

2019 CSR Report

Formosa Plastics Corporation

Corporate Social
Responsibility Report



台塑企業
FORMOSA PLASTICS GROUP

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About This Report

Report Overview

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This Report was published pursuant to the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) issued by the Global Reporting Initiative (GRI) and compiled based on the guidelines and framework of the Core Options. This Report provides an accurate and detailed introduction to the sustainability actions of Formosa Plastics Corporation (hereinafter referred to as "FPC") in areas including corporate governance, environmental sustainability, happy enterprise, safe workplace and community co-prosperity.

Information Period

2019 (January 1, 2019 to December 31, 2019)

Scope and Boundary of Reporting

The information recorded herein mainly focuses on FPC and does not include its investment companies in Taiwan and the U.S and subsidiaries in China. Any other information with a different scope of the disclosure will be otherwise specified. The data quoted and reporting boundary used in the 2019 CSR Report are identical to those in 2018.

The source of the financial information is the public accountant-certified statement, while other statistics are generally quoted from information provided by government departments or relevant websites and will be presented normally. Any exceptions will be specified.

Release Frequency

Annually. The 2018 CSR Report was released on June 11, 2019, and this Report was released in June 2020.

Report Guidelines



To strengthen performance comparison and report credibility, all information disclosed in this Report has been certified by the reputable British Standards Institution (BSI), disclosed in accordance with AA 1000AS Type I and the disclosure requirements specified in GRI Standards. The BSI Independent Assurance Opinion Statement is included in the Appendix II and will be presented in the internationally accepted format. Any estimation will be specified in the relevant chapters.

- i. Sustainability Reporting Standards of the Global Reporting Initiative (GRI Standards)
- ii. Materiality, Inclusivity, Responsiveness, and Impact of AA 1000 APS (Accountability Principle Standard)
- iii. ISO 26000 Social Responsibility Guidelines
- iv. Rules Governing the Preparation and Filing of Corporate Social Responsibility Reports by TWSE-Listed Companies
- v. Corporate Social Responsibility Best Practice Principles for TWSE/GTSM-Listed Companies
- vi. United Nations Global Compact
- vii. United Nations Sustainable Development Goals (SDGs)

Contact Information

If you have any opinions or questions about the content of FPC's CSR report, please feel free to submit your valuable recommendations via the following methods:



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E-mail: fpccsr@fpc.com.tw

Progress of Corporate Social Responsibility Goals

102-15

Response to the United Nations' Sustainable Development Goals (SDGs):

In 2019, FPC aligned nine SDGs and identified 20 targets. SDGs 3, 8, 9, 11, 12, and 13 were relevant to the core operations while SDGs 4, 6, and 7 were of secondary relevance.

Economic

SDGs



Targets: 8.2 / 9.4 / 12.2 / 12.5 / 13.1

	FPC's Objectives	Specific Actions in 2019
Short-term (One to three years)	1. Expand operations at home and abroad and carry out debottlenecking projects	Please refer to the section "2.5 Response to Significant Economic Issues" for more details.
	2. Advance the transformation plan for Renwu Complex (Industry 4.0 and AI R&D Center and Compound R&D Center)	1. The Industry 4.0 and AI R&D Center and Compound R&D Center are scheduled to be completed in the first half of 2020. 2. The application for changing the land required for this project into a Class A industrial area was reviewed and approved by the Ministry of the Interior and took effect in July 2019.
	3. Hold innovation presentations	The 4th and 5th innovation presentations were held at National Yunlin University of Science and Technology and ITRI Southern Region Campus respectively in 2019.
	4. Promote AI technology development and applications	1. Enhance AI technology development and applications using the five major pillars of development. Please refer to the section "2.3.2 (2) Develop Artificial Intelligence" for more details. 2. As of 2019, 41 out of 91 proposed AI technology development cases were completed; the remaining 50 AI technology development cases are now ongoing with the expected annual benefit of NT\$160 million.
	5. Increase the sales volume of differentiated products by more than 5% compared to 2018	In 2019, the sales volume of differentiated products accounted for 36.3% of the total sales volume, an increase of 1% compared to 2018. Continuous efforts will be made.
	6. Disclose company-related information in English in alignment with the international community	In line with the Corporate Governance Roadmap implemented by the government, FPC compiled the English annual report starting from 2019. We will also disclose material information in English starting from 2020.

	FPC's Objectives	Specific Actions in 2019
Short-term (One to three years)	7. Implement Industry 4.0 to optimize production by enhancing the quality of products, achieving optimal operations, optimizing generation set scheduling and formulas	In 2019, 28 out of 32 improvement plans made were completed; the remaining four improvement plans will be completed one by one by 2020 with the annual benefit of NT\$87 million.
Medium-term (Three to five years)	1. Advance the transformation plan for Renwu Complex (mass production of dye sensitized solar cells)	FPC has cooperated with the ITRI to build the automated trial production line for dye sensitized solar cells in Shalun, Tainan. The trial production was successfully completed in January 2020. The expansion will be subsequently determined based on the application of dye sensitized solar cells.
	2. Strengthen research and development of differentiated products	Please refer to the section "2.3.2 Product and AI Technology Development and Innovation" for the research and development results of differentiated products in 2019.
	3. Cultivate R&D talents to enhance the capacity for R&D	There were 536 R&D employees in 2019 (accounting for 8.9% of total employees), an increase of 23, or 0.2%, from 2018.
	4. Equip the inspection center with valuable instruments to improve the capacity for R&D, inspection, and analysis	By the end of 2019, FPC invested NT\$220 million in purchasing 26 valuable instruments. It expects to invest another NT\$320 million by the end of 2022.
Long-term (More than five years)	1. Reduce the proportion of exports to Mainland China and expand into emerging markets	In 2019, the proportion of exports to Mainland China (including Hong Kong) was 45.8%, a decrease of 0.6% from 2018. FPC will continuously diversify markets to reduce risks.
	2. Continue to promote key performance indicators (KPIs) and understand the competitive advantages of benchmark peers to increase business performance	FPC set 147 KPIs for 21 products. In the fourth quarter of 2019, 13 KPIs for six products (9%) were not met (with the achievement rate less than 80%). A countermeasure has been drafted for improvement.

Reference chapters: 2.1.1 Operating and Financial Performance, 2.3.1 Main Products and Brands, 2.3.2 Product and AI Technology Development and Innovation, and 2.5 Response to Significant Economic Issues

Environmental

SDGs



Targets: 3.9 / 6.3 / 6.4 / 6.5 / 7.3 / 7.a / 8.4 / 8.8 / 9.4 / 11.5 / 11.6 / 12.2 / 12.4 / 12.5 / 13.1 / 13.3

	FPC's Objectives	Specific Actions in 2019
Short-term (1~3 years)	1. Promote "circular economy" in each complex to implement reduction, reuse and utilization of resources	<ol style="list-style-type: none"> The Mailiao Complex has set a goal of reducing waste by 3% within three years (six-year average) to strengthen reuse and recycling. The plans for the reuse of desulfurized sludge, calcium fluoride sludge, and salt mud were sent to the Ministry of Economic Affairs for review in 2019 and are scheduled to be implemented upon approval in 2020.
	2. Strengthen leakage control and improvement in equipment components at each complex	<p>FPC conducted random sampling of equipment components at each plant from time to time and installed Fourier-transform infrared spectroscopy (FTIR) at Mailiao, Renwu and Linyuan Complexes. Once the abnormal concentration is detected, relevant plants were alerted immediately to find the source of the leak and to track the improvement. Please refer to the section "3.4.1 Air Pollution Monitoring and Assessment" for more details.</p>
	3. Promote the annual greenhouse gas voluntary reduction project at each complex	<p>In 2019, FPC continued to join in the Industrial GHG Voluntary Reduction Information Platform under the Industrial Development Bureau, Ministry of Economic Affairs. As of today, 51 projects have been verified by the Industrial Development Bureau to reduce 24,972 tons of CO₂.</p>
	4. Promote water and energy conservation and water, electricity and steam consumption reduction by 5% from the previous year and achieve 100% of rainwater harvest area at complexes in addition to Mailiao Complex	<ol style="list-style-type: none"> Please refer to the section "3.2.2 Water Conservation Performance" and "3.3.2 Improvement in Energy Conservation" for more details of the water and energy conservation performance in 2019. In 2019, 100% of rainwater harvest area was achieved at Mailiao Complex while 95% of rainwater harvest area was achieved at other complexes. Achieving 100% of rainwater harvest area at other complexes by 2020 is expected. In 2019, FPC obtained the third-party certification of "water footprint" and achieved "A-" on CDP Water Disclosure Project.
	5. Implement the plan to eliminate white smoke visual pollution at the cogeneration plant	<p>By the end of 2019, white smoke visual pollution caused by three of six chimneys at the cogeneration plant was improved; the improvement in the remaining three chimneys is scheduled to be completed by May 2021.</p>

FPC's Objectives		Specific Actions in 2019
Short-term (1~3 years)	6. Introduce Scope 3 GHG inventory and verification	In July 2019, we obtained the GHG verification opinion statements from SGS Taiwan and British Standards Institution (BSI) respectively. Please refer to the section "3.3.1 Greenhouse Gas Inventory and Emission Intensity" for more details.
Medium-term (Three to five years)	1. Adopt higher standards in the supervision and management of the environment of the plant as well as install additional air pollution prevention equipment to reduce the discharge of pollutants and prevent the incidence of safety, environmental and health accidents	<ol style="list-style-type: none"> The Mailiao Complex has set the goal of reducing air pollutants (TSP, SOx, NOx, and VOC) by 3% within three years (six-year average). In response to more stringent NOx and SOx emission standards for power facilities, we have planned to improve the prevention equipment of coal-fired boilers.
	2. Promote the source reduction in wastewater and recycling of discharged water from wastewater treatment plants	<ol style="list-style-type: none"> FPC continued 28 improvement plans for the source reduction in wastewater and expected to reduce wastewater discharge by 2,460 CMD. As of 2019, 25 improvement plans were completed to reduce wastewater discharge by 2,110 CMD. The remaining three improvement plans are scheduled to be completed in June 2020. FPC implemented the recycling of discharged water from wastewater treatment plants and expected to recycle 6,100 CMD. The project is scheduled to be completed in 2022.
Long-term (More than five years)	1. Continue to promote a "circular economy" and strive toward achieving the "zero waste" objective	FPC has cooperated with National Cheng Kung University and ITRI to invest in the "Capture and Reutilization of Fuel Gas CO ₂ " project, which was approved by the Ministry of Economic Affairs in 2019.
	2. Achieve zero wastewater discharge	FPC implemented the recycling of concentrated wastewater from recycling facilities with an estimated volume of 2,000 CMD. It expects to achieve the goal of zero wastewater discharge by 2023.
	3. Achieve zero violation of environmental laws	<ol style="list-style-type: none"> FPC strengthened independent inspections at plants, source reduction and management, process waste reduction, and end control. FPC installed equipment with the best available control technology. We improved the effectiveness of pollution prevention equipment through AI technology.

Reference chapters: 3.2.1 Water Resource Consumption and Reduction Management, 3.2.2 Water Conservation Performance, 3.2.3 Zero Wastewater Discharge, 3.3 Greenhouse Gas and Energy Management, 3.3.1 Greenhouse Gas Inventory and Emission Intensity, 3.3.2 Improvement in Energy Conservation, 3.4.1 Air Pollution Monitoring and Assessment, and 3.6 Environmental Compliance

Social

SDGs

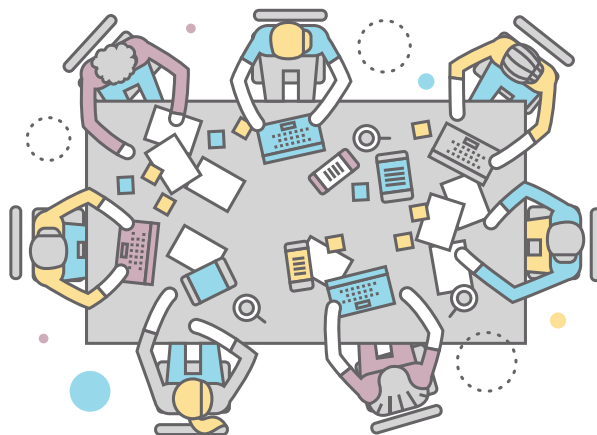


Targets: 3.9 / 4.5 / 4.7 / 8.6 / 8.8 / 11.5

FPC's Objectives	Specific Actions in 2019	
Short-term (One to three years)	1. Integrate the Company's resources and seek active cooperation between the academic and industrial sectors to bolster employment opportunities	Please refer to the section "6.2.1 Industry-Academia Cooperation Program" for more details.
	2. Continue to promote various neighborhood and social charity events	In 2019, FPC invested NT\$700 million in social welfare activities such as environmental volunteerism, caring for vulnerable groups, after-school tutoring for school children, scholarships, and nutritional breakfast with love. Please refer to the section "6.1.2 Social Investment" for more details.
	3. Continue to organize dialogues and forums for new employees to actively care for employees and offer assistance in overcoming difficulties to ensure talent retention	<ol style="list-style-type: none"> In 2019, FPC organized four forums and attracted 226 participants. In 2020, we will further promote employee care and counseling by arranging for counselors to regularly provide counselling for employee on site and assigning supervisors at all levels to take sensitivity training, so as to offer employees assistance in overcoming their difficulties as early as possible.
	4. Increase information transparency to enhance communication with stakeholders	FPC's corporate social responsibility website in both Chinese and English has been launched in 2019.
	5. Expand participation in community activities	Please refer to the section "6.1.1 Community Relations" for more details.
	6. Cultivate AI talents	<ol style="list-style-type: none"> AI training was divided into five stages: basic training, practical training, project implementation, Taiwan AI Academy, and operation manager training. As of 2019, nearly 100% of our employees holding a bachelor's degree or above received basic AI training.
	7. Reduce the disabling injury frequency to 0.15 and the disabling Injury severity rate to 0.8	No major occupational disasters occurred in 2019, with the disabling injury frequency of 0.32 and the disabling Injury severity rate of 1. Please refer to the section "5.1.1 Occupational Health and Safety" for more details.

	FPC's Objectives	Specific Actions in 2019
Medium-term (Three to five years)	1. Preserve cultural assets by establishing the Wang Yung-Ching and Wang Yung-Tsai Park in Kaohsiung City	The park restoration and reuse plan was reviewed and approved by the Kaohsiung City Government in December 2019. The park restoration and reuse plan is currently ongoing and scheduled to be completed by the end of 2022.
	2. Promote summer science camps and environmental activities	Please refer to the section "6.1.1 Community Relations" for more details.
	3. Increase the proportion of people with disabilities employed	In 2019, 88 persons with disabilities were employed, 47% more than the statutory requirements.
	4. Reduce the work-related disability injury indicators year by year (20%)	CCTVs were installed at operation areas to ensure the complete and dynamic monitoring during construction.
Long-term (More than five years)	1. Achieve zero occupational disaster	The intelligent personnel positioning and face recognition system was established. Please refer to the section "5.1.1 Occupational Health and Safety" for more details.
	2. Gradually improve the CSR governance framework, and establish a designated organization to coordinate CSR performance to advance progress	FPC has established the CSR Task Force to be in charge of implementing CSR activities and disclosing related results.
	3. Strengthen communication with local communities to enhance identification with FPC	FPC listened to opinions of the locals and conveyed the business philosophy of perpetual business operation and dedication to the society by actively promoting corporate policies to the communities, so as to strengthen the relationship between FPC and communities.

Reference chapters: 2.2.2 Unit in Charge of Corporate Social Responsibility, 4.1.2 Employee Recruitment, 4.2.5 Diversified Training and Performance Management, 6.1 Local Community Development and Investment, 6.2 Community Engagement, 6.2.2 Formosa LOHAS Circle, and 6.3 Response to Local Community Issues



2019 CSR Highlights

102-12



2019
Net profit
before tax

NT\$
42.2
billion



2019
Consolidated
revenue

NT\$
207.8
billion



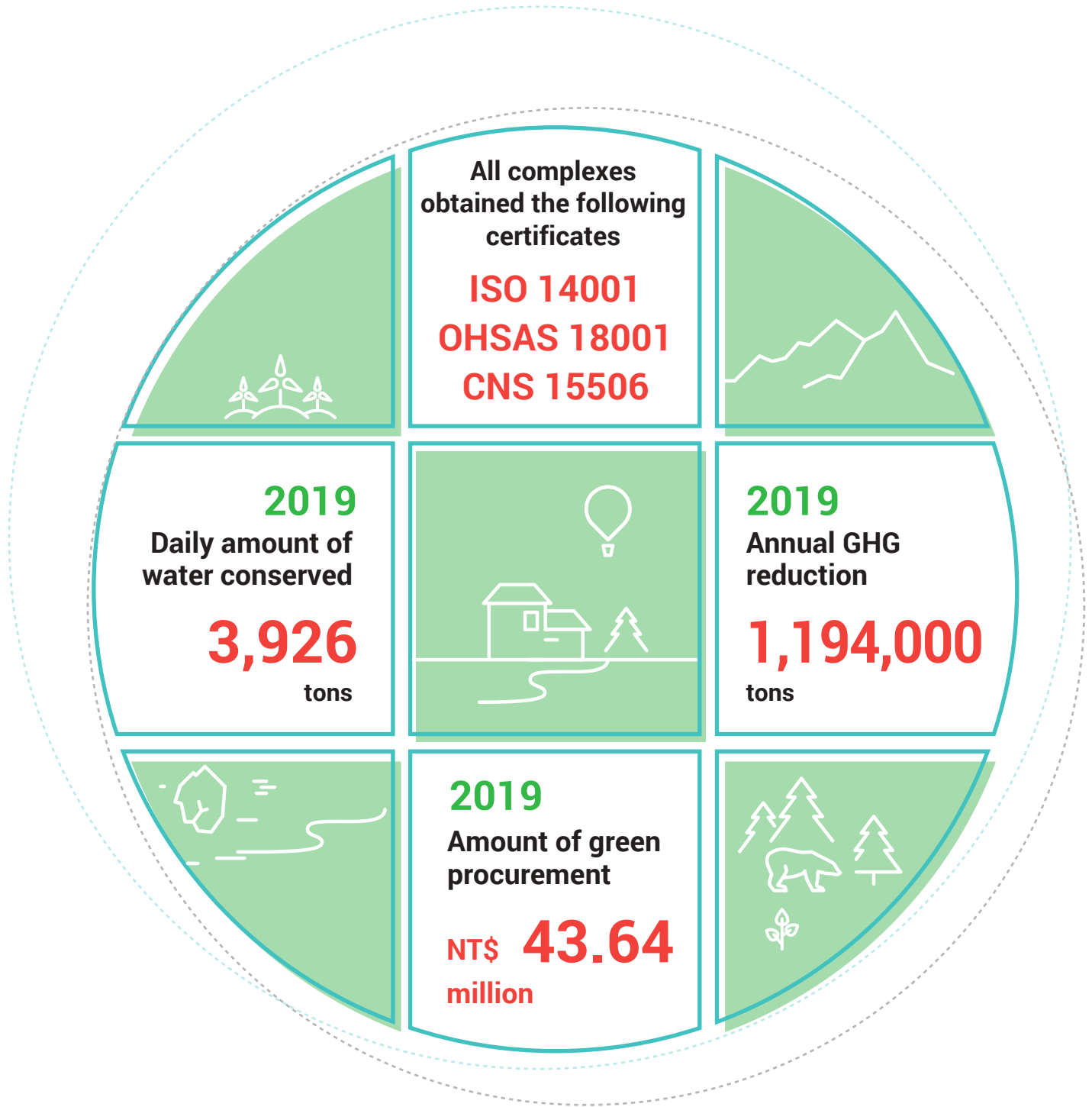
Economic



Environmental



Social



Economic

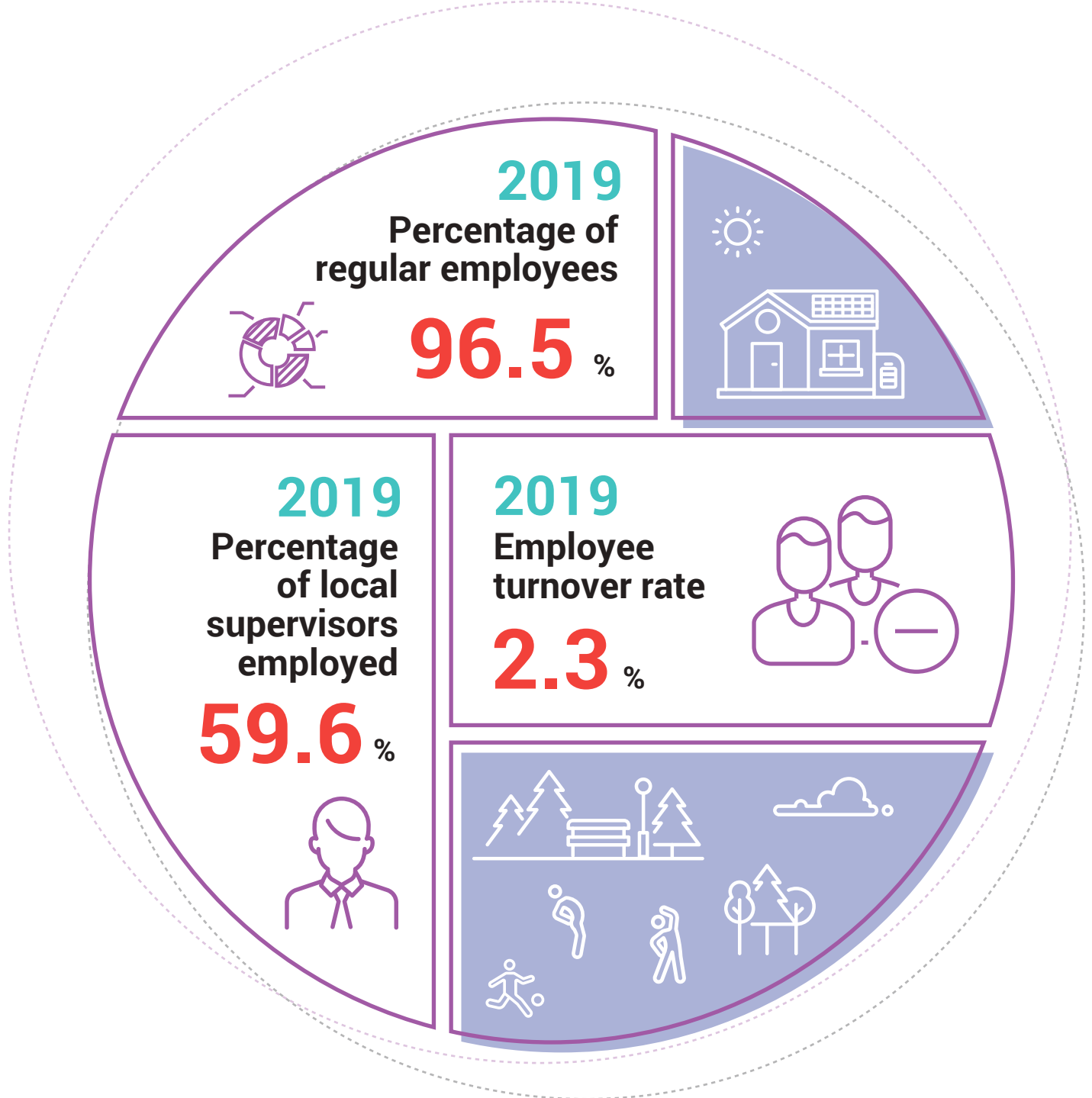


Environmental



Social





Economic



Environmental



Social

Award-Winning Performance in 2019

102-12



Awarding Organization
Ministry of Labor,
Executive Yuan

Award
Five-Star Excellent
Occupational Safety
and Health Department
Award

Category
S

Awarded Department
Mailiao Complex



Awarding Organization
Yunlin County
Government

Award
Excellent Occupational
Safety and Health
Department

Category
S

Awarded Department
Mailiao AN Plant



Awarding Organization
Yunlin County
Government

Award
Excellent Occupational
Safety and Health
Department

Category
S

Awarded Department
Mailiao VCM Plant



Awarding Organization
Yunlin County
Government

Award
Excellent Occupational
Safety and Health
Department

Category
S

Awarded Department
Mailiao LLDPE Plant



Awarding Organization
Environmental
Protection
Bureau, Kaohsiung City
Government

Award
Outstanding Green
Procurement Enterprise

Category
E

Awarded Department
FPC



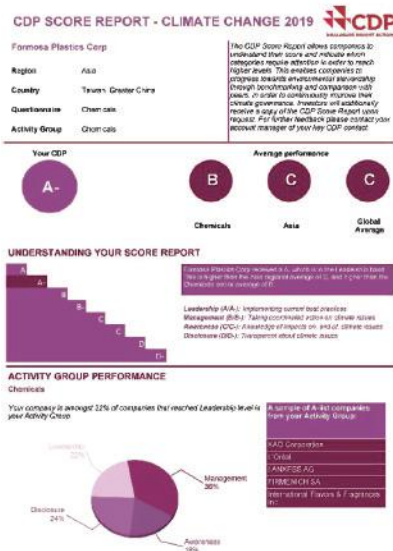
Awarding Organization
Department of
Environmental
Protection, Taipei City
Government

Award
Outstanding Green
Procurement Enterprise

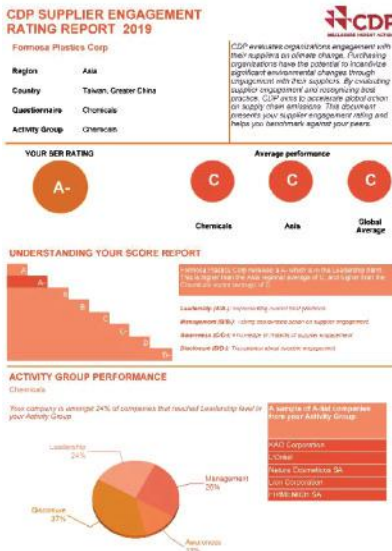
Category
E

Awarded Department
FPC

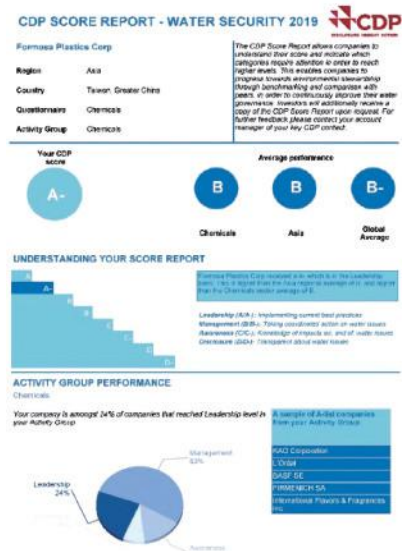
Note: "S" refers to social awards; "E" refers to environmental awards.



A- on CDP Climate Change Project



A- on CDP Supply Chain



A- on CDP Water Disclosure Project

1

Builders of Innovative and Sustainable Future

- 1.1 Message from the Chairman
- 1.2 About FPC
- 1.3 Stakeholder Identification and Communication
- 1.4 Identification of Material Issues



1.1 Message from the Chairman

102-12

102-14

Greetings to all our partners who have supported us throughout in the development of FPC and cared for its growth.

2019 marked a year of uncertainty. The global economy slowed down due to the uncertainties brought about by the China-U.S. trade war; the poor performance of automotive and real estate markets resulted in shrinking demand for aluminum, paint, textiles, and home appliances; the new production capacity of the petrochemical industry in China and the U.S. caused the supply to increase, leading to a decline in the prices of petrochemical products and further a petrochemical downturn; in addition, income of Formosa Petrochemical Corp., Formosa Plastics Corporation, U.S.A., and Formosa Sumco Technology Corp. plummeted. All of these factors led to a decline in both revenue and profit of FPC.

To reduce the impact caused by the slump in the petrochemical industry, FPC adopted the disruptive business strategies, including stepping up product differentiation and marketing. In 2019, the sales of distinctive products increased by 1% from 2018. Established by Formosa Industries Corporation, the high-density polyethylene (HDPE) plant with an annual capacity of 400,000 tons was put into production at the end of August 2019. In addition, FPC enhanced the development and application of artificial intelligence (AI) in the five aspects, namely, production and marketing optimization, quality assurance, smart maintenance, digital inspection, and cost reduction, and continuously implemented Industry 4.0 by developing automated production and marketing systems and applying them to all products to improve operational efficiency. We also encouraged employees to make innovative proposals and spared no effort to take corrective measures in course of pursuing rationalization, so as to strengthen corporate management. While dealing with multiple challenges, we were poised to maintain sustainable growth in acknowledgement of the support and encouragement from all of our shareholders, employees, and customers, as well as business partners.

Looking back on 2019, FPC acted as a builder of a prosperous economy while setting the short-term, medium-term, and long-term sustainable development goals in economic, environmental, and social aspects to fulfill corporate citizenship. We also identified nine of the United Nation's Sustainable Development Goals (SDGs) as our long-term sustainable development goals. At the same time, we continued to make all-out efforts to promote corporate governance, environmental sustainability, employee welfare, workplace safety, and shared prosperity with local communities, fully showing FPC's determination to achieve common good and sustainable development with all stakeholders. After more than five years of implementation, we were continuously selected as a constituent of the TWSE Taiwan High Compensation 100 Index, Taiwan Employment 99 Index, and Corporate Governance 100 Index, respectively, in 2019; besides, six departments received commendation and recognition from the competent authorities in terms of occupational health and safety, energy conservation, and workplace safety and health. FPC's efforts have been widely recognized; especially, Mailiao Complex has been granted the Five Star Award by the Ministry of Labor for its excellent performance in workplace health and safety for three consecutive years. More importantly, we have become more convinced that promoting sustainable development is imperative and a right thing to do.


FPC has been committed to creating an excellent living environment and a better and sustainable future for the Earth. As of 2019, we invested a total of NT\$24.2 billion in pollution prevention, energy conservation and waste reduction, greenhouse gas (GHG) reduction, and industrial safety and fire protection. In 2019 alone, we conserved 3,926 tons of water per day and reduced 1,194 thousand tons of GHG emissions per year. To further reduce the environmental impacts caused by the plant operations, we took measures such as strengthening the control over leaks of volatile organic compounds (VOCs), setting up air quality stations at Renwu and Linyuan Complexes to monitor air quality instantly, launching the white smoke elimination project at the Renwu and Linyuan Utility Plants, promoting zero wastewater discharge, and keeping oil, water, gas, and plastic powder/pellets off the ground. In addition, FPC worked with the academic institute on the flue gas CO₂ capture and reuse program, which was granted a subsidy by the Ministry of Economic Affairs under the "A+ Industrial Innovation R&D Program" in 2019.

In readiness for global curbs on plastics and environmental trends, FPC acquired a 19% equity interest in Minima Technologies Co., Ltd., a Taiwan's leading brand of compostable products and resins, in 2019 to meet the increased need for biodegradable plastics. The biodegradable compounds (particulate and colloidal) produced by Minima Technologies Co., Ltd. can be completely decomposed into water, CO₂, and organic carbon in a general environment for a maximum of one and a half years without causing any environmental pollution. To achieve social and environmental sustainability, we will use the existing products of FPG such as PTA (pure terephthalic acid), butanediol, and maleic anhydride to develop the key raw materials of green plastics, namely, PBS (polybutylene succinate) and PBAT (polybutylene adipate terephthalate), facilitating the vertical integration of the green plastic industry's supply chain and the popularization of green plastics.

In the face of increased emphasis on corporate social responsibility in 2020, we, as the leader in Taiwan's petrochemical industry, will strive to fulfill our sustainability commitment to all stakeholders based on the management philosophy of our two founders. Aiming at the world's No.1 manufacturer that offers future-proof, high value-added, and eco-friendly products and processes on the basis of enhanced AI applications, FPC will build emerging technologies such as AI, 5G, quantum computing, and blockchain on the past implementation of automation and digitization while promoting the digital transformation throughout the value chain with optimized production and marketing and innovative management models; in addition, we will adopt a technology-based approach to improve service quality and long-term competitiveness. While maintaining business development and environmental sustainability, FPC will continue to promote circular economy and energy saving and carbon reduction and strengthen safety and environmental management and fire resilience, so as to prevent abnormal processes and industrial safety. Our goal is to become a leading enterprise that is committed to environmental protection, social prosperity, and economic development while creating sustainable value for all stakeholders.

Formosa Plastics Corporation

Chairman



2020

1.2 About FPC

1.2.1 Management Philosophy 102-16

As a member of the Formosa Plastics Group (FPG), Formosa Plastics Corporation (FPC) has undergone more than 60 years of development based on the management philosophy of the late founders, Mr. Wang Yung-Ching and Mr. Wang Yung-Tsai, who always emphasized and demonstrated the spirit of "Diligence, Perseverance, Frugality and Trustworthiness; To Aim at the Sovereign Good; Perpetual Business Operation; and Dedication to the Society." For more information on the founders of FPG, please refer to FPG's official website.

FPG Website:
About Our
Founders

CSR Website:
Business
Philosophy

For more information on management philosophy, please refer to FPC's CSR website.

1.2.2 Company History 102-1 102-3 102-4 102-5 102-6 102-7



Formosa Plastics Corporation (FPC)

Date of Founding November 5, 1954

Date of Listing July 27, 1964

Business Plastics, fiber, chemicals and co-generation

Location Head Office: No. 100, Shuiguan Road, Renwu District, Kaohsiung City
Taipei Office: 4th Floor, No. 201, Dunhua North Road, Songshan District, Taipei City

Global Location Taiwan, Mainland China, U.S.A., and Vietnam

Amount of Capital (NT\$ thousand) 63,657,408

Consolidated Revenue in 2019 (NT\$ thousand) 207,848,572

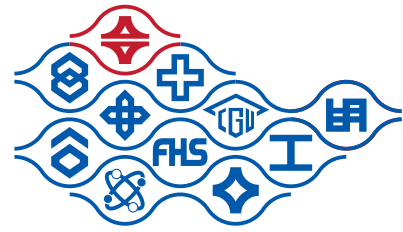
Number of Taiwan Employees in 2019 6,240

For more information on development over the years, please refer to "Memorabilia" on FPC's official website.

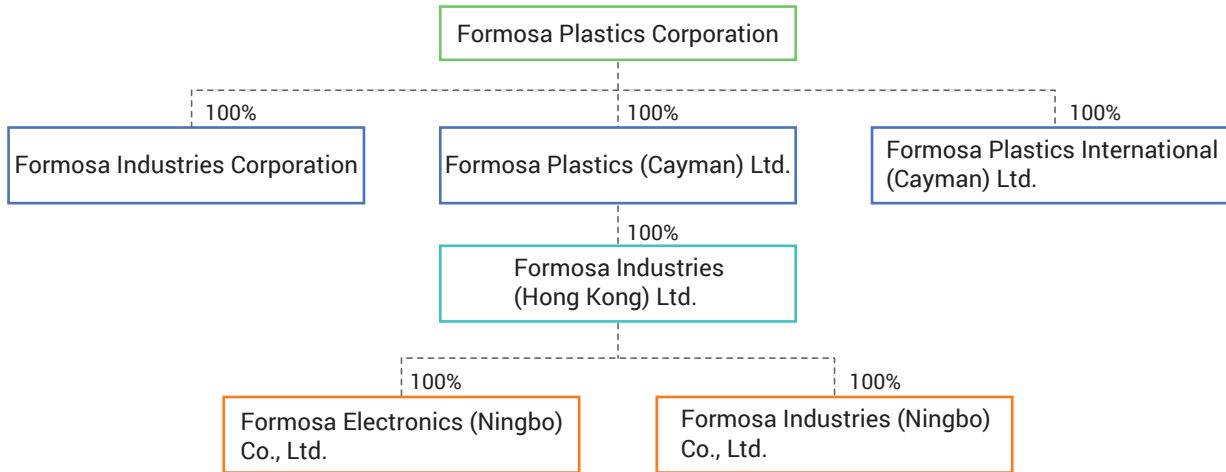
FPC Website:
Memorabilia

1.2.3 Corporate Identity System

The relationship among the companies under FPG is shown in the logo of FPG as a chain of different companies. The symbol representing the Company is a transformation of the Chinese character “台,” which is kept relatively similar to FPC’s logo.



1.2.4 Organization Chart 102-45



1.3 Stakeholder Identification and Communication 102-40 102-42 102-43 102-44

Considering the experiences of the various departments and consulting the five major principles of the AA1000 Stakeholder Engagement Standard (SES) (Dependence, Accountability, Influence, Multiple Perspectives, and Degree of Concern), FPC has identified the seven main stakeholder groups, and established a variety of smooth communication channels with the stakeholders according to the nature of each department to learn more about their issues of concern, and obtain their feedback. In addition to providing the basis for the preparation of this Report, such feedback will also serve as an important reference for FPC when determining strategies and objectives in the future.

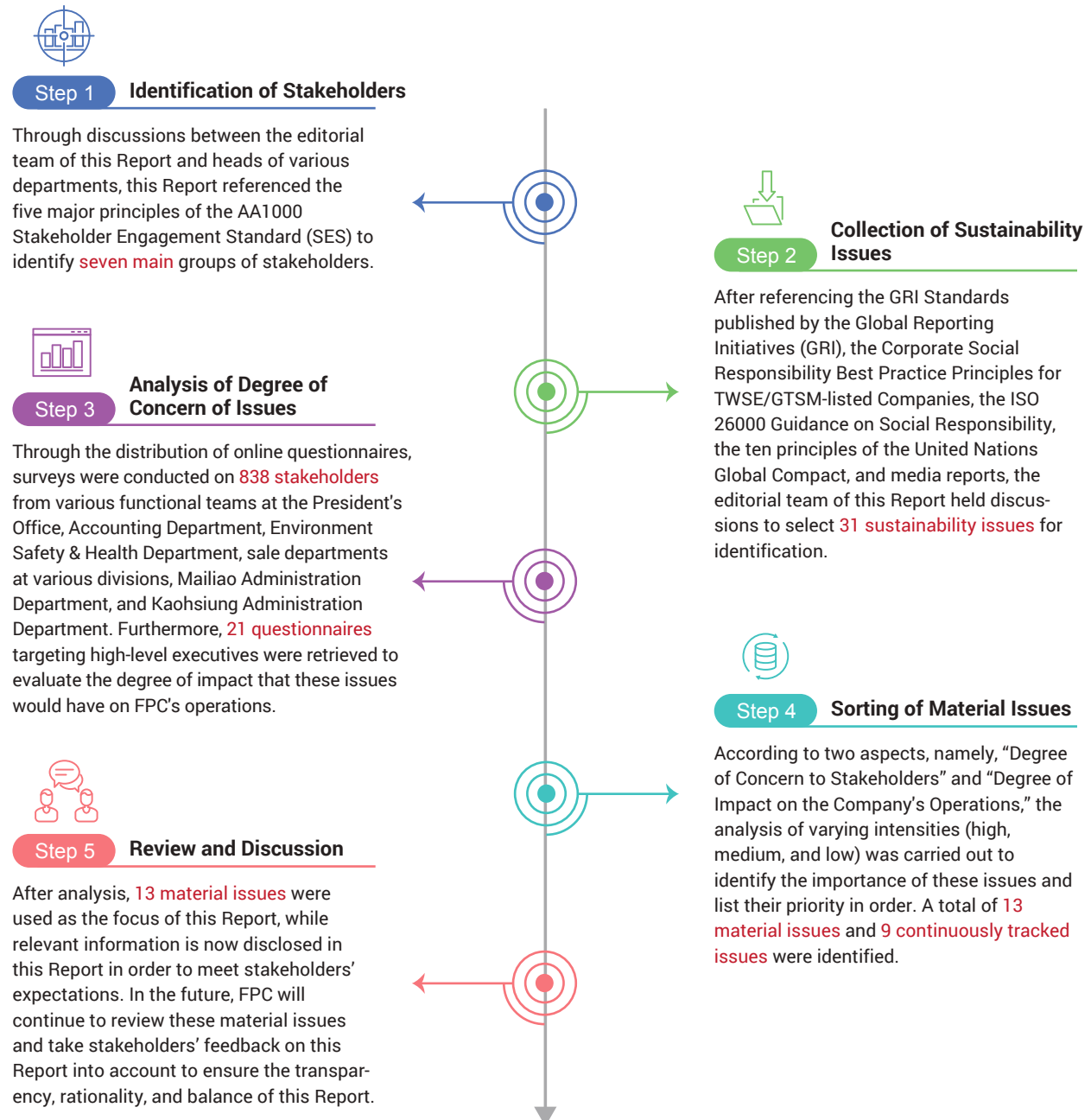
For more information on channels, frequency, and focus of communication with stakeholders, please refer to FPC’s CSR Website.



1.4 Identification of Material Issues

By analyzing material issues, FPC can understand the issues of concern to the stakeholders and evaluate the impact of these issues as a reference for the preparation of this Report.




1.4.1 Analysis Process for Material Issues



1.4.2 Materiality Matrix 102-49



To more accurately focus on the issues of concern to stakeholders, the Social Responsibility Promotion Team reviewed the materiality analysis process this year by referencing industry trends at home and abroad, clarifying the significance of issues, and adjusting the scope of materiality as appropriate. Adjustments to issues this year are described below:

Aspect	Material Issue	Adjustment Method	Adjustment Description
 Economic	Product and AI Technology Development and Innovation	Issue title revised	Product Technology R&D and Innovation was changed to Product and AI Technology Development and Innovation.
 Environmental	Greenhouse Gas and Energy Management	Issue title revised	Greenhouse Gas Emissions and Energy Management was changed to Greenhouse Gas and Energy Management.
 Social	Talent Recruitment and Retention	Listed as a continuously tracked issue	In the materiality analysis this year, this issue was changed from a material issue in 2018 to a continuously tracked issue in 2019. The status of talent recruitment and retention has remained stable for a long time. FPC will continue to track this issue.

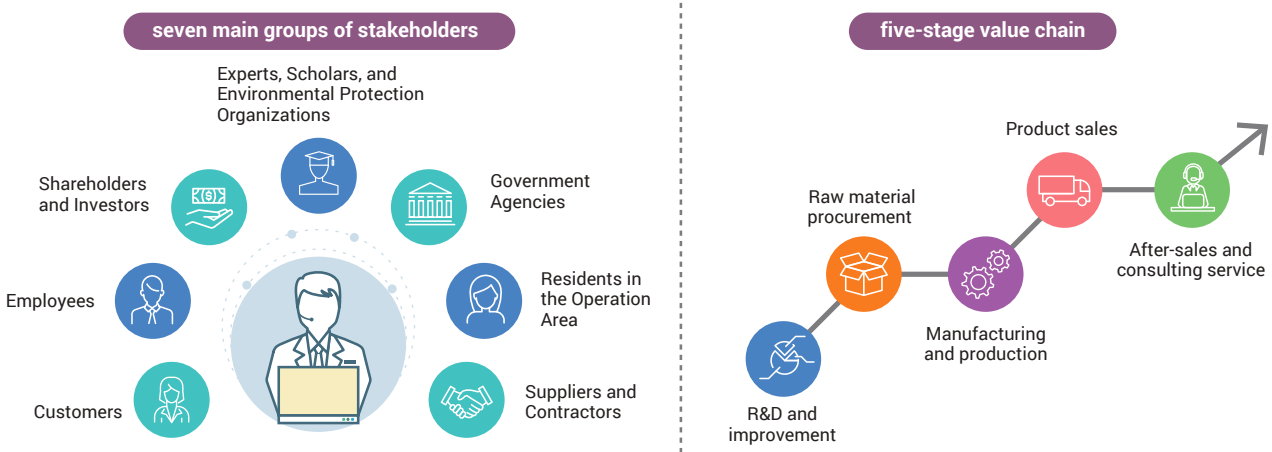
Note 1: FPC had no new material issues in 2019 compared to 2018.

Note 2: In the materiality analysis this year, Anti-corruption Measures, Sustainable Procurement, Biodiversity and Ecological Protection, Product Transport Safety, Use of Raw Materials, Environmental Cost and Benefit Analysis, Socioeconomic Compliance, Employee Diversity and Gender Equality, and Career Development and Training were excluded from the material issues and continuously tracked issues.

1.4.3 Identification of Material Issues and Value Chain

103-1

Following the five-stage value chain identified in 2018, this year FPC further analyzed the material issues corresponding to each stage of value chain and assessed the types of stakeholders affected. To identify and effectively manage the impacts caused by material issues, FPC divided them into direct and indirect impacts based on the degree of involvement in hopes of having more efficient communication with the stakeholders.



Identification of FPC's Value Chain

Degree of Involvement: Direct/ Indirect (Facilitator or Business Relationships)

Economic

Material Issue	Operating and Financial Performance					
Stage of Value Chain	1. R&D and improvement 2. Raw material procurement 3. Manufacturing and production 4. Product sales 5. After-sales and consulting service					
Entity of Impact	Customers	Employees	Shareholders and Investors	Government Agencies	Suppliers and Contractors	Experts, Scholars, and Environmental Protection Organizations
Degree of Involvement						

- Corresponding Chapter: 2.1.1 Operating and Financial Performance
- Topic in GRI Standards: 201 - Economic Performance

Material Issue	Corporate Governance					
Stage of Value Chain	2. Raw material procurement 3. Manufacturing and production 4. Product sales 5. After-sales and consulting service					
Entity of Impact	Customers	Employees	Shareholders and Investors	Government Agencies	Suppliers and Contractors	Experts, Scholars, and Environmental Protection Organizations
Degree of Involvement						

- Corresponding Chapter: 2.2 Corporate Governance
- Custom topic

Material Issue	Operational Risk Management and Response						
Stage of Value Chain	1. R&D and improvement 2. Raw material procurement 3. Manufacturing and production 4. Product sales						
Entity of Impact	Customers	Employees	Shareholders and Investors	Government Agencies	Residents in the Operation Area	Suppliers and Contractors	Experts, Scholars, and Environmental Protection Organizations
Degree of Involvement							

- Corresponding Chapter: 2.2.4 Operational Risk Management and Response
- Custom topic

Material Issue	Product and AI Technology Development and Innovation		
Stage of Value Chain	1. R&D and improvement 3. Manufacturing and production 4. Product sales		
Entity of Impact	Customers	Employees	Suppliers and Contractors
Degree of Involvement			

- Corresponding Chapter: 2.3.2 Product and AI Technology Development and Innovation
- Custom topic



Environmental

Material Issue	Use and Management of Water Resources			
Stage of Value Chain	3. Manufacturing and production			
Entity of Impact	Employees	Government Agencies	Residents in the Operation Area	Experts, Scholars, and Environmental Protection Organizations
Degree of Involvement				

- Corresponding Chapter: 3.2 Use and Management of Water Resources
- Topic in GRI Standards: 303 - Water & 306 - Effluents and Waste

Material Issue	Greenhouse Gases and Energy Management			
Stage of Value Chain	3. Manufacturing and production			
Entity of Impact	Employees	Government Agencies	Residents in the Operation Area	Experts, Scholars, and Environmental Protection Organizations
Degree of Involvement				

- Corresponding Chapter: 3.3 Greenhouse Gas and Energy Management
- Topic in GRI Standards: 302 - Energy & 305 - Emissions

Material Issue	Air pollutant management				
Stage of Value Chain	2. Raw material procurement 3. Manufacturing and production 4. Product sales				
Entity of Impact	Employees	Government Agencies	Residents in the Operation Area	Suppliers and Contractors	Experts, Scholars, and Environmental Protection Organizations
Degree of Involvement					

- Corresponding Chapter: 3.4 Air Pollutant Management
- Topic in GRI Standards: 305 - Emissions

Material Issue	Environmental compliance				
Stage of Value Chain	1. R&D and improvement 2. Raw material procurement 3. Manufacturing and production 4. Product sales				
Entity of Impact	Employees	Shareholders and Investors	Government Agencies	Residents in the Operation Area	Experts, Scholars, and Environmental Protection Organizations
Degree of Involvement					

- Corresponding Chapter: 3.6 Environmental Compliance
- Topic in GRI Standards: 307 - Environmental Compliance

Material Issue	Emergency Response Mechanism at Complexes		
Stage of Value Chain	3. Manufacturing and production		
Entity of Impact	Employees	Government Agencies	Residents in the Operation Area
Degree of Involvement			

- Corresponding Chapter: 5.1.2 Emergency Response Mechanism at Complexes
- Custom topic







Social





Material Issue	Employee Benefits and Remuneration	
Stage of Value Chain	1. R&D and improvement 2. Raw material procurement 3. Manufacturing and production 4. Product sales 5. After-sales and consulting service	
Entity of Impact	Employees	Government Agencies
Degree of Involvement		

- Corresponding Chapter: 4.2 Employee Rights, Benefits and Training
- Topic in GRI Standards: 401 - Employment & 402 - Labor/Management Relations





Material Issue	Occupational health and safety			
Stage of Value Chain	3. Manufacturing and production			
Entity of Impact	Employees	Government Agencies	Suppliers and Contractors	Experts, Scholars, and Environmental Protection Organizations
Degree of Involvement				

- Corresponding Chapter: 5.1 Workplace Safety Management
- Topic in GRI Standards: 403 - Occupational Health and Safety

Material Issue	Industrial and Public Safety			
Stage of Value Chain	2. Raw material procurement 3. Manufacturing and production 4. Product sales			
Entity of Impact	Employees	Government Agencies	Suppliers and Contractors	Experts, Scholars, and Environmental Protection Organizations
Degree of Involvement				

- Corresponding Chapter: 5.2 Industrial Safety Management in Supply Chain
- Custom topic

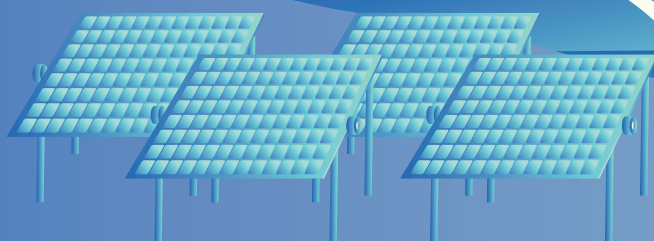
Material Issue	Community Engagement and Giving Back to the Society	
Stage of Value Chain	2. Raw material procurement 3. Manufacturing and production 4. Product sales	
Entity of Impact	Employees	Residents in the Operation Area
Degree of Involvement		

- Corresponding Chapter: 6.1 Local Community Development and Investment
- Topic in GRI Standards: 413 - Local Communities

2

The Builder of a Prosperous Economy

- 2.1 Operation Overview
- 2.2 Corporate Governance
- 2.3 Innovative Sustainable Products
- 2.4 Customer Service
- 2.5 Response to Significant Economic Issues



2.1 Operation Overview

2.1.1 Operating and Financial Performance

102-7

103-2

103-3

201-1

Material Issue: Operating and Financial Performance



Management Approach

Goals and targets: Achieve perpetual business operation and maintain outstanding and sound financial performance

Commitment: Steadily create a higher economic value

Policies and action plans:

1. Maintain healthy financial performance by reducing the debt ratio and increasing the current ratio and interest coverage ratio
2. Continuously implement Industry 4.0 and introduce artificial intelligence (AI) to reduce operating costs and strengthen competitiveness while developing high value-added composite materials to increase profitability

Unit in charge: President's Office

According to FPC's consolidated financial statements for the year ended December 31, 2019, the revenue reached NT\$207.8 billion, and the profit before tax was NT\$42.2 billion. In 2019, FPC was ranked 758th in the World's Biggest Public Companies List published by Forbes, moving up 43 spots compared to 2018. FPC's ranking has been improving for several consecutive years, which indicates that FPC is on a par with international corporations. For more financial information, please visit "Investor Relations" on FPC's official website.

FPC Website:
Financial Info



2.1.2 Participation in External Associations

102-13

To help improve the overall management of industries in Taiwan, FPC actively participates in various industry associations. In 2019, FPC was a member of 17 external associations and served as a director, supervisor, or representative of such associations; in particular, Chairman Jason Lin served as the chairman of Taiwan Synthetic Resins Manufacturers Association.

The Industrial Technology Research Institute (ITRI) has long been a pioneer in promoting Taiwan's industrial innovations and research and development. The ITRI accelerates the introduction of international advanced and innovative technologies to the industrial sector and helps foster industrial talent, making it the pivot of Taiwan's technological development and economic growth. In October 2019, Chairman Lin was selected as ITRI laureate. As the petrochemical industry faced transformation, FPC took this opportunity to give advice on the developments of the petrochemical and renewable energy industries in hopes of contributing to Taiwan's industrial innovations and research and development and long-term economic growth. For more information, please visit the ITRI's official website.



2.2 Corporate Governance

102-7

102-11

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103-3

Material Issue: Corporate Governance



Management Approach

Goals and targets: Achieve perpetual business operation and become a model for the global petrochemical industry

Commitment: Achieve transparent ethical corporate management, comply with laws and regulations strictly, and maintain stakeholders' interests

Policies and action plans:

1. Ensure the transparent disclosure of business information and uphold ethical corporate management and compliance
2. Comply with laws and regulations and work with the government to promote the sustainable development of the petrochemical industry
3. Adopt thorough internal controls and seek for approaches to value creation and risk mitigation to protect shareholders' equity.
4. Strengthen communication with stakeholders and strive to meet their expectations for corporate sustainability
5. The Board of Directors resolved on May 7, 2019 to appoint Chief Accounting Officer & Assistant Vice President Chia-Tse Chang as chief corporate governance officer.

Unit in charge: Board of Directors and President's Office



2.2.1 Corporate Governance Overview

102-22

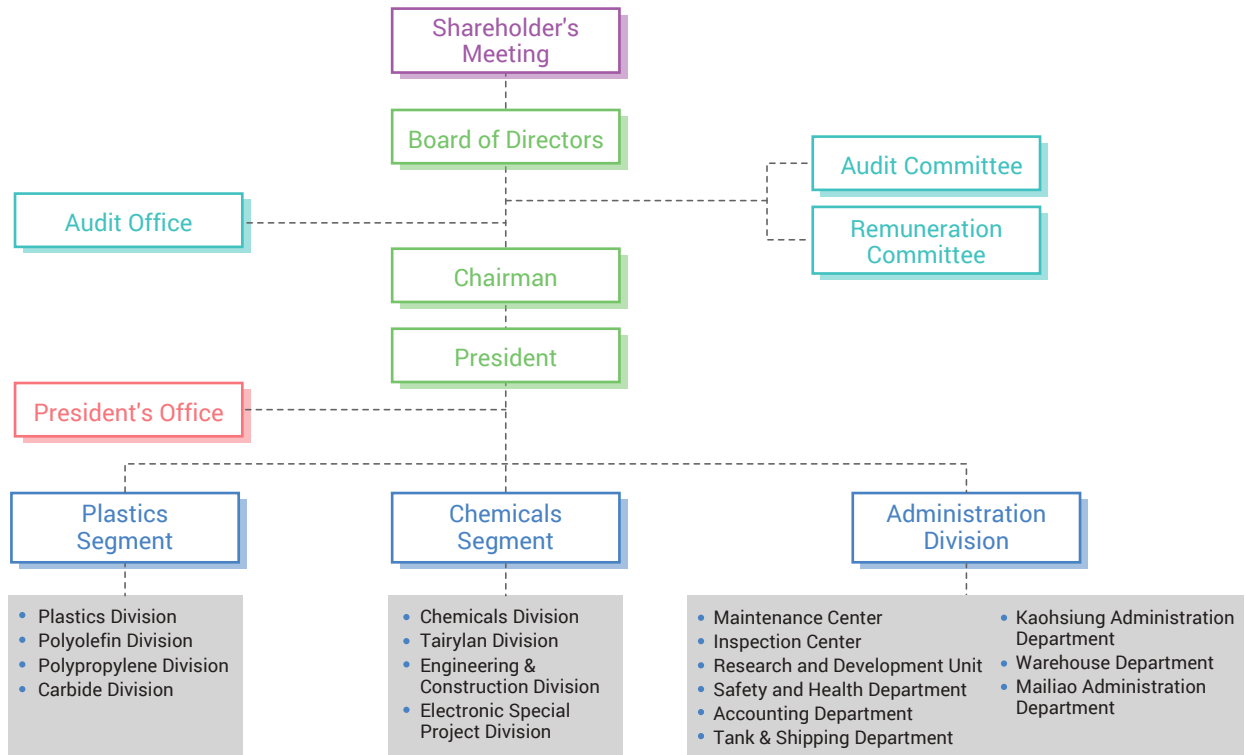
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(1) Governance Structure

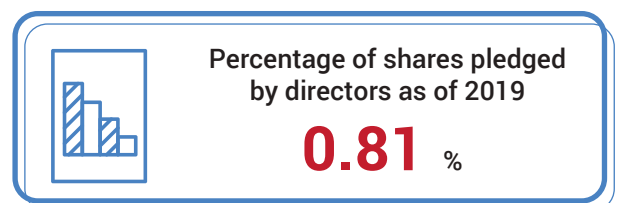
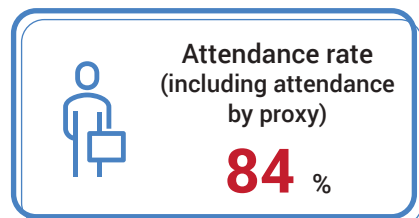
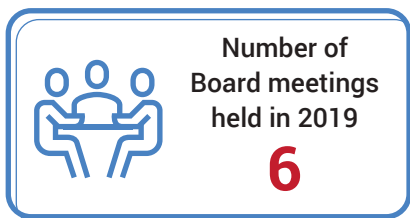


(2) Operations of the Board of Directors

At present, the Board of Directors consists of 15 directors, including three independent directors and two female directors, who possess professional expertise and broad industrial experience. These directors will be able to provide the most appropriate strategic guidance for the future development of FPC. For more information on the Board members, please refer to "Management Team" on FPC's official website.



For more information on corporate governance and committees implementation, please refer FPC's official website.



(3) Remuneration Committee

The Remuneration Committee is composed of three independent directors and holds at least two meetings every year. During these meetings, remuneration policies and systems for directors and managerial officers are evaluated, and recommendations are submitted to the Board of Directors for deliberation, so as to prevent directors and managerial officers from engaging in conduct that exceeds the risk appetite of FPC due to remuneration policies.

**(4) Independent Audit Committee**

The Audit Committee is composed of three independent directors and holds at least two meetings every year. The main purpose of establishing this committee is to supervise the fair expression of financial statements, the appointment (dismissal), competence, independence and performance of CPAs, the effective implementation of internal control, compliance with the relevant laws and regulations, and the control of existing or potential risks to FPC.

**(5) Shareholder Services**

The section not only answers inquiries from investors and shareholders and discloses sustainable development strategies, but also provides timely disclosures of statistics and data, including information on corporate governance and risk controls on the Market Observation Post System (MOPS).

FPC Website:
Investor
Relations Q&A

(6) Relations with Institutional Investors

FPC has been conducting monthly performance report seminars to develop a face-to-face communication channel with professional media institutions. FPC has appointed spokesmen to serve as a liaison with investing institutions. Furthermore, we occasionally participate in investor forums organized by domestic or international organizations to provide the latest information on the Company's operations. FPC also maintains "IR Contact Person" on the official website.

FPC Website:
IR Contact
Person

Number of investor conferences held in 2019

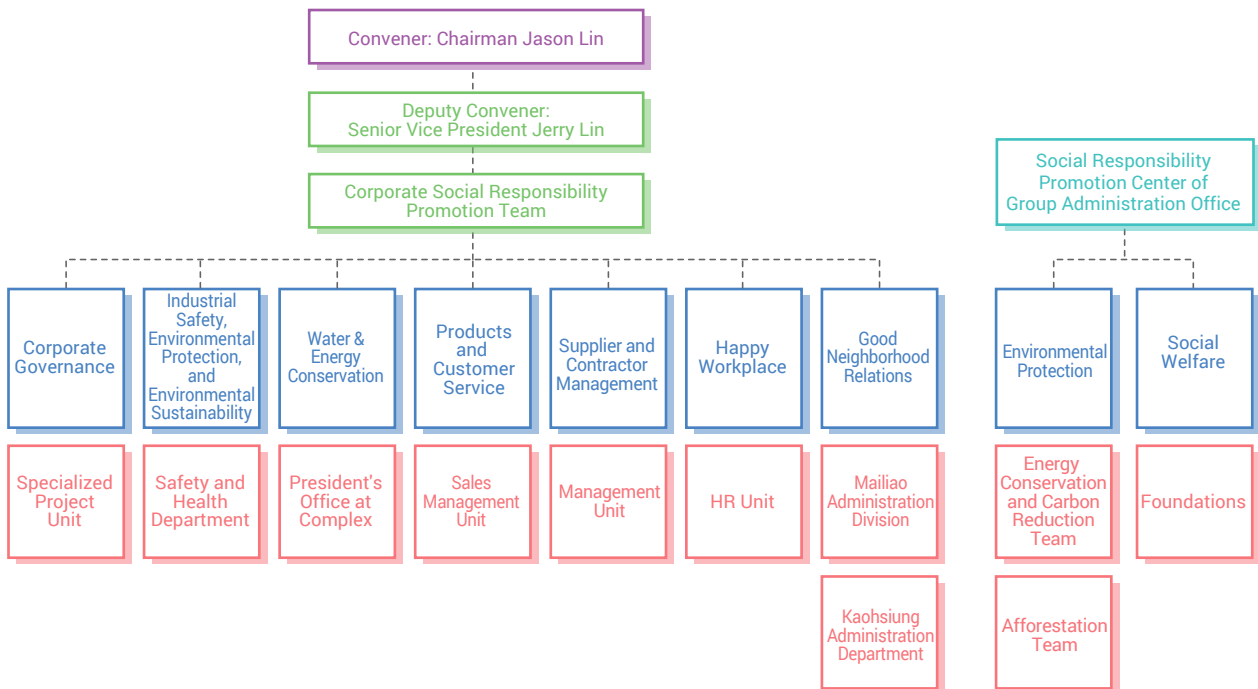
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2.2.2 Unit in Charge of Corporate Social Responsibility 102-22

FPC has appointed Chairman Mr. Jason Lin and Senior Vice President Mr. Jerry Lin to serve as convener and deputy convener, respectively, for the promotion of social responsibility operations. They are responsible for developing social responsibility strategies, supervising the performance of these strategies, and conducting social responsibility work in cooperation with the Social Responsibility Promotion Center under the Group Administration Office.

The order of the themes and issues of this Report were decided in a meeting at the beginning of 2019 by the President's Office, Safety and Health Department, Accounting Department, Mailiao Administration Department, Kaohsiung Administration Department, and members of the Social Responsibility Promotion Center. The content of this Report was first compiled and submitted to the convener and the deputy convener before being reported to the Board of Directors at least once every year in order to ensure that the issues disclosed in this Report are in line with the needs of stakeholders.

FPC's Corporate Social Responsibility Promotion Team



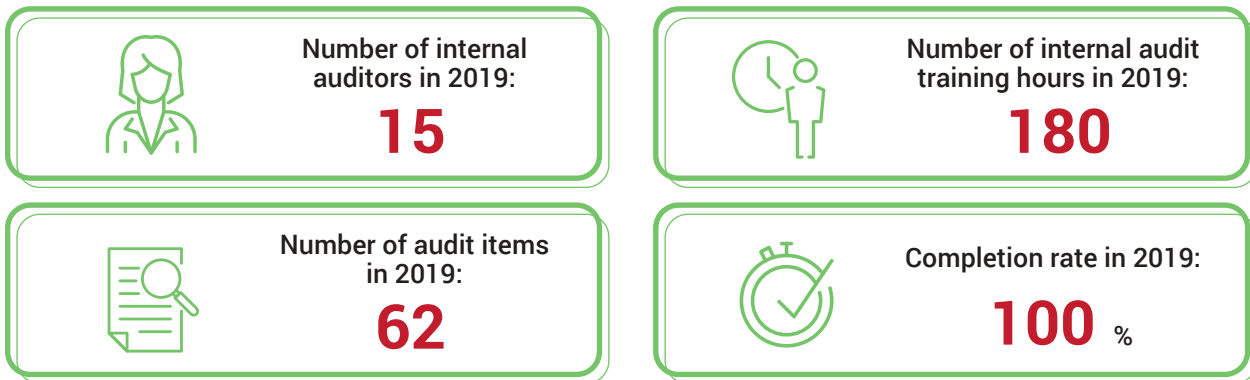
2.2.3 Internal Control Mechanism 102-15 102-16

(1) Professional and Independent Internal Auditing System

FPC has established the independent Audit Office under the Board of Directors. Each year, the Audit Office is responsible to carry out independent auditing and supervision of business functions to ensure their management efficiency.

For more information on the internal audit organization and its operation, please refer to "Audit System" on FPC's official website.





(2) Ethical Corporate Management and Anti-corruption

FPC has implemented a stringent code of ethics to prevent trade secret leaks, misconduct, malpractice or misappropriation of funds, as well as behavior which violates gender equality at work. For more information on concrete measures, please refer to "Ethical Corporate Management & Conduct" on FPC's official website.



2.2.4 Operational Risk Management and Response

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103-3

Material Issue: Operational Risk Management and Response

Management Approach

Goals and targets: Keep abreast of the uncertainties such as the global economic situation and industrial development and develop development strategies and adjust the business model in advance to ensure stable business performance

Commitment: Pay close attention to global industry trends and timely adjust the short-term, medium-term, and long-term development objectives and business strategies of each product to reduce potential risks

Policies and action plan: Hold management meetings on a regular basis or from time to time to discuss response measures for operational risks and adjust the business strategies as advance or timely precautions

Unit in charge: Board of Directors and President's Office



For each identified operational risk, FPC has designated a risk management unit in charge of assessing and reviewing the risk and developing relevant response measures in hopes of effectively strengthening the soundness of business operations. For more information, please refer to our CSR website.



2.3 Innovative Sustainable Products

2.3.1 Main Products and Brands 102-2 102-7 102-9

At present, FPC has successfully completed the vertical integration of upstream, midstream and downstream industries in areas such as plastics, fiber, and chemicals, and also expanded the economies of scale to reduce production costs in order to satisfy customer needs and enhance market competitiveness. For more information on FPC's main products, please visit our official website.



- Caustic Soda
- Chlorine Gas
- Methyl Tert-Butyl Ether



- EDC→VCM
- Acrylonitrile
- Cyanic Acid
- Methyl Methacrylate
- N-butanol
- Acrylic Acid
- Epichlorohydrin



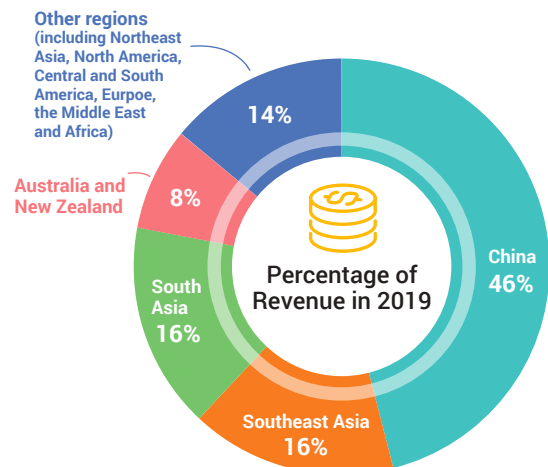
- Polyvinyl Chloride
- Linear Low Density Polyethylene
- High Density Polyethylene
- Ethylene Vinyl Acetate
- Polypropylene
- Carbon Fiber
- Acrylic Ester
- Super Absorbent Polymer

FPC has increased the production capacity of main products to meet increasing demand from the downstream clients. At present, FPC is one of the best in the global plastics, chemical and fiber industries, ranking among the top ten manufacturers in the world in terms of production capacity for 10 products including polyvinyl chloride (PVC) and vinyl chloride (VCM), etc. For more information on product applications, please refer to "Applications Overview" on FPC's official website.



Product	Local Market Share	Global Ranking
Polyvinyl Chloride (PVC)	67%	2
Vinyl Chloride (VCM)	Self-supplied	2
Caustic Soda	71%	4
Acrylic Ester (AE)	90%	6
Epichlorohydrin (ECH)	66%	6
Carbon Fiber	33%	6
N-butanol (NBA)	93%	7
Superabsorbent Polymer (SAP)	51%	7
Acrylonitrile (AN)	45%	8
Methyl Methacrylate (MMA)	35%	9
High Density Polyethylene (HDPE)	56%	11
Linear Low Density Polyethylene (LLDPE)	39%	11
Polypropylene (PP)	30%	11
Ethylene Vinyl Acetate (EVA)	19%	24

The percentage of revenue in major regions of the world in 2019 is shown below.



Main Brand	Product	Use
FORMOLON	Suspension PVC	Rubber, construction materials, water pipes, etc.
TAISOX	Polyethylene Ethylene Vinyl Acetate (EVA)	Shopping bags, packaging bags, agricultural films, shoe materials, etc.
YUNGSOX	Polypropylene	Toys, food containers, medical equipment, household products, etc.
FORMOCON	Polyacetal Resin	Electronic, electrical, automotive, transportation machines, general machinery, etc.
TAIRYFIL	Carbon Fiber	Aerospace, automotive, industrial applications, wind turbine blades, sports equipment, etc.
TAISAP	Super Absorbent Polymer	Diapers, urine pads, sanitary napkins, etc.
TAIRYSORB	Super Absorbent Polymer	Water-retaining agents for agriculture and gardening, soil modifiers, etc.
NANO CALMALON	Nano Calcium	Garbage bags, woven bags, injection molding products, extrudates, shopping bags, etc.

For more information on the supply of main raw materials, please refer to the Annual Report under "AMG" on FPC's official website.



2.3.2 Product and AI Technology Development and Innovation

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103-3

Material Issue: Product and AI Technology Development and Innovation

Management Approach

Goals and targets: Accelerate the development of differentiated, high-value, and eco-friendly products and technologies

Commitment:

1. Accelerate R&D and commercialization
2. Build a virtual lab and a digital R&D management system to introduce Industry 4.0 and AI to the production
3. Master key technologies and applies for patents at home and abroad to build a patent protection network
4. Participate in product standardization and develop differentiated, high-value, and innovative products
5. Develop technologies such as CO₂ capture and utilization and water reuse and eco-friendly green materials

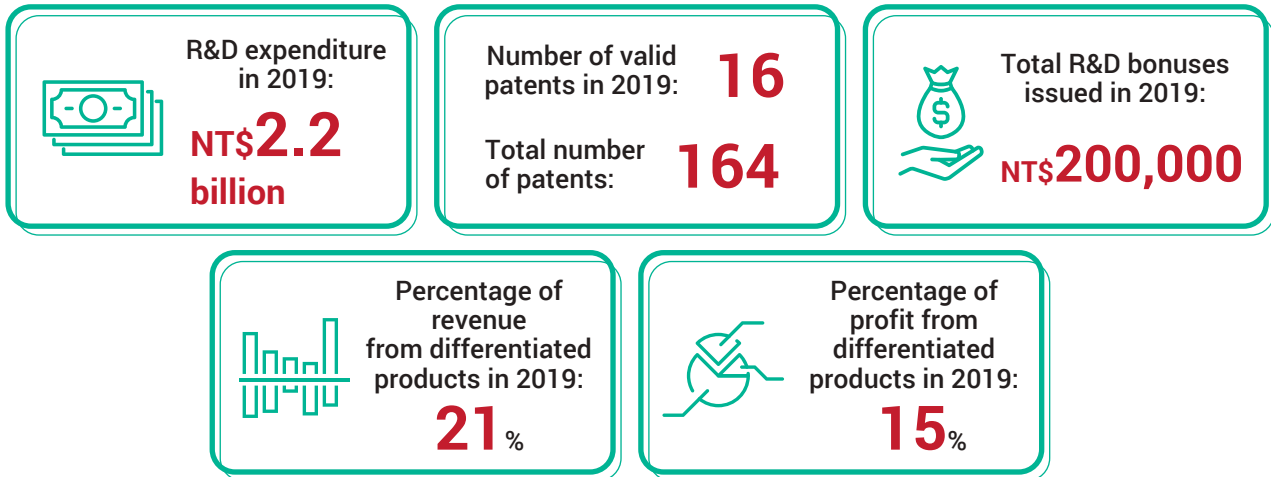
Policies and action plans:

1. Establish a R&D culture of "professional technical service"
2. Implement "vertical integration" R&D management
3. Encourage "innovative R&D" and commend the outstanding teams

Unit in charge:

1. President's Office
2. Technology department of each division

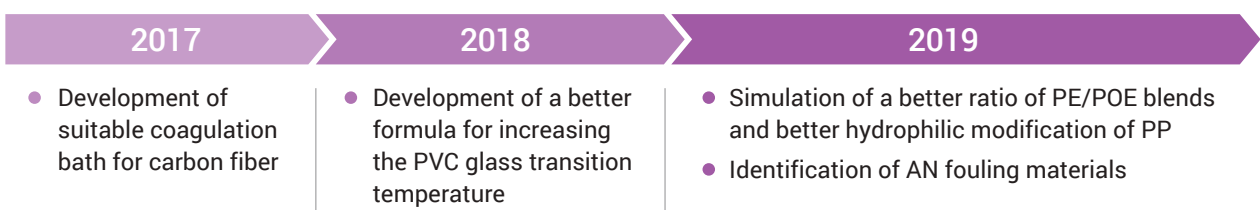




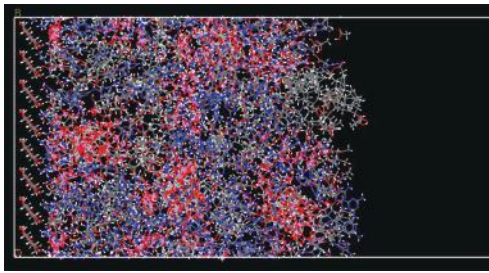
Development of Differentiated Products in 2019

Item	Product	Description
1	PVC emulsion for medical gloves	PVC copolymer, PR900G, is mixed with nitrile rubber (NBR) emulsion to produce new PVC/NBR medical gloves through the dipping process.
2	Urinary system sensor test kit	Polyamides can be used as the electrode substrate of H ₂ O ₂ to improve the electrode sensitivity, and can also be applied to biomedical sensors to expand their applicability and performance.
3	HDPE cap & closure grade	Low-odor 8040C for injection molding and 8020 for compression molding can be applied to the cap and closure of water bottles.
4	HDPE for floating solar platform application	In response to the trend in the renewable energy industry, HDPE for floating solar platform application is produced using HDPE 8001BL and 7301U.
5	Vinyl ester (VE) compatible carbon fiber sizing	Having the advantages of low cost and fast molding, VE carbon fiber composite can be applied in the automotive sheet molding compound (SMC) and wind power (pultruded) carbon fiber markets.
6	Biodegradable SAP	Eco-friendly SAP products
7	Medical grade PP	It is mainly used for injection-grade medical packaging containers such as solid medicine bottles and liquid medicine bottles.

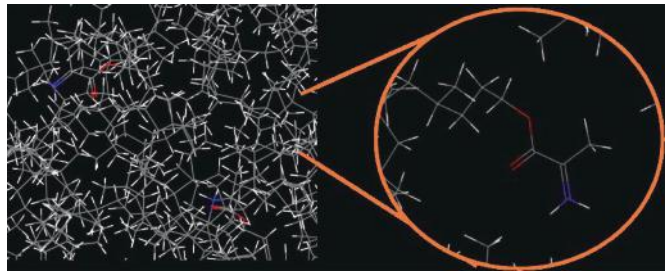
To accelerate R&D and commercialization, FPC has adopted an experimental approach that is different from the traditional one to the modification of old materials and development of new materials based on a mature theory and drawn support from the academia. In August 2016, FPC built a virtual lab to simulate and analyze chemical structures and polymers using computer cluster in hopes of developing high value-added and green products in a more innovative, economical, and eco-friendly way. We expect to further enhance the technology and competitiveness required to develop new products and markets. The R&D achievements in the past three years are described as follows:



Display of Virtual Lab's Simulation:



Foam expansion simulation



Monomer and polymer crosslinking



5th FPC Innovation Presentation Event in December 2019 at ITRI Liujia Campus

(1) Develop Advanced Technologies and Green Materials

To cultivate renewable energy professionals, FPC has forged a strategic industry partnership with the ITRI to develop third-generation dye-sensitized batteries. Since January 2020, a small amount of dye-sensitized batteries has been produced from the pilot production line at Shalun Smart Green Energy Science City in Tainan. For more information, please refer to "Local Industry Development" on our CSR website.



At the end of January 2019, FPC's "Capture and Reuse of Flue Gas" was granted the subsidy from the "A+ Industrial Innovative R&D Program" by the Ministry of Economic Affairs.



Industry-academia exchange with Texas A&M University in September 2019



Industry-academia exchange with Yamagata University in October 2019



Exchange with Dr. Shao-Tang Lee, an American expert in polymer foam in November 2019

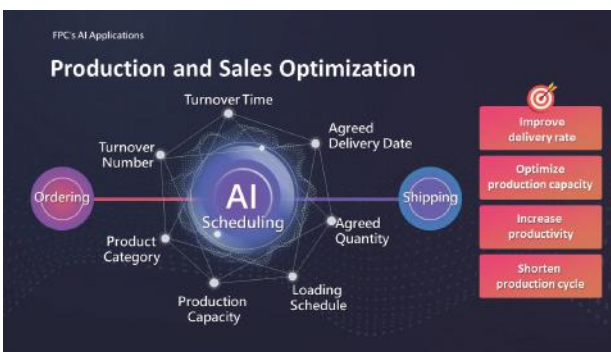


(2) Develop Artificial Intelligence

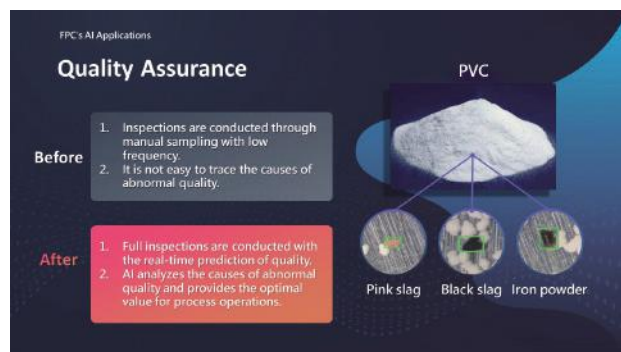
To integrate available resources across the Company for the development of artificial intelligence (AI), FPC set up the "AI Promotion Team" in June 2018. Inside the organization, the AI Promotion Team is tasked to hold AI contests and set up a platform for information exchange; outside the organization, it is responsible to introduce relevant AI technologies, seek technical resources from international companies, and organize cross-field technical exchanges. Going forward, the AI Promotion Team aims to develop high-performance computing servers, build a comprehensive data integration platform, and continuously improve machine learning algorithms in hopes of enabling AI applications across the Company.



AI Promote Team's five priorities



Production and sales optimization



Train AI models through historical process data and inspection data to predict quality status in real time



Number of AI projects in 2019:

91



Estimated investment amount:

NT\$390 million








Estimated annual benefit:

NT\$160 million

2.3.3 Product Safety and Health Responsibility 416-1

FPC is committed to reducing hazardous formulas, improving waste reduction in processes, and developing green products. With our products registered and certified in accordance with relevant laws and regulations, we are moving toward a manufacturer of non-toxic, eco-friendly products and renewable energy.

<p>European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)-registered</p> <p>PVC, PE, PP, polyoxymethylene (POM), methyl methacrylate (MMA), and n-Butanol</p>	<p>EU RoHS-certified</p>  <p>PVC, PE, PP, POM, and masterbatch</p>	<p>U.S. Food and Drug Administration (FDA)-certified</p>  <p>PE, PP, POM, and masterbatch</p>
<p>United States Pharmacopeia (USP)-certified</p>  <p>PE and PP (for medical products)</p>	<p>Japan Hygienic Olefin And Styrene Plastics Association (JHOSPA)-PL certified</p>  <p>PE and PP (for food packaging containers)</p>	<p>Food additive license</p>  <p>Liquid and flake caustic soda, hydrochloric acid and lime</p>

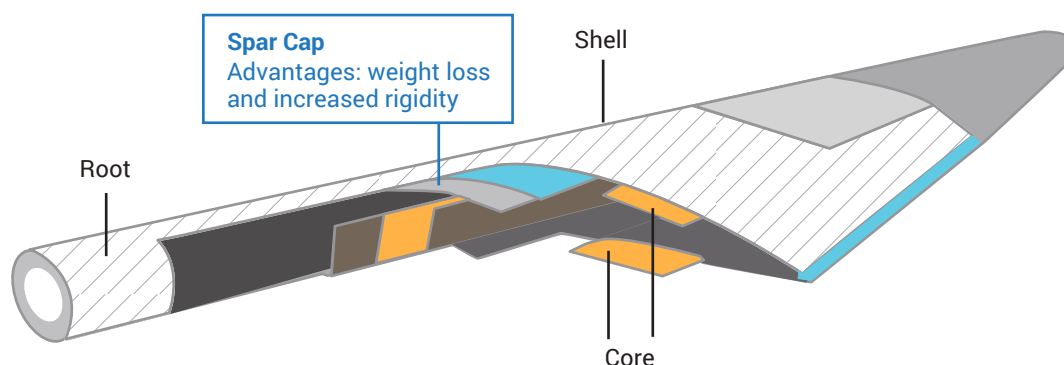
Green Energy:

In line with the government's renewable energy policy, FPC has expanded its business development in the green energy industry and signed the memorandum of understanding with international leading companies on the local production of wind turbine blade materials. In 2019, FPC furthered the certification of carbon fiber used for wind turbine blades.

Prospects of Taiwan's Offshore Wind Farms

The Taiwan Strait is rated as one of the world's best wind farms for offshore wind power generation. With an increase in the capacity of wind power generation, wind turbine blades have become larger. To prevent blades from deformation during operation due to the weight and insufficient rigidity, the spar cap design is converted from glass fiber to carbon fiber with strong rigidity.

Application of carbon fiber on parts of wind turbine blades



According to the Ministry of Economic Affairs' policies on wind power generation and local supply chain development, a capacity of 5.5 GW at offshore wind power farms is planned to be built by 2025. Given the estimated capacity of 6~9.5 MW among different turbine manufacturers, it is necessary to build more than 700 wind turbines, equivalent to about 3,000 tons of carbon fiber in Taiwan's wind power market.

Strength of FPC's Carbon Fiber

With an annual capacity of 7,650 tons, FPC is the world's sixth largest carbon fiber manufacturer with a vertically integrated supply chain and complete product specifications. Featuring long service life and relatively high power generation efficiency, the large tow product has excellent rigidity and is not easily deformed by rotation on the wind turbine blades; it has been successfully imported into major European and American wind turbine manufacturers. At present, the percentage of sales from wind power applications has exceeded 70%.

One and only in the world! FPC's vertically integrated supply chain for carbon fiber production



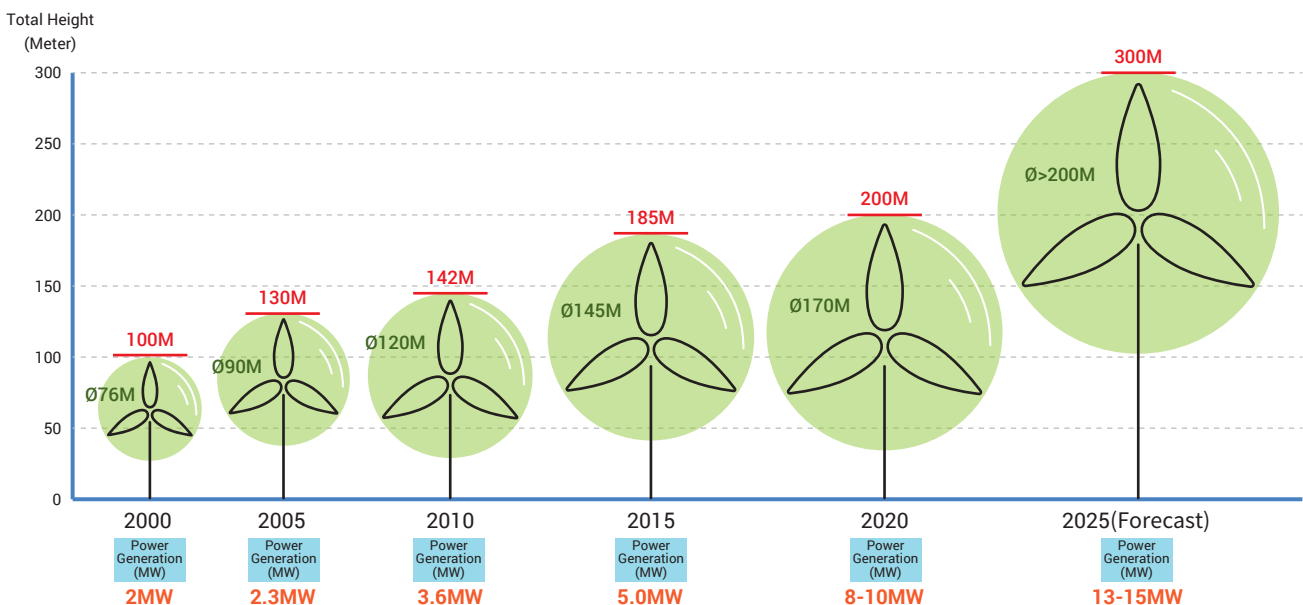
In addition to the wind power market in Taiwan, new offshore wind turbines in advanced countries such as the United States, Japan, and Germany have gradually increased in terms of blade size and capacity due to the advancement of offshore engineering technology and policy development. Compared with the existing scale, the wind turbine power is estimated to improve by 26%~58% by 2025. In the future, the costs of offshore wind power installations and power generation will be reduced through larger wind turbines, larger component standardization, more developed infrastructure, and larger wind farms. In step with outstanding geographic conditions for wind power generation and the government's support, FPC expects to accelerate the development of renewable-energy based power generation both in Taiwan and around the world with its high-quality carbon fiber.

Global prospects of offshore wind power generation

Estimated percentage of wind turbine power improvement by 2025:

26-58%

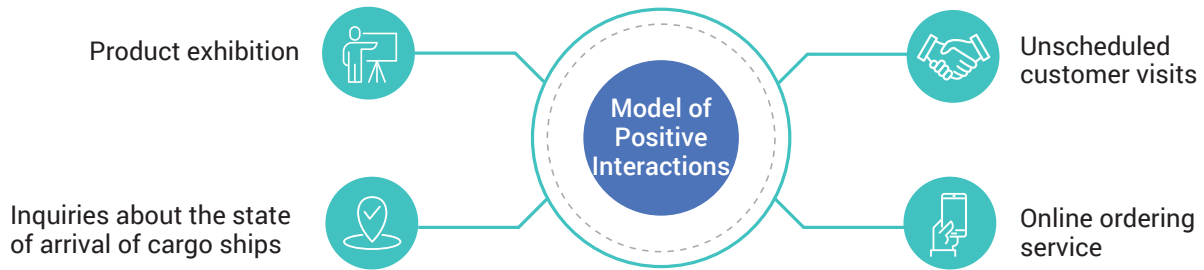
Super scaling of wind turbines



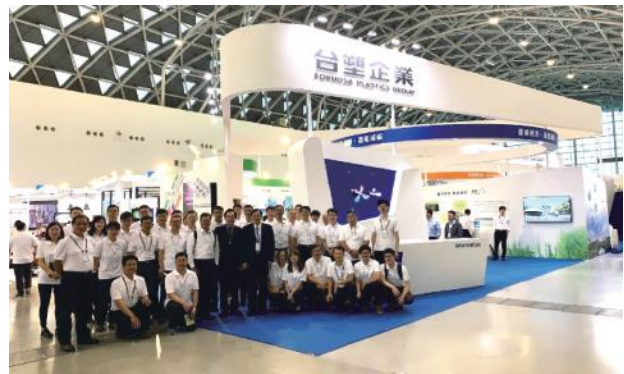
2.4 Customer Service

Maintaining good customer relations based on mutual growth is not only the responsibility of sales departments, but also the aim of all FPC's employees. By doing so, we expect to form a virtuous cycle and create a win-win situation for the Company and our customers.

2.4.1 Customer Relations and Privacy Protection 418-1



CHINAPLAS in Guangzhou in May 2019



Taiwan International Plastics, Rubber and Composites Show in August 2019

Customer Feedback and Response

To solve customers' inquiries and needs in a timely manner, FPC has set up "Contact Us" on the official website. Customers may make inquiries or comments by calling us or writing to an e-mail address listed on the official website. In case of return of goods and refunds, customers may express their feedback to sales representatives. The sales representatives will then fill out the "Customer Complaint Form" to handle the cases, so as to ensure that customers' requests are handled in a timely manner.



Information Protection

FPC has established the "Regulations Governing Personal Information Management," which requests all relevant departments to list personal data management as a self-inspection item. Only authorized personnel are allowed to check employee or customer information. Any personnel intending to get access to such information due to business needs must sign the "Application Form for Personal Information Collection, Processing and Use," while verification has to be carried out to ensure that such an application complies with the regulations before the personnel can access such information. Besides, the method of using such information is also strictly regulated. No violations related to information privacy were reported by clients in 2019.

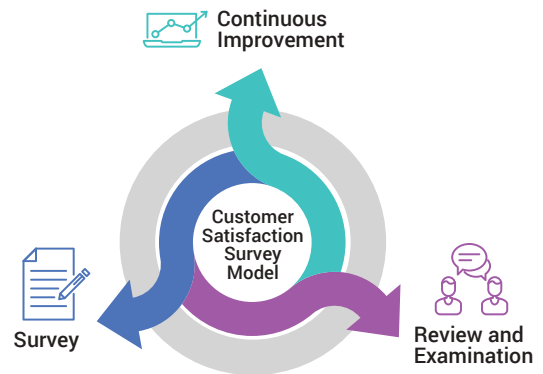
Stakeholder Communication and Feedback Mechanism



2.4.2 Customer Satisfaction Survey

To fulfill the requirements of ISO 9001 regarding quality commitment to customers and show FPC's focus on customer satisfaction, a satisfaction survey is conducted among FPC's domestic and foreign customers at least once a year. The survey questions are further modified based on the issues or areas of concern that customers have previously expressed.

Average satisfaction score in 2019



Note: 4 points or more is considered "satisfied."

According to the customer satisfaction survey in 2019, FPC's overall performance was 4.4, with only "product price" falling short of customers' expectations. This was mainly due to the increase in costs of raw materials, which subsequently led to an increase in product prices. The overall satisfaction from 2016 to 2019 was higher than the benchmark of "satisfied" (4 points). FPC incorporates customer feedback and suggestions into the operation policies, and strives to continuously improve the professional competencies and service attitude of the sales representatives and technicians to better meet customer expectations.

2.5 Response to Significant Economic Issues

102-44

102-47

1. FPC's Major Investment Plans

To enhance competitiveness, FPC is actively engaging in capacity expansion and debottlenecking projects. The following projects were completed in 2019:

- (1) The phase 3 polypropylene (PP) debottlenecking project with the annual capacity of 30 thousand tons at the Ningbo Complex: The annual production capacity will increase from 492 thousand tons to 522 thousand tons. This project was completed in the third quarter of 2019.

- (2) The acrylic acid (AA) debottlenecking project with the annual capacity of 20 thousand tons at the Ningbo Complex: The production capacity will increase from 320 thousand tons to 340 thousand tons. This project was completed in the first quarter of 2019.
- (3) Construction of the new high density polyethylene (HDPE) plant with the annual capacity of 400 thousand tons in Texas, USA: this project was completed in the third quarter of 2019.

The ongoing projects include:

- (1) The PVC debottlenecking project with the annual capacity of 37 thousand tons at the Linyuan Complex: The production capacity will increase from 1,265 thousand tons to 1,302 thousand tons. It is estimated that this project will complete, with the complex beginning operation, in the second quarter of 2020.
- (2) Construction of the new propane dehydrogenation (PDH) plant with the annual capacity of 600 thousand tons at the Ningbo Complex: It is estimated that this project will complete, with the complex beginning operation, in the third quarter of 2021.
- (3) The SAP debottlenecking project with the annual capacity of 10 thousand tons at the Ningbo Complex: The production capacity will increase from 90 thousand tons to 100 thousand tons. It is estimated that this project will complete, with the complex beginning operation, in the third quarter of 2020.

In response to the urban development of Kaohsiung City, the Dock Tank Complex in Qianzhen is to be relocated to the petrochemical zone of Kaohsiung Intercontinental Container Terminal (ICT) Project Phase 2. In 2014, FPC leased the petrochemical zone land and special dock with Port of Kaohsiung, Taiwan International Ports Corporation, Ltd. The Company will set up 12 storage tanks and 1 salt warehouse, which is scheduled to be completed in the second quarter of 2021.

2. Develop Green Plastics

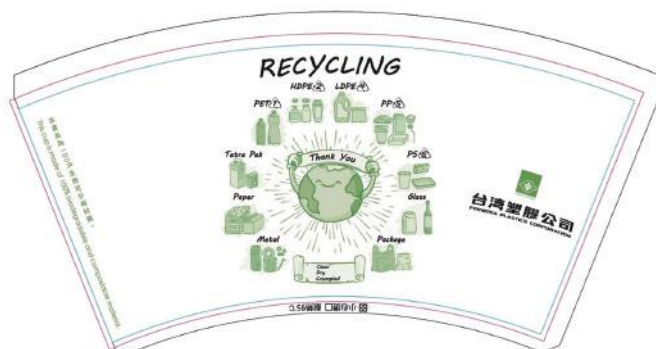
The need for biodegradable plastics has increased in response to global curbs on plastics and environmental trends. At present, however, there are only few suppliers of raw materials worldwide. To achieve corporate social responsibility, the Board of Directors resolved in June 2019 to acquire a 19% equity interest in Minima Technologies Co., Ltd., a Taiwan's leading brand of compostable products and resins.

Minima Technologies Co., Ltd. currently produces 4,000 tons of biodegradable compounds (particulate and colloidal) annually, mainly for its own use in the production of disposable consumer products such as tableware, paper cups, straws, and other degradable plastic products. The biodegradable compounds (particulate and colloidal) produced by Minima Technologies Co., Ltd. can be completely decomposed into water, CO₂, and organic carbon in a general environment for a maximum of one and a half years (in a composting environment within 180 days, which is in line with international standards) without causing any environmental pollution. After the Huwei Plant goes into operation in the second quarter of 2020, the annual capacity is expected to gradually increase to 20,000 tons.

At the same time, FPC will use the existing products of FPG such as PTA (pure terephthalic acid), butanediol, and maleic anhydride to develop the key raw materials of green plastics, namely, PBS (polybutylene succinate) and PBAT (polybutylene adipate terephthalate), facilitating the vertical integration of Minima Technologies Co., Ltd.'s supply chain and the popularization of green plastics. It is expected to further increase FPC's business scale and profitability.



Minima Technologies Co., Ltd.'s Certificate for Products

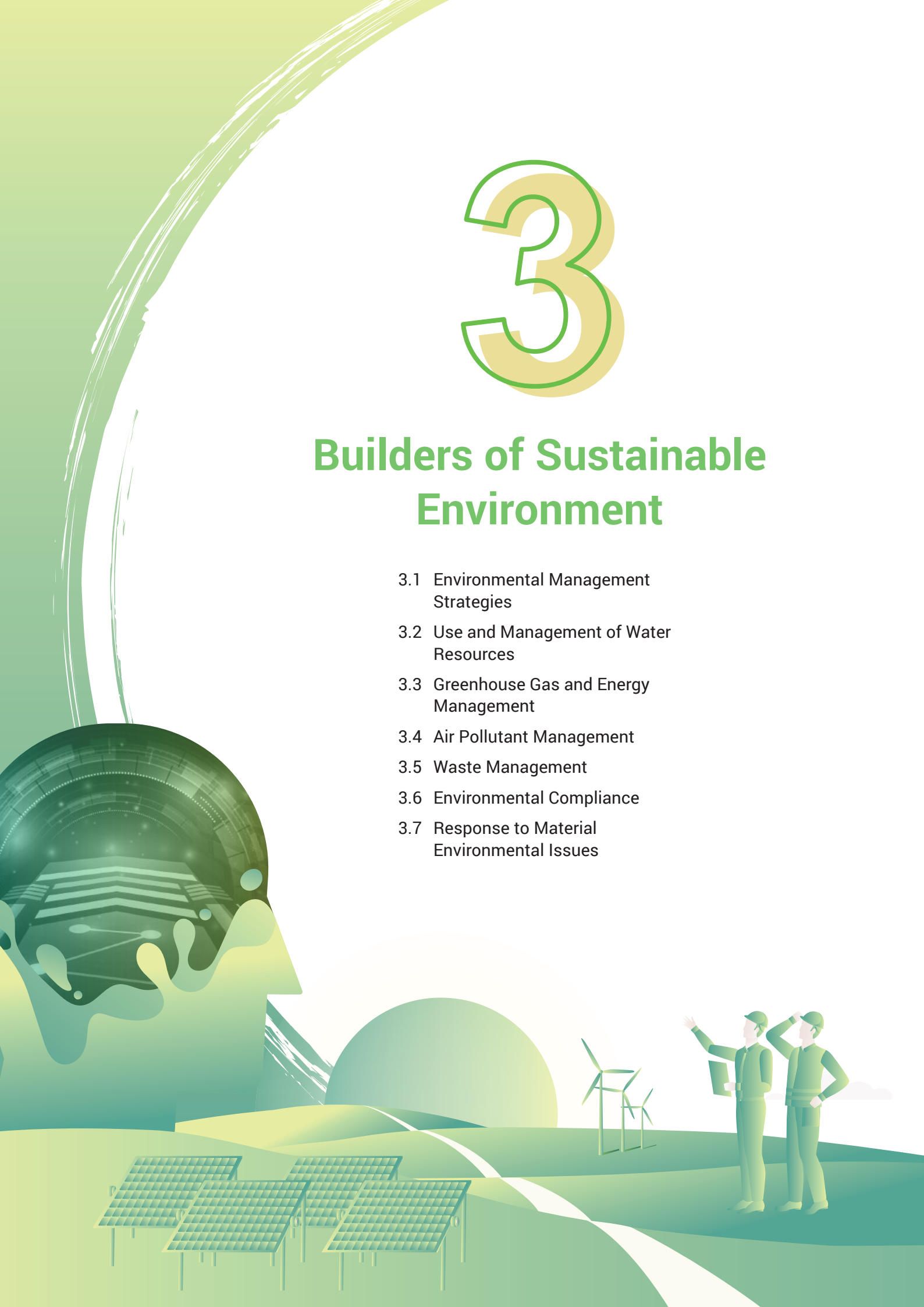


Paper cups made of biodegradable materials (sample)

3

Builders of Sustainable Environment

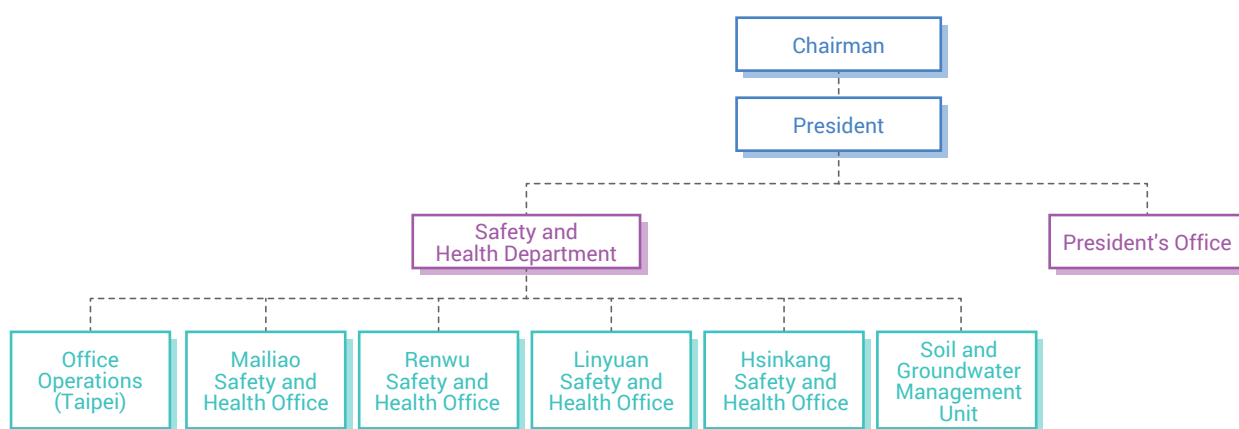
- 3.1 Environmental Management Strategies
- 3.2 Use and Management of Water Resources
- 3.3 Greenhouse Gas and Energy Management
- 3.4 Air Pollutant Management
- 3.5 Waste Management
- 3.6 Environmental Compliance
- 3.7 Response to Material Environmental Issues



3.1 Environmental Management Strategies

3.1.1 Environment, Health and Safety Organization and Management 403-4

The Environment Safety and Health Department, which consisted of 59 employees as of 2019, is responsible for issuing guidelines on overall safety, health, environment, and fire policies for the Company and implementing external operations. The Environment Safety and Health Department is supervised, assisted and assessed by the SHE Center under the Group Administration Office. Furthermore, safety and health centers have been established in each industrial complex to promote safe, health, environment, and fire management.



In addition, FPC holds SHE review meetings, safety and environment performance review meetings, the Occupational Health and Safety Committee meetings, and Safety and Health Coordination meetings on a regular basis. Top management, plant management, plant supervisors, SHE personnel and other employees, and contractors all participate in and conduct reviews in hopes of achieving zero hazard and zero pollution in the field of health and safety management and environmental protection.



3.1.2 Risks and Opportunities Arising from Climate Change 102-15

Every year, FPC collects data and analyze climate and energy risks and opportunities. Referring to the risk identification process under ISO 14001, FPC identifies and assesses risks and opportunities that may arise from climate change such as solar power installations, adoption of energy-efficient equipment, and development of energy saving or renewable energy products, so as to reduce the impact of climate change.

Identification and Assessment of Climate Risks

<h3>Operation</h3> <ul style="list-style-type: none"> • Flooding caused by heavy rain • Establish the water level monitoring system for real-time response 	<h3>Finance</h3> <ul style="list-style-type: none"> • Increase in electricity prices and operating costs • Increase the percentage of power generation through renewable energy and natural gas 	<h3>Compliance</h3> <ul style="list-style-type: none"> • GHG reduction targets under the Greenhouse Gas Reduction and Management Act • Replace equipment to improve the energy efficiency 	<h3>Reputation</h3> <ul style="list-style-type: none"> • Conflict between the Company and the public due to a shortage of water • Invest in rainwater harvesting and reuse of water resources
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Identification and Assessment of Climate Opportunities



Product and Service Innovation

- Develop materials required for renewable energy
- Produce carbon fiber to be used in wind turbines



Development of Renewable Energy

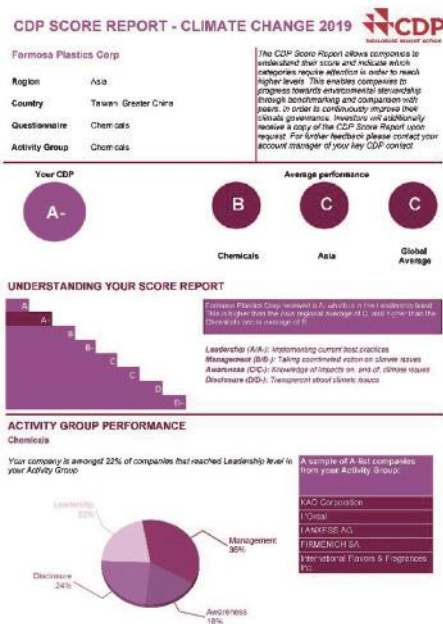
- Research and develop energy-saving or renewable energy products
- Research and develop dye-sensitized batteries



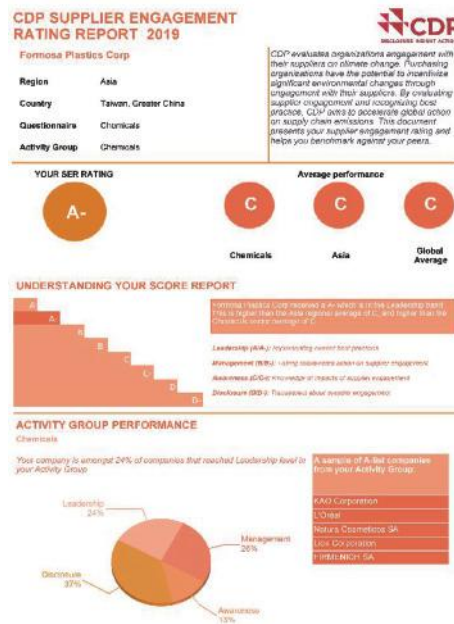
Utilization of Resources

- Promote circular economy, resource/energy integration, and waste recycling

Among 8,400 companies that were invited by the Carbon Disclosure Project (CDP) to participate in the climate change and supply chain projects, FPC was rated A- (Leadership), better than the international average, C (Awareness). For more information, please visit the CDP website.



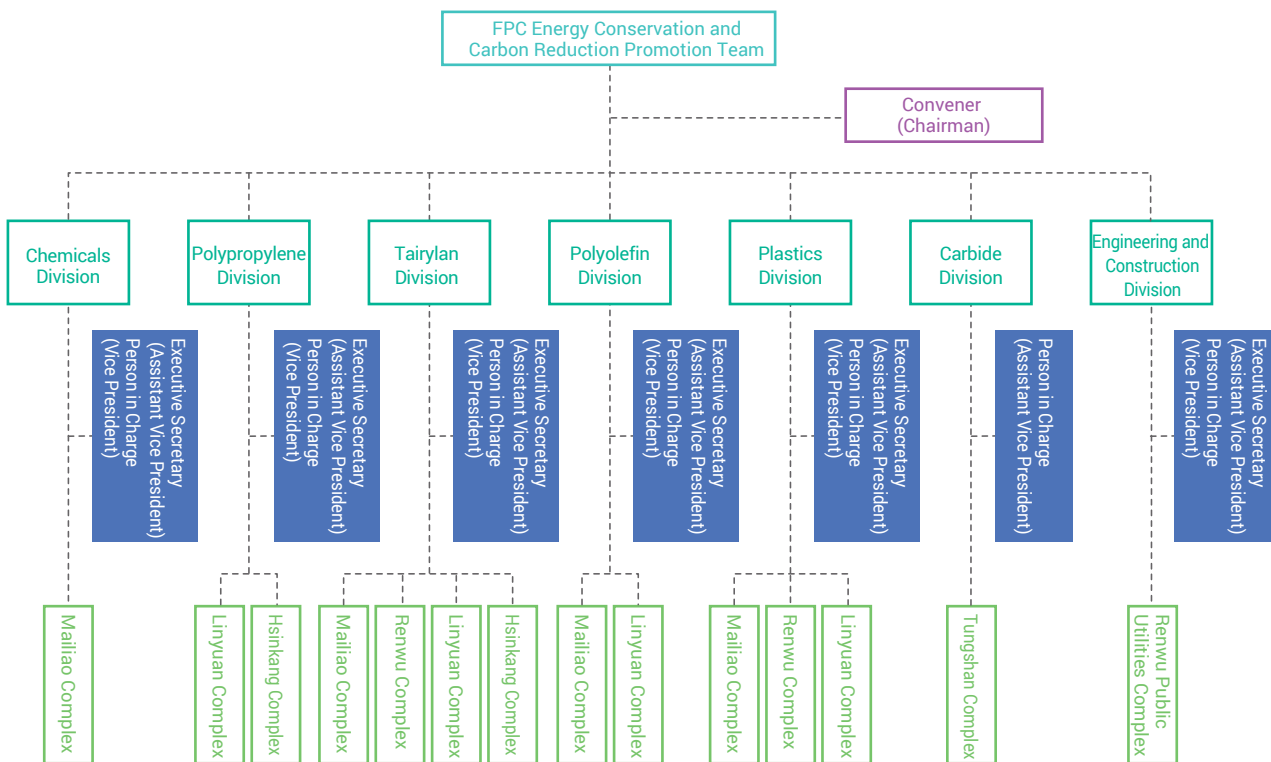
2019 Climate Change Project Score: A-



2019 Supply Chain Project Score: A-

3.1.3 The Energy Conservation, Carbon Reduction and Pollution Control Promotion Team

The Energy Conservation and Carbon Reduction Promotion Team was established in 2006, in which the Chairman assumes the position of convener, while heads of divisions assume the role of person in charge and executive secretary. This team is responsible for integrating company-wide resources to promote various water and energy conservation initiatives. We always have confidence in balancing the economic development and environmental protection.



3.1.4 Environmental Accounting

FPG is the first enterprise in Taiwan to directly include environmental benefits into the environmental accounting system. Our environmental costs in 2019 totaled NT\$2,655 million, of which the costs of green procurement, recycling and re-manufacturing of products produced or sold, and products and services derived from environmental protection initiatives, NT\$1,446 million, accounted for 54.5%. This indicates that FPC has placed great importance on environmental protection and strived to reduce indirect environmental impacts and effects.



3.2 Use and Management of Water Resources

103-2 103-3

Material Issue: Use and Management of Water Resources

Management Approach


Goals and targets: Set an annual target of 5% less than the average of the previous year

Commitment: Review each department's water reduction at the end of every quarter and request each department to improve continuously. Monitor groundwater on a regular basis to control the quality of soil and groundwater

Policies and action plans: Utilize various existing technologies and professional knowledge and follow the principles of source management, waste reduction during production processes, and end control in line with government regulations and administrative policies

Unit in charge:

1. Environment Safety and Health Department
2. President's Office at complex



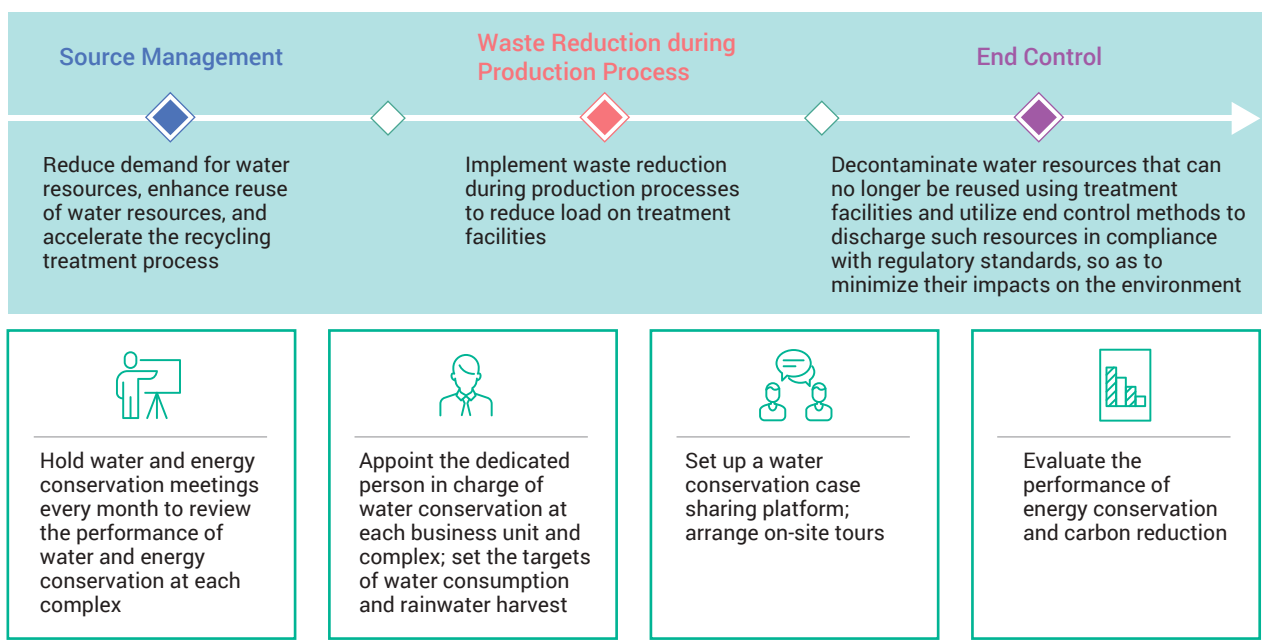
3.2.1 Water Resource Consumption and Reduction Management

303-1 303-2 303-3 306-1 306-5

The Company sources water from surface water (rainwater, river water, and tap water) and groundwater, and uses it in production as raw materials or solvents, as cooling water for equipment during the process, and as domestic water at the complexes.

In response to the government's environmental policy, each complex continued to implement circular economy by reducing water consumption or reusing water resources, or taking other measures such as improving the steam piping system to reduce wastewater, installing rainwater storage tanks to increase the amount of rainwater collected, improving the cooling system to reduce evaporation, and recycling cooling water to reuse wastewater.

Water Resources Management Measures

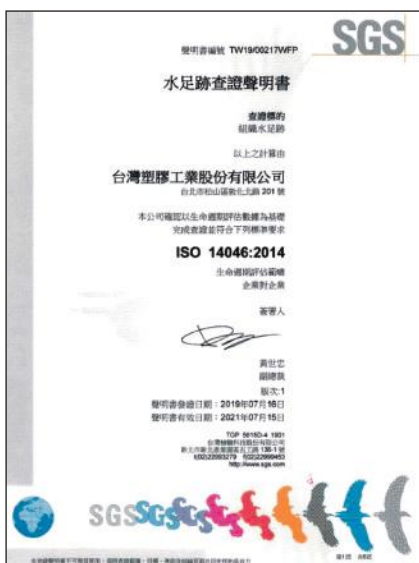


Evaluation Performance Rules

To strengthen the performance of energy and water conservation, the President's Office at Mailiao and Renwu Complexes respectively conducts the performance evaluation of energy conservation and carbon reduction every month according to the regulations of FPG and FPC and grants NT\$500/person and NT\$300/person, respectively, to the first place and the second place among departments; for the department with the worst performance, NT\$300/person is deducted from the bonus. In addition, NT\$50,000 is granted to the department with the best performance every year.

To truly recognize the actual amount of water used in the production, FPC authorized third parties, namely, SGS and BSI to conduct the water footprint verification at Mailiao, Renwu, Linyuan, Hsinkang, and Tungshan Complexes from March to July 2019. All verification items, including the source of water, water balance, and emissions, were certificated by SGS and BSI.

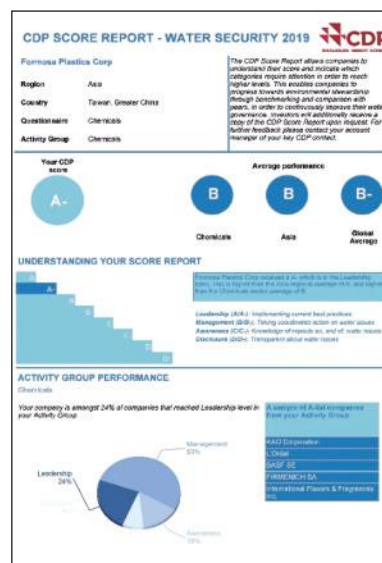
According to the CDP Score Report - Water Security 2019, FPC was rated A- (Leadership), better than the average score of other major chemical companies (B). This shows that our water management approaches and results and countermeasures for water scarcity, along with our endeavor to achieve corporate sustainability, were recognized by the world's top institutional investors.



SGS Water Footprint Verification Opinion Statement dated July 16, 2019



BSI Water Footprint Verification Opinion Statement dated August 4, 2019



2019 CDP Score on Water Security: A-

According to the monthly "Jiji Weir Industrial and Public Water Supply Report" of the Ministry of Economic Affairs' Industrial Development Bureau, the annual water supply of Jiji Weir in the past four years (2016-2019) ranged from 307,946 to 572,887 megatons. The average of industrial water consumption accounted for 2.1% of the total water supply, and water consumption transferred from agricultural water usage only accounted for 1.8%. The relevant water consumption is shown in the following table.

Statistics of Water Supplied by the Jiji Weir from 2016 to 2019

Unit: Ten thousand tons

Year	Inflow from the Jiji Weir (A)	Average Water Consumption of Agricultural Irrigation (B)	Industrial Consumption			
			Average Water Consumption (C)	Ratio of Water Consumption to Inflow (C)/(A)	Water Consumption for Agricultural Purposes (D)	Percentage of Water Consumption for Agricultural Purposes (D)/(B)
2016	510,257	227,234	9,976	2.0%	3,317	1.5%
2017	572,887	186,163	10,138	1.8%	3,328	1.8%
2018	307,946	182,450	10,256	3.3%	3,618	2.0%
2019	510,006	189,778	9,840	1.9%	3,301	1.7%
Average	475,274	196,406	10,053	2.1%	3,391	1.8%

Source: Annual Report of the Jiji Weir Operations, Central Region Water Resources Office, Water Resources Agency, Ministry of Economic Affairs.

Although water consumption at the Mailiao Complex does not supplant other industries and result in competition for water with farmers, in order to effectively utilize Taiwan's precious water resources, FPC not only strives for process improvement, enhancement of equipment effectiveness, optimization of operating conditions, and recycling and reuse of wastewater to increase water use efficiency, but also promotes recycling and reuse of rainwater at the same time.

FPC Water Withdrawal in 2019

Unit: Million liters

Category	Complex						Complex with Water Stress
	Renwu	Linyuan	Tungshan	Hsinkang	4th Complex	Mailiao	
Surface Water (A)	45.55	0	0	44.41	0	15,857.35	Mailiao
Groundwater (B)	10,542.40	0	334.82	0	0	0	
Third-party Water (C)	2,023.33	5,659.96	2.10	1,237.93	22.87	1,199.11	
Subtotal (A)+(B)+(C)	12,611.28	5,659.96	336.92	1,282.34	22.87	17,056.46	
Total Water Withdrawal	36,969.83						

Note 1: The amount of water withdrawal in 2019 was compiled by each complex and is yet to be confirmed with the third-party verification. The verification opinion statement is expected to be obtained in August 2020.

Note 2: Third-party water came from tap water; no seawater or produced water was withdrawn; the source of water withdrawal was all fresh water with total dissolved solids (TDS) of 1,000 mg/L or less.

Note 3: According to the results of water risk assessment, no data showed that any of our complexes was located in an area with water stress. In readiness for potential risks arising from water resources, we identified Mailiao Complex as complex with water stress whose third-party water came from surface water.

3.2.2 Water Conservation Performance 303-1

The water sources used in FPC's complexes mainly consist of surface water and groundwater. Under the condition of limited water resources, various measures are implemented to optimize and reduce water consumption, including reducing water use in production processes, water conservation, and reducing evaporation loss.

1. If the department's water consumption rate of the previous year is equal to or more than 100%, the annual target should be the department's net consumption of the previous year \times 95%.

2. If the department's water consumption rate of the previous year is less than 95%, the annual target should be the department's net consumption of the previous year.
3. If the department's water consumption rate of the previous year is equal to or more than 95% but less than 100%, the annual target should be the department's net consumption of the previous year \times 95% or the target of 2019, whichever is lower.

Compared to the previous years, the amount of water saved in 2019 increased on average mainly due to the effective improvement actions such as wastewater reduction, recycling, and rainwater harvesting.

FPC Water Conservation Performance (2016~2019)

Item \ Year	2016~2018 Achieved	2019 Achieved	2016~2019 Cumulative Amount	Early 2020 Ongoing	Total
Improvement (cases)	257	161	418	118	536
Volume of Water Conserved (Tons/day)	10,224	3,926	14,150	5,214	19,364
Investment (NT\$100 million)	3.20	1.09	4.29	4.89	9.18
Benefit(NT\$100 million/year)	0.54	0.19	0.73	0.24	0.97

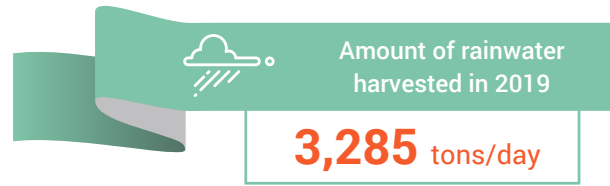
Source: FPG's SHE Database

With water consumption at the Mailiao Complex strictly regulated by the environmental impact assessment, FPC delivered water consumption performance better in 2019 than in 2018 mainly due to the effective recycling of domestic waste and improvement in process equipment performance.

Annual Production, Water Consumption and Unit Water Consumption at FPC's Mailiao Complex (2016~2019)

Item \ Year	2016	2017	2018	2019
Average Capacity (Tons/day)	14,541	15,531	15,344	15,345
Average Water Consumption (Tons/day)	43,341	44,264	44,374	43,445
Unit Water Consumption (Tons/ton)	2.98	2.85	2.89	2.83

To improve water efficiency, the Mailiao Complex continued to strengthen rainwater harvesting. Rainwater was effectively stored and reused through various methods such as increasing the rainwater collection surface area and modifying rainwater storage tank pipelines. The average amount of rainwater harvested from 2016 to 2018 was 2,465 tons/day; it reached 3,285 tons/day in 2019.



Note: Rainwater harvesting rate = Actual amount harvested / Theoretical amount harvested.
 Theoretical amount harvested = Rainfall x (Permeable layer area x 0.8 + Impermeable layer area x 0.2).
 Permeable layer runoff coefficient: 0.8; impermeable layer runoff coefficient: 0.2.

Rainwater Amount Harvested and Harvesting Rate at FPC's Mailiao Complex (2016~2019)

Item \ Year	2016	2017	2018	2019
Rainwater Amount Harvested (Tons/day)	2,415	2,605	2,376	3,285
Harvesting Rate (%)	64.4	79.8	98.1	110.2

3.2.3 Zero Wastewater Discharge

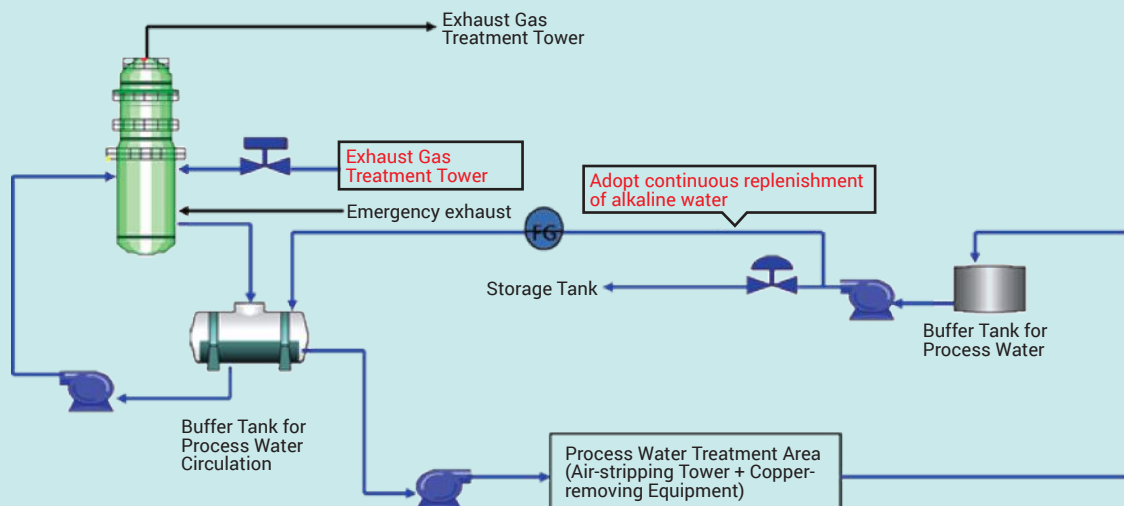
303-1 303-2 303-4 303-5 306-1

To maximize the effect of pollution prevention, it is necessary to reduce and recycle pollutants from the source. To this end, the President's Office is tasked to promote wastewater treatment technologies company-wide, develop and promote on-site wastewater treatment, and improve internal technologies. Taking the zero wastewater discharge plan, which is divided into four stages, namely, reduction from source, cooling water recycling, effluent recycling, and zero discharge of concentrated discharge, at the Renwu Complex for example, the Renwu Complex expects to invest NT\$1.2 billion in achieving zero wastewater discharge by 2023.



Case Study

The buffer tank of the exhaust absorption tower originally replaced circulating water with industrial water in batches to maintain the absorption of exhaust; alkaline water of the air-stripping tower removing EDC and metal ions was continuously added instead to achieve water circulation, which was expected to reduce wastewater by 12 CMD (cubic meters/day).



FPC's Water Discharge in 2019

Unit: Million liters

By Destination	Complex						Complex with Water Stress
	Renwu	Linyuan	Tungshan	Hsinkang	Mailiao	4th Complex	
Surface Water (a)	2,323.9	0	302.6	629.4	0	0	
Third-party Water (b)	1,864.9	2,491.2	0	0	6,782.5	0	
Sea Water (c)	0	0	0	0	0	11.8	
Subtotal (a)+(b)+(c)	4,188.8	2,491.2	302.6	629.4	6,782.5	11.8	
Total Water Discharge	14,406.3						

Note 1: Groundwater was not included in the destination of water discharge at each complex.

Note 2: The category of surface water discharge refers to fresh water with TDS equal to or less than 1,000 mg/L; the category of third-party water discharge includes other water with TDS greater than 1,000 mg/L and fresh water with TDS equal to or less than 1,000 mg/L that are disposed of by third parties according to law.

FPC's Water Consumption in 2019

Unit: Million liters

By Destination	Complex						Complex with Water Stress
	Renwu	Linyuan	Tungshan	Hsinkang	Mailiao	4th Complex	
Water Consumption	8,422.48	3,168.76	34.32	652.94	10,273.96	11.07	
Total Water Consumption	22,563.53						

Note 1: Due to the weather, the Tungshan Complex collected run-off for treatment based on the water pollution prevention permit, so the amount discharged was greater than the amount consumed.

Note 2: The discharge at the 4th Complex was based on the discharge at the discharge point. The coal loading/unloading sprinkle was not recyclable, and rainwater (area up to 4 hectares) was confluent and then discharged from the discharge point; as a result, the amount discharged was greater than the amount consumed.

3.2.4 Soil and Groundwater Management

FPC's soil and groundwater management has evolved from monitoring, investigation, and remediation to measures such as process water recycling to prevent soil and groundwater pollution. In recent years, FPC has sponsored the establishment of an information sharing platform for soil and groundwater pollution prevention technologies in cooperation with the government and academia (National Central University, National Chung Hsing University, and National Kaohsiung University of Science and Technology), so as to promote the concept and technology of soil and groundwater remediation.



Books about soil and groundwater remediation

More than 100 experts and scholars have joined in the platform and published two books about soil and groundwater remediation; another two books about remediation of chlorine-containing organic solvents and enclosure are now in preparation and expected to be published between 2020 and 2021. The purpose of the platform is to facilitate the discussions about land remediation in all social circles across Taiwan, further promoting land remediation in a rational and cooperative manner.

3.2.5 Water Pollution Prevention Measures 303-2 306-1

To maximize the effect of water pollution prevention, it is necessary to classify wastewater for management from the source. Taking the Renwu Complex for example, to deal with different types of wastewater, it has six wastewater treatment plants in place for organic and inorganic wastewater treatment, and also set up five monitoring systems to connect with local authorities in real time. The water quality monitoring results have been better than the statutory standards for five consecutive years.

In line with the Kaohsiung City Government's policy to build the Houjing River Park, FPC invested NT\$110 million in building 4.8 km of sea discharge pipelines in 2019 to discharge all sources of discharge at the Renda Industrial Park into the sea.

Effluent Quality Control in 2019

Complex	Water Volume (CMD)		pH			COD (mg/L)			SS (mg/L)		
	Permissible Volume	Amount Discharged	Statutory Standard	Internal Control Value	Mean	Statutory Standard	Internal Control Value	Mean	Statutory Standard	Internal Control Value	Mean
Renwu	44,744	11,476	6~9	6.5~8.5	8	100	90	55	30	25	10
Linyuan	12,050	7,500	6~9	7.5~8.2	7.6	100	70	50	30	20	10
Hsinkang	3,200	1,724	6~9	7.6~8.6	8.4	100	80	30	30	20	5
Tungshan	1,468	829	6~9	6.5~8.5	8	100	90	6.5	30	25	7
4th Complex	475	32.25	6~9	6.5~8.5	8	100	90	30	30	20	10

Note: According to the Water Pollution Control Act, only the Renwu Complex and Hsinkang Complex were required to set up the continuous water monitoring system (CWMS); however, CWMS was also set up at some of our other complexes for autonomous management or as requested by the Linyuan Industrial Park Service Center, Ministry of Economic Affairs.



3.3 Greenhouse Gas and Energy Management

103-2

103-3

Material Issue: Greenhouse Gas and Energy Management



Management Approach

Goals and targets:

Set the short-term, medium-term, and long-term GHG reduction targets in accordance with the "Greenhouse Gas Reduction and Management Act," the "Regulations for Periodic Regulatory Goals and Approaches of the Greenhouse Gas Emissions," and national policies

Commitment:

1. Implement energy conservation measures, including energy consumption reduction during the process, energy reuse, waste heat reuse, improvement in equipment efficiency, and energy management
2. Implement reductions in accordance with the "Greenhouse Gas Reduction and Management Act" and the "Regulations for Periodic Regulatory Goals and Approaches of the Greenhouse Gas Emissions"

Policies and action plans:

Maximize the utilization of energy through energy and resource integration across complexes and companies based on the idea of circular economy to achieve GHG reductions; report the performance of GHG reductions to the Senior Vice President or above for confirmation on a regular basis and include it in the corporate social responsibility reports for the Board of Directors' approval

Unit in charge:

1. Safety and Health Department
2. Set and review the annual target of energy consumption: When budgeting, each complex/department sets the annual target of energy consumption, reviews the performance every month, and reports specific energy issues for improvement.
3. Appoint the dedicated person in charge of process improvement: Each complex/department continuously improves material and energy consumption.
4. Encourage creative proposals: FPC has offered incentives ranging from NT\$300 to NT\$30,000, based on the benefits of the proposals, for employees to make IE improvement proposals.



3.3.1 Greenhouse Gas Inventory and Emission Intensity

305-1

305-2

305-4

To meet our corporate social responsibility and future requirements for GHG reductions, we commissioned the British Standards Institution (BSI) and SGS Taiwan to conduct Scope 1 and Scope 2 GHG inventories from 2006 to 2018 in accordance with ISO 14064-1:2006. The purpose of third-party verification is to ensure that GHG inventories are correct and can be used as a basis for future improvement in GHG reductions.

Scope 3 GHG inventory has been conducted since 2016. In 2018, we took a further step to commission the BSI and SGS Taiwan to conduct Scope 3 GHG inventories, with the scope expanded from three items to seven items, namely, fuel and energy activities, products and services purchased, upstream transportation and distribution, operating waste generated, business travel, employee commuting, and downstream transportation and distribution.



Greenhouse Gas Emissions in 2018 by Complex

 Unit: 10 thousand tons CO₂-e

Scope \ Complex	Renwu	Tungshan	Linyuan	Mailiao	Hsinkang	4th Complex	Total	Percentage (%)
Scope 1	246.4	14.8	67.1	54.2	1.1	0.0	383.6	43.4%
Scope 2	7.2	1.7	14.0	450.5	27.2	0.2	500.8	56.6%
Total	253.6	16.5	81.1	504.7	28.3	0.2	884.4	100.0%
Percentage (%)	28.7%	1.9%	9.2%	57.0%	3.2%	0.0%	100%	-

Source: 2018 GHG Verification Opinion Statement.

Note 1: The 2019 verification opinion statement is expected to be obtained in August 2020.

Note 2: The types of GHG emissions in Scope 1 included carbon dioxide, methane, nitrous oxide, and hydrofluorocarbon. The types of GHG emissions in Scope 2 were those of FPC's public utilities plant, FPC's public utilities plant, and Taiwan Power Company. GHG emissions were calculated based on emission factors after the boundaries had been determined using an operational control approach.

Note 3: According to EPA regulations, the second assessment report released by IPCC is used for inventory data before 2015 (inclusive), whereas the Global Warming Potential (GWP) of the fourth assessment report released by IPCC is used for inventory data starting from 2016. These data have already been certified by a third-party organization (BSI and SGS) while certification with reasonable assurance levels has been issued.

FPC's Scope 3 GHG Emissions from 2016 to 2018

 Unit: Tons CO₂-e

Boundary	2016	2017	2018
Mailiao Complex	2,102.8658	2,101.4640	2,575,591
Other Complexes (Renwu, Linyuan, Hsinkang, 4th Complex, and Tungshan)	4,662.3530	5,047.5350	8,827,153
Total	6,765.2188	7,148.9990	11,402,744

Note 1: The 2019 verification opinion statement of Scope 3 is expected to be obtained in August 2020.

Note 2: The verification items in 2016 and 2017 included waste generated from operations, business travel, and employee commuting. The verification items in 2018 included fuel and energy activities, products and services purchased, upstream transportation and distribution, operating waste generated, business travel, employee commuting, and downstream transportation and distribution.

GHG Emissions at FPC from 2015 to 2018

 Unit: Tons CO₂-e

Year	Scope 1	Scope 2	Scope 3	Subtotal	Emission Intensity (Tons CO ₂ -e/NT\$100 Million)
2015	4,322,415	4,857,117	NA	9,179,532	5,724.09
2016	4,061,443	4,871,848	6,765	8,940,056	5,968.29
2017	4,060,474	5,183,854	7,149	9,251,477	5,433.29
2018	3,836,493	5,008,477	11,402,744	20,247,714	10,699.13

Source: GHG verification opinion statements and FPG Greenhouse Gas Inventory Database. The 2019 verification opinion statement is expected to be obtained in August 2020.

Note: The verification items in 2016 and 2017 included waste generated from operations, business travel, and employee commuting. The verification items in 2018 included fuel and energy activities, products and services purchased, upstream transportation and distribution, operating waste generated, business travel, employee commuting, and downstream transportation and distribution.

In response to the government's renewable energy policy, FPC invested NT\$43.87 million in building two sets of solar power systems with a total of 1,669 solar panels on the rooftops of the welfare building and the parking building, respectively, at the Renwu Complex. The total annual power supply reached 666,000 kWh. As of February 2020, the total power generation reached 1.518 million kWh, and the total CO₂e reduction reached 809 tons (based on the electricity factor of 0.533 kg CO₂e/kWh announced in 2018).

3.3.2 Improvement in Energy Conservation

302-3

302-4

305-5

 Energy Conservation Performance at FPC in 2019

Category \ Item	Amount Conserved	2019		Estimated Investment Benefit (NT\$100 Million/Year)	Estimated Greenhouse Gas Reduction (Ten Thousand Tons CO ₂ -e/Year)	Energy Intensity (Product Unit Consumption)
		Improvement Completed (Number of Cases)	Investment (NT\$100 Million)			
Steam	47.4 tons/hour	110	1.60	3.47	12.26	0.52 ton/ton
Electricity	12,243 kWh/hour	365	5.50	1.63	6.37	281.58 kWh/ton
Fuel	341.23 tons/hour	2	5.12	0.83	100.80	-
Total	-	477	12.22	5.93	119.43	-

Source: FPG SHE Database.

Note 1: Scope 1 covered steam and fuel; Scope 2 covered electricity. The types of GHG emission reduction included carbon dioxide, methane, nitrous oxide, and hydrofluorocarbon.

Note 2: In 2019, the "Energy Conservation Improvement through Replacement Operations at Energy Recovery Sites" was completed at the Renwu Public Plant, improving incinerators to recover heat. It reduced fuel consumption by 341 tons/hour, and the estimated GHG reduction was 1,002,200 tons/year.




 Electricity Savings Completed in 2019

Type	Number of Cases	Electricity Savings (kWh/Hour)	Million Joules
Energy management	71	772	24,345,792
Improvement of equipment efficiency	189	6,990	220,436,640
Energy consumption savings	102	1,637	51,624,432
Others	3	123	3,878,928
Total	365	9,522	300,285,792

Source: FPG SHE Database.

Note: Additional electricity was saved by 2,721 kWh/hour mainly due to steam, water and fuel saving cases.

Since 2020, 399 new improvements have been added, with an estimated amount of 27.56 tons/hour in steam savings, 13,105 kWh/hour in electricity savings, 0.29 tons/hour in fuel savings, and 147.4 thousand tons CO₂-e/year in GHG reductions. The total amount of investment is NT\$1.556 billion, with an annual benefit of NT\$409 million, where:

-  An estimated amount of 4,927 kWh/hour in electricity savings can be achieved through "Oxygen Workshop Process Supply from Oriental Union Chemical Corporation" at the Linyuan Public Plant.
-  An estimated amount of 2.89 tons/hour in steam savings can be achieved through "Heat Recovery Improvement for VCM Quench Tower" at the Mailiao PVC Plant.
-  An estimated amount of 0.23 ton/hour in fuel savings can be achieved through "Energy Conservation Improvement for Cracking Furnace B" at the Mailiao VCM Plant.

3.4 Air Pollutant Management

103-2

103-3

Material Issue: Air Pollutant Management

Management Approach

Goals and targets: Implement air pollution controls and improvements to prevent air pollution incidents, in the hope of achieving the annual goal of zero pollution

Commitment: Comply with environmental laws and regulations in Taiwan: adopt BAT and BACT during the complex design; adopt the best air pollution control equipment and implement waste exhaust gas reduction, VOCs reduction, and odor control during production

Policies and action plans: Upholding the business philosophy of balancing safety, health, and environment and economic development, FPC implements various environmental initiatives in line with the "Safety/Health/Environment Policy" approved by the Chairman, and demonstrates its commitment to a safe and healthy environment to neighboring residents to win the understanding and support from the public. Please refer to our official website.

Unit in charge:

1. Safety and Health Department
2. FPC includes environmental protection in the performance evaluation and deducts the performance bonus in case of any abnormalities.



Case Study

To ensure the accuracy of CEMS monitoring data, FPC commissioned a German third-party institution (TÜV Rheinland) to verify and check the CEMS (system audit), monitoring data (data audit), and functions (performance audit) in 2019. The on-site audit is scheduled in 2020.

3.4.1 Air Pollution Monitoring and Assessment

305-7

413-2

(1) Air quality

To keep abreast of various environmental indicators in real time at the Mailiao Complex, FPC sets out to establish a comprehensive environmental monitoring network consisting of eight layers of intensive monitoring control by referencing local prevailing wind directions. This allow us to track emission sources quickly, thereby ensuring local air quality. For more information on air pollution management and prevention, please refer to our CSR website.



(2) Air quality impact analysis

To monitor the air quality, FPC purchased six sets of Fourier-transform infrared spectroscopy (FTIR), three of which were stationed at Mailiao, Renwu, and Linyuan Complexes; the other three sets are mobile, which can effectively and immediately detect abnormalities for improvement at the complexes.

Number of abnormalities detected in 2019 **20**

Improvement Rate **100 %**



Stationed FTIR



Mobile FTIR (e.g., turnaround and abnormality detection)

3.4.2 Air Pollution Control Measures

305-5

305-7

FPC strives to reduce air pollution by adopting the best available technology and air pollution control equipment, and appointing two employees (better than the statutory requirements) to be in charge of air pollution control (including one proxy) at each unit. The air pollution control personnel are required to pass the national examination to ensure the effectiveness of air pollution control measures at each complex. At present, FPC's pollution control results have surpassed national standards and are on a par with the performance of global optimization standards.

Improvements in Exhaust Emissions

Boiler Exhaust Quality

- We use imported coke breeze with a sulfur content of 0.4% to 2.0%.
- Most of combustion facilities have converted heavy oil into natural gas or process exhaust gas.

VOCs Reduction

- FPC seals and collects exhaust gas from storage tanks to combustion equipment for treatment.
- We use Gas Find IR for on-site detection of equipment components.

Air Pollution Reduction

- In addition to ensuring that various pollutants comply with environmental protection regulations, FPC has also continued to promote air pollution reduction projects.

Improvement in Visual Pollution

- A medium gas-gas heater (MGGH) is used to heat tail gas of the chimney to eliminate white smoke and reduce PM2.5 emissions.





Use Gas Find IR for on-site detection



Seal and collect exhaust gas from storage tanks to combustion equipment for treatment



MGGH before improvement



MGGH after improvement

Air Pollutant Emissions at FPC in 2019

Unit: Ton/Year

Air Pollutant	Complex						Total
	Renwu	Linyuan	Mailiao	Hsinkang	Tungshan	4th Complex	
Sulfur Oxides (SOx)	518.231	171.596	324.086	0.791	1.321	0	1,016.025
Nitrogen Oxides (NOx)	964.839	310.352	257.591	0.521	124.325	0	1,657.628
Volatile Organic Compounds (VOC)	25.268	87.024	243.259	22.609	8.878	9.077	396.115
Total Suspended Particles (TSP)	178.407	50.623	41.939	1.134	11.296	0	283.399

Source: EPA Air Pollution, Wastewater and Waste Declaration Website.

Improvements in Air Pollutant Emissions in 2019

Complex	Improvement	Type of Air Pollutant
Mailiao n-Butanol Plant	After evaluation, waste oil was recycled to replace light oil for the POX reactor.	VOC
Mailiao HDPE Plant	Hexane was recycled from the polymerization tank dry area.	VOC
Mailiao Epichlorohydrin Plant	Waste propylene from the buffer tank was recycled and decomposed.	VOC

3.5 Waste Management

3.5.1 Waste Disposal and Management

Following the principles of source management, waste reduction during product processes, and end control, FPC minimizes waste output and maximizes resource recovery. Taking the waste thermal insulation cotton at the Mailiao Complex for example, FPC commissioned the recycling company to produce recycled materials/pellets for trench backfilling, reducing 232 tons of landfill in 2019.

In 2019, FPC generated 63,345 tons of industrial waste, among which 31,766 tons were general industrial waste that could be incinerated or buried, while 2,040 tons were hazardous industrial waste. After waste classification, recycling and reuse, 29,539 tons were recovered as resources, accounting for 46.6% of the total waste generated. The ways of treatment of industrial waste are as follows:

Item	Resource Recovery	General Industrial Waste	Hazardous Industrial Waste	Total
Output (Tons)	29,539	31,766	2,040	63,345
Percentage	46.6%	50.2%	3.2%	100%

Source: The Industrial Waste Report and Management System, Environmental Protection Administration.

FPC's Treatment of General Industrial Waste in 2019

Unit: Ton

Item	Outsourced Treatment	In-house Treatment	Total	Percentage
Physical Treatment	3,270	277	3,547	11.2%
Landfill Treatment	89	9,259	9,348	29.4%
Incineration Treatment	10,508	6,389	16,897	53.2%
Other Treatments	1,974	0	1,974	6.2%
Total	15,841	15,925	31,766	100%

FPC's Treatment of Hazardous Industrial Waste in 2019

Unit: Ton

Item	Outsourced Treatment	In-house Treatment	Total	Percentage
Solidification Treatment	61	512	573	28.1%
Incineration Treatment	1,271	6	1,277	62.6%
Physical Treatment	190	0	190	9.3%
Total	1,522	518	2,040	100%

3.5.2 Disposal and Management of Hazardous Substances

To manage hazardous substances at each complex (including the EPA's controlled chemical substances and hazardous chemical substances), FPC strictly requires that all management personnel should obtain professional and technical licenses and that all complexes should be equipped with detection and alarm systems. Unused EPA's controlled chemical substances are managed as hazardous industrial waste.

Number of waste disposal contractor inspections in 2019 **116**

Number of treatment contractor inspections in 2019 **21**

In 2019, FPC worked with nine qualified waste disposal contractors and four treatment contractors and conducted inspections and visits from time to time to ensure that hazardous industrial waste was properly disposed of.

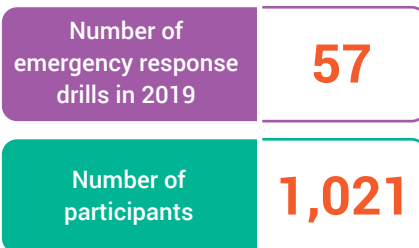
For EPA's controlled chemical substances (toxic chemicals), we have appointed more professional management personnel (holding valid licenses) than the statutory requirements at each complex.

Complex	Statutory Number of Professional Management Personnel		Registered Number of Professional Management Personnel at FPC in 2019
	Grade A	Grade B	
Mailiao	Grade A	1	9
	Grade B	1	1
Hsinkang	Grade A	1	2
Renwu	Grade A	1	11
	Grade B	1	-
Linyuan	Grade A	1	4
	Grade B	1	-
4th Complex	Grade A	1	2

According to the amendment to the Regulations of New and Existing Chemical Substances Registration on March 11, 2019, 106 chemical substances should be registered. FPC's ammonia and acrylic acid are included in the controlled chemical substances, and their manufacturing or import situation, category and labeling, and toxicology and ecotoxicity should be registered. FPC expects to complete the registration by the end of 2021.

3.5.3 Hazardous Substance Prevention and Emergency Response Exercise

In 2019, FPC organized emergency response drills for EPA's controlled chemical substances at all complexes (including factory sites and transportation). The content of these drills consisted of notification, evacuation, disposal, testing, etc.; the focus at factory sites was familiarity with emergency response procedures, the use of personal protection equipment, and verifying whether the response equipment was in good condition. FPC also commissioned a third-party institution (the Southern Center for Emergency Response of Toxic Substance) to conduct the tank transportation drill.



Emergency Response Drills



Use an inflatable leak-proof pad to stop the tank truck leak



Stop the chlorine cylinder valve leak

3.6 Environmental Compliance

103-2

103-3

Material Topic: Environmental Regulatory Compliance



Management Approach

Goals and targets: Environmental protection and pollution prevention are the corporate responsibilities. FPC strictly abides by the environmental laws and regulations to achieve the goal of zero penalty.

Commitment: Strictly abide by the environmental laws and regulations at home and abroad; inquire into the roots of environmental violations and improve accordingly, and clarify possible misunderstanding of environmental issues in accordance with laws.

Policies and action plans: Upholding the business philosophy of balancing safety, health, and environment and economic development, FPC implements the "Safety/Health/Environment Policy" approved by the Chairman, demonstrating its commitment to a safe and healthy environment to neighboring residents. For the Safety/Health/Environment Policy, please refer to FPC's official website.

Unit in charge:

1. Environment Safety and Health Department
2. FPC includes environmental protection in the performance evaluation and deducts the performance bonus in case of any abnormalities.

FPC Website:
Environmental Policy



3.6.1 Penalties for Violation of Environmental Regulations

307-1

Belonging to the petrochemical industry, FPC is one of the primary inspection targets of both central and local environmental protection agencies. In 2019, we committed 14 environmental violations, including one major environmental violation (major violations are defined as single events penalized with a fine of NT\$1 million or more) and other minor environmental violations. In the future, FPC will continue to propose improvement measures in safety, health, and environmental management in hopes of further reducing the number of environmental violations and the amount of fines.

Number of Environmental Violation Cases and Penalty Amounts at FPC from 2016 to 2019

Unit: Case, in NT\$10,000

Type of Environmental Violation	2016		2017		2018		2019	
	Number of Cases	Amount	Number of Cases	Amount	Number of Cases	Amount	Number of Cases	Amount
Air Pollution	2	20	11	115	6	80	13	215
Water Pollution	0	0	0	0	1	204.6	0	0
Waste Pollution	1	0.15	1	6	3	7.2	0	0
EPA's Controlled Chemical Substances	0	0	0	0	0	0	0	0
Soil and Groundwater ^(Note)	0	0	0	0	1	20	1	1,601.5
Subtotal	3	20.15	12	121	11	311.8	14	1,816.5

Note: After verifying the groundwater pollution at the Renwu Complex in 2009, the Environmental Protection Bureau, Kaohsiung City Government imposed a fine of NT\$80.83 million odd in 2011 for FPC's delay of remediation for illegal gains. FPC took emergency response and remediation measures upon discovering pollution, so it found the penalty improper. Following FPC's administrative lawsuit, the Kaohsiung High Administrative Court revoked the penalty in 2014. In 2019, the Kaohsiung City Government imposed a fine of NT\$16.01 million odd once again, FPC filed another administrative lawsuit on October 22, 2019. The case is currently being tried by the Kaohsiung High Administrative Court.

3.7 Response to Material Environmental Issues

102-44

(1) Trip of VCM tank truck safety valve at the Linyuan Complex

On the early morning of November 7, 2019, a fire occurred due to the safety valve of the VCM tank truck tripping during unloading at the Linyuan Complex. The fire sprinkler was immediately turned on for fire isolation and protection. The fire was extinguished within 2 minutes of occurrence. The complex stopped operation safely without causing any personal injury or affecting other process plants at the complex or other companies in the industrial park.

On the same day, the Environmental Protection Bureau, Kaohsiung City Government and the Center of Consultation on Response to Disasters Caused by Hazardous Chemical Materials under the Environmental Protection Administration conducted air and environmental quality monitoring on-site and detected no vinyl chloride. FPC was terribly sorry about unrest caused in the community, and it looked into the cause of the incident for immediate improvement, so as to avoid recurrence in the future.

(2) FPG's response to the United Daily News reporting that "Yunlin, Chiayi, and Tainan has the most serious air pollution problems"

On July 12, 2019, the United Daily News reported that Yunlin, Chiayi, and Tainan has the most serious air pollution problems. According to the Deputy CEO of Citizen of the Earth, Taiwan, Yunlin showed the highest average value of PM2.5 due to the Mailiao Industrial Park's discharge of pollutants while Chiayi City and Tainan City were downwind, resulting in serious air pollution problems. This was inconsistent with the results of surveys conducted by the EPA and professional institutions. FPG clarified the media report as follows:

1. According to the 2017 Air Quality Improvement System Establishment Plan (second year) conducted by the EPA, 36.6% of PM2.5 concentration in Yunlin, Chiayi, and Tainan was affected by external transmission, and the percentage of PM2.5 concentration caused by stationary sources, traffic, and surface sources (e.g., dust and cooking fume) was 19.3%, 20.0%, and 18.8% respectively; in particular, the percentage of PM2.5 concentration caused by the petrochemical and electricity industries at the Mailiao Industrial Park was 5.94%.
2. As to the impact of Mailiao Industrial Park's discharge of pollutants on PM2.5 concentration in Yunlin, Chiayi, and Tainan, the EPA-reviewed study on "Project-responsive Air Quality Planning at the Mailiao Industrial Park" indicated that only 0.44%~2.34% of PM2.5 concentration in Yunlin, Chiayi, and Tainan was affected by the Mailiao Industrial Park's discharge of pollutants; other major sources of pollution included diesel vehicles (13.3%~16.7%), gasoline vehicles (7.6%~11.5%) and dust (5.31%~8.82%).
3. In summary, there were multiple sources that affected the air quality in Yunlin, Chiayi, and Tainan, similar to the description of the Environmental Protection Bureau, Yunlin County on July 12, 2019. The Mailiao Industrial Park was not the main source of pollution.

FPG's Mailiao Complex has always strived to balance the economic development and environmental protection by keeping air pollution under proper control. We welcome people from all walks of life who are concerned about the operation of Mailiao Complex and related environmental issues to visit us on-site and give advice.

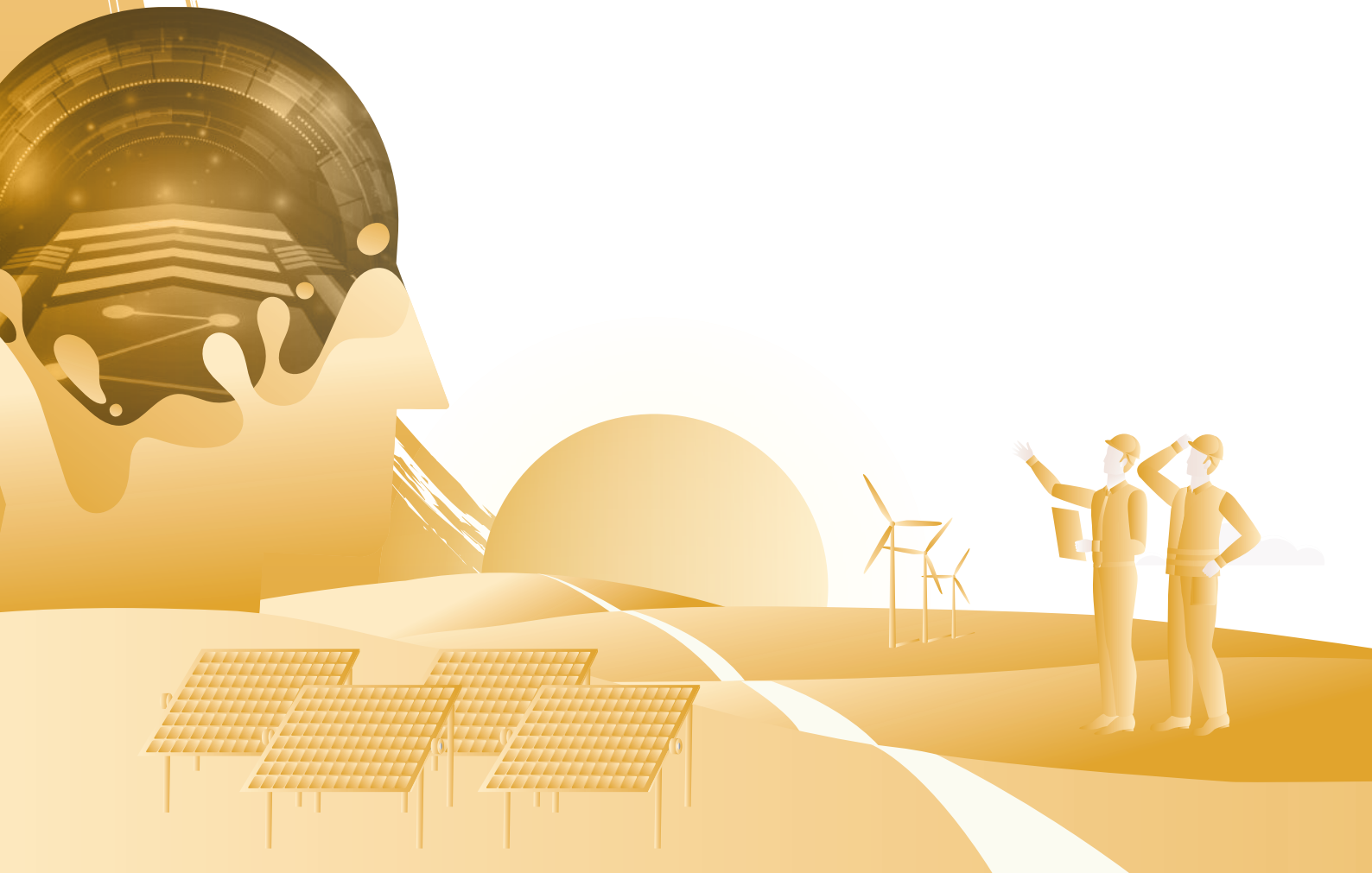
(3) Response to the media report on FPCUSA's discharge of pollutants

Regarding the media report on FPCUSA's discharge of pollutants on July 8, 2019, the United States Federal Courts found it a violation of the Clean Water Act. FPCUSA has reached a comprehensive settlement with the plaintiff. In the next five years, FPCUSA will invest US\$50 million in promoting public welfare in the region. To operate as a responsible corporate citizen, FPCUSA will pursue safe and eco-friendly production and ensure that all environmental protection measures taken are better than the standards of the petrochemical industry.

4

Builders of Happy Talent

- 4.1 Human Resource Policies and Employee Composition
- 4.2 Employee Rights, Benefits and Training



4.1 Human Resource Policies and Employee Composition

102-8

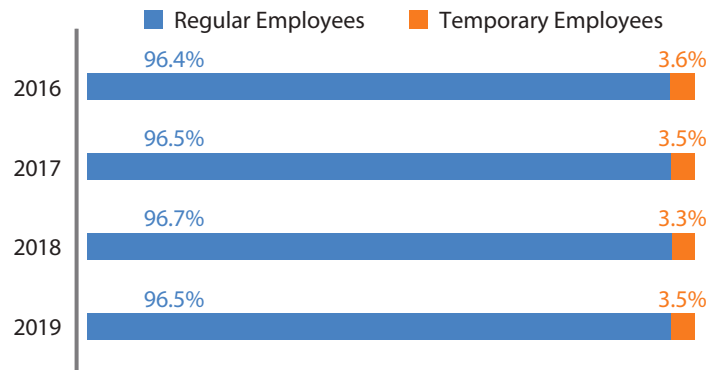
4.1.1 Manpower Structure

401-1

In 2019, there were 6,240 regular employees at the Company, accounting for 96.5% of the total number of employees. On the other hand, there were 227 temporary employees such as consultants, contract employees, and part-time student workers, constituting 3.5% of the total number of employees. Over the past four years, the annual percentage of regular employees has remained above 95%, while 100% of them were local employees.

Due to the characteristics of the industries to which FPC belongs, the ratio of male to female employees is approximately 9.7:1. Meanwhile, the average age of employees is 43.0 years old, while the average length of service is 17.13 years. Our employees are mostly in the 30 to 49 years old age group, indicating that our colleagues put their trust in FPC and have grown identification with the Company. Our senior colleagues also play the role of mentors for new recruits in order to upgrade the organization.

Percentages of Regular Employees and Temporary Employees from 2016 to 2019



Manpower Structure of FPC in 2019

Unit: Person

Category	Group	Regular Employees		Temporary Employees		Total
		Number of People	Percentage	Number of People	Percentage	
Position	Management level and above	3	0.5%	41	0.7%	44
	Management levels 1 and 2	76	13.0%	1,302	23.0%	1,378
	First-line supervisor level	106	18.1%	1,582	28.0%	1,688
	Assistant and staff level	400	68.4%	2,730	48.3%	3,130
	Total	585	100.0%	5,655	100.00%	6,240
Location	Northern Taiwan	202	34.5%	454	8.0%	656
	Central Taiwan	144	24.6%	2,492	44.1%	2,636
	Southern Taiwan	231	39.5%	2,576	45.6%	2,807
	Eastern Taiwan	8	1.4%	133	2.3%	141
	Total	585	100.0%	5,655	100.00%	6,240

Category	Group	Male		Female		Total
		Number of People	Percentage	Number of People	Percentage	
Age	Below 29	73	12.5%	651	11.5%	724
	30~49	360	61.5%	3,518	62.2%	3,878
	50 and older	152	26.0%	1,486	26.3%	1,638
	Total	585	100.0%	5,655	100.00%	6,240
Length of Service	Less than 10 years	181	30.9%	2,115	37.4%	2,296
	11~30 years	258	44.1%	2,771	49.0%	3,029
	More than 30 years	146	25.0%	769	13.6%	915
	Total	585	100.0%	5,655	100.00%	6,240
Education	Doctor's degree	7	1.2%	33	0.6%	40
	Master's degree	94	16.1%	820	14.5%	914
	Bachelor's degree	88	15.0%	980	17.3%	1,068
	Others	396	67.7%	3,822	67.6%	4,218
	Total	585	100.0%	5,655	100.00%	6,240

Description of Positions

Position	Job Title
Management Level and Above	President, Executive Vice President, Senior Vice President, Vice President, Assistant Vice President, etc.
Management Level 1	Plant Manager (Department Manager), Deputy Plant Manager (Deputy Department Manager), Senior Engineer (Senior Administrator), etc.
Management Level 2	Section Chief, Deputy Section Chief, Engineer (Administrator), etc.
First-line supervisor level	Shift Supervisor, Junior Engineer (Junior Administrator), Foreman, etc.
Assistant and Staff Level	Staff and clerks whose titles are fixed according to their appointments

In 2019, a total of 190 regular employees resigned from FPC, including 45 employees (approximately 23.7%) who retired and 49 employees (approximately 25.8%) with early retirement. Over the past four years, the annual employee turnover rate has remained below 4%, and the overall turnover rate after deducting all retirees has been about 1.54%, which is significantly lower than that of our peers. This shows the effects of our commitment towards employee care and employment security.

Age and Area Distribution of FPC's Resigned Employees in 2019

Unit: Person

Category	Group	Male		Female	
		Number of People	Percentage	Number of People	Percentage
Age	Below 29	6	0.10%	27	0.43%
	30~49	7	0.11%	51	0.82%
	50 and older	0	-	54	0.87%
	Retirement	4	0.06%	41	0.66%
Area	Northern Taiwan	10	0.16%	16	0.26%
	Central Taiwan	2	0.03%	56	0.90%
	Southern Taiwan	5	0.08%	98	1.57%
	Eastern Taiwan	0	-	3	0.05%
Total		17	0.27%	173	2.78%
Percentage of Resigned Employees by Gender		8.95%		91.05%	

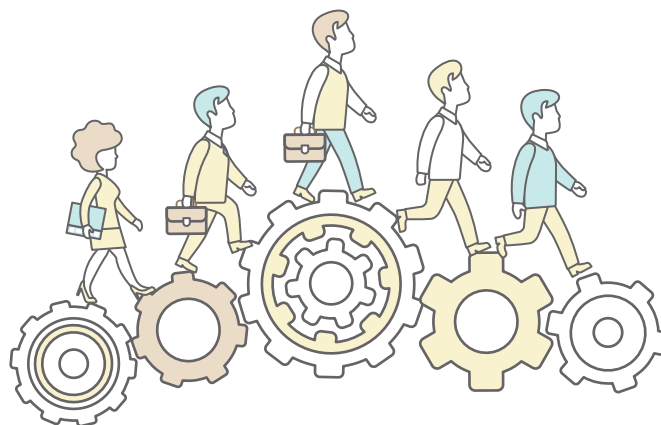
Comparison of Employee Turnover Rate Between FPC and Peer Industries over the Past Four Years

Unit: %

Industry	Year	2016	2017	2018	2019
Formosa Plastics Corporation		3.6	3.5	2.5	2.3
Petroleum and Fuel Manufacturing		8.7	7.8	8.5	11.6
Chemical Material Manufacturing		13.0	12.0	11.3	13.9
Plastic Products		24.6	26.6	22.7	25.2

Note 1: Source of industry information: Directorate-General of Budget, Accounting and Statistics (time series data query - exit rate).

Note 2: FPC: Turnover rate = (Retired + Deaths + Layoffs + Others) / Total number of employees at the end of the year.



4.1.2 Employee Recruitment

202-2 401-1

FPC expands enrollment sources through multiple channels, and candidates are selected without differential treatment based on factors like age, ethnicity, gender, sexual orientation, religion, partisanship, birthplace, marriage, appearance, or physical and mental disabilities. In 2019, a total of 265 new employees were recruited, with 219 new employees aged under 30 years old, accounting for 83% of the total number of new employees.



Age and Area Distribution of New Employees in 2019

Unit: Person

Category	Group	Number of People		Percentage	
		Number of People	Percentage	Number of People	Percentage
Age	Under 30	28	0.45%	191	3.06%
	30~49	7	0.11%	39	0.63%
	50 and older	0	0%	0	0.00%
Area	Northern Taiwan	12	0.19%	28	0.45%
	Central Taiwan	9	0.14%	79	1.27%
	Southern Taiwan	13	0.21%	120	1.92%
	Eastern Taiwan	1	0.02%	3	0.05%
Total		35	0.56%	230	3.69%
Percentage by Gender		13.21%		86.79%	

FPC provides appropriate work for people with physical and mental disabilities, and their remuneration standards are the same as those of new employees in the same position to protect their rights and interests.

Year	Statutory Number of People with Disabilities Employed (A)	Number of People with Disabilities Employed by FPC (B)				Excess or Insufficiency (B-A)
		Mild	Moderate	Severe or Above	Total	
2019	60	44	14	15	88	+28

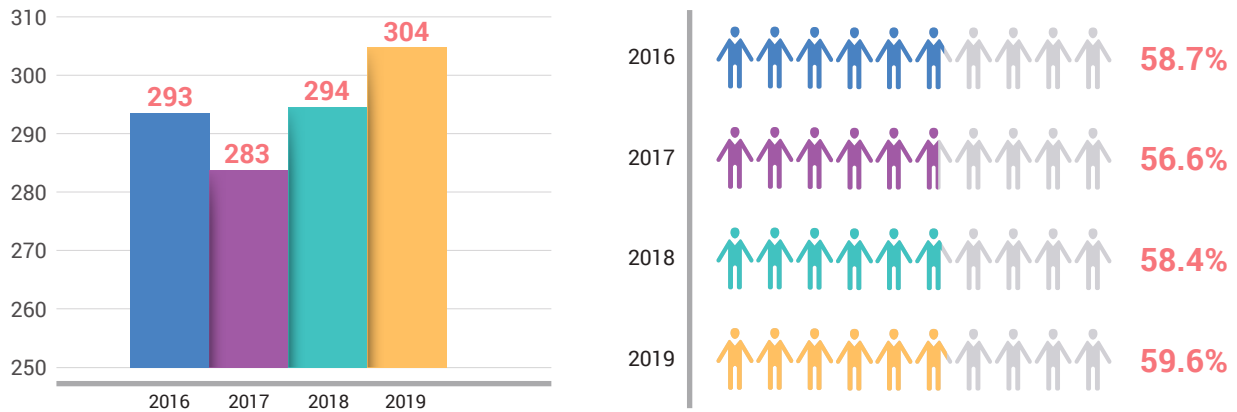
Note 1: According to Article 38 of the People with Disabilities Rights Protection Act, any company whose total number of employees is no less than 67 shall employ people with disabilities with capability to work, and the number of employees with disabilities shall be no less than 1 percent of the total number of the employees (under labor insurance), and no less than 1 person.

Note 2: According to the People with Disabilities Rights Protection Act, when a company employs a person with severe disabilities, the person shall be calculated as two.

With the continuous development, FPC has created job opportunities for the locals. We give priority to local residents in the recruitment of new employees; in addition, we also actively nurture outstanding local supervisors. Hence, the percentage of local residents at a senior management level has remained over 55% over the past four years.

Percentage of Local Residents at Senior Management Level over the Past Four Years

Unit: Person



Note: High-level executives refer to the percentage of personnel with positions above Management Level 1 (inclusive) having household registration in the same county/city in which the complex is located.

4.2 Employee Rights, Benefits and Training

103-2 103-3 201-1 401-2

Material Topic: Employee Benefits and Remuneration

Goals and targets: Attract and retain outstanding talents

Commitment: Provide competitive remuneration packages, a sound insurance system, and the same salary conditions for both men and women

Policies and action plans:

1. Set the remuneration standards for new recruits based on their education and work experience; continue to improve remuneration packages by adjusting salaries and promoting employees appropriately based on the performance evaluation system
2. Contribute to the pension reserve at the prescribed proportion and grant the pension and souvenirs to employees when they meet the statutory conditions for retirement

Unit in charge: HR Unit

Management Approach

4.2.1 Human Rights Management

FPC never uses child labor or illegal labor. In 2019, there were no incidents of discrimination based on the race, gender, religion, political party, or sexual orientation, sexual harassment, or bullying in the workplace. In addition, Chairman Jason Lin signed a new version of the human rights policy in August 2019.

Number of human rights training courses held in 2019






37

Training Courses Held at Complexes in 2019

Complex	Round	Theme	Hours	Number of Participants	Total Hours
Tungshan	3	Labor Laws and Labor Rights	8	136	1,088
Mailiao	26	Labor Rights and Effects of Labor Law Amendments	4	1,775	7,100
		Effects of the Labor Incident Act and Responses	4	1,716	6,864
Hsinkang	1	Overview of the Labor Incident Act and Labor Movements	16	34	544
Renwu	4	Controversy and Reflection in the Era of Globalization - Working Conditions in Taiwan	8	934	7,472
Linyuan	3	Labor Rights and Health Seminar	8	527	4,216
Total	37	-	-	5,122	27,284

4.2.2 Employee Benefits and Compensation 202-1 401-2

Remuneration Ratio of Male to Female Employees in Similar Positions and on Similar Ranks at FPC over the Past Four Years

Year	—	2016	2017	2018	2019
Gender					
Management Level and Above	1	0.75	0.73	0.73	0.73
Management Levels 1 and 2	1	1.46	1.41	1.36	1.36
First-Line Supervisor Level	1	1.22	1.19	1.19	1.19
Assistant and Staff Level	1	1.20	1.19	1.17	1.17

To recruit outstanding talent, FPC offers competitive remuneration packages. The ratio of the minimum monthly salary to the statutory minimum basic salary for the newly recruited staff is 104%, and the salary may be adjusted based on the education and work experience.



Minimum Wage in 2018
Announced by Ministry
of Labor **100%**



Average Monthly Salary
of Newly Recruited
Staff in 2019 **178%**

Based on the overall business operation, FPC sets the same standard for the year-end bonus and salary adjustment for all regular employees to encourage the staff to continuously work professionally in order to improve the business performance. The number of regular employees other than managerial officers, average annual salary, and median annual salary over the past two years are compared below.

Item	2018 (A)	2019 (B)	Percentage (C=B/A)
Number of Regular Employees Other than Managerial Officers	5,991	6,005	-
Average Annual Salary (NT\$)	1,406,379	1,397,418	99.4%
Median Annual Salary (NT\$)	1,279,118	1,272,362	99.5%

To provide employees a quality and sound workplace, FPC has implemented a number of welfare measures that are superior to the standards stipulated by the law, including employee welfare, health care benefits, employee regards, and expatriate welfare. For more information on employee benefits, please visit our CSR website.



Founder Commemoration & Family Day



Basketball Competition

4.2.3 Unpaid Parental Leave 401-3

With the purpose of implementing the concept of a happy workplace, FPC has not only established breastfeeding rooms at each complex, but also promoted the unpaid parental leave program to provide parental leave so that our colleagues who meet the requirements of the program can adjust their working hours based on their needs. In 2019, a total of four employees applied for unpaid parental leave and eight employees were actually reinstated in the year, with a reinstatement rate of 88.9%; in addition, two employees were reinstated in 2018, and both of them remained in FPC for more than one year, with a retention rate of 100%.

Unpaid Parental Leave Applications and Reinstatement Rates in the Past Four Years

Unit: Person

Item	2016			2017			2018			2019		
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
Number of Applications for Unpaid Parental Leave by Eligible Employees	27	344	371	17	298	315	18	276	294	18	290	308
Actual Number of Applications for Unpaid Parental Leave	2	0	2	2	1	3	9	0	9	3	1	4
Number of Employees Reinstated in the Current Year (A)	4	1	5	2	0	2	3	0	3	9	0	9
Number of Employees Who Applied for Reinstatement in the Current Year (B)	4	1	5	2	0	2	2	0	2	8	0	8
Reinstatement Rate (B/A)	100%	100%	100%	100%	-	100%	66.7%	-	66.7%	88.9%	-	88.9%
Retention Rate (%)	100%	-	100%	100%	100%	100%	100%	-	100%	100%	-	100%

Note: "Retention rate" indicates the rate of employees who remain at the Company for more than one year, after taking unpaid parental leave.

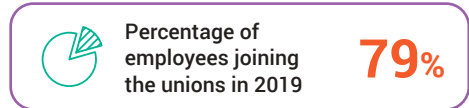
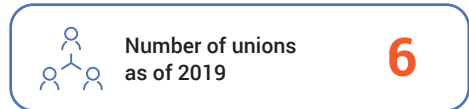
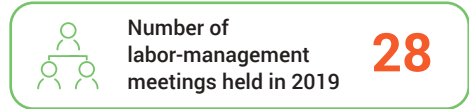
4.2.4 Employee Communication and Care

FPC announces its business operations on a regular basis in accordance with laws and regulations for the employees to understand the development of the Company. For a special need (e.g., significant operational changes), the employees will be informed within the prescribed time limit to implement labor-management communication. For more information, please visit FPC's official website.

To establish harmonious labor-management relations, FPC has provided multiple channels of communication to encourage employees to come up with innovative ideas. Employees can make recommendations for better living conditions to the Company through labor unions, welfare committees, and labor-management meetings.

Furthermore, we have appointed counselors for newly recruited reserve supervisors or personnel who are under special conditions to regularly provide concerns and help them overcome work and life-related difficulties in order to allow them progress with stability and reduce the rate of staff turnover.

FPC had a total of 4,910 employees who joined the unions in 2019. Even if employees do not join the union, their rights such as salary adjustments and year-end bonuses are protected by the agreement signed between FPC and the employees. For more information on multiple channels of communication, please visit our CSR website.

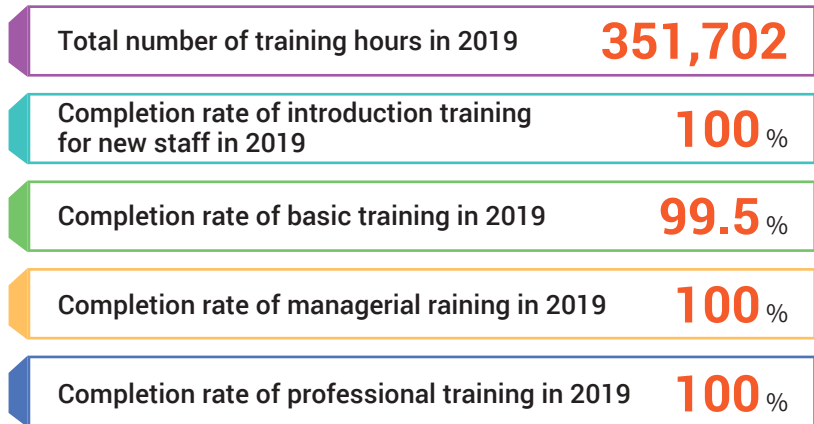


4.2.5 Diversified Training and Performance Management

The scope of performance appraisal includes all regular employees. Work performance is regularly assessed every month, which is then used as the benchmark for efficiency bonus. On the other hand, work performance is compiled at the end of the year as a reference for managers to carry out year-end performance appraisal of employees in order to ensure the objectivity of such appraisal. In addition to the regular promotion evaluation, employees with outstanding performance are not only provided with opportunities and channels for promotion and salary increment, but also awarded year-end bonuses based on the business performance of FPC (FPG) and individual employee performance appraisal. Through performance management, we link individual goals and company goals, creating a win-win situation for both FPC and employees.

FPC has developed a set of comprehensive training programs and recorded relevant training data through the electronic training platform in order to implement the goal of providing all-round training for employees. For more information on education and training categories, please refer to our CSR website.





In response to the emergence of AI and big data or their applications, FPC has assigned employees to participate in the training courses organized by Taiwan AI Academy established by Academia Sinica and Taiwan Data Science Foundation since 2018, so as to keep abreast of the latest trends and applications. In addition to the existing training courses, FPC holds seminars on specific topics from time to time.



Number of participants in AI training in 2019 **1,574**

Total number of AI training hours in 2019 **67,239**



Seminar on Global Economic Outlook in April 2019



Seminar on 5G and Quantum Technology in July 2019

Employee Training Hours at FPC over the Past Four Years

Unit: Hour/person

Year	Position	Management Levels 1 and 2	First-Line Supervisor Level	Staff Level	Company-Wide Average Hours
2016	Female	13.5	26.0	18.3	19.3
	Male	29.8	49.3	55.3	48.0
	Total	29.3	47.9	50.4	45.4

Year	Position	Management Levels 1 and 2	First-Line Supervisor Level	Staff Level	Company-Wide Average Hours
2017	Female	13.9	23.2	18.0	18.6
	Male	25.9	46.9	59.8	48.6
	Total	25.3	45.5	54.5	45.8
2018	Female	15.3	32.5	19.4	21.3
	Male	26.3	47.5	56.7	47.2
	Total	25.7	46.6	52.0	44.8
2019	Female	47.5	46.8	27.0	33.3
	Male	44.2	66.2	58.6	57.4
	Total	44.3	64.9	54.6	55.1

Note 1: Since FPC falls into the petrochemical material manufacturing industry and due to the complicated nature of production equipment and considerations for industrial safety, the operators' training hours are higher. On-site operations are mainly conducted by male employees, so male employees have clocked more training hours than female employees.

Note 2: In 2019, FPC further organized basic AI training, practical AI training, and AI seminars, as well as external courses of Taiwan AI Academy for managerial officers and employees; therefore, overall training hours increased.

In addition to basic training, managerial training is organized annually for employees who will soon meet the qualifications for promotion to management levels 1 and 2. In 2019, the number of managerial training hours totaled 4,842.

Training Data of Management Levels 1 and 2 Officers in 2019

Item	Round	Hours per Round (Hour)	Number of Participants (Person)	Training Hours (Hour)
Management Level 1	8	24	53	1,272
Management Level 2	7	30	119	3,570

Note: To strengthen management trainees' in-depth knowledge of the Company' operations and future developments, FPC added required courses such as enterprise competitiveness, international economic analysis, and artificial intelligence.

In-depth Seminar Courses for Supervisors and Managers

Other than deepening the professional competencies of employees at all levels, FPC also organized two seminar courses on Design Thinking and Innovation & AI for supervisors and managers in 2019, in the hope of offering new knowledge so as to broaden their perspectives on management, innovation, and decision-making, increase their skills in teamwork and leadership, and optimize our industrial competitiveness of sustainable management.



Group Photo (Chairman, President Thu-Hua Liu and Management)

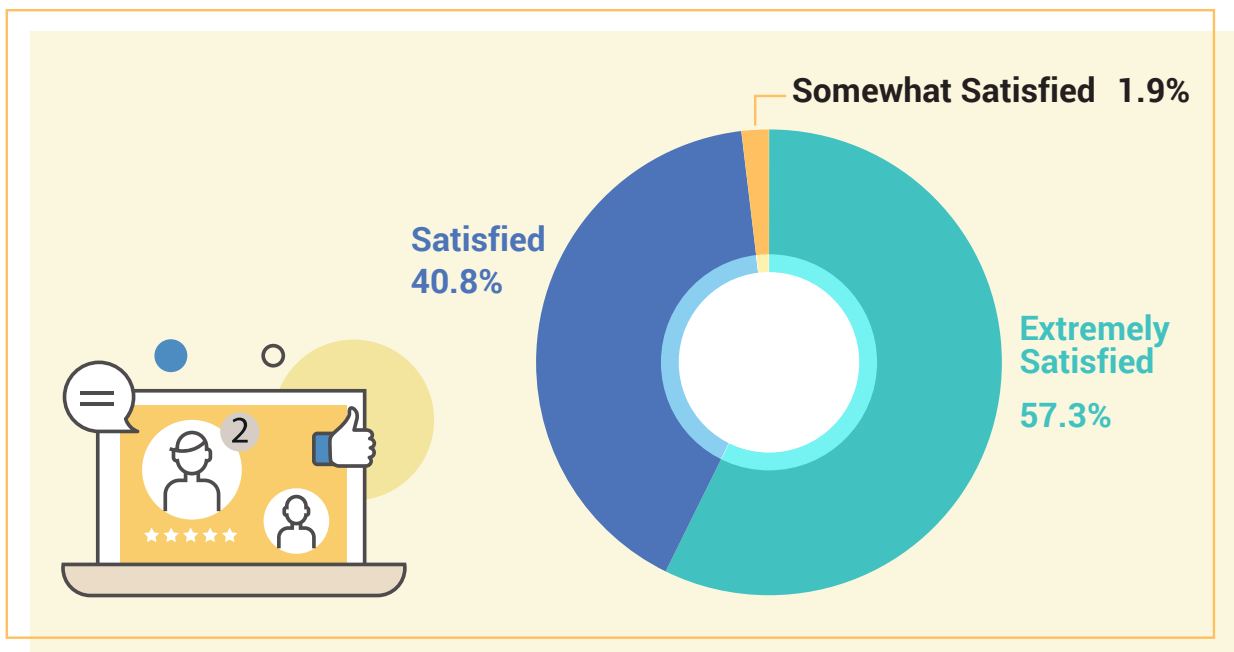


Award Ceremony



Group Photo (Chairman, Management, and Trainees)

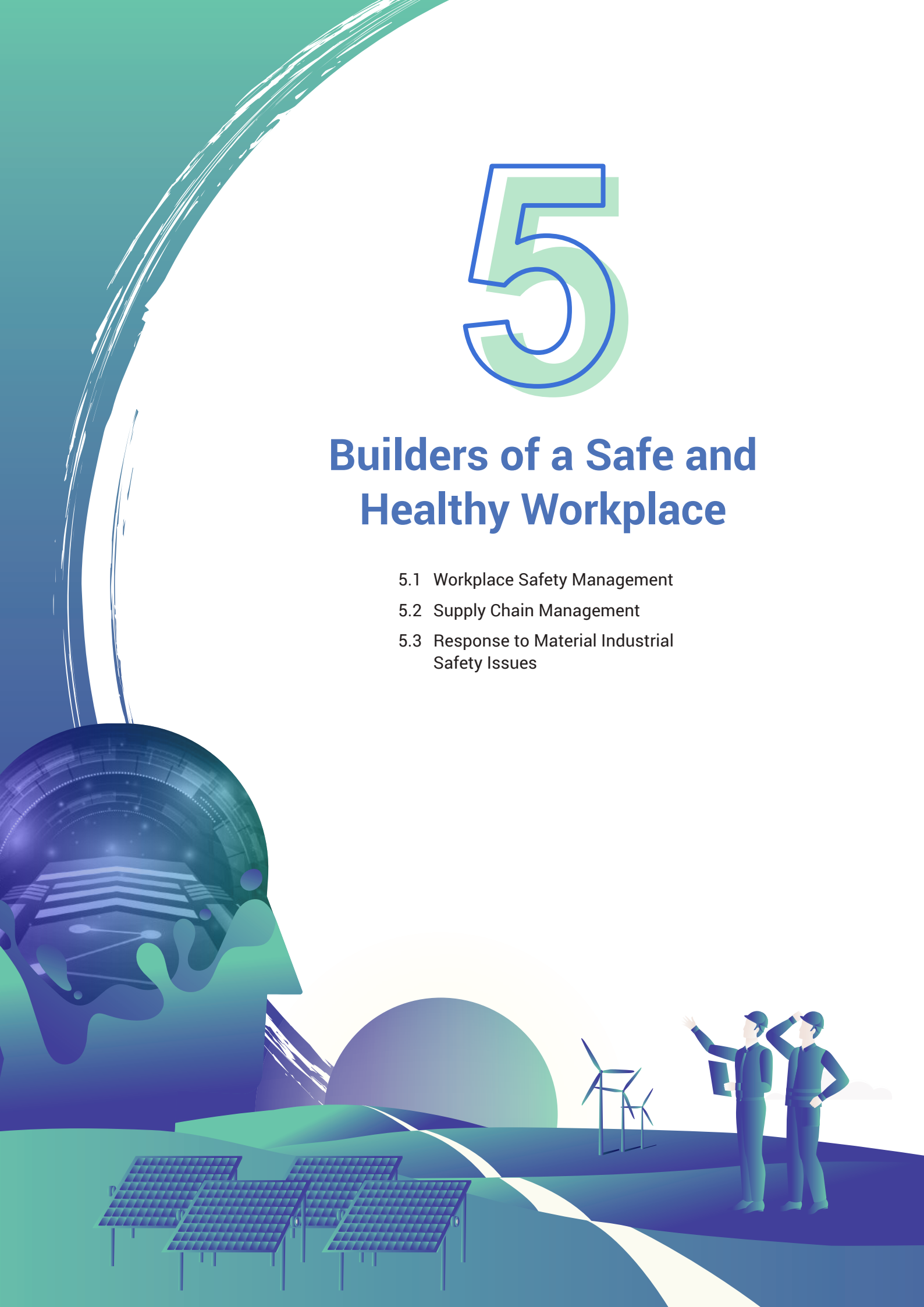
2019 Management-Level Seminar Course Satisfaction Survey



5

Builders of a Safe and Healthy Workplace

- 5.1 Workplace Safety Management
- 5.2 Supply Chain Management
- 5.3 Response to Material Industrial Safety Issues



5.1 Workplace Safety Management

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Material Topic: Occupational Health and Safety

Management Approach

Goals and targets: Create a people-oriented safe culture; reduce the frequency-severity indicator by 20% every year

Commitment: Comply with and perform better than the safety and health laws and regulations at home and abroad; build a safe and healthy work environment where no occupational injuries occur

Policies and action plans:

1. Build safe equipment and facilities
2. Obtain the certification of occupational health and safety management system at each complex
3. Implement standard operating procedures (SOP)
4. Promote process safety management (PSM) and strengthen process safety event (PSE) management (including risk assessment)
5. Implement employee health grading management and promote a healthy workplace

Unit in charge:

1. Safety and Health Department
2. Grant rewards to departments with outstanding performance in occupational safety and health management; request departments evaluated as the last three departments for three consecutive times to report improvement plans to the Business Management Committee meeting and arrange training as needed



5.1.1 Occupational Health and Safety

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FPC has set up a dedicated organization tasked with different responsibilities for occupational health and safety management, including setting up SHE targets and rules, process safety management, and care for employee health; an occupational health and safety management system is also in place to implement occupational health and safety management using a risk-based approach under the PDCA model.

In addition, FPC integrates AI into occupational health and safety management and keeps track of the performance based on the safety and health performance indicators in hopes of shaping a safety culture, building the safest work environment.

A. Hazard Identification and Risk Assessment

FPC uses organized or systematic analysis techniques to conduct workplace hazard and risk assessments and takes preventive measures accordingly to avoid any unsafe operation during the process. In case employees independently identify any potential hazards and risks in the workplace, they may report them by filling out the "False Alarm Form," besides responding to the supervisors directly. If potential risks are verified, a bonus will be granted to employees as an incentive to identify potential hazards for improvement.

Hazard Identification and Risk Assessment Process



Risk Matrix

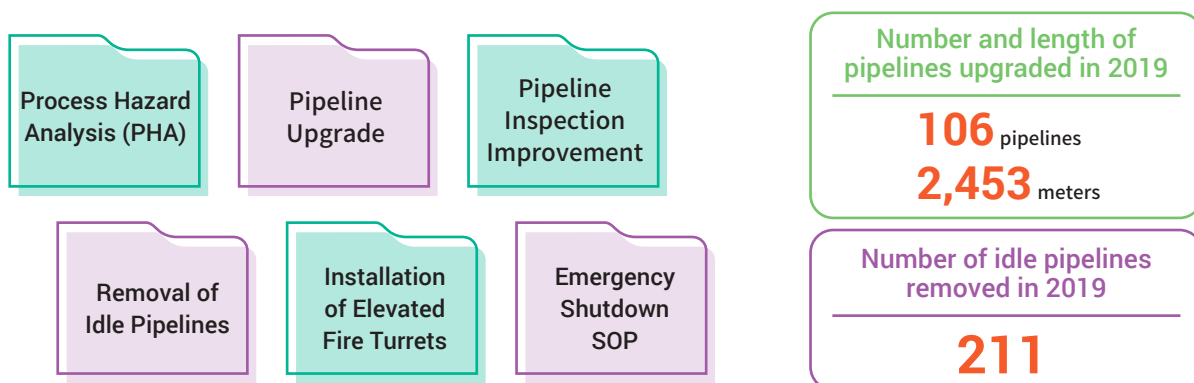
Severity Level	Likelihood (times/year)				
	$p > 10^{-1}$	$10^{-1} \geq p > 10^{-2}$	$10^{-2} \geq p > 10^{-3}$	$10^{-3} \geq p > 10^{-4}$	$p \leq 10^{-4}$
	Level 1: Very frequent	Level 2: Very likely	Level 3: Unlikely	Level 4: Very unlikely	Level 5: Extremely unlikely
Level 1: Large scale	Level 1: Very high risk	Level 1: Very high risk	Level 2: High risk	Level 2: High risk	Level 3: Moderate risk
Level 2: Serious	Level 1: Very high risk	Level 2: High risk	Level 2: High risk	Level 3: Moderate risk	Level 4: Low risk
Level 3: Material	Level 2: High risk	Level 2: High risk	Level 3: Moderate risk	Level 4: Low risk	Level 4: Low risk
Level 4: Critical	Level 2: High risk	Level 3: Moderate risk	Level 4: Low risk	Level 4: Low risk	Level 5: Nearly no risk
Level 5: Ignorable	Level 3: Moderate risk	Level 4: Low risk	Level 4: Low risk	Level 5: Nearly no risk	Level 5: Nearly no risk

	Consequence			
	Personnel safety	Public safety/ environmental impact	Equipment/ facility loss	Discontinued days
Severity Level	Level 1	Level 1	Level 2	Level 1
Likelihood	Level 5	Level 5	Level 5	Level 5
Risk Level	Level 3: Moderate risk	Level 3: Moderate risk	Level 4: Low risk	Level 3: Moderate risk

B. Occupational Health and Safety Management

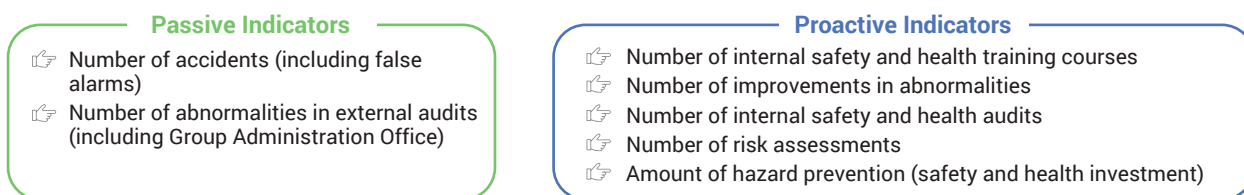
In 2019, FPC comprehensively reviewed the risks of units processing flammable, explosive materials and other fluids at each complex. In response to the corrosion rate in the special environment, the Mailiao Complex introduced new detection technologies to inspect areas that were once inaccessible, so as to avoid possible hazards.

In addition, elevated fire turrets were installed at each complex (currently 101 sets; additional 82 sets will be installed) to effectively extinguish the fire caused by gas explosion or explosion in high places. The regulations governing cases that require emergency shutdown are also in place. For instance, if a leak cannot be effectively turned off, isolated, or stopped immediately, emergency shutdown is required.

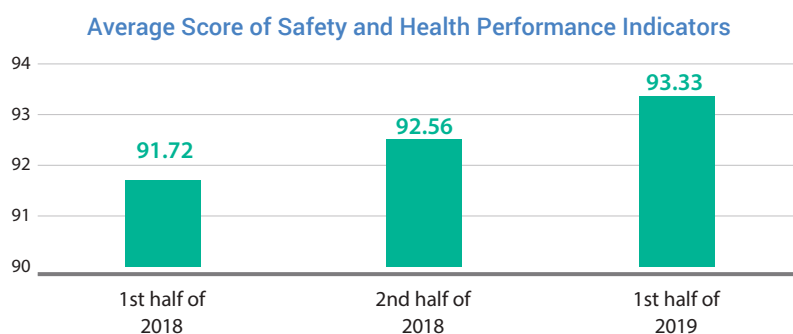


C. Safety and Health Performance Indicators

To monitor and measure each department’s safety and health performance, FPC requires that each department should report the implementation of seven safety and health performance indicators every six months. Based on the reports, we are able to evaluate the safety climate in the entire company and each department and to diagnose the safety and health management weaknesses for improvement.



1. The performance of each department in the first half of 2019 averaged 93.33 points, showing improvement from 91.72 points in the same period last year; however, the scores on "the number of improvements in independent inspections" and "number of risk assessments" were lower from those in the same period last year. Continuous improvement will be made in the future.



Note: The performance results in the second half of 2019 are expected to be announced in June 2020.

2. FPC had a total of 5 process safety events (PSE) in 2019, with a process safety event rate (PSER) of 0.09.

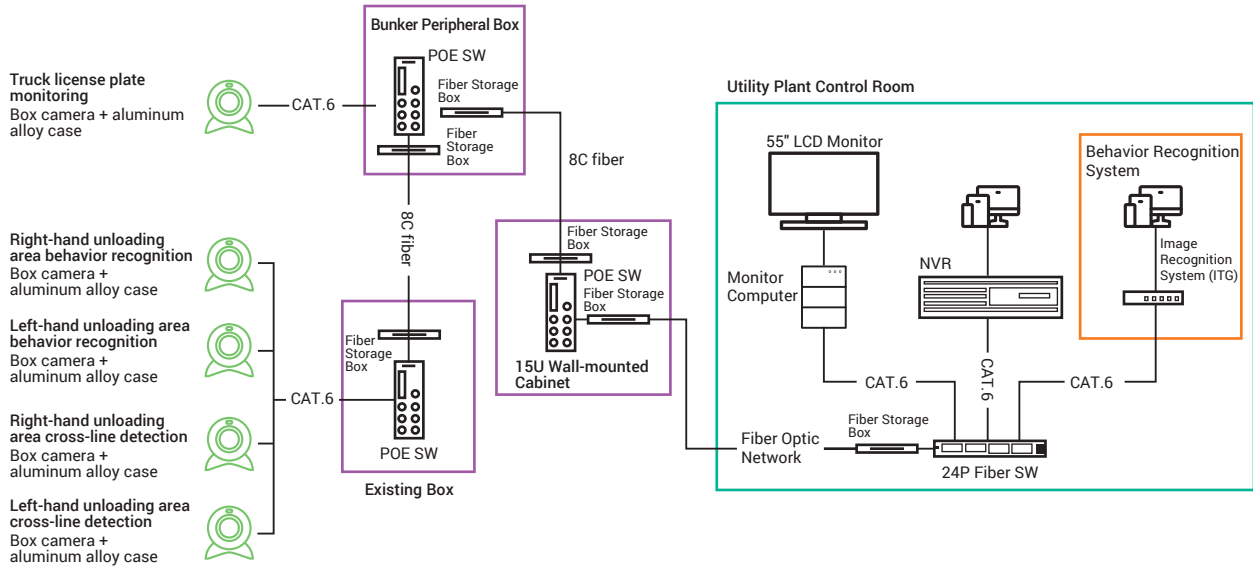
PSER
0.09

Description of PSE

When replacing the hot water buffer tank’s level gauge at the process area in the OO Complex, OO Lee, an employee of the contractor OO, squatting down in a narrow space, accidentally scalded the hands and feet as remaining hot water flowed out of the tank. Immediately after the accident, the employee was sent to the OO hospital for treatment. After treatment, the employee was hospitalized for a total of 47 days, and was recuperated at home after discharge. The employee returned to work five days later.

D. AI Applications to Industrial Safety Management

FPC has built indoor coal storage units (commonly known as bunkers) at Renwu and Linyuan Complexes to provide boilers for utilities plants. When carrying coal to the bunkers for unloading, the truck drivers and contractors work on-site. To control the movement and safety of operators, an automatic optical inspection (AOI) system has been installed at the entrance of the indoor coal storage unit at the utilities plant since January 2020. In case of abnormal situations such as falls, injury, and stepping beyond the boundary, the AOI system will immediately prompt the supervisor on duty, who will then assign the operator to the cases, so as to reduce the risk of industrial accidents.



AOI System Architecture



The AOI system at the bunker's entrance detects and responds to abnormal situations immediately.

E. Care for Employee Health

Health Management

Provide existing employees regular health checkups; provide re-examinations for those with abnormal health examination results (including blood lipid and blood glucose tests) with the "ie Health Instrument"; provide "FPC Health Cloud" App (new this year) for employees to check their health examination results

Health Promotion

Promote preventive medicine and disease prevention by organizing health seminars and health examinations in cooperation with Chang Gung Biotechnology; hold weight loss activities such as jogging after work to encourage employees to exercise



Weight Loss Activity



In 2019, the disabling injury frequency rate among employees was 0.24 (0.26 for males and 0 for females), while the disabling injury severity rate was 1 (1 for males and 0 for females); no cases of occupational diseases or work-related fatalities were recorded at FPC. Occupational injuries that occurred over the years were mainly burns. FPC strengthened the pre-operation safety inspections to reduce the risk of occupational hazards. These inspections included completely emptying high temperature equipment and pipelines before disassembly and ensuring the room temperature with a thermometer and upon the site manager's confirmation; in addition, we planned to purchase thermal insulation gear for operators' use. Employee injury indicators in 2019 are as follows:

Employee Injury Indicators in 2019

Complex / Item	Mailiao		Renwu		Hsinkang		Linyuan		Tungshan		FPC	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Disabling Injury Frequency Rate (FR)	0	0	0.57	0	0	0	0.64	0	0	0	0.26	0
Disabling Injury Severity Rate (SR)	0	0	3	0	0	0	3	0	0	0	1	0
Frequency-severity Indicator (FSI)	0	0	0.04	0	0	0	0.05	0	0	0	0.02	0
Lost Work Time	0	0	9	0	0	0	5	0	0	0	14	0

Item \ Complex	Mailiao		Renwu		Hsinkang		Linyuan		Tungshan		FPC	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Absentee Rate (%)	0.31	0.17	0.40	0.40	0.06	0	0.01	0	0.22	0.16	0.31	0.25
Working Hours (Hour)	4,758,912	342,688	3,534,352	403,376	395,664	23,904	1,567,520	69,184	263,128	14,224	11,326,216	1,079,424

Note 1: FR = (Total number of injuries × 10⁶) / Total working hours.

Note 2: SR = (Total lost work time × 10⁶) / Total working hours.

Note 3: FSI = $\sqrt{(FR \times SR) / 1000}$.

Note 4: The statistics are mainly based on the important statistical indicators of disabling injuries announced by the Ministry of Labor and GRI Standards, including disabling injury frequency rate (FR), disabling injury severity rate (SR), and absentee rate (AR) (excluding traffic accidents outside the complexes).

Note 5: AR (%) = Lost work time due to absence / (Scheduled working days × Number of employees) × 100% (including sick leave, official leave, and injury leave only).

5.1.2 Emergency Response Mechanism at Complexes

103-2

103-3

Material Topic: Emergency Response Mechanism at Complexes

Management Approach

Goals and targets: Achieve the goal of zero accident at complexes within five years to protect the health and safety of stakeholders

Commitment: Strengthen the emergency response practices at each complex in compliance with the Fire Services Act and the Toxic and Concerned Chemical Substances Control Act to minimize the loss caused by accidents

Policies and action plans: Set up an emergency response organization under each complex management unit and appoint the head of the complex as the emergency commander; initiate the emergency response center of each complex, along with emergency response procedures such as evacuation, rescue, and safety protection, depending on the dynamics of an accident.

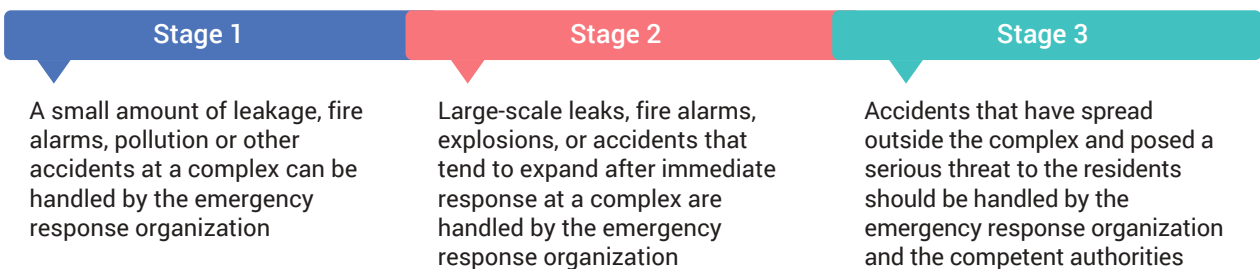
Unit in charge: The Environment Safety and Health Department reviews the emergency response plans and drills of each complex on a regular basis and helps set up the pre-plan of the standard procedures for disaster relief.



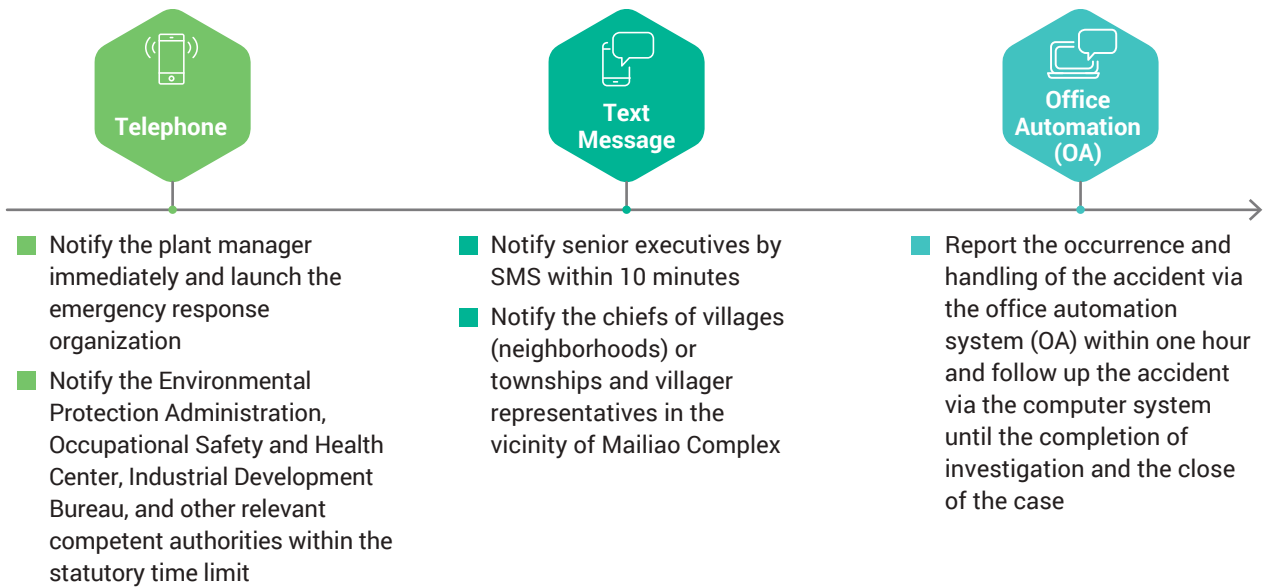
A. Emergency Response Mechanisms

FPC divides emergency response mechanisms into three stages. In the event of an accident, it will be reported immediately, followed by the emergency response mechanisms. An emergency commander is assigned at each stage. The regional defense organization within the complex may be launched as needed to support disaster relief at plants in the vicinity. Any accidents are reported to the competent authority within the statutory time limit.

Emergency Response Mechanisms

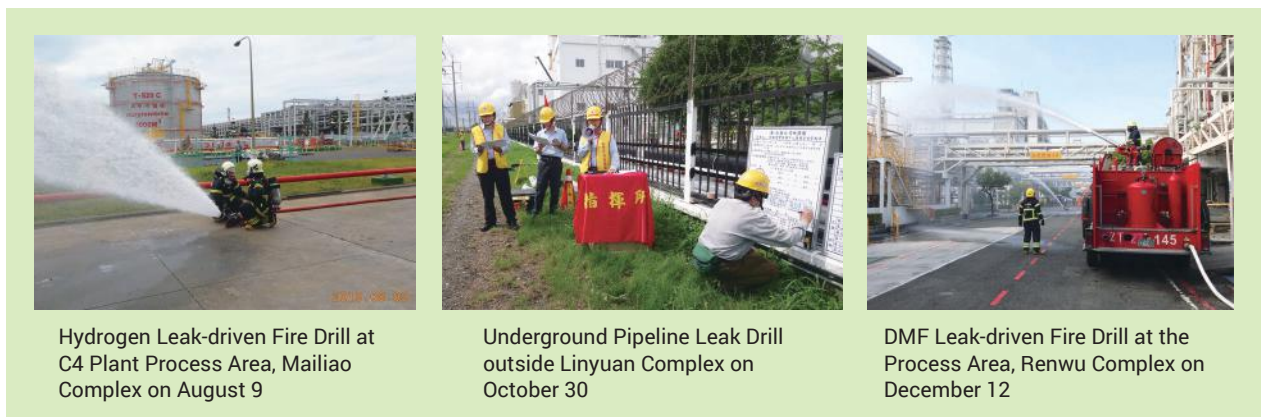
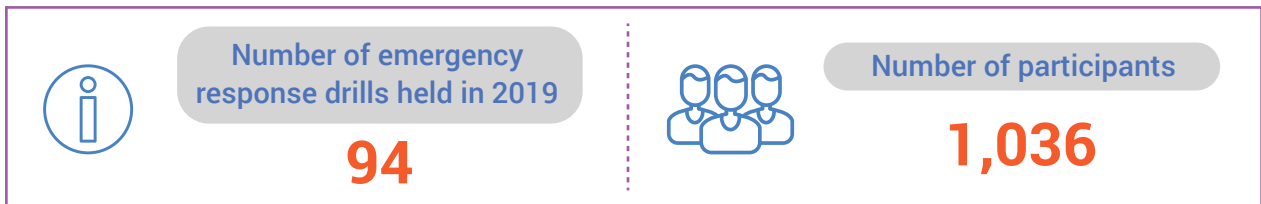


Incident Reporting Procedures



B. Drills at Complexes

Each complex conducts drills every half a year based on different situations and organizes firefighting training.



5.2 Supply Chain Management

103-2

103-3

Material Topic: Industrial and Public Safety

Management Approach

Goals and targets: Achieve the goal of zero process disasters to minimize business risks

Commitment: Comply with the Occupational Safety and Health Act , domestic laws and regulations relating to fire services and hazardous goods in plants, and related regulations on process safety management; take responsibility for hazardous workplace management; ensure that suppliers and contractors are in compliance with occupational safety and health regulations; make continuous improvement in process safety management and prevention techniques

Policies and action plans:

1. Regulate the responsibility for process safety management at each level and establish work rules and standard operating procedures
2. Review each department's key performance indicators for process safety management and fire safety management; complete the audit of all PSM items within three years; evaluate the implementation of fire management at each department every quarter
3. Make and implement a test plan based on the pipeline risk level management system to replace risky pipelines
4. Organize more process safety management training for supervisors and personnel at all levels to strengthen their ability to identify and supervise process hazards; review the risk analysis of each process hazard once every five years and provide recommendations for improvement in the safety of existing processes

Unit in charge: Safety and Health Department



5.2.1 Safety and Health Management System

403-8

To provide a healthy and safe environment for workers at each complex, each of FPC's department formulates an annual occupational health and safety management plan, along with an occupational health and safety management system, and implements health and safety management based on the documented procedures and a PDCA model. The occupational health and safety management systems at all of FPC's complexes were OHSAS 18001 and CNS 15506 certified. As OHSAS 18001 is to be replaced by ISO 45001, FPC expects to obtain the certification of ISO 45001 for each complex by 2021.



Renwu Complex
CNS 15506:2011



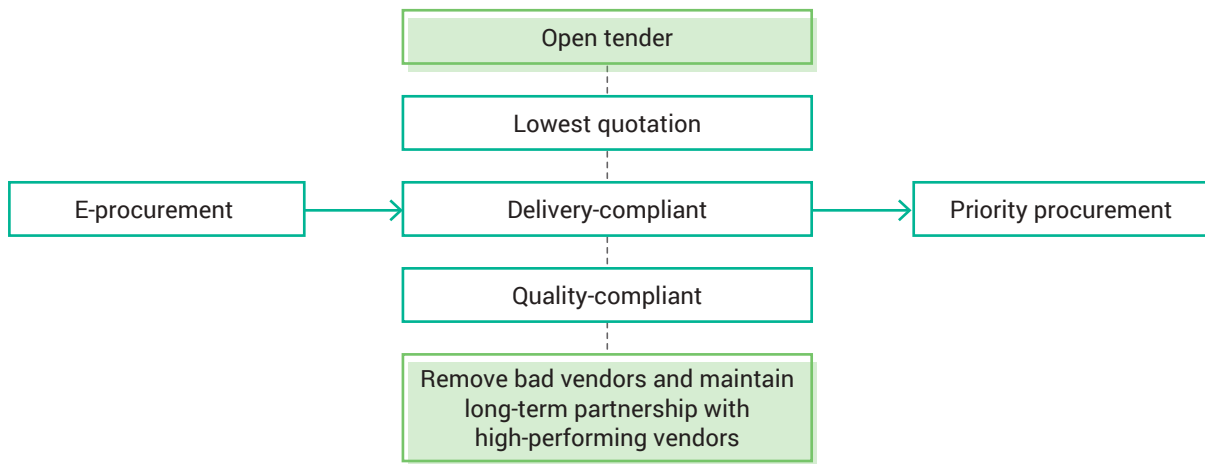
Linyuan Plant
OHSAS 18001:2007



Mailiao Complex
ISO 14001:2015

5.2.2 Supplier and Contractor Management

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(1) Supplier/Contractor Corporate Social Responsibility

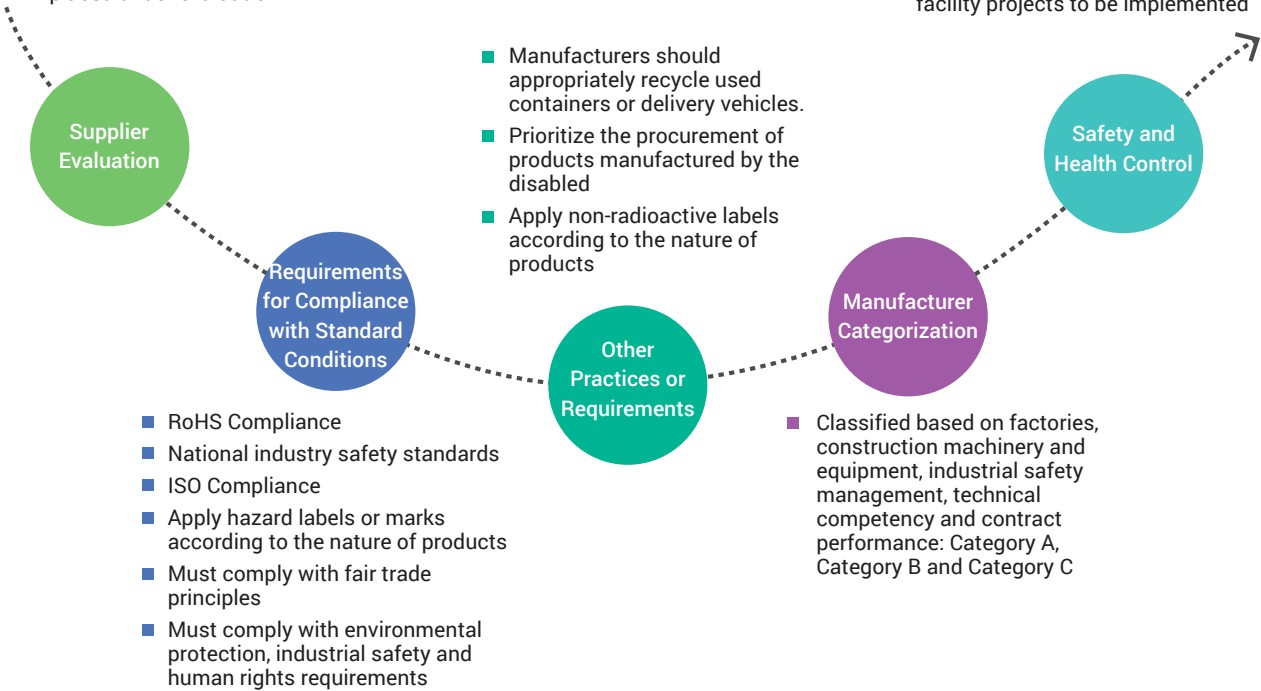
Upholds the spirit of sustainable development and the principle of fair trade, FPC requires that all suppliers and contractors should meet the requirements for environmental protection, industrial safety, and human rights. To allow our suppliers and contractors to better understand and jointly respond to our cause for social responsibility, we formulated the Supplier/Contractor Social Responsibility Commitment and Supplier/Contractor Social Responsibility Questionnaire in October 2019, requesting suppliers and contractors to sign and respond to the aforesaid commitment and questionnaire upon signing in to the Formosa Technology E-Market Place or ordering.





(2) Supplier/Contractor Evaluation and Category Management

- Written or on-site evaluation: A manufacturer is listed as a cooperating manufacturer upon passing the evaluation.
- Manufacturer's delivery (construction) assessment: A manufacturer whose delivery (project) is overdue, of poor quality or in violation of industrial safety regulations, is automatically placed under evaluation.

- Including health and safety management costs as necessary expenses in annual budgets
- The quoted amount of health and safety management costs should not be lower than the budgeted amount.
- Must detail contract specifications with regard to health and safety facility projects to be implemented

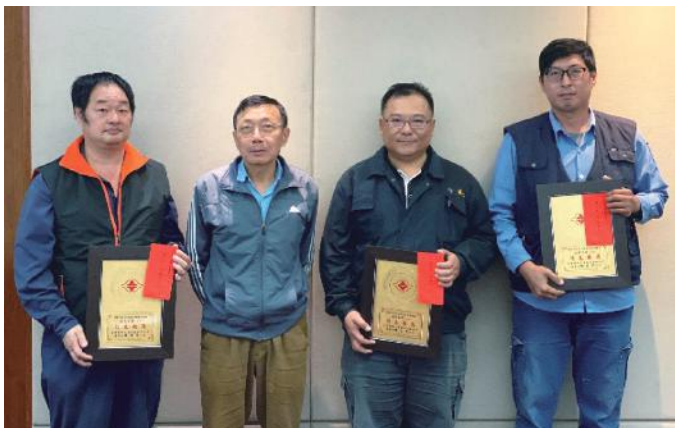


Evaluation and Grading Management Mechanisms

Subject	Evaluation Standards	Grading	Remark
 Suppliers	Price competitiveness	Six grades from A to F	Non-compliant vendors will be placed under vendor evaluation.
	Late delivery rate		
	Quality abnormality rate		
 Contractors	Plant site	Three grades from A to C	
	Construction machinery and equipment		
	Site safety management capability		
	Technical competencies		
	Contract performances		

FPC reviews the responses from suppliers and contractors and arranges evaluations as needed to ensure that all suppliers and contractors fulfill their corporate social responsibilities as required by FPC.

FPC has also established the incentive system for contractors. By turning penalties into rewards, FPC evaluates the safety and health management performance of contractors on a regular basis and grants rewards based on the results of the evaluation to encourage contractors' independent industrial safety management and to raise their safety awareness.



January 16, 2020
Award-winning Contractors



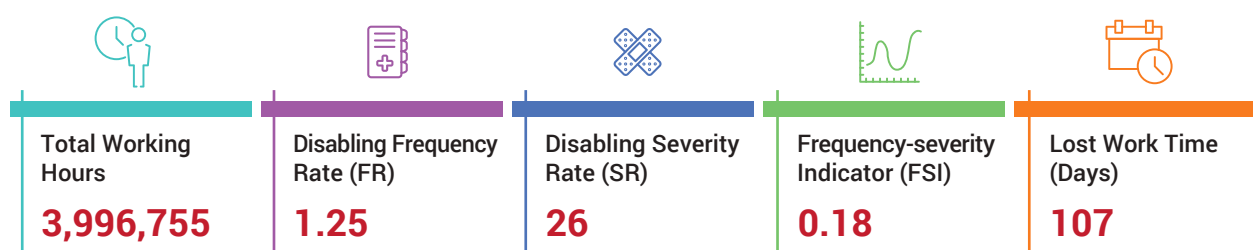
For more information on supplier/contractor evaluation and grading management, please refer to our CSR website.



(3) Supplier/Contractor Injury Indicators

To improve the workplace safety of FPC's supply chain, FPC also requires that all suppliers and contractors should report relevant data on occupational injuries. In 2019, no case of deaths caused by occupational diseases or business was reported by suppliers/contractors. The occupational injuries that occurred over the years were mainly pinches, scalds, and splashes of hazardous materials. Suppliers and contractors have been required to pay attention to work safety rules and comply with workplace safety regulations to reduce the risk of occupational hazards. Injury indicators for suppliers and contractors in 2019 are described as follows:

Supplier/Contractor Injury Indicators in 2019



1. FR = (Total number of injuries × 10⁶) / Total working hours.

2. SR = (Total lost work time × 10⁶) / Total working hours.

3. FSI = $\sqrt{(FR \times SR) / 1000}$.

4. The statistics are mainly based on the important statistical indicators of disabling injuries announced by the Ministry of Labor and GRI Standards, including disabling injury frequency rate (FR) and disabling injury severity rate (SR) (excluding traffic accidents outside the complexes).

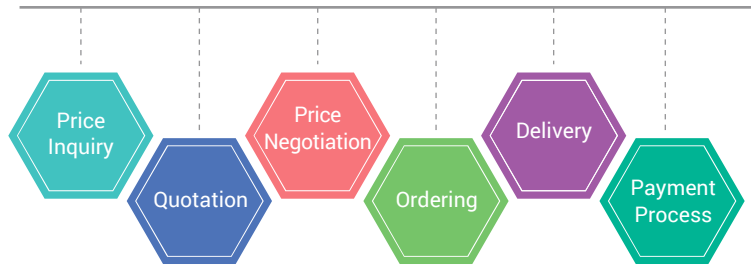
5.2.3 Procurement Policy

102-12

204-1

Through the Formosa Technology E-Market Place, FPC employs an open tender approach that provides suppliers and contractors various transaction functions online. Regular meetings with contractors and suppliers are also organized to enhance and encourage two-way communication.

Formosa Technology E-Market Place



Procurement Performance in 2019

To reduce carbon emissions from delivery vehicles, FPC has collaborated with Kerry TJ Logistics to promote the "Supplier Collaboration E-System."

Percentage of e-centralized delivery
99.81%

Percentage of e-invoices issued
86.84%

To further reduce invoice costs and increase the efficiency of invoice management, electronic invoices have been promoted to comprehensively replace traditional paper invoices.

The procurement and outsourcing policies mainly revolve around local procurement and outsourcing. FPC only sources goods from overseas and allows bidding from abroad when local suppliers are unable to meet the needs.

Percentage of local procurement
70%

Amount of green procurement
NT\$ 43.64 Million

FPC has actively promoted green procurement and entered into a commitment to green procurement with Taipei City Government and Kaohsiung City Government. FPC primarily purchases green products such as personal computers, plastic pallets, and carbon cartridges.



November 18, 2019
FPC is awarded the Green Procurement Outstanding Enterprise by the Department of Environmental Protection, Taipei City Government.

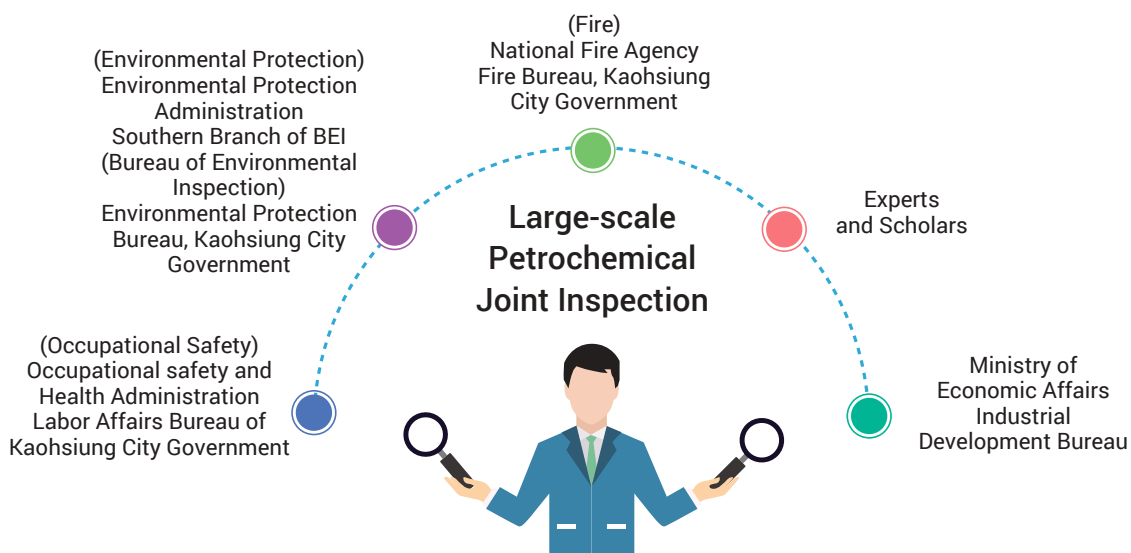
5.3 Response to Material Industrial Safety Issues

102-44

Large-scale Petrochemical Joint Inspection

According to the official letter from the Industrial Development Bureau, inflammable, explosive or toxic chemicals involved in some processes at the Renwu Complex were considered higher potential for hazards. To implement public safety management, relevant competent authorities conducted on-site inspections to examine the process safety, environmental protection, and fire management respectively on July 15, July 23, July 24, and July 29, 2019.

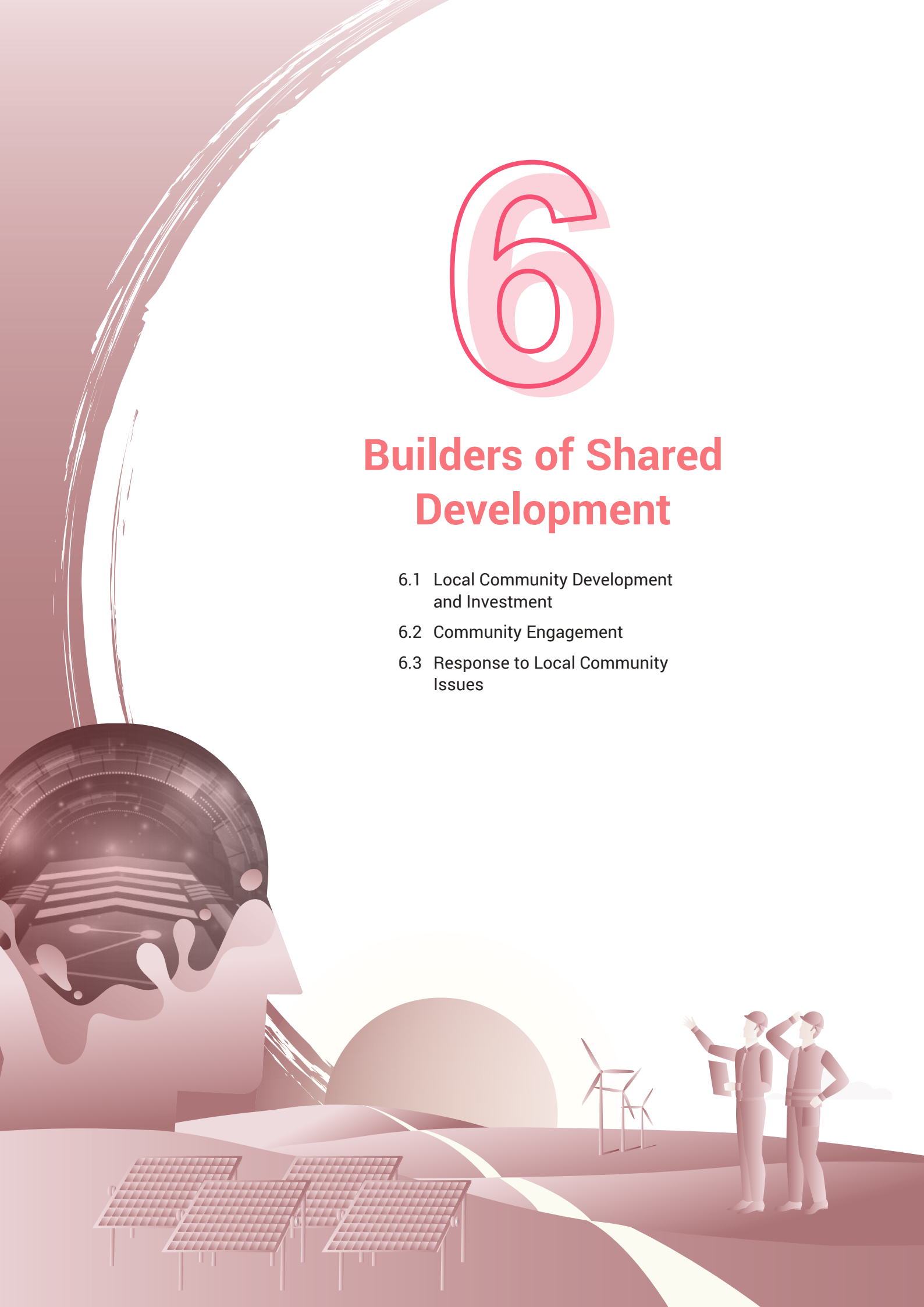
Although no material deficiencies or violations of laws and regulations were found, FPC still requested the Renwu Complex to improve based on the opinions from the competent authorities, so as to enhance safety management at the complex. In the future, FPC will invest NT\$86.4 million in upgrading machinery and equipment, so as to improve resilience to process hazards and energy efficiency.



6

Builders of Shared Development

- 6.1 Local Community Development
and Investment
- 6.2 Community Engagement
- 6.3 Response to Local Community
Issues



6.1 Local Community Development and Investment

103-2

103-3

203-1

Material Topic: Community Engagement and Giving Back to the Society

Management Approach

Goals and targets: Maintain the rights and interests of FPC and communities; strengthen the relationship between FPC and communities

Commitment: Listen to opinions of the locals, build the sound channels of communication, and promote community activities

Policies and action plans:

1. Organize a variety of community activities covering health and care, industry development, care for the disadvantaged and school children, scholarships, gifts for low-income households, and treasuring traditional culture and promoting folk arts to enhance the interaction with communities
2. Convey the business philosophy of perpetual business operation and dedication to the society by actively promoting corporate policies to the communities

Unit in charge:

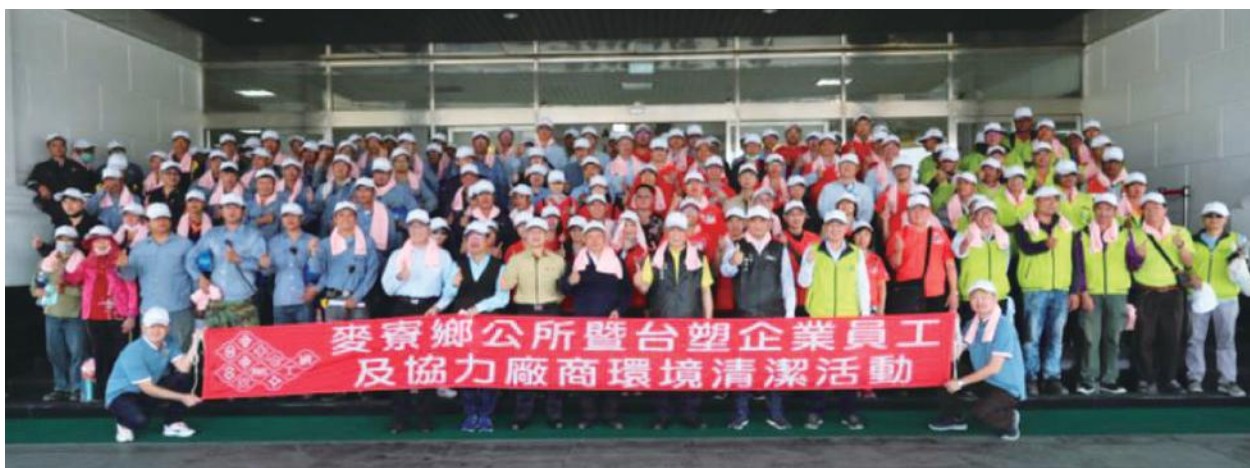
1. Mailiao Administration Division
2. Kaohsiung Administration Department
3. President's Office



6.1.1 Community Relations

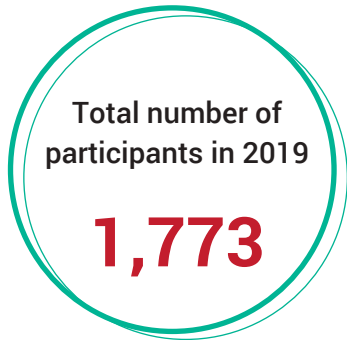
(1) Promoting Environmental Volunteerism and Keeping the Environment Clean

To maintain close ties with local communities, FPC works with volunteers in the neighborhood to clean the streets and organize other environmental activities. By working hand in hand with local residents, we maintain good community relations and raise local residents' awareness of environmental protection in their hometowns.



Environmental Cleaning Activity by Employees from Mailiao Complex and Vendors

In response to the International Coastal Cleanup, FPC organized the beach cleanup activities in Taipei, Yilan, Yunlin, Chiayi, and Kaohsiung in cooperation with the Society of Wilderness in 2019. Except the beach cleanup activity in Yunlin, we promoted the mission statement of beach cleanup activities and recorded the results in compliance with the "International Coastal Cleanup Code of Conduct." The beach cleanup project was organized in coordination with the Mailiao Ocean Culture Festival, the largest scale in history, and attracted more than 500 employees and villagers from Mailiao Township.



International Beach Cleanup in September 2019



Certificate of Appreciation from the Society of Wilderness



(2) Participating in Local Events and Giving Back to the Community

For charity events organized by nearby organizations and schools such as county/city sports competitions, temple activities, school anniversaries and sporting events, community activities, and festival celebrations, FPC is always willing to provide assistance to maintain a friendly relationship with local communities.

Water Caltrop Festival in Renwu on October 27, 2019

Due to urban developments in recent years, the number of water caltrop fields has decreased. To support local agriculture, FPC has sponsored the "Water Caltrop Festival" organized by the Kaohsiung City Government and Renwu District Office since 2013. On October 27, 2019, the Water Caltrop Festival was organized at Wuhe Community in Renwu, from which low- and middle-income families were invited to enjoy the delicious taste of water caltrop. For more information on the Water Caltrop Festival, please visit our CSR website.



Number of participants **3,500**

CSR Website:
Water Caltrop Festival

2019 Kaohsiung Installation Art of Light Festival



CSR Website:
Kaohsiung Installation Art of Light Festival

The Economic Development Bureau, Kaohsiung City Government held the "2019 Kaohsiung Installation Art of Light Festival" at the Central Park from December 2019 to January 2020. FPG donated NT\$3 million to set up light boxes next to the main entrance/exit of Central Park Station. For more information on the Kaohsiung Installation Art of Light Festival, please visit our CSR website.

For more local events, please refer to the "Latest News in FPC" on our CSR website.

CSR Website:
Latest News in FPC

(3) After-School Tutoring for School Children & Nutritional Breakfast with Love

Since 2012, employees with a bachelor's degree and above at the Mailiao Complex have volunteered to serve as tutors for underprivileged school children who could not afford to attend cram schools, children of foreign spouses, and those raised by their grandparents. Since June 2019, FPC has donated NT\$180,000 per semester to Gushan Elementary School in Dashu District, Kaohsiung City to cover the lunchbox and after-school tutoring costs for underprivileged students for a span of five years; it has also supported the Zhuhou Elementary School in Renwu District to supply a bottle of milk to a total of 65 students every Wednesday and Friday.

Average number of students tutored by employees from Mailiao Complex	18
Number of beneficiaries from Zhuhou Elementary School	65



Memorandum of Understanding on Long-term Donation between FPC and Gushan Elementary School in June 2019



Beneficiaries from Zhuhou Elementary School

(4) FPC Science Summer Camp

To promote environmental sustainability and to ensure the correct understanding of the petrochemical industry, FPC first organized the science winter and summer camps in 2016 for Grade 4~6 elementary school students from nearby schools. In 2019, FPC worked with the Center for Innovation and Entrepreneurship Education of National Kaohsiung University of Science and Technology to design interactive activities and DIY workshops that introduced artificial intelligence (AI), allowing participants to learn technological innovations and understand that FPC values both environmental protection and industrial development.

Number of FPC Science Summer Camp sessions in 2019	9
Number of participants	489



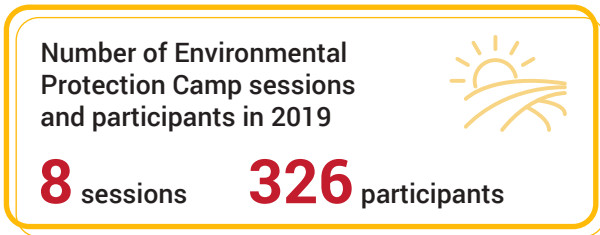
FPC Science Summer Camp in July 2019



News Report (Automated Guided Vehicle)

(5) Marine Conservation Family Camp (Winter) & Environmental Protection Camp (Summer)

Since 2017, the Mailiao Administration Division has held the environment protection camp every summer. As of 2019, a total of 30 sessions were held, with a total investment of NT\$554,000, and 1,192 school children participated. In 2019, the winter family camp was held for the first time. The respective themes of the winter and summer camps were marine conservation and food and agriculture education. The camps emphasized that learning should be based on "contact, experience, and identification." Through interactive learning, hands-on practice, and creative thinking, participants learned the concepts of marine conservation and food and agriculture from games easily.



Marine Conservation Family Camp (Winter) in January 2019 - Painted Eco Bag



Environmental Protection Camp (Summer) in July and August 2019

6.1.2 Social Investment 201-1 203-1

To have an in-depth understanding of social needs, FPC has proactively cooperated with the public and private sectors to invest human resources and funds in promoting local developments and philanthropic activities, including community activities, road maintenance, education, care for the elderly, charities, temple activities and more.



Note: The cost of community activities at the Mailiao Complex is shared by FPC, Nan Ya Plastics Corp. (NPC), Formosa Chemicals & Fibre Corp. (FCFC), and Formosa Petrochemical Corp. (FPCC) in proportion.

6.2 Community Engagement 102-44 201-1 203-1

6.2.1 Industry-Academia Cooperation Program

FPC has cooperated with various universities and colleges to support local education, enhance employees' employability, and reduce brain drain. Industry-academia cooperation programs in 2019 are described below.

Industry-Academia Cooperation Programs in 2019

Category	School	Number of Students	Period
Industrial-Academia Cooperation	Ming Chi University of Technology	70	One year
	Special Renda Class for the Petrochemical Industry in Kaohsiung	38	One year
Employment Program	Department (Institute) of Chemical Engineering, Chung Yuan University	7	Two weeks
Education Cooperation	Night School, National Siluo Agricultural Industrial High School	15	One year
Summer Work-Study Program	Universities and colleges	36	Two months
Total	-	166	-

6.2.2 Formosa LOHAS Circle

Formosa LOHAS Circle activities are mainly held in Yilan, Taoyuan, Yunlin, Changhua, and Kaohsiung. Focusing on environmental sustainability and social participation, FPC has promoted the Formosa LOHAS Circle in cooperation with local communities, vendors, small farmers, and local governments around the complexes.

Number of Formosa LOHAS Circle activities held in 2019	Total number of participants	Total investment amount ^(Note)
113	30,649	NT\$ 9.14 million

Note: The cost of the Formosa LOHAS Circle is shared by FPC, NPC, FCFC, and FPCC equally.



In September 2019, the principal and teachers of Shih Jia Elementary School visited the Wang Yung-Ching and Wang Yung-Tsai Park in Kaohsiung City for ecological education.



6.3 Response to Local Community Issues

102-44

Social Participation - Preventing Dengue Fever in Kaohsiung City

The dengue fever took place in Kaohsiung in the summer of 2019. To prevent the dengue fever from spreading, Chairman Jason Lin led all employees to take part in the epidemic prevention activity. More than 685 volunteers of FPC also joined in the Renwu District Office to clean up breeding containers in the community following the four steps: inspect (inspect water containers and drains), invert (invert containers), wash (wash water containers and drains), and brush (brush off mosquito larvae). In addition to attending the epidemic prevention activity in person, we donated 40 tons of bleach and NT\$1 million to the Renwu District Office for disinfection. The donations were first used for weekly disinfection (water sprays and thermal sprays) at Dawan Village and Bagua Village around Jinshi Lake, where the dengue fever broke out.

Social Participation - Preventing the COVID-19 Pandemic

In early 2020, the outbreak of COVID-19 put the world on alert. In response, FPC voluntarily offered local governments and schools sodium hypochlorite solution (bleach) as sanitizers at its own cost to help them fight against the COVID-19 pandemic; bleach instructions were also attached to teach people how to prepare and use bleach correctly (take 10 cc of 12% bleach and dilute it with 2,400 cc of clean water to make 0.05% bleach) and remind people that bleach should be kept separately from chemicals such as hydrochloric acid. By taking concrete action to combat the epidemic with the government and the general public, we expect the spread to be curbed through comprehensive disinfection.



Dengue Fever Prevention Activity from June to September 2019



Distribution of Bleach as Sanitizer in February 2020



Appendix

- I. Global Reporting Initiative
- II. Independent Assurance
Opinion Statement



I. Global Reporting Initiative

102-54

102-55

The following indicators refer to the content of this Report in accordance with the 2016 Global Reporting Initiative (GRI) Sustainability Reporting Standards. As indicated in the external audit statement, relevant information has been audited and found to be in compliance with the requirements of GRI Standards with regard to external checklist:

Disclosure Item	Description	Reference Chapter	Note	
GRI 102: General Disclosures				
Organizational Profile (2016 Edition)	102-1	Name of the organization	1.2.2 Company History	
	102-2	Activities, brands, products, and services	2.3.1 Main Products and Brands	
	102-3	Location of the headquarters	1.2.2 Company History	
	102-4	Location	1.2.2 Company History	
	102-5	Ownership and legal forms	1.2.2 Company History	
	102-6	Markets served	1.2.2 Company History	
	102-7	Scale of the organization	1.2.2 Company History 2.1.1 Operating and Financial Performance 2.2 Corporate Governance 2.3.1 Main Products and Brands	
	102-8	Information on employees and other workers	4.1 Human Resource Policies and Employee Composition	
	102-9	Supply chain	2.3.1 Main Products and Brands 5.2.2 Supplier and Contractor Management	
	102-10	Significant changes to the organization and its supply chain	-	No significant change in 2019
Strategy (2016 Edition)	102-11	Precautionary principles or approaches	2.2 Corporate Governance	
	102-12	External initiatives	1.1 Message from the Chairman 2019 CSR Highlights 5.1.1 Occupational Health and Safety 5.2.3 Procurement Policy	
	102-13	Membership of associations	2.1.2 Participation in External Associations	
	102-14	Statement from senior decision-maker	1.1 Message from the Chairman	
	102-15	Key impacts, risks and opportunities	Progress of Corporate Social Responsibility Goals 2.2.3 Internal Control Mechanism 2.2.4 Operational Risk Management and Response 2.3.2 Product and AI Technology Development and Innovation 3.1.2 Risks and Opportunities Arising from Climate Change	

Disclosure Item	Description	Reference Chapter	Note	
Ethics and Integrity (2016 Edition)	102-16 Values, principles, standards, and norms of behavior	1.2.1 Management Philosophy 2.2.3 Internal Control Mechanism		
Material Topic: Corporate Governance				
Governance (2016 Edition)	102-18	Governance structure	2.2 Corporate Governance	
	102-22	Composition of the highest governance body and its committees	2.2.1 Corporate Governance Overview 2.2.2 Unit in Charge of Corporate Social Responsibility	
	102-23	Chair of the highest governance body	2.2.1 Corporate Governance Overview	
	102-24	Nominating and selecting the highest governance body	2.2.1 Corporate Governance Overview	
	102-25	Conflicts of interest	2.2.1 Corporate Governance Overview	
	102-36	Process for determining remuneration	2.2.1 Corporate Governance Overview	
Management Policies (2016 Edition)	103-2	The management approach and its components	2.2 Corporate Governance	
	103-3	Evaluation the management approach	2.2 Corporate Governance	
Communication with Stakeholders (2016 Edition)	102-40	List of stakeholder groups	1.3 Stakeholder Identification and Communication	
	102-41	Collective bargaining agreements	-	No collective agreement signed with the labor union
	102-42	Identifying and selecting stakeholders	1.3 Stakeholder Identification and Communication	
	102-43	Approach to communication with stakeholders	1.3 Stakeholder Identification and Communication	
	102-44	Key topics and concerns raised	1.3 Stakeholder Identification and Communication 2.5 Response to Significant Economic Issues 3.7 Response to Material Environmental Issues 5.3 Response to Material Industrial Safety Issues 6.2 Community Engagement 6.3 Response to Local Community Issues	

Disclosure Item	Description	Reference Chapter	Note	
Reporting Practices (2016 Edition)	102-45	Entities included in the consolidated financial statements	Report Overview 1.2.4 Organization Chart	
	102-46	Defining report content and topic boundaries	Report Overview	
	102-47	List of material topics	2.5 Response to Significant Economic Issues	
	102-48	Restatements of information	Report Overview	No restatement of information
	102-49	Changes in reporting	Report Overview 1.4.2 Materiality Matrix	
	102-50	Reporting period	Report Overview	
	102-51	Date of the most recent report	Report Overview	
	102-52	Reporting cycle	Report Overview	
	102-53	Contacts for questions regarding the report	Report Overview	
	102-54	Claims of reporting in accordance with the GRI Standards	Appendix I.	
	102-55	GRI content index	Appendix I.	
	102-56	External assurance	Appendix II.	
GRI 103: Management Approach				
Management Policies (2016 Edition)	103-1	Explanation of the material topic and its boundary	1.4.3 Identification of Material Issues and Value Chain	
GRI 200: Topic-specific Disclosures—Economic Topics				
Material Topic: Operating and Financial Performance				
Economic Performance (2016 Edition)	201-1	Direct economic value generated and distributed by the organization	2.1.1 Operating and Financial Performance 4.2 Employee Rights, Benefits and Training 6.1.2 Social Investment 6.2 Community Engagement	
Management Policies (2016 Edition)	103-2	The management approach and its components	2.1.1 Operating and Financial Performance	
	103-3	Evaluation the management approach	2.1.1 Operating and Financial Performance	
Market Presence (2016 Edition)	202-1	Ratios of the standard entry level wage by gender compared to the local minimum wage	4.2.2 Employee Benefits and Compensation	
	202-2	Proportion of senior management hired from the local community	4.1.2 Employee Recruitment	

Disclosure Item	Description	Reference Chapter	Note
Indirect Economic Impacts (2016 Edition)	203-1 Development and impact of Infrastructure investments and services supported	6.1 Local Community Development and Investment 6.1.2 Social Investment 6.2 Community Engagement in the Operation Area	
Procurement Practices (2016 Edition)	204-1 Proportion of procurement expenses on local suppliers	5.2.3 Procurement Policy	
Anti-corruption (2016 Edition)	205-3 Confirmed incidents of corruption and actions taken	-	No corruptive incidents reported in 2019

GRI 300: Topic-specific Disclosures—Environmental Topics

Material Topic: Greenhouse Gas and Energy Management			
Energy (2016 Edition)	302-3	Energy Intensity	3.3.2 Improvement in Energy Conservation
	302-4	Reduction of energy consumption	3.3.2 Improvement in Energy Conservation
Emissions (2016 Edition)	305-1	Direct (Scope 1) GHG emissions	3.3.1 Greenhouse Gas Inventory and Emission Intensity
	305-2	Indirect (Scope 2) GHG emissions	3.3.1 Greenhouse Gas Inventory and Emission Intensity
	305-4	GHG emission intensity	3.3.1 Greenhouse Gas Inventory and Emission Intensity
	305-5	Reduction of GHG emissions	3.3.2 Improvement in Energy Conservation 3.4.2 Air Pollution Control Measures
Management Policies (2016 Edition)	103-2	The management approach and its components	3.3 Greenhouse Gas and Energy Management
	103-3	Evaluation the management approach	3.3 Greenhouse Gas and Energy Management
Material Topic: Use and Management of Water Resources			
Water (2018 Edition)	303-1	Water withdrawal by source	3.2.1 Water Resource Consumption and Reduction Management 3.2.2 Water Conservation Performance 3.2.3 Zero Wastewater Discharge
	303-2	Management of discharge-related impacts	3.2.1 Water Resource Consumption and Reduction Management 3.2.3 Zero Wastewater Discharge 3.2.5 Water Pollution Prevention Measures

Disclosure Item		Description	Reference Chapter	Note
Water (2018 Edition)	303-3	Quantity of water consumption	3.2.1 Water Resource Consumption and Reduction Management	
	303-4	Water release volume	3.2.3 Zero Wastewater Discharge	
	303-5	Water consumption	3.2.3 Zero Wastewater Discharge	
Effluents and Waste (2016 Edition)	306-1	Water discharge by quality and destination	3.2.1 Water Resource Consumption and Reduction Management 3.2.3 Zero Wastewater Discharge 3.2.5 Water Pollution Prevention Measures	
	306-5	Water bodies affected by water discharges and other (surface) runoff discharges	3.2.1 Water Resource Consumption and Reduction Management	
Management Policies (2016 Edition)	103-2	The management approach and its components	3.2 Water Resource Use and Management	
	103-3	Evaluation the management approach	3.2 Water Resource Use and Management	

Material Topic: Air Pollutant Management

Emissions (2016 Edition)	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	3.4.1 Air Pollution Monitoring and Assessment 3.4.2 Air Pollution Control Measures	
Management Policies (2016 Edition)	103-2	The management approach and its components	3.4 Air Pollutant Management	
	103-3	Evaluation the management approach	3.4 Air Pollutant Management	

Material Topic: Environmental Regulatory Compliance

Environmental Compliance (2016 Edition)	307-1	Violation of environmental laws and regulations	3.6.1 Penalties for Violation of Environmental Regulations	
Management Policies (2016 Edition)	103-2	The management approach and its components	3.6 Environmental Compliance	
	103-3	Evaluation the management approach	3.6 Environmental Compliance	

GRI 400: Topic-specific Disclosures—Social Topics

Material Topic: Employee Benefits and Remuneration

Employee-employer Relations (2016 Edition)	401-1	New employees and employee turnover	4.1.1 Manpower Structure 4.1.2 Employee Recruitment	
	401-2	Benefits provided to full-time employees (not including temporary or part-time employees)	4.2 Employee Rights, Benefits and Training 4.2.2 Employee Benefits and Compensation	
	401-3	Parental leave	4.2.3 Unpaid Parental Leave	

Disclosure Item	Description	Reference Chapter	Note
Management Policies (2016 Edition)	103-2	The management approach and its components	4.2 Employee Rights, Benefits and Training
	103-3	Evaluation the management approach	4.2 Employee Rights, Benefits and Training
Material Topic: Occupational Health and Safety			
Occupational Health and Safety (2018 Edition)	403-1	Occupational Safety and Health Management System	5.1 Workplace Safety Management
	403-2	Hazard identification, risk assessment, and incident investigation	5.1 Workplace Safety Management
	403-3	Occupational health services	5.1 Workplace Safety Management
	403-4	Worker participation, consultation, and communication on occupational health and safety	3.1.1 Environment, Health, and Safety Organization and Management 5.1 Workplace Safety Management
	403-5	Worker training on occupational health and safety	5.1 Workplace Safety Management
	403-6	Promotion of worker health	5.1 Workplace Safety Management
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	5.1 Workplace Safety Management
	403-8	Workers covered by an occupational health and safety management system	5.2.1 Safety and Health Management System
	403-9	Work-related injuries	5.1.1 Occupational Health and Safety 5.2.2 Supplier and Contractor Management
	403-10	Occupational disease	5.1.1 Occupational Health and Safety 5.2.2 Supplier and Contractor Management
Management Policies (2016 Edition)	103-2	The management approach and its components	5.1 Workplace Safety Management
	103-3	Evaluation the management approach	5.1 Workplace Safety Management
Material Topic: Community Engagement and Giving Back to the Society			
	413-2	Operations with significant actual and potential negative impacts on local communities	3.2.1 Water Resource Consumption and Reduction Management 3.4.1 Air Pollution Monitoring and Assessment

Disclosure Item		Description	Reference Chapter	Note
Management Policies (2016 Edition)	103-2	The management approach and its components	6.1 Local Community Development and Investment	
	103-3	Evaluation the management approach	6.1 Local Community Development and Investment	
Customer Health and Safety (2016 Edition)	416-1	Assessment of the health and safety impacts of product and service categories	2.3.3 Product Safety and Health Responsibility	
	416-2	Violations of health and safety of products and services	-	No violation of health and safety of products and services in 2019
Marketing and Labeling (2016 Edition)	417-2	Incidents of non-compliance concerning product and service information and labeling	-	No incident of non-compliance concerning product and service information and labeling in 2019
Customer Privacy (2016 Edition)	418-1	Substantiated complaints regarding breaches of customer privacy and losses of customer data	2.4.1 Customer Relations and Privacy Protection	No breach of customer privacy or loss of customer data in 2019
Socioeconomic Compliance (2016 Edition)	419-1	Non-compliance with laws and regulations in the social and economic area	-	No incident of non-compliance with laws and regulations in the social and economic area in 2019

FPC and Industry Issues

Disclosure Item		Description	Reference Chapter	Note
Material Topic: Product and AI Technology Development and Innovation				
Management Policies (2016 Edition)	103-2	The management approach and its components	2.3.2 Product and AI Technology Development and Innovation	
	103-3	Evaluation the management approach	2.3.2 Product and AI Technology Development and Innovation	
Material Topic: Emergency Response Mechanism at Complexes				
Management Policies (2016 Edition)	103-2	The management approach and its components	5.1.2 Emergency Response Mechanism at Complexes	
	103-3	Evaluation the management approach	5.1.2 Emergency Response Mechanism at Complexes	
Material Topic: Industrial and Public Safety				
Management Policies (2016 Edition)	103-2	The management approach and its components	5.2 Industrial Safety Management in Supply Chain	
	103-3	Evaluation the management approach	5.2 Industrial Safety Management in Supply Chain	
Material Topic: Operational Risk Management and Response				
Management Policies (2016 Edition)	103-2	The management approach and its components	2.2.4 Operational Risk Management and Response	
	103-3	Evaluation the management approach	2.2.4 Operational Risk Management and Response	

II. Independent Assurance Opinion Statement

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INDEPENDENT ASSURANCE OPINION STATEMENT

Formosa Plastics Corporation 2019 Corporate Social Responsibility Report

The British Standards Institution is independent to Formosa Plastics Corporation (hereafter referred to as FPC in this statement) and has no financial interest in the operation of FPC other than for the assessment and verification of the sustainability statements contained in this report.

This independent assurance opinion statement has been prepared for the stakeholders of FPC only for the purposes of assuring its statements relating to its corporate social responsibility (CSR), more particularly described in the Scope below. It was not prepared for any other purpose. The British Standards Institution will not, in providing this independent assurance opinion statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used, or to any person by whom the independent assurance opinion statement may be read.

This independent assurance opinion statement is prepared on the basis of review by the British Standards Institution of information presented to it by FPC. The review does not extend beyond such information and is solely based on it. In performing such review, the British Standards Institution has assumed that all such information is complete and accurate.

Any queries that may arise by virtue of this independent assurance opinion statement or matters relating to it should be addressed to FPC only.

Scope

The scope of engagement agreed upon with FPC includes the followings:

1. The assurance scope is consistent with the description of Formosa Plastics Corporation 2019 Corporate Social Responsibility Report.
2. The evaluation of the nature and extent of the FPC's adherence to AA1000 AccountAbility Principles (2018) in this report as conducted in accordance with type 1 of AA1000 Assurance Standard (2008) with 2018 Addendum assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process.

This statement was prepared in English and translated into Chinese for reference only.

Opinion Statement

We conclude that the FPC 2019 Corporate Social Responsibility Report provides a fair view of the FPC CSR programmes and performances during 2019. The CSR report subject to assurance is free from material misstatement based upon testing within the limitations of the scope of the assurance, the information and data provided by the FPC and the sample taken. We believe that the 2019 economic, social and environmental performance information are fairly represented. The CSR performance information disclosed in the report demonstrate FPC's efforts recognized by its stakeholders.

Our work was carried out by a team of CSR report assurers in accordance with the AA1000AS (2008) with 2018 Addendum. We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that FPC's description of their approach to AA1000AS (2008) with 2018 Addendum and their self-declaration in accordance with GRI Standards: Core option were fairly stated.

Methodology

Our work was designed to gather evidence on which to base our conclusion. We undertook the following activities:

- a review of issues raised by external parties that could be relevant to FPC's policies to provide a check on the appropriateness of statements made in the report.
- discussion with managers on approach to stakeholder engagement. However, we had no direct contact with external stakeholders.
- 10 interviews with staffs involved in sustainability management, report preparation and provision of report information were carried out.
- review of key organizational developments.
- review of the findings of internal audits.
- review of supporting evidence for claims made in the reports.
- an assessment of the organization's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness and Impact as described in the AA1000AP (2018).

Conclusions

A detailed review against the Inclusivity, Materiality, Responsiveness and Impact of AA1000AP (2018) and GRI Standards is set out below:

Inclusivity

This report has reflected a fact that FPC has continually sought the engagement of its stakeholders and established material sustainability topics, as the participation of stakeholders has been conducted in developing and achieving an accountable and strategic response to sustainability. There are fair reporting and disclosures for economic, social and environmental information in this report, so that appropriate planning and target-setting can be supported. In our professional opinion the report covers the FPC's inclusivity issues.

Materiality

FPC publishes material topics that will substantively influence and impact the assessments, decisions, actions and performance of FPC and its stakeholders. The sustainability information disclosed enables its stakeholders to make informed judgements about the FPC's management and performance. In our professional opinion the report covers the FPC's material issues.

Responsiveness

FPC has implemented the practice to respond to the expectations and perceptions of its stakeholders. An Ethical Policy for FPC is developed and continually provides the opportunity to further enhance FPC's responsiveness to stakeholder concerns. Topics that stakeholder concern about have been responded timely. In our professional opinion the report covers the FPC's responsiveness issues.

Impact

FPC has identified and fairly represented impacts that were measured and disclosed in probably balanced and effective way. FPC has established processes to monitor, measure, evaluate and manage impacts that lead to more effective decision-making and results-based management within the organization. In our professional opinion the report covers the FPC's impact issues.

GRI Sustainability Reporting Standards (GRI Standards)

FPC provided us with their self-declaration of in accordance with GRI Standards: Core option (For each material topic covered by a topic-specific GRI Standard, comply with all reporting requirements for at least one topic-specific disclosure). Based on our review, we confirm that social responsibility and sustainable development disclosures with reference to GRI Standards' disclosures are reported, partially reported or omitted. In our professional opinion the self-declaration covers the FPC's social responsibility and sustainability topics.

Assurance level

The moderate level assurance provided is in accordance with AA1000AS (2008) with 2018 Addendum in our review, as defined by the scope and methodology described in this statement.

Responsibility

The CSR report is the responsibility of the FPC's chairman as declared in his responsibility letter. Our responsibility is to provide an independent assurance opinion statement to stakeholders giving our professional opinion based on the scope and methodology described.

Competency and Independence

The assurance team was composed of Lead auditors experienced in relevant sectors, and trained in a range of sustainability, environmental and social standards including AA1000AS, ISO 14001, ISO 45001, ISO 14064 and ISO 9001. BSI is a leading global standards and assessment body founded in 1901. The assurance is carried out in line with the BSI Fair Trading Code of Practice.

For and on behalf of BSI:



Peter Pu, Managing Director BSI Taiwan



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