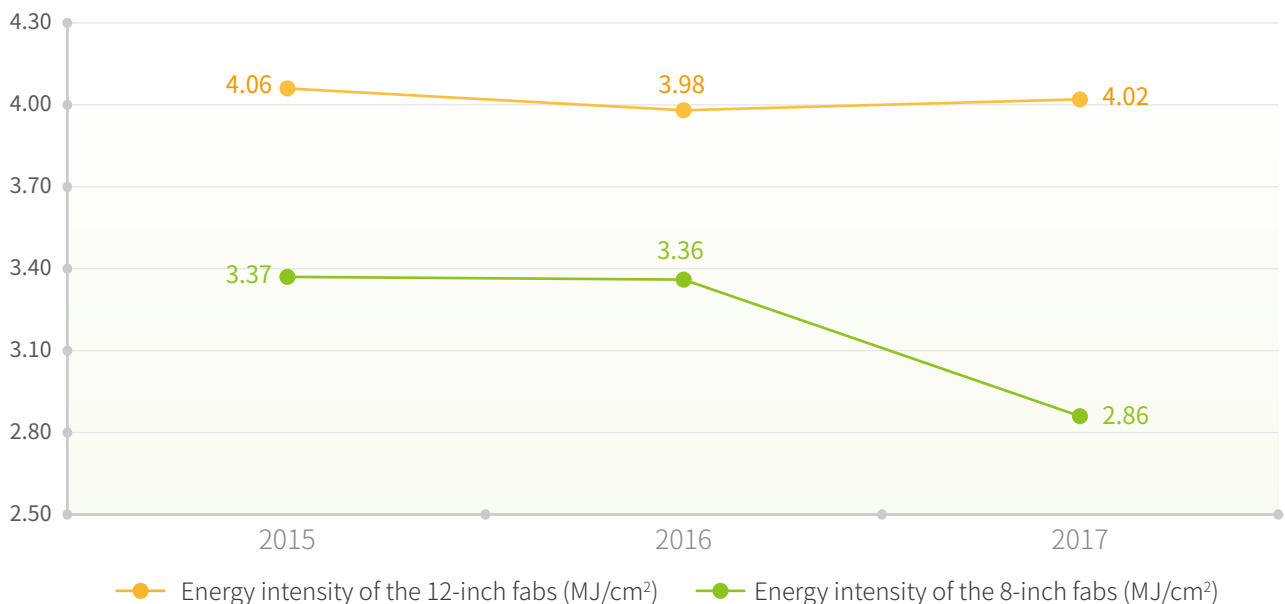
The statistics of the Company's energy consumption are shown in the table below. Although the consumption increases as the increase of production, the Company still continues to improve the consumption efficiency, striving to reduce environmental impact.

Plant	Energy resources	2016	2017	2018
12 inches	Electricity consumption (kWH/year)	845,567,209	860,984,605	867,091,072
	Diesel consumption (L/year)	33,891	37,400	27,667
	Natural gas consumption (m <sup>3</sup> /year)	8,822,068	9,129,190	8,712,301
8 inches	Electricity consumption (kWH/year)	189,858,380	192,339,613	195,401,621
	Diesel consumption (L/year)	6,495	25,780	9,632
	Natural gas consumption (m <sup>3</sup> /year)	2,012,304	2,334,144	2,331,727

The 12-inch plants have introduced energy administration system into its administration system via ISO 50001 system. The system analyzes energy consumption efficiency, seeks for energy efficiency so that the Company can lay the foundation as a green plant. Through the verification operations carried out by third parties (Verification agency) on a regular basis, administration system verification is updated, ensuring its effectiveness and that the performance and culture of energy administration of the Company are able to gradually grow. The 8-inch plants are currently not included in the scope of energy administration system, but the entire Company follows "Regulations on Setting Energy Conservation Objectives and Execution Plans for Energy Users" and continue to plan to achieve power saving goals. Energy intensity of each plant over the years is shown in the table below, when shows a trend of decrease.

Energy intensity of each plant over the years

(Unit: MJ/cm<sup>2</sup>)



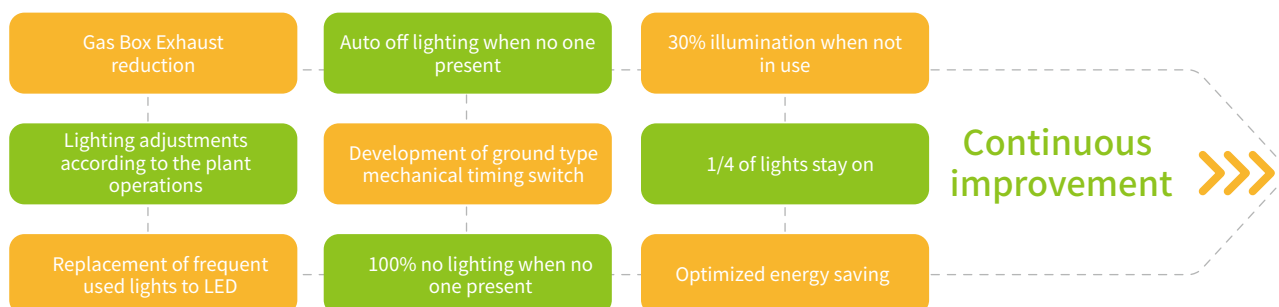
## Energy Saving

In a bid to comply with the "Regulations on Setting Energy Conservation Objectives and Execution Plans for Energy Users" formulated by Ministry of Economic Affairs, the Company executes various energy saving measures such as reviewing and reducing the electricity usage of low production units, plans to renew old equipment, development for renewable energy and setting the goal of saving 1% of electricity each year. 2018 energy saving statistics of each plant are shown in the table below; all plants have achieved the goal of energy saving plans.

Plants	Reduce the amount of energy (electricity + diesel + natural gas)	Energy saving rate
P1/2 plant	14,367,570 Mcal	1.115%
Energy saving plans	FAB B2F AHU2-2-1 AC energy saving shutdown	CUP 1F EF-10 exhaust of wind turbine energy saving shutdown
	P1 water cooled water chiller unit of primary pump with variable flow energy saving improvement	P2 MAU4-3 BACKUP damper removal energy saving improvement
	P1 PCDA inverter added on air compressor #3 energy saving improvement	P1 CDA replacement of old air compressor #1 energy saving improvement
	P12 – S-UPS un-installation of gas chemical system	P1 plant – PCW-JW P-601-1B2B inverter added
	Installation of energy saving device to TC Dry Pump of KEMs	PY40_01 change of SCT signal tower bulbs to LED bulbs
	Replacement of single tower bulbs of machines to led bulbs	Shortened baking time from 200 minutes to 100 minutes
P3 plant	6,093,763 Mcal	1.158%
Energy saving plans	Modification of blades of cooling tower fan (AC)	Cooling water pump ice machine renovation (AC)
	Un-installation of LSR RO (water treatment)	Improvement of heating jacket of CC9 (gasification)
	Un- installation of 1 ROR supply (water treatment)	Un-installation of AC box heater in basement of the SUP building (AC)
	Change of water boiler temperature from 101°C to 93°C	Optimized program modification for Edwards' Local Scrubber
	WT Chiller CDA consumption reduction	LED replacement
8A plant	2,881,654 Mcal	1.52%
Energy saving plans	CDA No.1 Air Compressor Motor Maintenance	Change of MAU air washer pump to high efficient motors
	Replacement of T8 to T5 lights, 268 lights - ADM3F/5F/6F	Lights of ADP car park and public areas and AT3F corridor have been changed to 250 LED lights (removal lights of 8B)
	DP-20A (secondary pure water pump) has been changed to energy saving pump	A/T RO stop the operation of second stage

In terms of energy saving in products, the Company has dedicated itself to improving manufacturing process technology. In 2018, the Company developed the technology platform of Flash 40nm, providing customers with an increase of 22% in output and effectively reduces production energy consumption. In 2020, it is also expected that the Company will complete the 25nm DRAM production development of 25nm with 28% less meta and product power consumption will be reduced by 14%.

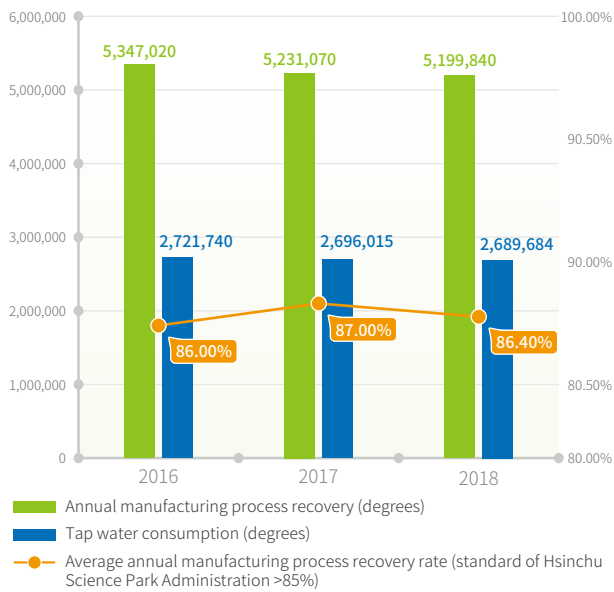
## Basic energy saving plans



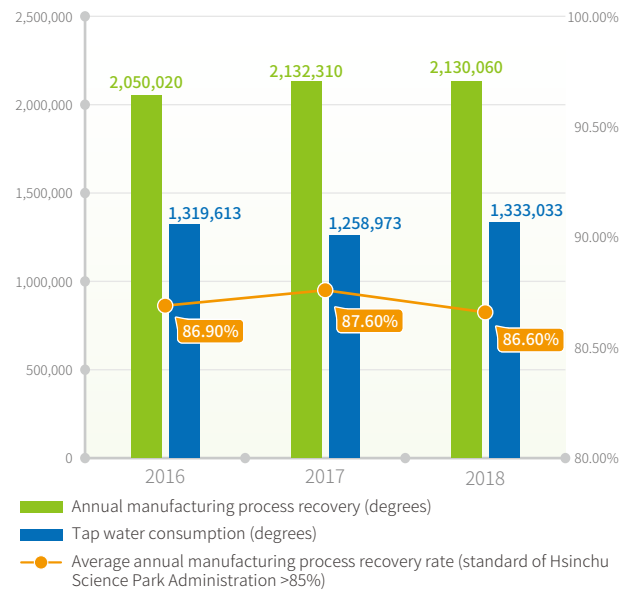
#### 4.1.2 Water Resource Management

The water used by the Company is tap water, which comes from the first and second dams of Baoshan, Hsinchu. In recent years, normal water supply in plants has been affected by climate change. The Company keeps on improving the water recovery rate and manufacturing water efficiency through technology improvement and equipment investment. The Company is the first semiconductor plant in the Park to make a promise of the manufacturing water rate of more than 85% (each drop of water is being used approximately 3 times). The ultrapure water used per unit in each chip in the 8A plant has reduced to 0.0069 from the original 0.009 (m<sup>3</sup>/cm<sup>2</sup>wafer).

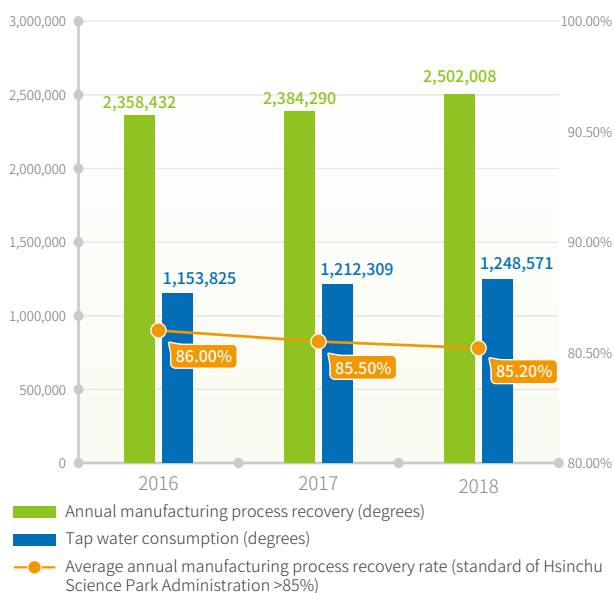
Summary of the average annual recovery rate of the manufacturing process recovery plan of P1/2 over the years



Summary of the average annual recovery rate of the manufacturing process recovery plan of P3 over the years



Summary of the average annual recovery rate of the manufacturing process recovery plan of 8A over the years

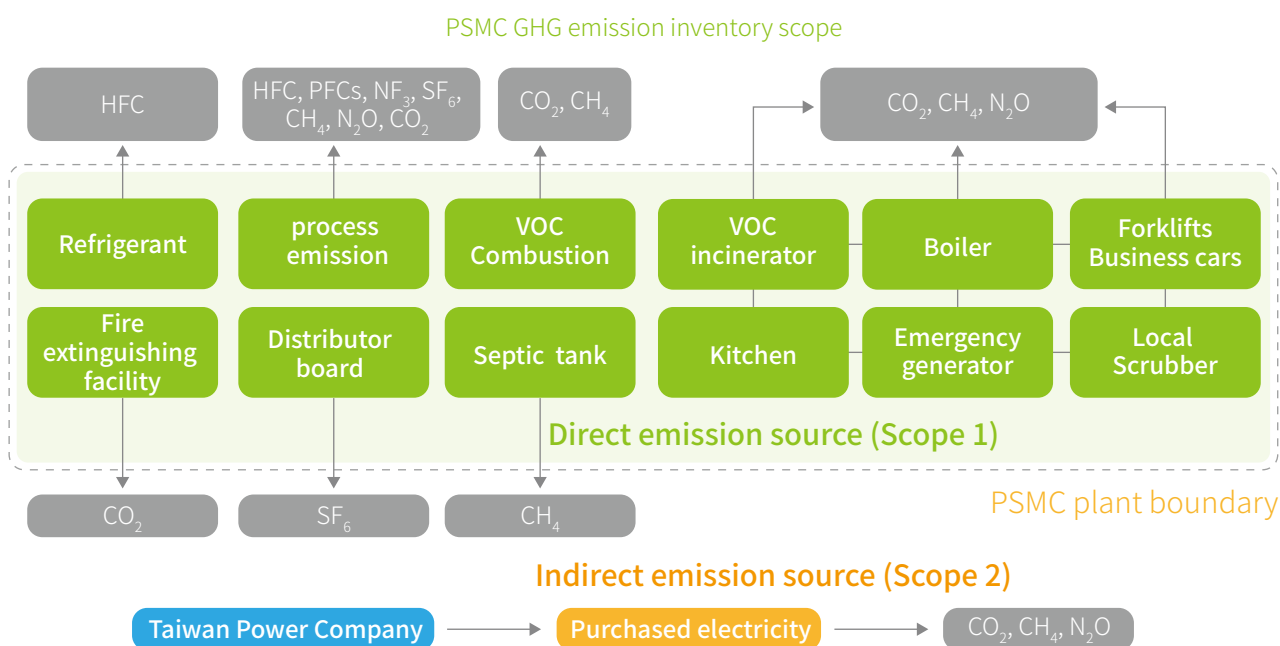
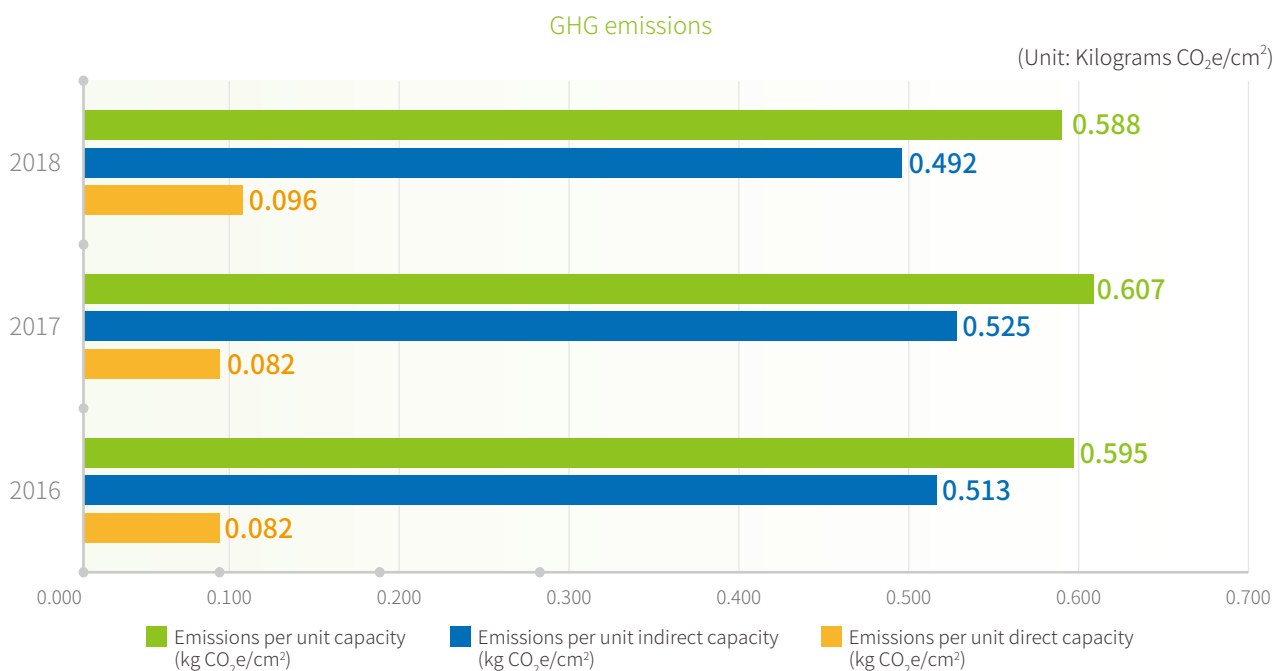


When Hsinchu Science Park Bureau (HSPB) announces a water restriction policy, phased water is carried out into 4 stages: 10%, 20%, 50% and 100% according to the Administration. The initial target is for the water consumption of public and residents then it expands to the water used by manufacturing process and lastly, priority will be given to maintain operation of the clean room. The Company has signed a contract with a water truck to come to the Company's water collection point, in case of insufficient water during the period of water restriction in order to extend the water supply within the plants.



## 4.1.3 GHG Inventory and Reduction

The Company has set up a Administration team of GHG Inventory and Reduction who collects GHG emission data, including direct energy (scope 1) and indirect energy (scope 2) but other indirect energy (scope 3) not including. The covered gasses are carbon dioxide, methane, nitrous oxide, hydro fluorocarbons, perflorocarbons, sulfur hexafluoride, nitrogen trifluoride. Ozone-Depleting Substances (ODS) under the Montreal Protocol are identified during GHG inventory, but not counted according to the EPA regulations. The Company has set up the goal to reduce carbon by 1% each year. The production capacity and emissions in 2018 have increased by 3.42% and 0.18%, respectively compared to 2017. Therefore the GHG emissions intensity reduced by 3.13%, achieving the Company's short-term goal



## 4.2 Pollution control



### Pollution control management policy

Protecting the environment, green production and fulfilling corporate social responsibility serve as the Company's duty to management. We believe that environmental health and safety risks in plants are deemed appropriate. Relevant regulations are complied and we keep on promoting our dedication on improving, prevention of pollution and environmental protection.

We fulfill our responsibility on air pollution, waste water discharge and waste management, and avoid possible relevant violation fines to reduce the Company's external and cost risks. We also increase the competitiveness of products on sustainable matters to maintain the Company's good image and customers' trust, achieving the ultimate goal of sustainable operation.

#### Covered issues

Emissions (air pollution emission management), waste water, waste, relevant environmental compliance



Norms

- Introduce international management systems such as ISO 14001. Formulate "Environmental and Safety, Fire Regulations Collection and Identification Measures" and "Prevention Measures for Plant Environmental Pollution".
- The Company's environmental health and safety policy stimulates issues regarding climate change and adjustment, as well as the use of sustainable resources in order to implement energy conservation and carbon reduction, and prompting the use of resources.
- Best feasibility control technology is used to ensure reduction from source. Various recycling resources are reviewed for re-use to ensure that all operations are in compliance with environmental protection standards.



Targets

- Business operations are in compliance with Environmental Protection Act.
- Reduce emissions of VOCs
- Parameter setting reduces the amount of chemicals used, and waste water produced by manufacturing process is monitored.
- Enhance recycling treatment equipment and its efficiency, and reduce waste water discharge.
- Increase 1% of the re-use rate of waste.



Execution

- All plants are equipped with air pollution control equipment and waste water treatment systems. Regular maintenance and relevant improvement are conducted to increase efficiency, and dedicated personnel have been set up to operate and monitor various pollution prevent measures.
- To answer to the trend of ammonia nitrogen reduction demand, the Company still insisted on using the catalyst method that is highly safe, zero waste but high construction costs as an environmental protection facility to reduce ammonia nitrogen.
- Dedicated personnel have been set up in all plants to be responsible for the management of plant waste, and will be assisted by plant affairs, general affairs and property management of different units.
- The Company's budget for waste removal annually is approximately NT\$130 million. The environmental protection activity costs for the personnel affairs of the 12-inch plants in 2018 came to NT\$110 million (environmental protection activity costs for the personnel affairs of the 8-inch plants had not been calculated in 2018).
- Regular consultation and communication meetings for environmental health and safety representatives, relevant education and training regarding environmental health and safety and education and training of all departments are held.
- Introduce ISO 14001 management and asses from time to time; if it is needed to add or enhance control equipment for manufacturing process and implement improvement in regards of relevant issues of perception.



Management

- According to the internal management review procedures of ISO 14001, the Company conducts an efficient evaluation of PDCA on emissions management quarterly.
- For waste removal/treatment manufacturer evaluation, at least one visit must be performed each year, and relevant information regarding the visit is kept in the audit system inside the plant.

The Company is located in the Hsinchu Science Park. All business operations must be reported to and controlled by the Park Bureau. Any evaluation relating to the environment and environmental monitoring are operated under the supervision of the Hsinchu Science Park Bureau, which has not caused direct impact on the community. Execution of operations within plants has always been about the environmental protection and health and safety in order to maintain certain environmental health and safety standards. The Company continues to enhance its interaction and exchange with the Ministry of Science and Technology of Hsinchu Science Park Bureau by participating in "Industrial Safety and Environmental Protection Month" for the safety of work environment. A safer and more comfortable working environment is provided to our employees by creating the plant's comprehensive environmental health and safety system. In 2018, the Company did not receive disciplinary action from the environmental protection authorities.

The Company is a part of the Environmental Supervision Team of the Park, and regularly communicates with surrounding residents to understand the expectations they have of the Park's manufacturers in regards of matters concerning environmental protection, and health and safety in order to continue to enhance its management mechanism of the manufacturer environmental health and safety.

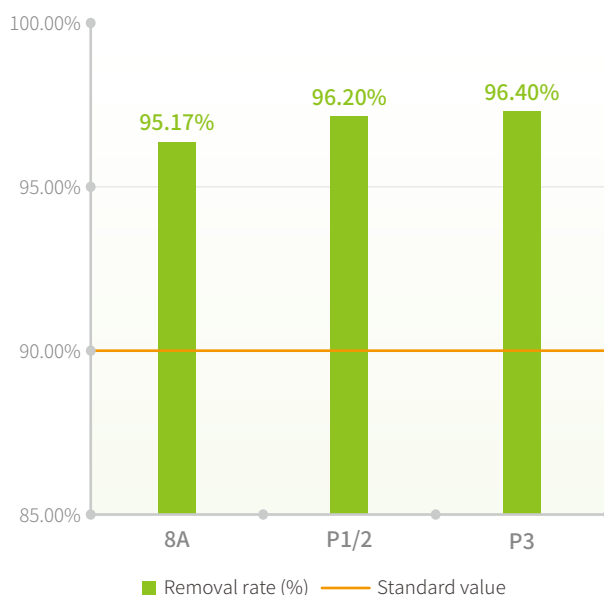
## 4.2.1 Air Pollution Emissions

In order to maintain the quality of the environment, the Company strictly monitors and controls the discharge of pollutants. Discharges over the years have been within the standards of regulations. The acidic and alkaline waste gas produced by the Company's manufacturing process is discharged after being treated by a web scrubber. The organic waste gas is adsorbed and concentrated by a zeolite absorbent wheel, and then desorbed with hot air which will then be incinerated in a burner. More than 95% of the removal efficiency of volatile organic compounds (VOC) can be reached. In 2018, the removal efficiency of VOCs in all plants is far better than the regulations stipulated in the "Air Pollution Control and Emissions Standards for the Semiconductor Industry". The Company's destruction of removal efficiency reaches more than 95% which is greater than 90% that is the regulation.

Faced with the increase of production and the continuous evolution of new manufacturing process, the Company adapts source classification and the most advanced and suitable pollution reduction technology which is air pollution control equipment and monitoring equipment. The equipment all complies with relevant regulations. Through continuous work on reduction technology, effect of existing control facilities is much enhanced. According to the actual test results over the years, the concentration of air pollutants is lower than the emission standards prescribed by the competent authority.

All of the Company's plants are located within Hsinchu Science Park. To be able to reduce emissions released by pollutants, the goal is to find the best technology available. Therefore, the Company has established enhanced measures on air pollution control equipment in the plant on the possible pollutants, and work on Parks' visually relevant air pollution issues with other companies in the Park. The Company will continue to cooperate with the Park Bureau to improve the air quality and evaluate relevant improvement plans.

VOC destruction removal efficiency

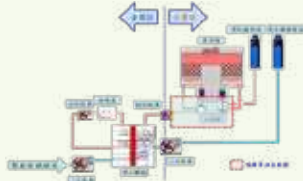
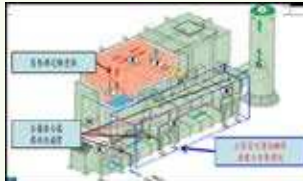

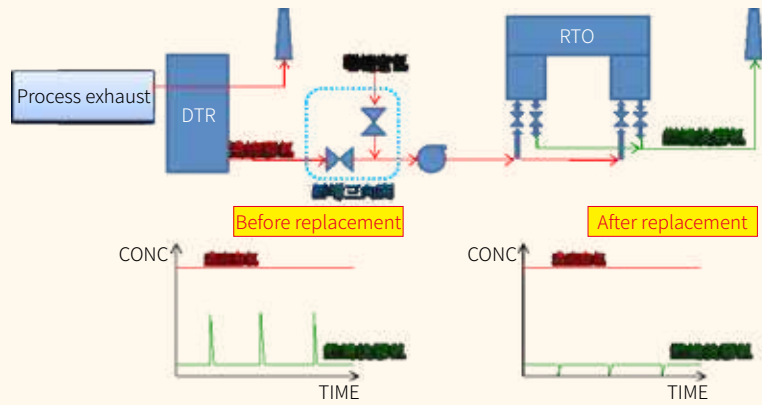




(Unit: ton)


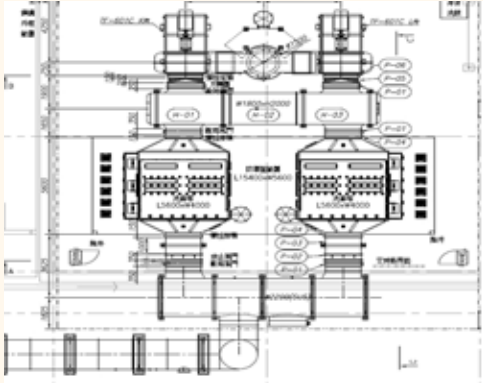
Total emissions	SOx	NOx	VOC
2016	1.03	20.39	22.77
2017	1.38	22.30	26.06
2018	1.44	23.20	32.38



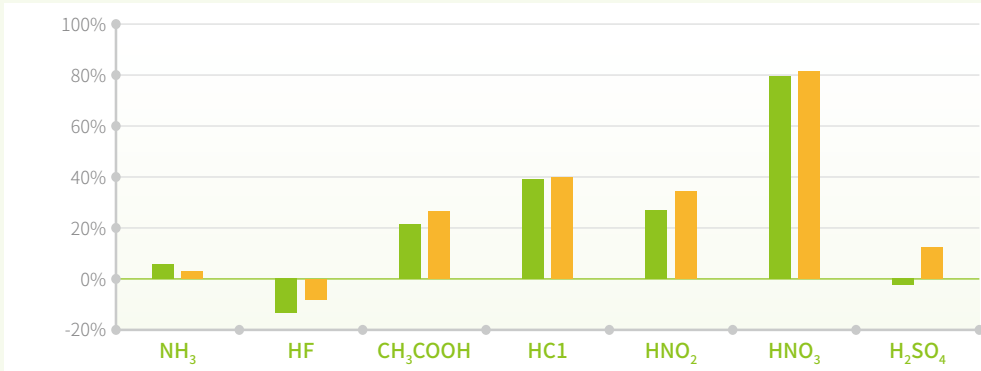
Main improvements are:

NO.1	Improvement plans	Setting of RTO leakage repair isolation cover to build a negative pressure environment, ensuring zero pollution																					
	Improvement efficiency	Setting of isolation cover to build a negative pressure environment, ensuring zero pollution																					
	Results	<div><div><p>▲ VOCs equipment structure</p></div><div><p>▲ Setting method of isolation cover</p></div><div><p>▲ Photo of the improvement cover</p></div></div>																					
NO.2	Improvement plans	Three-way switching valve added to improve the spillover of incinerator switching																					
	Improvement efficiency	Three-way switching valve added to lower the concentration of exhaust gas during switching																					
	Results	<div><p>Before replacement      After replacement</p></div>																					
NO.3	Improvement plans	Replacement to high-performance raschig rings to improve washing efficiency.																					
	Improvement efficiency	Raschig rings were replaced with the ones with high-performance which increases the specific surface area to 242m <sup>2</sup> /m <sup>3</sup> .																					
	Results	<div><div><p>Before replacement</p></div><div><p>After replacement</p></div></div> <table><thead><tr><th colspan="2">Sampling result</th><th>HF</th><th>HCl</th><th>HNO<sub>3</sub></th><th>H<sub>2</sub>SO<sub>4</sub></th></tr></thead><tbody><tr><td>Before replacement</td><td>Removal rate %</td><td>71%</td><td>68%</td><td>69%</td><td>69%</td></tr><tr><td>After replacement</td><td>Removal rate %</td><td>87%</td><td>94%</td><td>92%</td><td>93%</td></tr></tbody></table>					Sampling result		HF	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	Before replacement	Removal rate %	71%	68%	69%	69%	After replacement	Removal rate %	87%	94%	92%
Sampling result		HF	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>																		
Before replacement	Removal rate %	71%	68%	69%	69%																		
After replacement	Removal rate %	87%	94%	92%	93%																		

NO.4

Improvement plans	2 sets of scrubbers added, increasing the capacity of washing towers.
Improvement efficiency	2 sets of scrubbers added (1667CMM/scrubber), the single processing capacity of a single set is reduced from 857CMM to 667CMM.
Results	 

NO.5

Improvement plans	Make-up drainage increased/bigger exchange water rate to increase the washing efficiency of C/S in order to reduce emissions.																								
Improvement efficiency	The increase of make-up drainage improves capture efficiency and reduces emissions. After analysis, the amount of drainage is 27 tons/day with the emission reduction rate of 79.3% which shows the best benefit.																								
Results	<div>SEX1-1 Reduction Rate (P301 )</div> <div>Unit: %</div> <div><table><thead><tr><th></th><th>NH<sub>3</sub></th><th>HF</th><th>CH<sub>3</sub>COOH</th><th>HCl</th><th>HNO<sub>2</sub></th><th>HNO<sub>3</sub></th><th>H<sub>2</sub>SO<sub>4</sub></th></tr></thead><tbody><tr><td>■ 27 ton</td><td>5.8%</td><td>-13.4%</td><td>21.3%</td><td>39.2%</td><td>26.9%</td><td>79.3%</td><td>-2.4%</td></tr><tr><td>■ 37 ton</td><td>2.8%</td><td>-8.0%</td><td>26.3%</td><td>40.0%</td><td>34.2%</td><td>81.4%</td><td>12.5%</td></tr></tbody></table></div>		NH <sub>3</sub>	HF	CH <sub>3</sub> COOH	HCl	HNO <sub>2</sub>	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	■ 27 ton	5.8%	-13.4%	21.3%	39.2%	26.9%	79.3%	-2.4%	■ 37 ton	2.8%	-8.0%	26.3%	40.0%	34.2%	81.4%	12.5%
	NH <sub>3</sub>	HF	CH <sub>3</sub> COOH	HCl	HNO <sub>2</sub>	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>																		
■ 27 ton	5.8%	-13.4%	21.3%	39.2%	26.9%	79.3%	-2.4%																		
■ 37 ton	2.8%	-8.0%	26.3%	40.0%	34.2%	81.4%	12.5%																		





#### 4.2.2 Wastewater treatment

In order to grasp different treatment effects for different components, the Company divided the manufacturing wastewater into 19 different types of water treatment based on the type, concentration, and conductivity of the liquid at the manufacturing end. Not only can it increase the water recovery rate, some waste acid liquid (phosphoric acid/cooper sulfate/sulfuric acid/hydrofluoric acid), and organic waste liquid (IPA/PGMEA/TMAC) also have economic values for recycling. Separate division not only reduces the dosage of waste of the sewage treatment plant, it also reduces the difficulty for handling waste at the end.

#### Classification planning of wastewater recovery and discharge



The reclaimed water of process produced by manufacturing is treated with appropriate recycling water system treatment and then it is returned to the pure water system for re-use, increasing the recovery rate. The unrecyclable wastewater with high-concentration is discharged to the sewage disposal systems (including: acid-base/fluoric acid/slurry/ammonia nitrogen wastewater treatment system). After treatment, it will be piped into the Park's sewage treatment plant for subsequent treatment and discharge. There has no occurrence of serious leakage of wastewater over the years and no major fines.

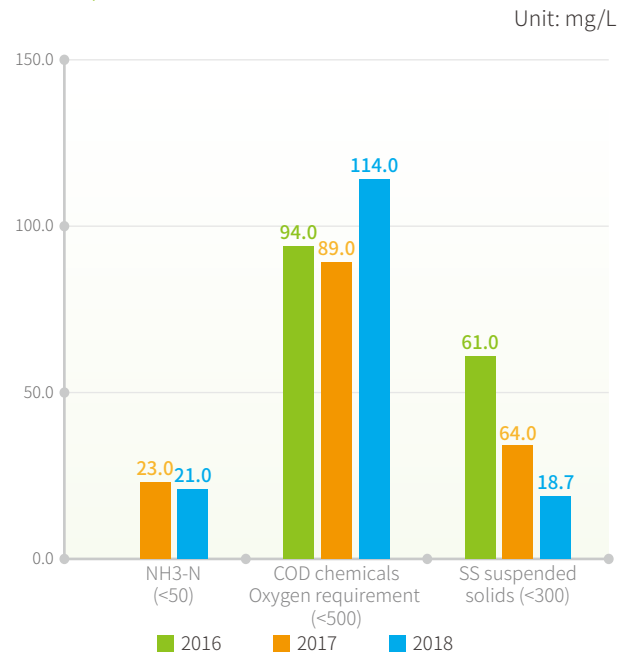
#### Wastewater disposal process



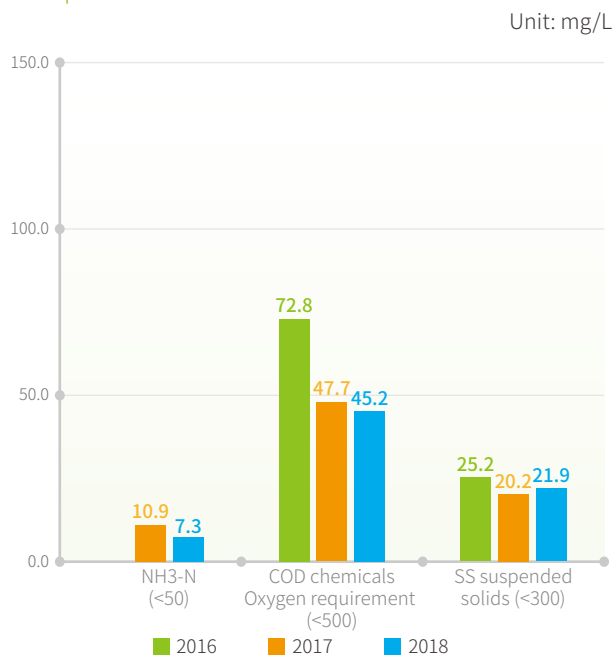
## ■ Total amount of wastewater of all plants



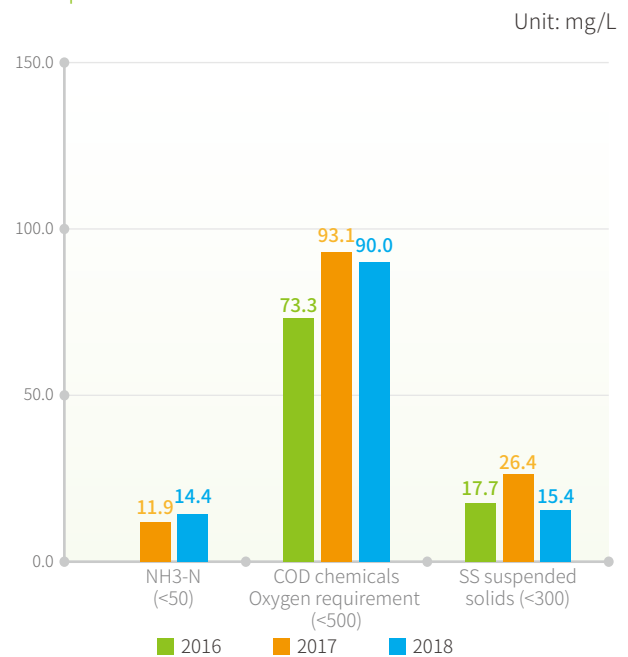
## ■ P1/2 plants releases water controlled substances



## ■ P3 plants releases water controlled substances



## ■ 8A plants releases water controlled substances



To answer to the trend of ammonia nitrogen reduction demand, the Company still insisted on using the catalyst method that is highly safe, zero waste but high construction costs as an environmental protection facility to reduce ammonia nitrogen. Not only can it reduce the ammonia nitrogen in the water body, it can also achieve the goal of no production of sludge generated by wastewater treatment, reducing the secondary environmental damage. The Company has also set up a setting of MBR biological system for the treatment of residents' sewage, allowing comprehensive treatment of the wastewater the production in the plant produces. The Company works with the Park Bureau to promote the plan and share the concept and results with other people and groups.

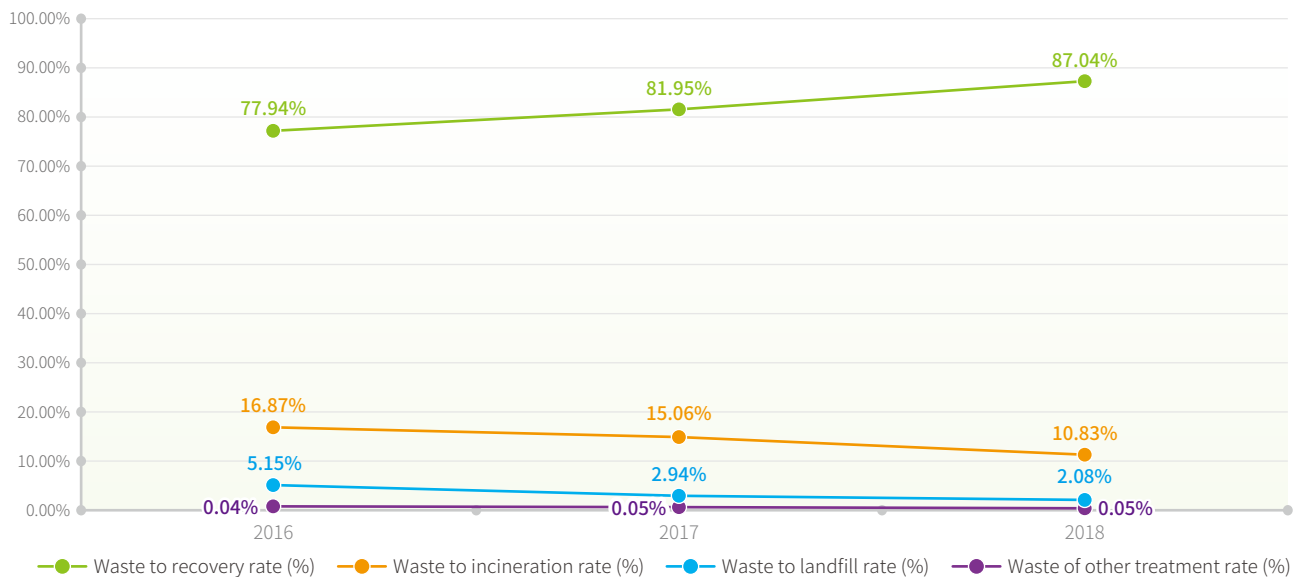
#### 4.2.3 Regeneration and Removal of Resources

##### Waste treatment

Dedicated personnel have been set up in all plants to be responsible for the management of plant waste, and will be assisted by plant affairs, general affairs and property management of different units. The Company's budget for waste removal annually is approximately NT\$130 million. The Company introduces the life cycle of waste management with continuous promotion of these goals: (1) Source reduction (2) Improve the re-use value of waste (3) Proper treatment of waste and tracking waste. By improving manufacturing process technology and raw material reduction, the Company reduces waste output from source management, achieving waste reduction. The overall waste output of 2018 decreased by 2% compared to 2017; waste output per unit wafer area decreased by 6% compared to 2017. Proportion of treatment method over the years as shown in the table below:

	2016	2017	2018
Total waste (ton)	13,742.94	15,010.14	14,666.83
Unit waste output (kg/cm <sup>2</sup> )	0.01315	0.01383	0.01307

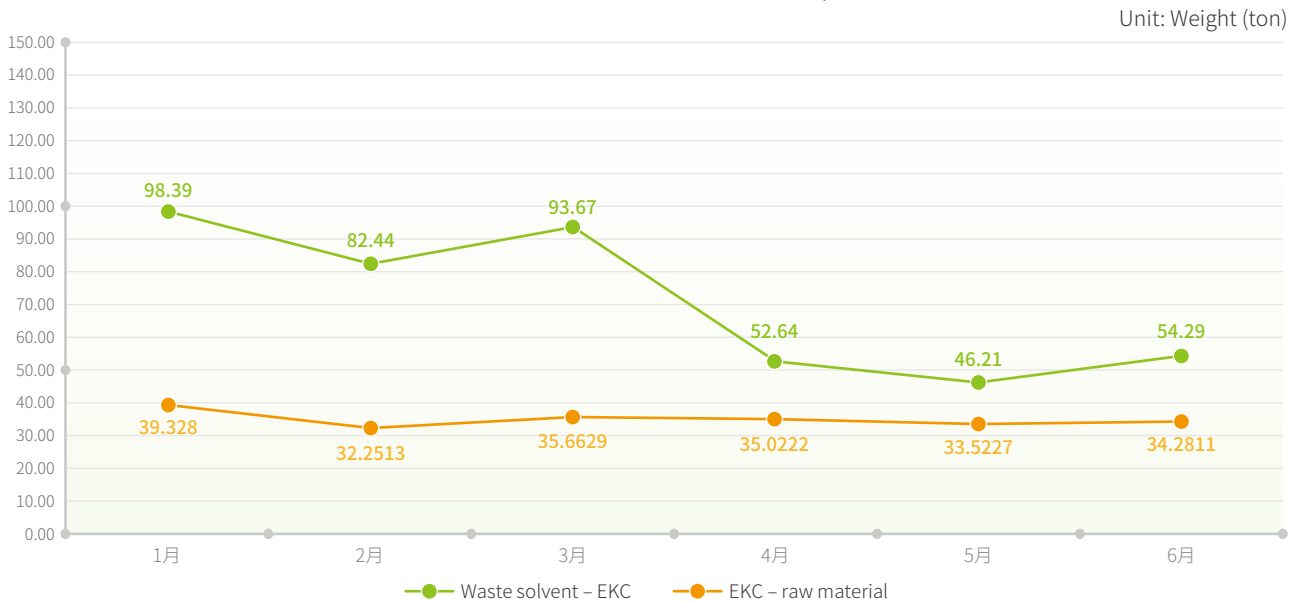
Proportion of various waste treatment methods over the years



## Source reduction

The output of waste solvent at P1/2 plant is higher than the other plants, therefore, the plan affairs and engineering department work together to continue to evaluate the emission reduction plans. Since March 2018, following the enforcement of improvement measures, the monthly output of solvent can be reduced by approximately 50 metric tons which saves the Company NT\$2 million in solvent treatment expenses. Such measure can also reduce the general waste incineration by approximately 62% and harmful waste incineration by about 3.5%.

2018 waste solvent – P1/2 EKC solvent output chart



### ■ Improve the re-use value of waste

The waste produced by the Company is mainly solvents, acids and sludge. By enhancing sorting from the front end and continuing to improve the values of waste, the Company works with manufacturers to evaluate whether measures are feasible to save the worries from end products. In 2018, the Company's target was to achieve waste recycling and re-use-rate of 1% and the actual re-use rate has increased to 87% (an increase of 5% compared to 82% in 2017), achieving the Company's short-term goal. In 2018, each plant has evaluated appropriate methods for recycling and re-using based on the production characteristics of the following table. Followed by the combination of the Company's businesses in 2019, the recycling method (such as PGMEA) will be gradually introduced at the 8-inch plants. The Company expects that the overall recycling and re-use rate of the Company will continue to increase.

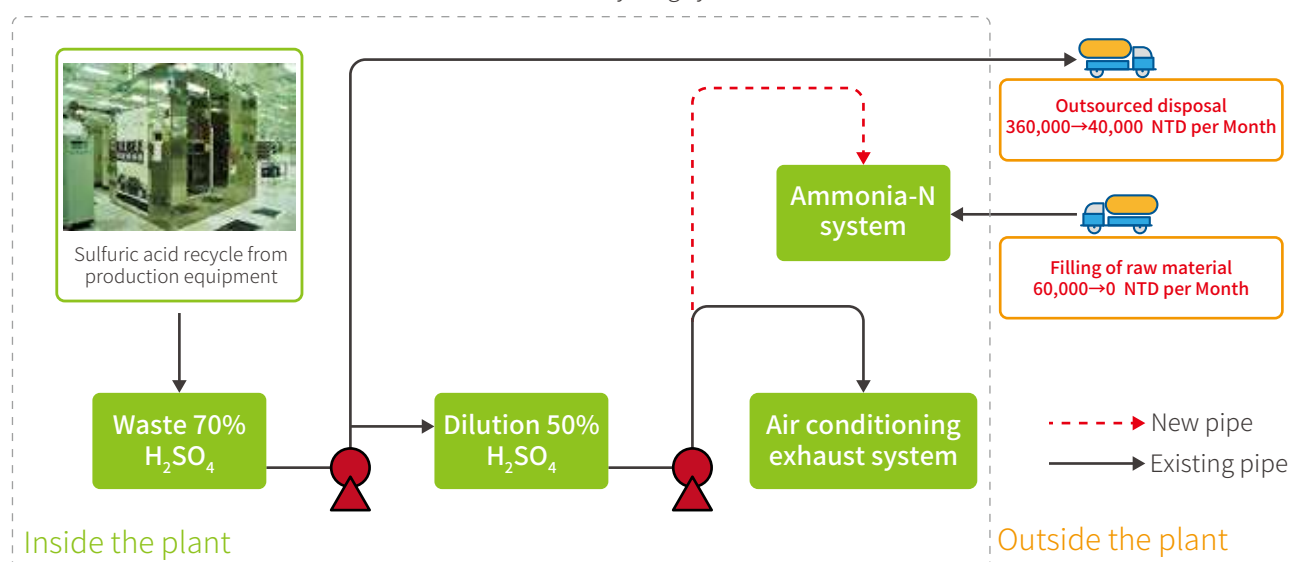
Types of waste	Recovery rate	Plants	Re-use method
Waste barrels	100%	12-inch, 8-inch (8A)	After cleaning/breaking, the manufacturer will make plastic and glass raw materials
Waste sulfuric acid	100%	12-inch	Recovered by the manufacturer in the plant will be supplied to the AC and water treatment with acid.
Waste copper sulfate	100%	12-inch (P1/2)	The manufacturer refines it into copper sulfate powder or copper recovery in acid solution
Activated carbon	100%	12-inch, 8-inch (8A)	After desorption regeneration for secondary use by the manufacturer
Inorganic sludge	98%	12-inch, 8-inch (8A)	Recovered by the manufacturer then it makes it into artificial granulated stones, cement raw materials and artificial fluorite
Waste phosphoric acid recovery	100%	12 inches	Recovered by the manufacturer and it makes it into potassium phosphate, water glass, and semi-finished products of water glass
Waste TMAH recovery	100%	12 inches	Recovered by the manufacturer then it makes it into HMAH for panel manufacturers
Waste organic solvents	69%	12-inch, 8-inch (8A)	Purified by the manufacturer and makes it into photoelectric grade EBR/ raw materials of paints
Waste resin	39%	12-inch, 8-inch (8A)	After desorption regeneration, it can be used by industries other than semiconductors

### Successful examples of the re-use of resources in 2018:

#### Re-use in the plants – waste sulfuric acid:

Specialized management collects sulfuric acid with recovery value, and supplies it to air pollution control equipment and wastewater plant as acid dosing agent after distribution of the plant. In 2018, 12-inch plant achieved 100% self-use rate of waste sulfuric acid.

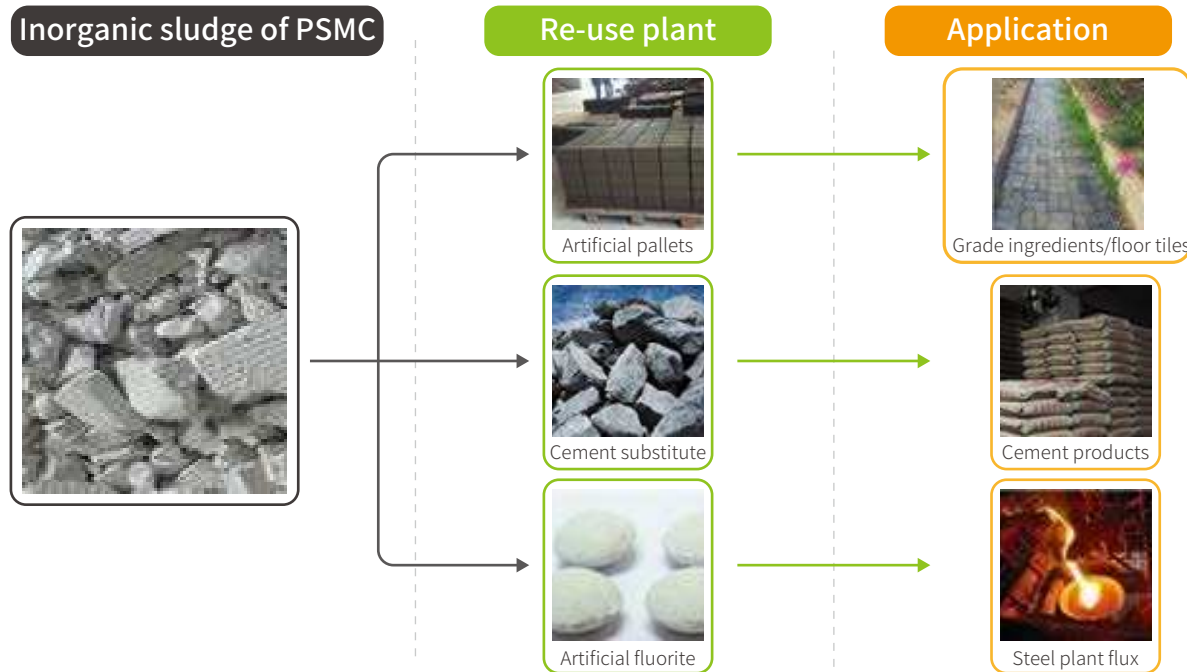
Waste sulfuric acid recycling system and flowchart





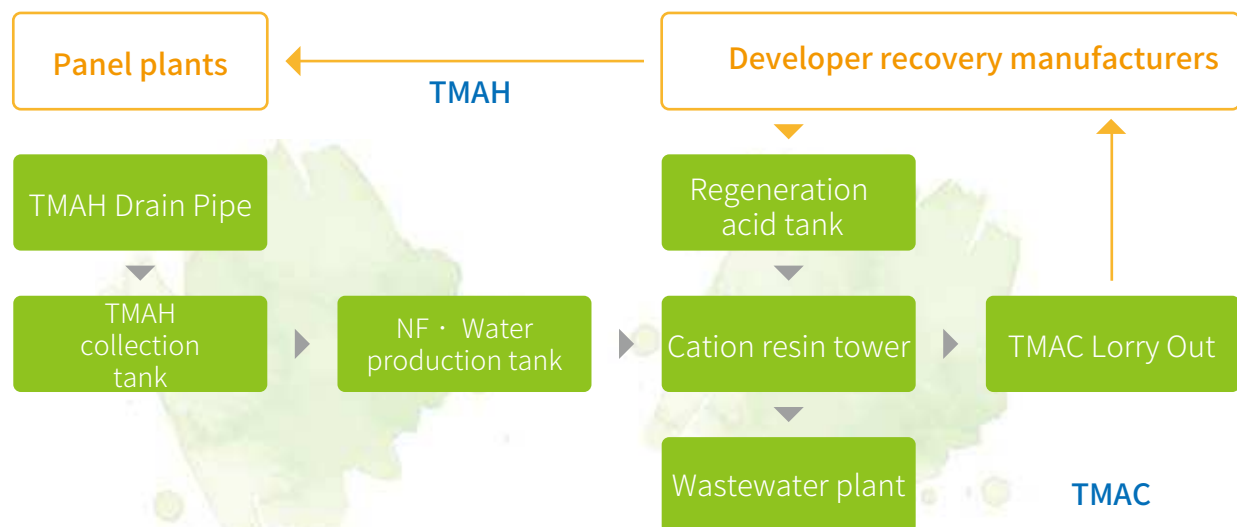
## Off-site re-use – inorganic sludge:

During the initial planning of building a plant, the Company always had the concept of separation collection treatment of the front-end water system, making the re-use of inorganic sludge highly viable (such as: artificial granules, cement additives, artificial fluorite, etc.). Due to the increase number of manufacturers re-using sludge, the original sludge treatment of the landfill method is gradually changed to the re-use method that is environmental friendly. Such method has increased the re-use rate of inorganic sludge from 91.2% (2017) to 97.8% (2018) and that it is expected that the re-use rate of inorganic sludge will reach to 100% in 2019.



## Off-site re-use – waste TMAH:

In response to the evaluation period of the introduction of ammonia nitrogen in wastewater norms, 12-inch plant needs to evaluate the contribution of TMAH to the ammonia nitrogen in the wastewater, with reference to the TMAH recovery technology of the panel plants and construct a primary purification system within the plant. It will then be refined by the recycling manufacturer to improve the re-use rate of waste.



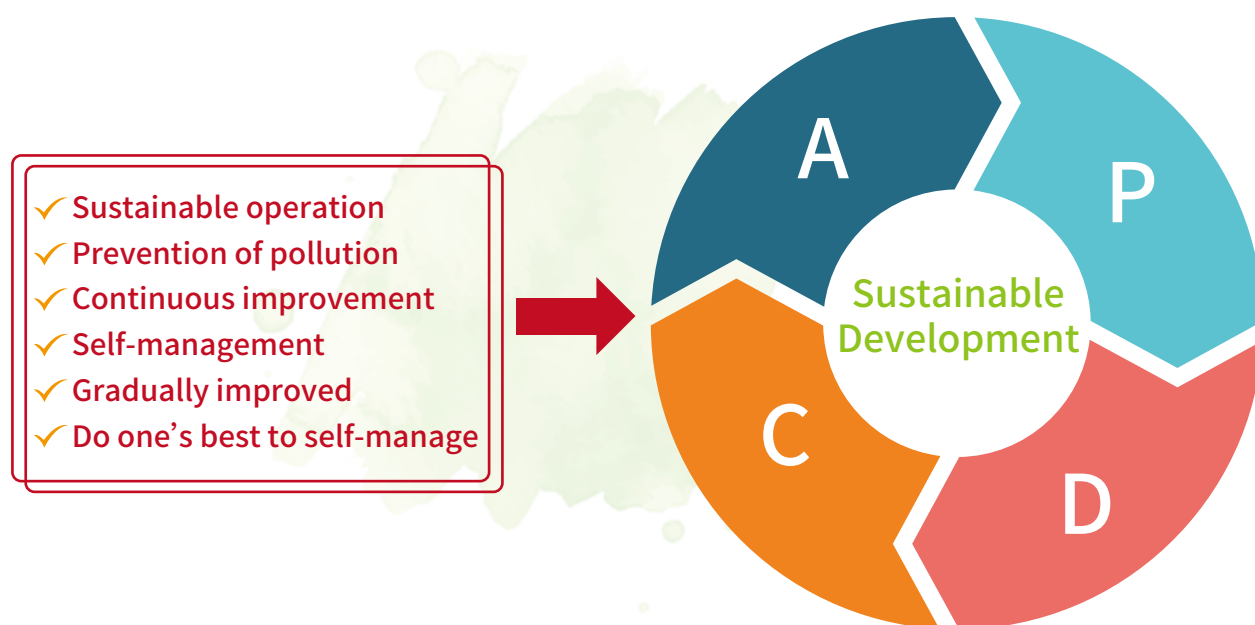
#### Off-site re-use – waste photoresist:

Since photoresists contain high-value organic solvents (PGMEA and PGME), they are collected by the front end using special tubes in order to reduce other impurities. Not only can the method boost the manufacturer's willingness for recovery, it also increases the chance to improve the re-use of organic waste liquid. The average recovery rate of photoresists in 2018 reached to 100%.

#### ■ Appropriate treatment and tracking of waste:

We take environmental issues very seriously. The waste we produce is meticulously classified and is disposed of by qualified waste manufacturers for re-use. We strictly demand that the disposal of waste must comply with the "Waste Disposal Act" and other international regulations. Of all the waste, a very small amount of nickel-cadmium batteries produced accounted for 0.0057% of the total amount. Basel Convention is also complied with - the waste being transported by sea to advanced countries for recycling.

We are dedicated to the planet earth. To reduce, recycling and re-use waste is our core concept. We always keep an eye on the waste output and evaluate the appropriateness of the waste disposal market. The Safety, Health and Environmental Committee of the plant compares the reasonableness of the waste output (raw materials with waste) that is produced quarterly. According to the internal management review procedures of ISO 14001, the Company conducts an efficient evaluation of PDCA on emissions management quarterly.



To make relevant audits thoroughly effective, a complete audit proposal for waste manufacturers is prepared each year. Depending on the inspection schedules of associations/unions and our plants, we carry out visits to business waste removal/treatment manufactures on a regular basis. The target of audits is the legality of compliance and appropriateness of treatment. Overall statistics of 2018, the 12-inch plants carried out 37 audits on waste manufacturers; 8-inch plants carried out 14 audits on waste manufacturers. A total of 38 deficits were found and needed improvement. The deficits were mainly safety management of on-site operations (24). In addition to the continuous demand for manufacturers to implement management on relevant on-site environmental health and safety/fire protection issues, relevant regulations were discussed and exchanged in case of a doubt of violations regarding the cooperation.

### 4.3 Environmental Health and safety Promotion and Education

In order to enhance the concept of safety protection, energy saving and carbon reduction, and health promotion of our colleagues, the Department of Risk Management held a series of "Industrial Safety and Environmental Protection Month" activities, hoping that through the joint participation of all employees, relevant concepts on personal safety, energy conservation, carbon reduction, and self-health management can be implemented into their daily lives, and by working together, commitment life and planet is practiced.

#### Protection of industrial safety and environmental protection

Running event for the opening ceremony of Industrial Safety and Environmental Protection Month of Hsinchu Science Park Bureau----- September 15



Through taking part in the opening ceremony and hiking activities, concepts of environmental health and safety, as well as implementation of exercise-related matters are further promoted. Running (4.5km), fun fair, astonishing performances, and lucky draws were included in the activities. A total of 87 of our colleagues along with their families took part.

"2018 Industrial Safety and Environmental Protection Month" – Questions with Reward-----

October 1-October 31

安全衛生環保通訊

『107年工安環保月』-有獎徵答活動說明

一、活動說明：為提升同仁廠區火災預防安全意識，107年度工安環保月特別規劃有獎徵答活動，活動題目將於10月份發佈之通訊中歸選，其活動辦法詳如下：

二、活動內容：

- ◆ 題目範圍：10/1~10/20期間發佈之有獎徵答通訊。
- ◆ 有獎徵答：題目上線時間將於10/22發佈並預計於10/31截止作答。
- ◆ 抽獎辦法：全數答對者由電腦隨機亂數選取10名並於11/5公告中獎名單。
- ◆ 獎勵獎品：1000元禮券乙份。(將列入個人所得)

Powerchip 力晶科技股份有限公司

In order to raise awareness for our colleagues' "fire prevention and safety", the "Industrial Safety and Environmental Protection Month" of 2018 specially organized a "Question and Reward" activity. The questions were selected in the newsletter released in October. The computer then randomly selected 10 people out of the ones with all correct answers. Each one received a NT\$1000 gift voucher.



## Protection of industrial safety and environmental protection

### Powerchip's Adopted Beach -Cleaning of the beach together -----November 27



We clean the beach as a way to show our commitment to social reasonability, and we showed our colleagues the concept of protecting the ocean using ICC forms.

### Flea market-----September 21 - November 1



Our colleagues donated items that were no longer needed for the charity sale, making the best use out of resources and exercising the concept of recycling and re-using, achieving energy saving and carbon reducing. A total of NT\$91,000 was raised in the sales and donated to charities. The event was both meaningful and environmentally friendly.

Donation objects:

Hsinchu Baoshan De-Lan Children Center NT\$31,000

Genesis Social Welfare Foundation –

Donation to Vegetables NT\$30,000

Syin-Lu Social Welfare Foundation –

Early Treatment NT\$30,000

### Park Association – 2018 Occupational Health and safety Forum ----- September 13



Working with the Park Administration to organize the all day "Occupational Health and safety Forum" in the aim of increasing occupational health and safety skills.



## Protection of industrial safety and environmental protection

### Road Traffic and Safe Driving Talk

September 7



2 instructors from Hsinchu Safe Driving Education Center were hired to carry out a course for our colleagues using indoor videos and outdoor motorcycle practice, to improve their understanding regarding road traffic rules. Safety concept of motorcycle riding on the way to work or on the way home was also emphasized, building correct driving behavior and attitude to reduce accidents.

### Respiratory Protection Principles and Fitness for Wearing Educational Training Seminar

October 29



The course "Respiratory Protection Principles and Fitness for Wearing Educational Training Seminar" of the "Industrial Safety and Environmental Protection Month" focused on the educational training for the operational colleagues regarding respiratory protection in order to build their concept of correct respiratory protection wearing and self-management.



## Emergency response

### ERT Disaster Prevent Fun Race

September 20



A fun race was held for the personnel who work inside the plant to get to know about their protective equipment, and develop a sense of bonding with the ERT, implementing the spirit of ERT's independent training performance.

## Health promotion activities

### Health Talk

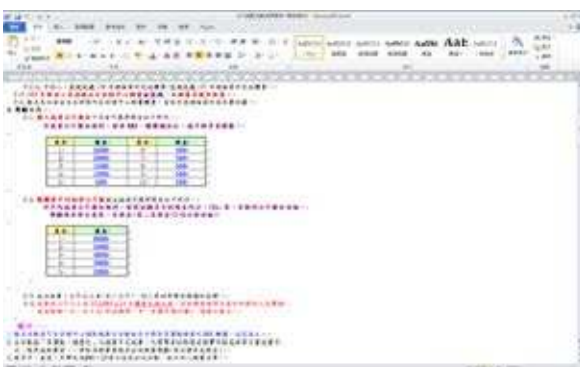
October 25



Dementia is not just a single illness; it is a group of symptoms. The symptoms is not as simple as memory loss, it also affects other cognitive functions while showing symptoms such as personality change, delusions, hallucinations or symptoms that may interfere with behaviors. The symptoms can be severe enough to affect their social relationship as well as work ability. Health talk was organized to let our colleagues get a sense of dementia

### 2018 Weight loss activities

Duration: 2 months



Colleagues (excluding pregnant women) whose BMI is larger than 20 are welcome to take part. There are categories of personal weight loss or group average weight loss, with reward NT\$500-6000, encouraging employees to exercise and look after their health.

# 05 Chapter

## Happy workplace

5.1 Recruitment and Retention / 5.2 Welfare Policy  
5.3 Talents Development, and Education and Training / 5.4 Employee Health Management

### 5.1 Recruitment and Retention



#### Friendly workplace management policy

Employees are regarded as the Company's most important assets. By maintaining good interaction between the labor and management, corporate culture and organizational atmosphere are naturally increased, and the relations between the labor and management harmonious. The Company and employees work together for the Company's stable growth.

Develop the knowledge, skills and healthy working attitude needed for workplace through educational training courses, increasing performance standards as well as the Company's operating efficiency.

#### Covered issues

#### Labor relations, labor-management and training and education



Norms

Formulate "Work Rules", "Regulations for Establishing Measures of Prevention, Correction, Complaint and Punishment of Sexual Harassment at Workplace", "Education and Training Rules" and "Employee Education and Training Procedures", and provide comprehensive education and training course, diversified learning channels as well as complaint channels in order to develop the knowledge, skills and healthy working attitude needed for workplace, increasing performance standards as well as the Company's operating efficiency.



Targets

- Achievement rate of training programs 80%
- "Partners' Words" – employee communication platform response rate 90%



Execution

- Diverse communication platforms are offered: 1. Partners' Words, 2. Employee Care Network, 3. 885 email and 4. Employee consultation
- Labor-management meetings and elections for labor representatives were held in each plant – with a total of total 16 sessions..
- Labor-management meetings and elections for labor representative are conducted according to the "Regulations for Implementing Labor-Management Meeting", and meetings are held on a regular basis.
- The prevention and treatment of workplace unlawful conducts are handled according to the following measures: "Administrative Measures of the Prevention of Unlawful Conducts when Performing Duties", "Regulations for Establishing Measures of Prevention, Correction, Complaint and Punishment of Sexual Harassment at Workplace" and "Procedures for Reporting Unlawful Conducts when Performing Duties".



Management

- Labor-management meetings and elections for labor representative and chairman are held according to regulations.
- Labor-management meetings are held on a regular basis
- "Partners' Words" – the employee communication platform response rate is reviewed regularly by the Quality Management Review Committee.
- Quality Management Review Committee reviews the execution situations of education and training bi-annually.

We are committed to following regulations; we protect our employees' human rights, personal privacy and strictly forbid inappropriate discrimination. When we are recruiting, we follow the principles of fairness, just and honesty. Recruitment selection and employment are in compliance with government regulations. There will be no treatment difference in regards of race, skin color, gender, gender identity, religion, marital status, age, nationality, and physical and mental disabilities. Moreover, the Company is also dedicated to the measures of sexual harassment. Other than promoting relevant matters in the education and training course for new recruits, a hotline has been established to handle any sexual harassment complaints. If a complaint is received, the ultimate goal is to protect the privacy of the person who has made the complaint so that employees are provided with sexual-harassment-free workplace.

Our security personnel must receive education on human rights each year. The content of the course includes relevant laws and regulations such as personal rights, labor freedom, wages, holidays, working hours, prohibition of discrimination and freedom of assembly and cases of related affairs, ensuring security personnel also comply with the relevant rules of social behavior.

### 5.1.1 Employee Structure

The 2018 proportion of the Company's Taiwanese employees – 12-inch plants: 97.01%, with a 2.99% of foreign nationals; 8-inch plants: 92.86%, with a 7.14% of foreign nationals. Positions higher than assistant managers – 12-inch plants: 19. Taiwanese accounted for 94.7% (Taiwanese: 18, foreign nationals: 1); 8-inch plants: 9 people who are all Taiwanese. Operations within plants are mainly based on our employees. The employee statistics of this report are actual number provided by the HR.

【12-inch plants】		2018.12.31		
Category	Age	Number		Percentage
		Male	Female	
Manager	Below 30 (incl.)	0	1	0.1%
	31-50	374	79	82.6%
	Above 51 (incl.)	85	10	17.3%
	Total	459	90	100.0%
Employee	Below 30 (incl.)	679	369	23.8%
	31-50	1,799	1,494	74.9%
	Above 51 (incl.)	34	21	1.3%
	Total	2,512	1,884	100.0%
Employment status	Full-time	2,971	1,974	100.0%
	Part-time	0	0	0%
Total		4,945		
Seniority avg.		9.36 years		

【8-inch plants】		2018.12.31		
Category	Age	Number		Percentage
		Male	Female	
Manager	Below 30 (incl.)	1	1	1.0%
	31-50	166	17	87.1%
	Above 51 (incl.)	21	4	11.9%
	Total	188	22	100.0%
Employee	Below 30 (incl.)	287	239	29.5%
	31-50	656	570	68.9%
	Above 51 (incl.)	19	9	1.6%
	Total	962	818	100.0%
Employment status	Full-time	1,150	840	100.0%
	Part-time	0	0	0%
Total		1,990		
Seniority avg.		8.04 years		

Note 1: Managers refer to personnel above section managers.



## 5.1.2 Promote labour relations

By maintaining good interaction between the labor and management, corporate culture and organizational atmosphere are naturally increased, and the relations between the labor and management harmonious. In addition to offering diverse communication platforms, we also organize labor-management meetings on a regular basis. Through the communication between the labor and management, relevant matters regarding work hours, holidays and welfare can be discussed to ensure employee rights.

(1) Labor-management meetings are held on regularly. The labor-management meeting:

Plant/meeting date	P1/2 plant	P3 plant	8A plant
First quarter	March 19	March 19	March 28
Second quarter	June 20	June 20	June 28
Third quarter	October 5	October 5	September 20
Fourth quarter	December 5	December 5	November 27
※Summary of major issues of the year 1. Annual negotiation 2. Welfare facilities and issues 3. Explanation of labor dynamics, production plans and business overview 4. Communication and voting regarding working hours stipulated in Labor Standards Act 5. Voting of labor representative election procedures and term period of Occupational Health and safety Committee			

(2) Opinion exchange and response of employee communication platform – the HR has an employee relations department that offers employees assistance and consultation referral services, hoping to relieve their emotional pressure and increase their work performance. Aside from the communication platform "Partners' Words", Employee Relations department has also set up complaint channels including the "Employee Care Network" and "Unlawful Conducts at Workplace" for various types of complaints. The Company also offers employees a good working environment that is equal and without discrimination.

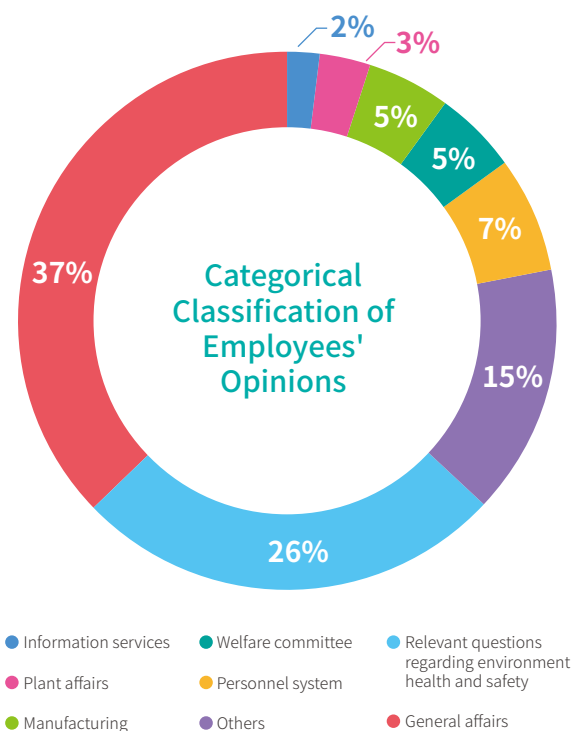
2018 "Partners' Words" Statistics

Category	Cases
General affairs	92
Relevant questions regarding environment health and safety	65
Plant affairs	8
Welfare committee	12
Information services	6
Manufacturing	11
Personnel system	18
Others	36
Total	248

★ Respond rate of 2018: 100 % ★

Performance indicators are reviewed by the Quality Management Review Committee

※ The labor-management communication channel is smooth, archiving harmonious labor-management relationship.



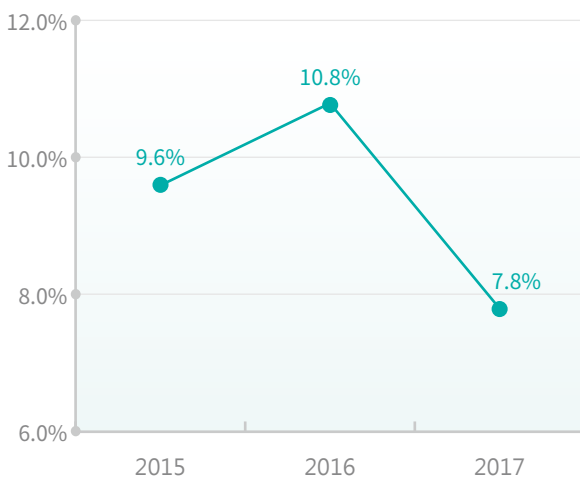
Since the establishment of the Company, the labor-management relationship has been harmonious. There has been no union established and no occurrence of loss due to labor-management disputes. The shortest notice regarding operational changes is handled according to Article 16 of the Labor Standards Act. The Company offers various communication channels including direct report to the manager. If being treated unreasonably, a correction or complaint can be filed via a complaint channel.

The Company complies with laws and regulations, and protects the human rights of those hired by the Company; therefore labor and human right policies have been formulated. We protect the mental and physical development of children and do not employ child workers under the age of 16. The employment of foreign workers also meets the age requirement of the exporting country. No labors under the age of 18 (young workers) engage any work that may endanger to health, safety or morals, including overtime or night shifts. Work situations make no difference despite race, religion, gender, age, marital status and political preference. Do not recruit labors by force, threat, dentition, making up debt, human trafficking or other illegal activities. Related coercive measures, including but not limited to, corporal punishment, intimidation or other verbal abuse, detention of labors' finances, identity documents or other illegal forced labor.

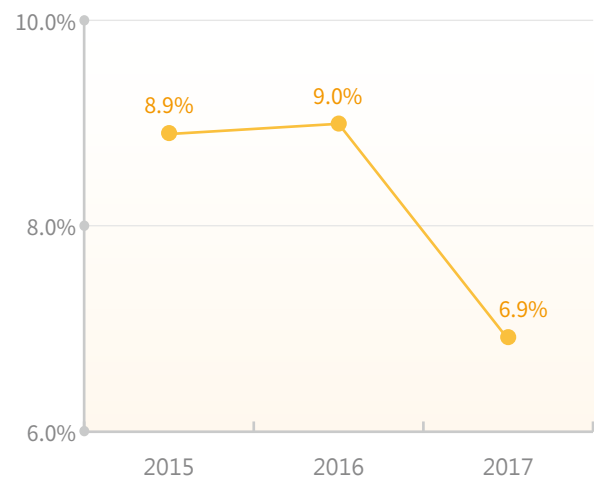
#### ■ New Employee and Turnover Rate

In 2018, the rate of the Company's new employees is 12.77%, an increase of 0.45% compared to 2017. In 2018, the turnover rate of the 12-inch plants was lower by 2.1% compared to 2017; the turnover rate of the 8-inch plants was lower by 1.5% compared to 2017. It shows that the Company's turnover rate is stable – meaning stable operations.

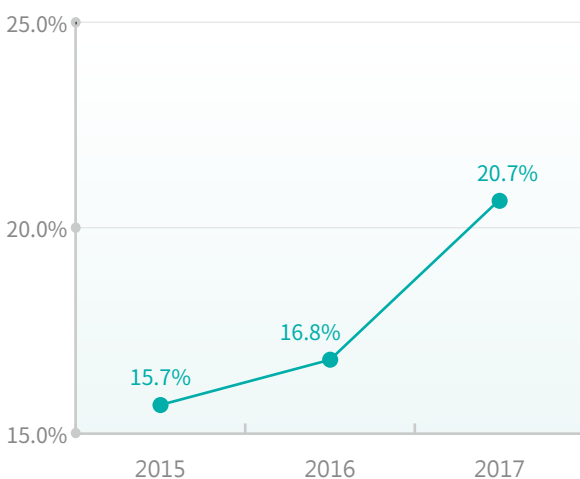
Total rate of new employees of the 12-inch plants



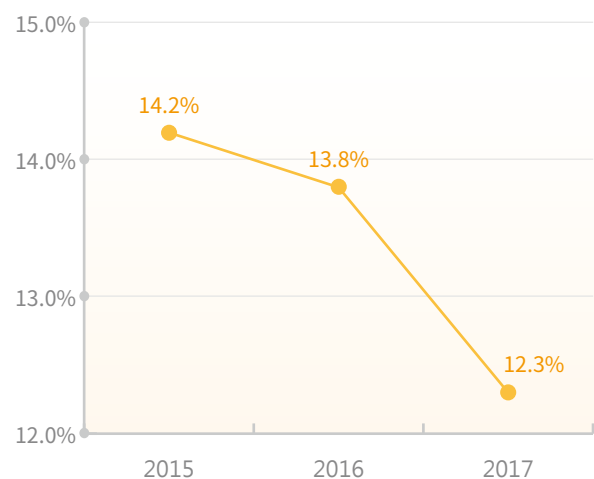
Total rate of turnover of the 12-inch plants



Total rate of new employees of the 8-inch plants



Total rate of turnover of the 8-inch plants





### 5.2 Welfare Policy

#### 5.2.1 We value the rights of our employees

In order to look after our employees and secure their living situations, we offer excellent wages and benefits. The starting wage of the personnel holding entry-level position is no different based on their gender. An Employee Welfare Committee has been set up to provide or sponsor the promotion welfare programs. Other than providing employees the labor insurance and National Health Insurance, we also offer free or self-paying group insurance – not only it benefits the employee, the spouse and children are also rewarded, protecting our colleagues and their families.

##### ■ Salary system

Our salary system is fair and reasonable. We also draw up a bonus plan based on their performances. There is no difference regardless of the gender of employees. In 2018, all of our employees accepted regular performance evaluation.

We have retirement measures for all official employees. According to the Labor Standards Act, monthly retirement funds are paid for employees to their special individual pension account of Bureau of Labor Insurance. The retirement funds of the Company are paid according to the law. The retirement funds of the personnel who adapted to the old system is supervised and managed by the Supervision Committee. For personnel who adapted to the new system, the Company pays 6% of their retirement funds according to the law.

Item	Content	Employees who are a part of the retirement plans
Retirement funds of the old system by Labor Standards Act	Employer: Based on the monthly salary, 12% is reserved for labor retirement funds.	100%
Retirement funds of the new system of the retirement regulations	Employer: 6% of the labor's monthly salary Labor: 0-6% of the monthly salary	100%

##### ■ Unpaid parental leave for raising children

The Company has established specified "Regulations for Implementing Unpaid Parental Leave for Raising Children". When employees of the Company have served in the Company for more than 6 months, before each child reaches the age of 3, the employee may apply for unpaid parent leave for raising children. In 2018, the reinstatement rate of the 12-inch plants increased by 5.6% compared to 2017. The retention rate of the 8-inch plants in 2018 increased by 16.7% compared to 2017.

【12-inch plants】			
Category	Male	Female	Total
Number of qualified people in 2018	501	293	794
Unpaid parental leave in 2018	7	29	36
Number of people reinstated in 2018	9	23	32
Actual reinstatement in 2018	6	16	22
Reinstatement rate in 2018	66.7%	69.6%	68.8%
Number of people retained in 2018	1	16	17
Retention rate in 2018	33.3%	76.2%	70.8%
Number of people that shall be reinstated in 2017	6	30	38
Actual reinstatement in 2017	3	21	24
Reinstatement rate in 2017	50.0%	70.0%	63.2%
Number of people retained in 2017	3	22	25
Retention rate in 2017	60%	84.6%	80.6%
Number of people reinstated in 2016	8	40	48
Actual reinstatement in 2016	5	26	31
Reinstatement rate in 2016	62.5%	65.0%	64.6%
Retention rate in 2016	20.0%	87.5%	75.9%

【8-inch plants】			
Category	Male	Female	Total
Number of qualified people in 2018	153	102	255
Unpaid parental leave in 2018	2	9	11
Number of people reinstated in 2018	3	10	13
Actual reinstatement in 2018	1	6	7
Reinstatement rate in 2018	33.3%	60.0%	53.8%
Number of people retained in 2018	0	7	7
Retention rate in 2018	-	100%	100%
Number of people that shall be reinstated in 2017	2	7	9
Actual reinstatement in 2017	0	7	7
Reinstatement rate in 2017	0.0%	100%	77.8%
Number of people retained in 2017	1	4	5
Retention rate in 2017	100%	80.0%	83.3%
Number of people reinstated in 2016	1	9	10
Actual reinstatement in 2016	1	5	6
Reinstatement rate in 2016	100%	55.6%	60.0%
Retention rate in 2016	-	71.4%	71.4%

Formula:

Expected number of reinstated people = Number of expected reinstated people in the current year due to unpaid parental leave

Reinstatement rate = Actual number of reinstated people / expected number of reinstated people

Number of people retained in 2018 = actual number of reinstated people in 2017 and still in service on December 31, 2018

Retention rate in 2018 = number of people retained in 2018/actual number of reinstatement in 2017

Note: qualified people: Male = January 1, 2016 – December 31, 2018 – number of people on parental leave

Female = January 1, 2016 – December 31, 2018 – number of people on parental leave

At the moment, the basic living measures of the Company's current employees:

### Delicious food

The Company has convenience stores, cafes and employee canteens which provide different types of meals including buffets, fast food and noodles. Lunches, dinners and suppers are subsidized by the Company. Our colleagues can enjoy delicious food with a small amount of fee.



### Accommodation

To solve the problem for technical personnel who live far from the Company, we offer comfortable, dormitory of direct personnel with water, electricity and AC.



### Convenience

For direct employees who live near the Company such as Hsinchu, Zhudong, Zhubei, Hukou, Tofen and Miaoli, the Company offer transportation free of charge.



## 5.2.2 Happy Workplace

The Welfare Committee not only provides employees gift vouchers for 3 major festivals, birthday gift vouchers, wedding gifts and birth, hospitalization subsidies, funeral subsidy, children's scholarships as well as emergency loans with different amounts of subsidy depending on the matter, it also offers colleague discounts on more than 710 shops. Exercise is good for body and mind. The Company values the balanced development of employees' work as well as leisure and has set up a multi-functional sporting venue in various plants, including facilities such as basketball courts, tennis courts, volleyball courts, pool tables, table tennis tables, and gyms, aerobics classrooms and Karaoke, audio and video rooms, encouraging employees to develop regular sports habits. Several clubs have also been set up, offering various diversified courses, encouraging colleagues to expand their social skills, interests and strengthen their physical fitness. Our colleagues are encouraged to develop interests as well as their social circle after work, promoting the balance of life and work.

In order for employees to relax and release their stress from work and improve their health, the Welfare Committee organizes various events that are suitable for all families such as: group competition, theater experience, arts and cultural activities, family days, and our care onto their families, hoping to serve the purpose of improving morale and quality of work.

Our colleagues are encouraged to take part in the activities held by the Welfare Committee from their busy work. The Committee continues to organize activities that are exclusively for colleagues such as: The Voice of Maxchip, Engineer Festival – I can Shoot, Family Day and several ball competitions. Anyone who took part in games received 3 "luck of the draw" tickets; spectators received 1. The activities were held in the first half and second half year with prizes including returned tickets of Samui Island and Hokkaido (valued at NT\$19,999). Other than planning activities to attract our colleagues, the additional prizes of Welfare Committee greatly enhanced the enthusiasm and willingness of our colleagues to take part in the activities.



### ■ Amazing entertainment

Christmas period is also a special moment of gratitude. In addition to the 4 movie tickets we gave out, in 2018, we also organized a Christmas dinner party to say our thanks to our colleagues for all of their hard work through the fantastic performances and delicious food. We also held "luck of the draw" with exceptional prizes. It was an unforgettable night and everyone had a good time.

Year-end party was organized in January 2018 with a theme of "fun fair". With so many fun activities, our colleagues enjoyed themselves as if they are children. Not only there were games, there were also gifts to be given out. Everyone seemed to have a splendid time.





The party started with amazing dances performed by our high-level managers with a video of our colleague dancing as the background. Everyone present cheered for them with laughter. Shen Yulin (William Shen) was the host, invited by our Welfare Committee. His way of hosting was funny and witty which made everyone burst into tears with laughter. The "luck of the draw" was the highlight of the party with amazing prizes that "wowed" our colleagues. Prizes were one of the ways to express our gratitude for 2017 and we hope that, by working together we will create another miracle for 2018.



To enhance employees' leisure, comply with the Company's guidelines and boost team spirit in order to improve work efficiency, employee trips were organized by the "Travel Group" established by the Welfare Committee. Employee trips were commissioned by Taipei International Uniter Travel Service to co-plan approximately 20 amazing trips domestically and abroad for our colleagues to choose from. The option of package tours for the Company's departments was also provided. The response was well received by all of our colleagues. Through organized trips, our colleagues had the chance to get to know other colleagues from other departments, which enhanced departmental relations.



In order for our colleagues to have legitimate entertainment, a singing contest "The Voice" was organized. Aside from showcasing their personalities, a team spirit was also formed. The colleagues taking part in the competition practiced together after work, adding another opportunity for them to develop their friendship. The Voice was divided into 3 seasons: preliminaries, semi-finals and finals. Through The Voice, we have found some true talents! Through the competition, we were able to see the support and enthusiastic attitude towards the Company which was fantastic.

Engineer Festival – I can Shoot. Through organizing a traditional toy "bamboo spears" activity, our colleagues were eager to take part. Not only it increased the exchange between the colleagues, the departmental atmosphere was livelier and a sense of cohesion was formed. At the same time, the fun and creativity out of the toy's logic and structure inspired our colleagues who are good at science and engineering. On the day of signing up, all the spaces were gone in seconds, showing that the idea was well-received. We look forward to this time of year when such activities are held. The balance of life and work is also implemented via such events so that everyone can enjoy what they do at work.



## ■ Diversified group activities

We encourage our colleagues to form clubs. By organizing club activities, interests and personal relationships can be improved. The culture and willingness to join in clubs by our colleagues have grown year by year. At the moment, the established clubs are: badminton club, table tennis club, tennis club, volleyball club, pool club, basketball club, reading club, softball club, aerobics club, video and music club, charity club, and healthy club. We encourage our colleagues to expand their social lives and develop more interests to enrich life. Each club regularly organizes various activities. In 2018, professional ball competitions were held, including basketball, softball, pool, badminton, volleyball, tennis, table tennis and bowling, with a total of 356 teams participating. Other than holding competitions within the Company, the clubs also actively participate in external competitions. In 2018, the Company has won: champion of the "Men's Volleyball of Park Cup", fourth place of the "Women's Volleyball of Park Cup", champion of the "Men's Basketball of Park Cup", third place of the "Women's Tennis of the Park", champion of the "Healthy Group's Volleyball of the Taiwan Cooperative Bank", fourth place of the "Group B's Badminton Healthy Group of the Taiwan Cooperative Bank" and our women's table tennis team has won many games in the Park Cup.

### July badminton competition



▲ Champion – Yield Integration



▲ Second place – TD



▲ Third place – Automation



▲ Fourth place – Film A

### September volleyball competition



▲ Champion - MFG



▲ Second place – Automation



▲ Third place – MIS



▲ Fourth place – RB United

### November volleyball competition



▲ Champion – Film A



▲ Second place – Duct



▲ Third place – Yellow Light A



▲ Fourth place – Chip Manufacturing



## Family Activities

We also take care of the family members of our employees and try our best to maintain and hold several family activities from time to time. We invite our employees and participate in the activities alongside their family members, so they can strengthen their family relationships and have a strong sense of belonging with PSMC.



"Family Day" is a special activity for our employees and their families. We held Family Day for the 12-inch plants at Leofoo Village Theme Park on August and September 2018, and Lihpao Land for the 8-inch plants on September 16th, 2018. Employees took part alongside their families; not only has it increased the interaction between them, their personal relationship has also widened. Both adults and children enjoyed food as well as the fantastic shows; the joyous atmosphere of the Family Day was deeply felt.



We held two family hiking activities in 18 Peaks Mountain in June and July 2018. 1,680 employees participated in the activities with an attendance rate of 62% and 63%, respectively. Except for hiking, we also arranged some games, DIY activities, performances and draw of the luck activities for the participants to enjoy together and strengthen their bodies.



## Arts and Culture Appreciation

We organize different culture and art appreciation activities each year, including parent-child theaters and seminars held by celebrities in order to bring employees more humanistic atmosphere and encourage parent-child interaction and learning to ensure balanced work and reaction of the employees. 4 theater experiences were organized in 2018, including 2 shows for children: "The Prince" by IF Kids, and "The Monkey King" by WARAWA - and 2 adult shows for adults: "Crazy Runway" by All U People Theatre and "The Long Goodbye" by Story Works. The theater experiences saw 3,588 participants who enjoyed the show thoroughly. All participants were immersed in the enjoyable atmosphere and parents and children were satisfied mentally and had a wonderful time with their family together. Aside from the theater experiences, we also held many culture and art talks covering topics such as welfare, motivation, health, education and cosmetology. In 2018, Chou, W.Z., Lang Tsu Yun, Tommy Chen, Liu Quwei and other famous celebrities were invited to share their life experience and professional knowledge. Professional lecturers from both Chang Hwa Bank and Standard Chartered were also invited to share their analysis on tax and the new situation of US-China trade as well as investment planning to help employees understand more about other professional fields



## 5.3 Talents Development, and Education and Training

We believe that talents are a crucial key to maintaining long and competitive advantages for a company. Therefore, we are dedicated to creating a healthy learning environment to provide comprehensive education and training courses. We develop the knowledge and skills needed for workplace and systemic training programs, as well as positive working attitude in order to increase the performances of employees and operation efficiency of the Company, enabling the employees to grow with the Company.



## Structure of Educational Training

The structures of educational training include "Guiding Training of New Employees", "Occupational Training" and "Knowledge Inspiration". These are comprehensive and systemic training courses needed for employees to plan their career development. We build a learning map for our employees to further extend their lifelong experiences as well as self-development



## Career Development Training

Based on the personal background of education and experiences, job types and professional abilities, different further training courses are co-planned between managers and our colleagues, providing colleagues the most up-to-date and suitable training assistance plans.

Category	Course content
Professional	Provide two types of professional courses: operation technology and administrative management to improve the professional skills of our employees.
Management	Provide phased management skills to supervisors/successors of different levels, working their way up to being great managers.
General	Provide a diverse of conceptual courses (such as time management, personal interaction) to nurture potentials.

## Diverse Learning Channels

Utilize the training recourses inside and outside the Company to plan exclusive training WebPages, hoping that our colleagues can access to the latest information to quickly learn via diverse learning channels.





After hiring new employees, the Company quickly conducts educational training courses regarding human rights such as employee rights, environmental safety, information security and Labor Standards Act. In the process of talent development and nurture, we explore organizational and personnel needs endlessly, regardless of gender. We always review ourselves to gradually conduct various training courses in order to improve the knowledge and skills needed for personal career development. Direct employees inside plants are mostly females; therefore training hours are less than males. Before the combination of the plants, there were no training courses at the 8-inch plants; therefore the training hours are less than 12-inch plants. The achievement rate of the training programs in 2018 (including E-Learn) is 96%, and the survey scored 94.9% of the actual course satisfactory.

### ■ Type of employees, gender and average training hours of the 12-inch plants

Year		2016			2017			2018		
Item/gender		Total	Training Total hours	Average training hours	Total	Training Total hours	Average training hours	Total	Training Total hours	Average training hours
Management	Male	743	15,682	21.1	810	26,256	32.4	848	30,144	35.5
	Female	143	2,991	20.9	177	5,652	31.9	184	5,579	30.3
Full-time	Male	1,719	31,480	18.3	2,086	79,948	38.3	2,333	151,406	64.9
	Female	583	10,988	18.8	641	21,567	33.6	1,873	66,368	35.4

### ■ Type of employees, gender and average training hours of the 8-inch plants

Year		2018		
Item/gender		Total	Total hours of training	Average training hours
Management	Male	279	7,273	26.1
	Female	42	858	20.4
Full-time	Male	600	11,663	19.4
	Female	618	6,420	10.4

In 2018, the Company carried out training courses relating to human rights protection on employees. A total of 1,626 employees completed the training, accounting for 33% of the total number of the 12-inch plants, with average training hours of 3.9. In the future, we will continue to focus on the issues of human rights protection and carry out educational training regarding relevant matters and expand to the entire company in order to raise awareness on human rights protection and reduce possible risks.



## 5.4 Employee Health Management



### Safety and health management policy

By thorough implementation of environmental health and safety system, and to continue maintain good communication channels with stakeholders including employees, customers, contractors, suppliers, outsources, and the general public to achieve the ultimate goal of sustain business operations.

#### Covered issues

#### Occupational health and safety – occupational disaster prevention and occupational disease prevention



Norms

- All supervisors of all levels are committed to providing necessary resources and implement daily environmental health and safety management. They also continue to review and improve the system to ensure its suitability, adequacy and effectiveness.
- It is all employees' direct responsibility to protect the environment, promote physical and mental health, and prevent foreseeable danger and control the loss.
- Occupational health and safety management systems "OHSAS 18000" and "CNS-15506 (TOSHMS)"



Targets

- Obtained transferred-version verification of the occupational health and safety management systems: ISO 45001 and CNS 45001.
- The total injury index is 1/3 less than the total injury index of peer industries.
- Promote the expected goal after health promotion: Promote health to reduce 2% from the 10% of the occurrence of cardiovascular disease for the next 10 years.
- No pain at work leads healthy lifestyles.



Execution

- The deputy general manager of administration is the representative of the environmental health and safety who is responsible for reviewing and promoting the operation of environmental health and safety management.
- Formulate health promotion plans, occupational disease prevention and management measures, carry out regular statutory operating environment monitoring, provide personal protective gear wearing and use, and risk assessment of work hazards. Analyze the cause of occupational injury from time to time and carry out safety promotion and education training.
- Headquarters Safety, Health and Environmental Protection of the plants have been established and matters regarding safety, health and environment are discussed in meetings. Labor representatives are elected according to the law, allowing our employees to understand the operation mode of our company's health, safety and environment and provide formal communication channels.
- Promotion of prevention and control of infectious diseases, epidemic prevention, material backup, follow-up and crisis response are carried out in accordance with the Employee Health Management Measures.



Management

- Internal audits on environmental health and safety are carried out half-yearly; checks and correction will be conducted on execution status of the overall system operation.
- Environmental health and safety meeting are held so that everyone can review and make correction, achieving the goal of continuous improvement.

## 5.4.1 Employee Health Management and Promotion

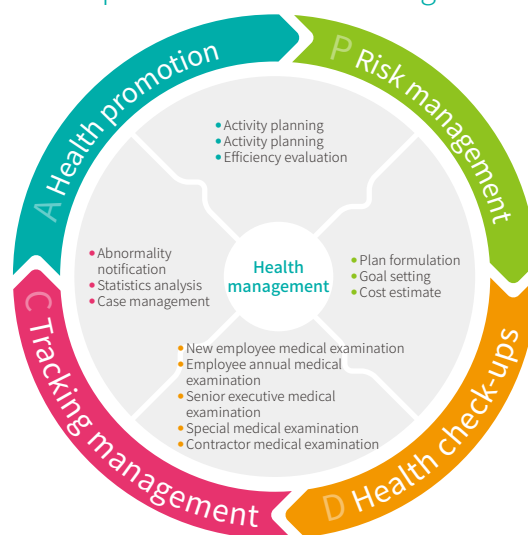
Due to the philosophy that employees are the most important properties of the company, PSMC is concerned about the health of our employees and wants them to receive a complete health care with a series of health planning from physical examination to health promotion activities. In addition to establishing and promoting a complete professional health management system to take more care of employee's health, we make more investment in the health management and execute this policy even the Company encounters any operational difficulties. We are eager to achieve the goal of "double win situation for both work and health" to strengthen the entire corporate competitiveness!



▲2018 Sustainable Workplace Excellence Award from the Health Promotion Administration, Ministry of health and Welfare

The employee health management planning is extended from the prevention concept of the three sections with five levels. The first section of prevention - health promotion (the first level): includes annual physical examination, health lectures. The first section of prevention - Specific protection (the second level): includes the project management for high-risk groups (special operators, high-risk group of cardiovascular diseases, senior labors, nightshift workers, maternity health protection personnel, etc.). The second section of prevention - early diagnosis and prompt treatment (the third level): includes case diagnoses for overtime workers and interviews with occupational medicine doctors. The third section of prevention - medical treatment (the forth level - disability limitation, the fifth level - rehabilitation): referral assistance to appropriate hospitals for treatment, rehabilitation and other therapeutic measurements. The health management planning keeps our employees healthy physically, mentally and spiritually. As a result, the company has been taking relevant suggestions from specialists and scholars into account since 2007 in order to review the execution of internal business for its integration and planning. We establish the actions in our occupational diseases prevention management for the final goal of "work without pain and disease, live with health" to be implemented from the perspectives of Prevention, Return to work, Compensation (PRC). Meanwhile, we also review potential hazardous operations, update the list of these operations and incorporated them in the internal supervision. The multiple preventive measures and diversified management actions enable the personnel in charge of the promotion won the "2018 Sustainable Workplace Excellence Award from the Health Promotion Administration, Ministry of health and Welfare".

### Comprehensive health management





### Employee health management

We provide our employees complete and better health check-ups annually. We also track every abnormal health items through the whole process to reach the purpose of "early detection and early treatment". Besides, the employees who receive health check-ups will be divided into levels for health management in health center in accordance with the result of their diagnosis at the hospital:

Ethnic group	Action taken	Description
<i>A</i>	Immediate re-examination	Highly abnormal - re-examination standards (urgent re-examination, abnormal X ray) Re-examination and response (no reply to tracking 4 times and telephone interview)
<i>B</i>	Re-examination and response	No reply to tracking 3 times
<i>C</i>	No compulsive for re-examination and reply	No reply to tracking 2 times
<i>D</i>	Send Re-examination notification and health and safety education	Notify once with no more tracking
<i>E</i>	No need for tracking	---

We make case management tracking for high-risk groups (high-risk group of cardiovascular disease, maternity health protection employees, special operators and so on), provide them with profession counseling service and refer them to the occupational medical doctors for occupation health services to help them find suitable work. At the same time, we will provide the same health care management to the long-term contractors in PSMC and request them to complete health check-ups regularly for developing a healthy and non-infectious workplace.

#### List of special health check-up items and number of people received in 2018

Items/people	2018 special operators/times	
	Plants	
	12-inch plants	8-inch plants
Dimethylformamide	46 Person/time	33 persons/time
Ionizing radiation	123 Person/time	134 Person/time
Noise operation	165 Person/time	65 Person/time
Arsenic and its compounds	90 Person/time	26 Person/time
Chromic acid and its salts	52 Person/time	0 Person/time
Indium and its compounds operations	90 Person/time	0 Person/time

Note: "Chromic acid and its salts" and "Indium and its compounds operations" are not used in the 8-inch plants



## Health Promotion and Psychological Counseling

According to the health check up results and seasonal changes, the company will hold different types of ultrasound check ups, health promotion activities for losing weight, health care for group of cardiovascular diseases, checkups for breast cancer as well as cervical cancer and so on in order to take care of the physical health of our employees. Besides, we also hold various types of lectures and provide professional specialist consult services for improving the life competency and cultivate the right mental health for our employees. Promote the expected goal after health promotion: Promote health to reduce 2% from the 10% of the occurrence of cardiovascular disease for the next 10 years.

### Awards for Health Promotion for the Past 3 Years

Year	Awards	Organization
2016	Third place in the Personal Group of the Weight Loss for Health 11367, organized by Hsinchu City Government	Hsinchu City Government
2016	First place in the Personal Group of the Weight Loss for Health 11367, organized by Hsinchu City Government	Hsinchu City Government
2017	Excellent Promotion Personnel for Healthy Workplace	Ministry of Health and Welfare
2017	Excellent Personnel for Promoting Occupational Health and safety Award	Hsinchu Science Park Administration
2018	Excellent Personnel for Promoting Occupational Health and safety Award	Ministry of Labor
2018	Sustainable Workplace Excellence Award	Ministry of Health and Welfare

## Digitalized Health Management

Our employees can check their medical reports for each year through the electronic health management system to manage their health condition. Moreover, they can also make appointments for hospitals, sign up for health promotion activities and consult for their health problems online. The system also offers various and comprehensive health services to strengthen our employees' abilities for health self-management and obtain the function of prevention and health care.

## Powerchip Clinic

The company has established Powerchip clinic in the factory to provide health management services such as clinic visit, health advisory, prophylactic inoculation and so on to our employees even to their family members, the employees of our affiliated companies and the contractors. There are doctors of occupational health services which offer health education and health guidance to help them find suitable work.

We have full-time nurses who work in the factory for 24 hours a day, 7 days a week. They give professional services for health protection and care, hold health promotion activities and provide emergency rescue and relief acts for the complete health care for our employees.



▲ Powerchip's clinical service information



▲ Front door of Powerchip Clinic

## ■ Advocacy Platform

- There are medical common sense and information of every activity on the homepage of PSMC's health management website for our employees' references.
- The website also includes health Q&A and mom & baby websites that our employees can exchange information through their questions.
- We will update the bulletin boards on a regular basis, post health information and posters for health education and so on.
- Send e-mails of different types of health promotion activities and messages about health information for our employees' references.



▲ Powerchip's health management system information

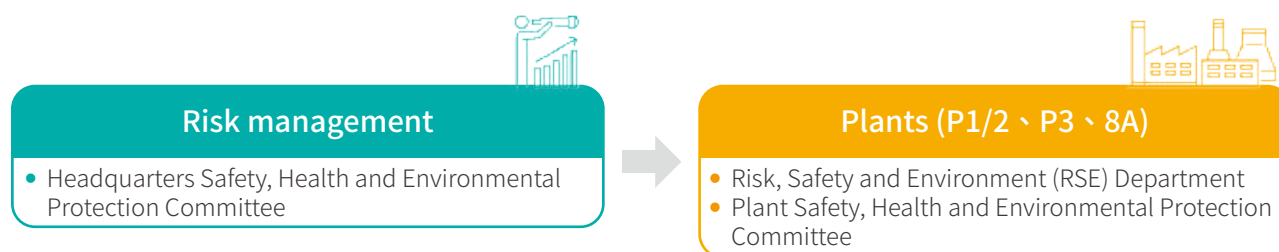
## ■ Approaches for legal infectious diseases control and Emergency Response Training

Large scales of infectious diseases have been spread rapidly for the past years including avian influenza, Middle East respiratory syndrome coronavirus (MERS) and so on. Thus, how to control these diseases has become a challenge of every corporate. The company has made [Preventive Plan of Infectious Diseases] in accordance with the related government regulations. The contents of the planning include information about infectious diseases (refer to the information on the website of Centers for Disease Control, R. O. C. (Taiwan)), the structure and authority for the crisis management team, the prevention policy of the company and procedures for related measures, related criterion of the prevention and how to face a sudden epidemic. The Preventive Plan of Infectious Diseases applies related approaches according to the level of the epidemic. We not only establish the "crisis management team for infectious diseases" to integrate the company's resources at the first place, the health center will also keep contact with our medical units and amend all of the prevention measures and advocacies such as preparation of the prevention reserves, body temperature monitoring of all staffs (including the manufacturers, visitors and family members of our employees) in the factory, set criterion for sterilization method and frequency (including every operational areas, staff dormitories, factory vehicles and so on), workplace isolation criterion as well as infection control criterion, etc. We also take more measures to promote the advocacy and hold educational training lectures about the infectious diseases to release the panic.

We plan to execute emergency personnel practice and examine courses quarterly, and regularly held emergency personnel refresher training to greatly increase the emergency response capability of the emergency personnel. For the related courses contents, considering the characteristics of 24 hours shift work of the employees, the Company applied the E-learning system and health management system for the employees to receive health information and take training courses anywhere and at any time.

## 5.4.2 Employees' Safety at Workplace

### Organizational Chart of Safety, Health and Environmental Protection Committee



The Company's Department of Risk Management has a Headquarters Safety, Health and Environmental Protection Committee and a Plant Safety, Health and Environmental Protection Committee. Regular meetings are held to discuss relevant matters regarding safety, health and environmental protection. Labor representatives are being voted according to the law, allowing our employees to understand the Company's operation mode for matters regarding safety, health and environmental protection and we also provide formal communication channels.

Proportion of labor representatives to the Company's Plant Safety, Health and Environmental Protection Committee.

Plants	Headquarters	P1/2 plant	P3 plant	8A plant
Number of labor representatives	35	10	8	13
Total number of people in the Committee	91	26	22	27
Proportion <sup>note</sup>	38%	38%	36%	48%

Note: The statistics above is calculated until 2019/07/31. The calculation formula is: Number of labor representatives/ Total number of people in the Committee\*100%.

#### ■ Absence

The absence rate of 2018 has majorly improved compared to 2017 and 2016.

Year	Sick leave	Injury leave	Total	Absence rate	Total days at the end of year
2018	5,618	276.6	5,894.6	0.34%	1,733,750
2017	6,121.8	8,234.3	14,356.1	0.87%	1,652,250
2016	6,891.3	9,033.6	15,924.9	0.99%	1,616,000

Note: Total days at the end of year are calculated as 250 days a year.



### ■ Disabling Injury Analysis

We provide excellent and safe working environment and mechanical equipment according to relevant laws and march forward with the "zero industrial injury" as the goal. Protection of the employees for their health and safety is the goal that we are making efforts to achieve.

The comprehensive damage index statistics over the past three years show that in 2018, there was no occurrence of occupational disaster that lost any work hours in the 12-inch plants; there were 2 incidents in the 8-inch plants with a loss of 2 work days. The analysis of the causes, review of the operation procedures, and planning of preventive measures were carried out among the plants to avoid recurrence of similar accidents.

Occupational incidents from 2016 to 2018 are "0". Occupational incidents of contractors in 2018 are "0", and the injury rate is "0".

Comprehensive damage index of the 12-inch plants				
Year	Industry total injury index	Frequency-Severity Indicator (FSI)	Disabling Injury Frequency Rate (FR)	Disabling Severity Rate (SR)
2018	0.07	0	0	0
2017	0.05	0.003	0.09	0.09
2016	0.09	0.05	0.38	6.96

Comprehensive damage index and injury index of the 8-inch plants				
Year	Industry total injury index	Frequency-Severity Indicator (FSI)	Disabling Injury Frequency Rate (FR)	Disabling Severity Rate (SR)
2018	0.7	0.01	0.56	0.6
2017	0.05	0.01	0.31	0.3
2016	0.09	0.02	0.63	0.6





# 06

## Chapter Care for our Society

6.1 Love and Protect our Environment / 6.2 Care for the Disadvantages  
6.3 Promotion of Arts and Culture

### 6.1 Love and Protect our Environment

In a bid to make our environment better and to prevent animals from dying for mistakenly eating plastic. Our Healthy Mind Club has been promoting the "333 No Plastic" since 2017. They invite other colleagues to go out nearby the Company and pick garbage on the third Wednesday of each month, using the 30 minutes of their lunch break. They have not stopped once. Through clearing up garbage time after time, we also feel much better. Our colleagues also sometimes go to Baoshan Reservoir after work to pick up garbage. They enjoy the beautiful view while garbage picking, making everyone feel at ease.



In order to save our planet, we have been participating in the tree planting activity. The Healthy Mind Club holds tree planting talks, tree planting activities and charity sales. The money raised from the charity sales are donated to the foundations who promote tree planting. We hope through our little effort, more people will support tree planting activities, and the planet we live in will be a much better place.



The Powerchip Environmental Foundation was established in May 2006. The Foundation is dedicated to promoting environmental education and applications domestically and abroad. We work on or sponsor the studies, discussions and relevant events regarding domestic and international environmental fields. We actively promote our outcomes to individuals, the society and corporations and implement environmental protection in daily life.

Activities	Old Trees Fostering Home	Promotion of environmental protection	Planting cheery blossom trees
Sponsors items	We implemented the plan for old tree protection, promoted the objects related to our committee and hired management consultants to help with tree care and relevant consultation.	<ul style="list-style-type: none"> <li>We sponsored the environmental protection and energy conservation education promotion – "Angry Land" held by Taiwan Concern Social Service Association</li> <li>We sponsored "The Saving of Emerald Town, Children's Environmental Education Program" held by Taiwan Indigenous Peoples Culture Promotion.</li> <li>We sponsored the drama promotion activity – "Love our Planet, Together" held by the Chinese Cultural and Creative Arts Charity Association</li> </ul>	The "Green Foundation" is located behind the Foundation's building.
Achievements	We move trees that are going to be chopped off for reasons such as building constructions to an appropriate land and proper care and arrangements will also be made. We hope that by doing this, we are able to raise awareness of Taiwanese' concept of environmental protection that we also treasure the lives of trees and at the same time, educating our future generations.	<ul style="list-style-type: none"> <li>A total of 2,322 people from 10 elementary schools in Taipei, Taichung, Tainan and Kaohsiung were directly benefited. By spreading the concept of environmental protection into children and their families, the goal of multiple promotions is achieved.</li> <li>A total of 463 people from 4 elementary schools in Tainan and Chiayi were directly benefited. Through simple but humorous drama performance, concepts and importance of energy are built, allowing them to pass on the aspects of environmental protection.</li> <li>A total of 758 people from 6 elementary schools in Taichung, Tainan and Kaohsiung were directly benefited. Through drama performances and promotion-related products, we hope that everyone could change their attitudes toward consumption and life in order to really reduce the demand for energy/ resources. When they understand the concepts of environmental protection, treasuring resources and are grateful for what they have and at the same time, thankful for environmental protection workers.</li> </ul>	Beautify/green the environment. Planting 8 cherry blossoms (4 Yoshino Cherries and 4 Yaezakuras)



Environmental protection 2018 "The Saving of Emerald Town, Children's Environmental Education Program" – Tips of the host for promotion environmental protection



Environmental protection 2018 "Angry Land" environmental protection and energy conservation education promotion – 10 tips of energy saving and carbon reduction with classmates.

## 6.2 Care for the Disadvantages

### Community Commitment:

In regards of the great harm and impact drugs can do to our society, we try our utmost to promote anti-drugs. Not only do we promote crime-free education externally and execute anti-drug promotion in schools, we also fulfill our social responsibilities which will improve our corporate image and strive to make the society better and friendlier.

July and August 2018 is summer anti-drug promotion period: during summer vacation, working parents are more likely to neglect their children and very often, children are easily led to a different path. Educating children the correct concept, having good interaction with them and right aspect towards making friends will lead hopeful futures with wisdom.

We mean what we say on the issue of anti-drug promotion and will be promoting at the summer schools!

### Charities:



We Listen Carefully – August 14, 2018 Hsinchu Sesame Street Summer Camp



Happy Learning – July 18, 2018 Hsinchu Gene School

The Charity Club was established in 2004 by our colleagues. The main purpose of the Club is to promote and gather the employees who are willing to give, hoping that through participation and services, the meaning of charity events can be understood. The Club organizes charity service talks, experiences of relevant volunteering services with an aim to inspire the potential and concept of individuals and groups. The Club also substantially participates in and supports all works relating to all social benefit services such as: government, companies or non-governmental organizations. The Charity Club helps the disadvantaged minority with love and care voluntarily. We provide convenient channels for internal fund-raising occasionally and spare no effort in encouraging employees to participate in charity campaigns.

Event Content	Donations
<p><b>Event Name: "Rice and Shoes" event</b></p> <p>The owner of the "Yi He Yuan Organic Farm" in Zhudong, Hsinchu donated NT\$300 in the name of the donor when 10 bags of organic rice were purchased (NT\$2,300). The donation was used as shoe funds for daycares of Jianshi and Wufong areas, hoping to fulfill the disadvantaged children's wish of a pair of new shoes and those donors also got to enjoy the delicious organic rice harvested locally.</p> <p>2018 is the 8th year for the continuous good deeds of promotions by our Charity Club. We have raised 670 bags of rice ((NT\$183,700) for shoe funds for children of remote areas.</p>	<p><b>NT\$18,250</b></p>
<p><b>Event Name:</b>  <b>Syin-Lu Social Welfare Foundation – Fund-raise for Children with Early Treatment</b></p> <p>The Charity Club organized a one-time fund raising event and they raised a total of NT\$165,800 for Syin-Lu Social Welfare Foundation – Hsinchu branch – and treatment funds for children in need.</p>	<p><b>NT\$165,800</b></p>





Event Content	Donations
<p><b>Event Name:</b> Subscribe with love - "Genesis Social Welfare Foundation" – 2018 Children Drama Charity</p> <p>With every NT\$400 of donation, you could purchase a ticket of the children's drama - "Fantasy of Butter Lion – Snack Party of the Princess and Prince" held by the Genesis Social Welfare Foundation, Hsinchu branch. With the promotion of our Charity Club, the response was well-received by our colleagues and in just 3 days, a fund of NT\$69,300 was raised for Genesis Social Welfare Foundation.</p>	<b>NT\$69,300</b>
<p><b>Event Name:</b> The Wishing Bus of Christmas – Let Love Conquer Dream</p> <p>Each year at Christmas period, our Charity Club and more than 10 enterprises of the Hsinchu Science Park hold "Dreams Come True" event. Gathering unlimited love of the people from the Park, we raise Christmas presents to help thousands of disadvantaged children of different charity groups in Hsinchu area. It has become an event of "Love Carnival" for the Park people. 2018 our colleagues continued their love in dressing as Santa and Mrs. Santa and have purchased 358 presents for Huakuang Development Center, World Peace Association, Taiwan Fund for Children and Families and Xiuluan Elementary School. We enjoy creating joyous miracles during Christmas period to help disadvantaged children achieving their little wishes and dreams.</p>	<b>358 presents</b>
<p><b>Event Name:</b> Huashan Social Welfare Foundation – 2018 "Love Elderly" Donation</p> <p>The Charity Club organizes charity events for the elderly who live on their own on each Chinese New Year, Dragon Boat Festival and Mid-autumn Festival, in a bid to make them feel warm from people's generosity on such important festivals and ensure that their daily life is also well-cared for. Each year, our colleagues make generous contribution; 291 colleagues of Maxchip showed their love this year and NT\$242,550 was raised. The money will ensure that the elderly are warm and received proper daily care.</p>	<b>NT\$242,550</b>
<p><b>Event Name:</b> World Peace Association - 2018 "You can Help Save the Hungry Children" Donation</p> <p>Most students look forward to summer vacation and winter vacation with various activities planned by their parents such as going abroad, taking trips in Taiwan, going to summer camps or winter camps. But there are some students who are less fortunate and since it's the holidays, there are no free lunches, especially with their parents working in another place. They can only be hungry, hoping the holiday would quickly end. Our Charity Club partnered up with the World Peace Association and our colleagues to help these less-fortunate children, so they are not hungry just because it is holidays. This year, 235 colleagues have responded with a total of NT\$206,450 donation, ensuring that the children could be fed. Part of the donation is also for them to purchase stationeries needed at school. We hope they all keep well and healthy.</p>	<b>NT\$206,450</b>
<p><b>Event Name:</b> Modern Women's Foundation - 2018 Meet Amo. Share the Love</p> <p>Our Charity Club does their best to help the disadvantages. The Club took part in the protection work promoted by the Modern Women's Foundation and has helped more than 8,000 abused women and children from getting harmed again. The Club holds a "donate NT\$500 and receive Amo cake" event each year and our colleagues along their families all showed their support with their generosity to help. This year, over 210 people have contributed and NT\$137,000 was donated. We hope that we can help more abused mothers and children to re-build their new lives.</p>	<b>NT\$137,000</b>
<p><b>Event Name:</b> Donation of clean room suits to Zenan Homeless Social Welfare Foundation and Huashan Social Welfare Foundation</p> <p>Since 2009, to comply with the company policy, we no longer issue clean room suits to colleagues who have to enter clean rooms to work. Made in Japan, with breathable materials that provide great moisture management, the clean room suits have been just lying in our warehouse. After the discussion between OPG, customs division, procurement, finance and accounting, a decision has been made - donate the suits to charities groups who needed them. The Charity Club then contacted Zenan Homeless Social Welfare Foundation and Huashan Social Welfare Foundation who were both very happy to accept the donations. The main uses for the suits are for the homeless, elderly who live alone and those who are bedridden in a vegetative state. We have donated a total of 2,089 clean room shirts and 1,849 clean room pants.</p>	<p><b>2,089 clean room shirts</b></p> <p><b>1,849 clean room pants</b></p>

### 6.3 Promotion of Arts and Culture

Powerchip Foundation was founded in November 2004 with organizing cultural and artistic activities as its goal. At the moment, the Foundation helps promote developments of non-profit cultural and artistic activities through organizing/co-organizing performances or competitions, and other relevant non-profit cultural and artistic activities that share the same philosophy as the Foundation.

#### Powerchip Aesthetics Hall

##### Non-profit cultural and artistic activities

"Powerchip 2018 Arts and Culture Feast – The Fifth International Flute Arts Festival"	April 24 – May 7, 2018	Total of 10 concerts, 6 master classes, 1 lecture and approximately 9,000 participants.
"Powerchip 2018 Arts and Culture Feast – Yu-Chien Tseng and Russian National Orchestra" performance	June 8, 2018	1 event – approximately 2,200 participants.
"Bavarian Radio Symphony Orchestra" performance in Taiwan	November 18 – 19, 2018	2 events – approximately 11,000 participants.
"Saint Petersburg Philharmonic Orchestra" performance in Taiwan	November 6 – 7, 2018	2 events – approximately 2,000 participants
"Powerchip 2018 Arts and Culture Feast – Paavo Järvi and Tonhalle Orchestra Zurich" performance in Taiwan	October 31, 2018	1 event – approximately 4,000 participants
"Chicago Symphony Orchestra" performance in Taiwan	January 19, 2019	1 event – approximately 2,000 participants
"40 Years of New Aspect" events	November 17 – 18, 2018	Several performing arts, visual arts, academic forums, community talk – approximately 2,000 participants
"Kiev National Ballet" performance in Taiwan	June 6 – 10, 2018	5 events – approximately 10,000 participants
Formosa Ballet "2018 Creation: 《Lost Illusion》"	August 11 - 12, 2018	2 events – approximately 2,000 participants
"Interactive Multimedia Theater – SAYION II"	November 16 - 18, 2018	4 events, approximately 1,400 participants

##### Benefits

- People of various fields were invited to appreciate the beauty of arts and culture as to increase the artistic and cultural sides of them.
- Implement a series of promotion of education including Master Class, public arts and cultural lectures to maximize the benefits and actively develop talents of Taiwan's classic music.
- People of various fields were invited to appreciate the beauty of arts and culture as to increase the artistic and cultural sides of them.

##### Event photos



▲ Flute Arts Festival



▲ Yu-Chien Tseng and Russian National Orchestra



▲ Nikolai Lugansky – Piano Master Class



▲ Outdoor broadcast



▲ Cello Master Class



▲ French Horn Master Class





## Powerchip Seed of Arts Project

Non-profit cultural and artistic activities

### 「A Tour of Landscape Paintings – The Pushkin State Museum, Russia」

November 17, 2018 – February 17, 2019

approximately 150,000 participants

Events

- People of various fields were invited to appreciate the beauty of arts and culture as to increase the artistic and cultural sides of them.
- Implement a series of promotion of education including education in remote areas, teacher's training camps, and non-profit visits, maximizing the efficiency of the activities and develop Taiwan arts and culture talents.

Benefits



▲ Teacher's training camps



▲ Non-profit visit



▲ Education in remote areas (1)



▲ Education in remote areas (2)



## Appendix 1

### GRI Sustainability Reporting Standards (GRI Standards) Comparison Table

「\*」 material topics and 「●」 confirmed by internal supervisors

GRI Standards Categories/Topics	Number	Disclosure content of GRI Standards	Confirmed internally	Corresponding Chapter	Page No.	Omitted/ Notes
1. Organization overview						
GRI102 General Disclosure: Core	102-1	Name of the organization	●	1.1 Company profile	10	
	102-2	Activities, brands, products, and services	●	1.1 Company profile	10	
	102-3	Location of headquarters	●	1.1 Company profile	10	
	102-4	Location of operations	●	1.1 Company profile	10	
	102-5	Ownership and legal form	●	1.1 Company profile	10	
	102-6	Markets served	●	1.1 Company profile	10	
	102-7	Scale of organization	●	1.1 Company profile	10	
	102-8	Information of employees and other workers	●	1.1 Company profile	10	
	102-9	Supply chain	●	3.4 Supply Chain Management	40	
	102-10	Significant changes to the organization and its supply chains	●	Focus on fabs	10	
	102-11	Precautionary principle or approach	●	2.3 Risk Management	23	
	102-12	External initiatives	●	1.2 Development Strategies and Goals	11	
	102-13	Member of associations/unions	●	External participation	11	
2. Strategy						
GRI102 General Disclosure: Core	102-14	Statement from senior decision-maker	●	Words of the decision maker	02	
GRI 102 General Disclosure: Comprehensive	102-15	Key impacts, risks, and opportunities	●	2.3 Risk Management	23	
3. Ethics and Integrity						
GRI102 General Disclosure: Core	102-16	Values, principles, standards, and norms of behavior	●	Professional norms	22	
GRI 102 General Disclosure: Comprehensive	102-17	Mechanisms for advice and concerns about ethics	●	Professional norms	22	
4. Governance						
GRI102 General Disclosure: Core	102-18	Governance structure	●	2.1 Organizational Structure	20	
	102-19	Delegating authority	●			
	102-20	Executive-level responsibility for economic, environmental and social topics	●			
	102-21	Consulting stakeholders on economic, environmental, and social topics	●			
GRI 102 General Disclosure: Comprehensive	102-22	Composition of the highest governance body and its committees	●			
	102-23	Chair of the highest governance body	●			Not disclosed
	102-24	Nominating and selecting r the highest governance body	●			
	102-25	Conflict of interest	●			
	102-26	Role of highest governance body in setting purpose, values, and strategy	●			
	102-27	Collective knowledge of highest governance body	●			
	102-28	Evaluating the highest governance body's performance	●			Not disclosed

GRI Standards Categories/Topics	Number	Disclosure content of GRI Standards	Confirmed internally	Corresponding Chapter	Page No.	Omitted/ Notes
GRI 102 General Disclosure: Comprehensive	102-29	Identifying and managing economic, environment, and social impacts	●			Not disclosed
	102-30	Effectiveness of risk management processes	●			
	102-31	Review of economic, environmental, and social topics	●			
	102-32	Highest governance body's role in sustainability reporting	●			
	102-33	Communicating critical concerns	●			
	102-34	Nature and total number of critical concerns	●			
	102-35	Remuneration policies	●			Not disclosed
	102-36	Process for determining remuneration	●			Not disclosed
	102-37	Stakeholders' involvement in remuneration	●			
	102-38	Annual total compensation ratio	●			Not disclosed
	102-39	Percentage increase in annual total compensation ratio	●			Not disclosed
5. Stakeholder engagement						
GRI102 General Disclosure: Core	102-40	List of stakeholder groups	●	1.3 Identification and Communication of Stakeholders	12	
	102-41	Collective bargaining agreements	●	1.3 Identification and Communication of Stakeholders	12	
	102-42	Identifying and selecting stakeholders	●	1.3 Identification and Communication of Stakeholders	12	
	102-43	Approach to stakeholder engagement	●	1.3 Identification and Communication of Stakeholders	12	
	102-44	Key topics and concerns raised	●	1.3 Identification and Communication of Stakeholders	12	
6. Reporting practice						
GRI102 General Disclosure: Core	102-45	Entities included in the consolidated financial statements	●	Focus on fabs	10	
	102-46	Defining report content and topic Boundaries	●	1.4 Identification and Management of Major Topics	14	
	102-47	List of material topics	●	1.4 Identification and Management of Major Topics	14	
	102-48	Restatements of information	●	About the report	A	
	102-49	Changes in reporting	●	About the report	A	
	102-50	Reporting period	●	About the report	A	
	102-51	Date of most recent report	●	About the report	A	
	102-52	Reporting cycle	●	About the report	A	
	102-53	Contact point for questions regarding the report	●	About the report	A	
	102-54	Claims of reporting in accordance with the GRI Standards	●	About the report	A	
	102-55	GRI content index	●	About the report	A	
	102-56	External assurance	●	About the report	A	

GRI Standards Categories/Topics	Number	Disclosure content of GRI Standards	Confirmed internally	Corresponding Chapter	Page No.	Omitted/ Notes
Top-specific Standards: 200 Series (Economic topics)						
*Economic Performances						
GRI 103 Management approach to economic performances	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	3.2 Economic Continuity and Technology Innovation	32	
	103-3	Evaluation of management approach	●	3.2 Economic Continuity and Technology Innovation	32	
GRI 201 Disclosures of economic performances	201-1	Direct economic value generated and distributed by the organization	●	3.2.1 Profit Overview	32	
	201-2	Financial implications and other risks and opportunities due to climate change	●	4.1.2 Water Resource Management	45	
	201-3	Defined benefit plan obligations and other retirement plans	●	5.2 Benefit Policy	66	
	201-4	Financial assistance received from government	●	3.2.1 Profit Overview	32	Not receiving subsidies from government
Markets Presence						
GRI 202 Disclosures of market presence	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	●	5.1 Recruitment and Retention	62	
	202-2	Proportion of senior management hired from the local community	●	5.1 Recruitment and Retention	62	
Indirect Economic Impact						
GRI 203 Disclosures of indirect economic impacts	203-1	Development and impact of infrastructure investments and services supported	●	--	--	Not disclosed
	203-2	Significant indirect economic impacts	●	--	--	Not disclosed
Procurement Practices						
GRI 204 Disclosures of procurement practices	204-1	Proportion of spending on local suppliers	●	3.4 Supply Chain Management	40	
*Anti-corruption						
GRI 103 Management approach to anti-corruption	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	2.2 Business Integrity	21	
	103-3	Evaluation of management approach	●	2.2 Business Integrity	21	
GRI 205 Disclosures of anti-corruption	205-1	Operations assessed for risk related to corruption	●	--	--	Not disclosed
	205-2	Communication and training about anti-corruption policies and procedures	●	Professional norms	22	
	205-3	Confirmed incidents of corruption and actions taken	●	Professional norms	22	
Anti-competitive Behavior						
GRI 206 Disclosures of anti-competitive behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	●	Internal control	22	



GRI Standards Categories/Topics	Number	Disclosure content of GRI Standards	Confirmed internally	Corresponding Chapter	Page No.	Omitted/ Notes
Top-specific Standards: 300 Series (Environmental topics)						
Materials						
GRI 301 Disclosures of materials	301-1	Materials used by weight or volume	●	Raw material management	40	
	301-2	Recycled input materials used	●	--	--	Not disclosed
	301-3	Reclaimed products and their packaging materials	●	--	--	Not disclosed
*Energy						
GRI 103 Management approach to energy	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	4.1 Energy Resource Management	42	
	103-3	Evaluation of management approach	●	4.1 Energy Resource Management	42	
GRI 302 Disclosures of energy	302-1	Energy consumption within the organization	●	4.1.1 Energy Management	43	
	302-2	Energy consumption outside of the organization	●	4.1.1 Energy Management	43	
	302-3	Energy intensity	●	4.1.1 Energy Management	43	
	302-4	Reduction of energy consumption	●	Energy Saving	44	
	302-5	Reductions in energy requirements of products and services	●	Energy Saving	44	
*Water						
GRI 103 Management approach to water	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	4.1 Energy Resource Management	42	
	103-3	Evaluation of management approach	●	4.1 Energy Resource Management	42	
GRI 303 Disclosures of water	303-1	Water withdraw from resources	●	4.1.2 Water Resource Management	45	
	303-2	Impact of water resources through withdraw	●	4.1.2 Water Resource Management	45	
	303-3	Recycled and re-used water	●	4.1.2 Water Resource Management	45	
Biodiversity						
GRI 304 Disclosures of biodiversity	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	●	--	--	Not disclosed
	304-2	Significant impacts of activities, products, and services on biodiversity	●	--	--	Not disclosed
	304-3	Habitats protected or restored	●	--	--	Not disclosed
	304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	●	--	--	Not disclosed
*Emissions						
GRI 103 Management approach to emissions	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	4.2 Pollution control	47	
	103-3	Evaluation of management approach	●	4.2 Pollution control	47	



GRI Standards Categories/Topics	Number	Disclosure content of GRI Standards	Confirmed internally	Corresponding Chapter	Page No.	Omitted/ Notes
GRI 305 Disclosure of emissions	305-1	Direct (Scope 1) GHG emissions	●	4.1.3 GHG Inventory and Reduction	46	
	305-2	Energy indirect (Scope 2) GHG emissions	●	4.1.3 GHG Inventory and Reduction	46	
	305-3	Other indirect (Scope 3) GHG emissions	●	4.1.3 GHG Inventory and Reduction	46	
	305-4	GHG emissions intensity	●	4.1.3 GHG Inventory and Reduction	46	
	305-5	Reduction of GHG emissions	●	4.1.3 GHG Inventory and Reduction	46	
	305-6	Emissions of ozone-depleting substances (ODS)	●			No comparison
	305-7	Nitrogen oxides (NOx), sulfur oxides (Sox), and other significant air emissions	●	4.2.1 Air Pollution Emissions	48	
*Effluents and Waste						
GRI 103 Management approach to effluents and waste	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	4.2 Pollution control	47	
	103-3	Evaluation of management approach	●	4.2 Pollution control	47	
GRI 306 Disclosures of effluents and waste	306-1	Water discharge by quality and destination	●	4.2.2 Waste Water Treatment	51	
	306-2	Waste by type and disposal method	●	4.2.3 Regeneration and Removal of Resources	53	
	306-3	Significant spills	●	4.2.2 Waste Water Treatment	51	
	306-4	Transport of hazardous waste	●	4.2.3 Regeneration and Removal of Resources	53	
	306-5	Water bodies affected by water discharges and/or runoff	●	4.2.2 Waste Water Treatment	51	
*Environmental Compliance						
GRI 103 Management approach to environmental compliance	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	4.2 Pollution control	47	
	103-3	Evaluation of management approach	●	4.2 Pollution control	47	
GRI 307 Disclosures of environmental compliance	307-1	Non-compliance with environmental laws and regulations	●	4.2 Pollution control	47	
Supplier Environmental Assessment						
GRI 308 Disclosures of environmental assessment	308-1	New suppliers that were screened using environmental criteria	●	Supplier audit	41	
	308-2	Negative environmental impacts in the supply chain and actions taken	●	Supplier audit	41	
Top-specific Standards: 400 Series (Social topics)						
*Employment						
GRI 103 Management approach to employment	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	5.1 Recruitment and Retention	62	
	103-3	Evaluation of management approach	●	5.1 Recruitment and Retention	62	



GRI Standards Categories/Topics	Number	Disclosure content of GRI Standards	Confirmed internally	Corresponding Chapter	Page No.	Omitted/ Notes
GRI 401 Disclosures of employment	401-1	New employee hires and employ	●	5.1 Recruitment and Retention	62	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	●	5.2 Benefit Policy	66	
	401-3	Parental leave	●	5.1 Recruitment and Retention	62	
*Labor/Management Relations						
GRI 103 Management approach to labor/management relations	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	5.1 Recruitment and Retention	62	
	103-3	Evaluation of management approach	●	5.1 Recruitment and Retention	62	
GRI 402 Disclosures of labor/management relations	402-1	Minimum notice periods regarding operational changes	●	5.1 Recruitment and Retention	62	
*Occupational Health and Safety						
GRI 103 Management approach to occupational health and safety	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	5.4 Employee Health Management	75	
	103-3	Evaluation of management approach	●	5.4 Employee Health Management	75	
GRI 403 Disclosures of occupational health and safety	403-1	Worker representative of the formal Health and Safety Committee composed by both labor and management	●	5.4.2 Employees' Safety at Workplace	80	
	403-2	Injury categories, injuries, occupational diseases, lost days, absence rates and deaths due to work	●	5.4.2 Employees' Safety at Workplace	80	
	403-3	Workers with high risk of disease related to their profession or with high risks	●	5.4 Employee Health Management	75	
	403-4	Relevant issues regarding health and safety are officially included in the union	●	--	--	No union
*Training and Education						
GRI 103 Management approach to training and education	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	5.1 Recruitment and Retention	62	
	103-3	Evaluation of management approach	●	5.1 Recruitment and Retention	62	
GRI 404 Disclosures of training and education	404-1	Average hours of training per year per employee	●	5.3 Talents Development, and Education and Training	72	
	404-2	Programs for upgrading employee skills and transition assistance programs	●	5.3 Talents Development, and Education and Training	72	
	404-3	Percentage of employees receiving regular performance and career development reviews	●	5.2 Welfare Policy	66	
Diversity of employees and their fair opportunities						
GRI 405 Diversity of employees and their fair opportunities Top disclosures	405-1	Diversity of governance bodies and employees	●	5.1 Recruitment and Retention	62	
	405-2	Ratio of basic salary and remuneration of women to men	●	--	--	Not disclosed

GRI Standards Categories/Topics	Number	Disclosure content of GRI Standards	Confirmed internally	Corresponding Chapter	Page No.	Omitted/ Notes
Non-discrimination						
GRI 406 Disclosures of non-discrimination	406-1	Incidents of discrimination and corrective actions taken	●	--	--	Not disclosed
Freedom of Association and Collective Bargaining						
GRI 407 Freedom of Association and Collective Bargaining Top disclosures	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	●	--	--	Not disclosed
Child labor						
GRI 408 Disclosures of child labor	408-1	Operations and suppliers at significant risk for incidents of child labor	●	--	--	Not disclosed
Forced or Compulsory Labor						
GRI 409 Disclosures of forced or compulsory labor	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	●	--	--	Not disclosed
Security Practices						
GRI 410 Disclosures of security practices	410-1	Security personnel received human rights policies or procedures training	●	5.1 Recruitment and Retention	62	
Rights of Indigenous Peoples						
GRI 411 Disclosures of rights of indigenous peoples	411-1	Incidents of violations involving rights of indigenous peoples	●	Internal control	22	
Human Rights Assessment						
GRI 412 Disclosures of human rights assessment	412-1	Operations that have been subject to human rights reviews of impact assessments	●	--	--	No comparison
	412-2	Employee training on human rights policies or procedures	●	--	--	No comparison
	412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	●	1.2. Development Strategies and Goals	11	
Local Communities						
GRI 413 Disclosures of local communities	413-1	Operations with local community engagement, impact assessments, and development programs	●	4.2 Pollution control	47	
	413-2	Operations with significant actual and potential negative impacts on local communities	●	--	--	Not disclosed
Supplier Social Assessment						
GRI 414 Disclosures of supplier social assessment	414-1	New suppliers that were screened using social criteria	●	Supplier audit	41	
	414-2	Negative social impacts in the supply chain and actions taken	●	Supplier audit	41	
Public Policy						
GRI 415 Disclosures of public policy	415-1	Political contributions	●	Internal control	22	
Customer Health and Safety						
GRI 416 Disclosures of customer health and safety	416-1	Assessment of the health and safety impacts of product and service categories	●	3.3.1 System Certification And Customer Satisfaction	37	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	●	Internal control	22	



GRI Standards Categories/Topics	Number	Disclosure content of GRI Standards	Confirmed internally	Corresponding Chapter	Page No.	Omitted/ Notes
Marketing and Labeling						
GRI 417 Disclosures of marketing and labeling	417-1	Requirements for product and service information and labeling	●	--	--	Not disclosed
	417-2	Incidents of non-compliance concerning product and service information and labeling	●	--	--	Not disclosed
	417-3	Incidents of non-compliance concerning marketing communications	●	--	--	Not disclosed
*Customer Privacy						
GRI 103 Management approach to customer privacy	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	3.3 Customer Relations Management	36	
	103-3	Evaluation of management approach	●	3.3 Customer Relations Management	36	
GRI 418 Disclosures of customer privacy	418-1	Substantiated complaints regarding concerning breaches of customer privacy and losses of customer data	●	3.3 Customer Relations Management	36	
*Socioeconomic Compliance						
GRI 103 Disclosures of socioeconomic compliance Management approach	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	2.2 Business Integrity	21	
	103-3	Evaluation of management approach	●	2.2 Business Integrity	21	
GRI 419 Disclosures of socioeconomic compliance Top disclosures	419-1	Non-compliance with laws and regulations in the social and economic area	●	2.2 Business Integrity	21	
Custom topic on sustainability						
*Business Integrity						
GRI 103 Management approach to business integrity	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	19	
	103-2	Management approach and its elements	●	2.2 Business Integrity	21	
	103-3	Evaluation of management approach	●	2.2 Business Integrity	21	
*Intellectual Property Rights						
GRI 103 Management approach to business integrity	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	2.2 Business Integrity	32	
	103-3	Evaluation of management approach	●	2.2 Business Integrity	32	
*Product Service and R&D Innovation						
GRI 103 Product service and R&D innovation Management approach	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	3.2 Economic Continuity and Technology Innovation	32	
	103-3	Evaluation of management approach	●	3.2 Economic Continuity and Technology Innovation	32	
*Information Disclosures						
GRI 103 Management approach to information disclosures	103-1	Explanation of the material topics and its Boundaries	●	Description of Material topic Boundaries	16	
	103-2	Management approach and its elements	●	2.2 Business Integrity	21	
	103-3	Evaluation of management approach	●	2.2 Business Integrity	21	

## Appendix 2

United Nation Sustainable Development Goals (SDGs) Comparison Table

Items	Sustainable Development Goals	Corresponding Chapter	Page No.
Goal 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture.	6.2 Care for the Disadvantages	84
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	5.1 Recruitment and Retention 5.3 Talents Development, and Education and Training	62 72
Goal 5	Achieve gender equality and empower all women and girls	6.2 Care for the Disadvantages	84
Goal 6	Ensure availability and sustainable management of water and sanitation for all	4.1.2 Water Resource Management	45
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all	4.1.1 Energy Management	43
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	3.2 Economic Performance And Technological Innovation	32
Goal 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	3.2 Economic Performance And Technological Innovation	32
Goal 13	Take urgent action to combat climate change and its impacts	2.3 Risk Management	23
Goal 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	6.1 Love and Protect our Environment	82

## Appendix 3

ISO26000 Social Responsibility Index Comparison Table

Items	Clause	Corresponding Chapter	Page No.
1. Organizational Governance			
1.1	A system by which an organization makes and implements decisions in pursuit of its objectives	1.1 Company profile	10
2. Human Rights			
2.1	In compliance with laws and regulations and avoid the risk of reviews caused from human rights issues	Internal control	22
2.2	Situation of risks of human rights	2.3 Risk Management	23
2.3	Avoidance of complicity – direct, interest, and silence conspiracy (avoidance of accomplices)	2.2 Business Integrity	21
2.4	Resolving grievances	5.1.2 Promote labour relations	64
2.5	Discrimination and vulnerable groups	5.1 Recruitment and Retention	62
2.6	Civil and political rights	5.1 Recruitment and Retention	62
2.7	Economic, social and cultural rights	5.1 Recruitment and Retention	62
2.8	Fundamental principles and rights at work	5.1 Recruitment and Retention	62
3. Labor Practices			
3.1	Employment and employment relationships	5.1 Recruitment and Retention	62
3.2	Conditions of work and social protection	5.1 Recruitment and Retention	62
3.3	Social dialogue	5.1.2 Promote labour relations	64
3.4	Health and safety at work	5.4 Employee Health Management	75
3.5	Human development and training in the workplace	5.3 Talents Development, and Education and Training	72
4. Environment			
4.1	Prevention of pollution	4.2 Pollution control	47
4.2	Sustainable resource use	4.2.3 Regeneration and Removal of Resources	53
4.3	Climate change mitigation and adaptation	2.3 Risk Management 4.1.2 Water Resource Management	23 45
4.4	Protection of the environment, biodiversity and restoration of natural habitats	4.2 Pollution control 6.1 Protection Environment	47 82



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<b>5. Fair Operating Practices</b>			
5.1	Anti-corruption	2.2 Business Integrity	21
5.2	Responsible political involvement	1.1 Company profile	10
5.3	Fair competition	2.2 Business Integrity	21
5.4	Promoting social responsibility in the value chain	1.2 Development Strategies and Goals	11
5.5	Respect for property rights	3.2.2 Intellectual Property Protection	37
<b>6. Consumer Issues</b>			
6.1	Fair market, factual and unbiased information and fair contractual practices	3.4 Management of Supply Chains	40
6.2	Protecting consumers' health and safety	3.3.1 System Certification And Customer Satisfaction	37
6.3	Sustainable consumption	3.3 Customer Relations Management	36
6.4	Consumer service, support, and complaint and dispute resolution	3.3.1 System Certification And Customer Satisfaction	37
6.5	Consumer data protection and privacy	3.3.2 Customer Privacy and Information Security	39
6.6	Access to essential services	3.1 Semiconductor Industry and Foundry Services	29
6.7	Education and awareness	5.3 Talents Development, and Education and Training	72
<b>7. Community Involvement and Development</b>			
7.1	Community involvement	6. Care for our Society	82
7.2	Education and culture	6.3 Promotion of arts and culture	86
7.3	Employment creation and skills development	5.3 Talents Development, and Education and Training	72
7.4	Technology development and access	3. Innovative Technology	28
7.5	Wealth and income creation	3.2 Economic Performance And Technological Innovation	32
7.6	Health	5.4 Employee Health Management	75
7.7	Social investment	6. Care for our Society	82

## Appendix 4

### The UN Global Compact Comparison Table

Items	Clause	Corresponding Chapter	Page No.
1. Human Rights			
1	Businesses should support and respect the protection of internationally proclaimed human rights	1.1 Company profile	10
2	Make sure that they are not complicit in human rights abuse	1.1 Company profile	10
2. Labor			
3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	5.1 Recruitment and Retention 5.1.2 Promote labour relations	62 64
4	The elimination of all forms of forced and compulsory labor	5.1.2 Promote labour relations	64
5	The effective abolition of child labor	5.1 Recruitment and Retention	62
6	The elimination of discrimination in respect of employment and occupation	5.1 Recruitment and Retention	62
3. Environment			
7	Businesses should support a precautionary approach to environmental challenges	4.2 Pollution control	47
8	Undertake initiatives to promote greater environmental responsibility	4. Friendly Environment	42
9	Encourage the development and diffusion of environmentally friendly technologies	4. Friendly Environment	42
4. Anti-corruption			
10	Businesses should work against corruption in all its forms, including extortion and bribery	2.2 Business Integrity	21

