台塑企業
FORMOSA PLASTICS GROUP

2019 CSR Report

Formosa Petrochemical Corporation

Corporate Social Responsibility Report

2020 CSR Contents

Report Overview

This is the sixth Corporate Social Responsibility (CSR) Report published by Formosa Petrochemical Corporation (FPCC). The period involved in information disclosure herein is from January 1, 2019 to December 31, 2019. The boundary is Taiwan, relevant information that exceeds this scope will be footnoted in the report, and four-year data are provided in principle. Please download previous reports at CSR website.

Overview of issuance

Issue Date of First Version: December 2015
Issue Date of Previous Version: May 2019
Issue Date of Current Version: May 2020
Issue Date of Next Version: May 2021

Report Boundaries and Scope

This report mainly discloses information on FPCC. Affiliates of FPCC in the consolidated financial statements include Formosa Oil, Formosa Petrochemical Transportation Corp., FPCC USA, and FPCC Marine Corporation. The level of impacts from individual affiliates, however, are minimal. As such, this report features primarily data of FPCC. Hence, the boundary has not changed compared with the previous year.

Foundation for Data Calculation

The scope of information disclosed in this report includes financial, environmental, and social aspects. The data in this report were compiled by the President's Office with materials provided by individual units, and were reviewed and confirmed by the FPCC Sustainable Development Task Force of FPCC to comply with the integrity and transparency disclosure principles for this report.

Editing Principles

This report adopts the GRI Standards Core Option as the main framework, and referenced the Oil and Gas Sector Disclosures and the four major principles of the AA1000 AccountAbility Principle Standard, namely materiality, inclusiveness, responsiveness, and impact, to demonstrate FPCC's commitment to sustainability in its business operations.

This report discloses information and considers material issues based on the Corporate Social Responsibility Best Practice Principles for TWSE/GTSM Listed Companies of Taiwan, ISO 26000 Guidance on social responsibility, and UN Global Compact. This is the first time we adopted the Integrated Reporting (IR) framework for disclosures.

Third Party Verification

In order to ensure the transparency and credibility of information disclosure, related information and data disclosed in this report have gone through the independent verification performed by the British Standards Institution (BSI), a third party international certification institution, based on GRI Standards AA1000 AS:2008, and the verification statement is included in this report.

Contact information

Feel free to contact us through the following channels if you have any questions or suggestions concerning this report:

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Message from the Chairperson

Leading Innovation in the Industry to Create Diverse New Values

Formosa Plastics Group witnessed the glorious history of Taiwan's economic development over the past six decades, and has memories of the stories of over ten thousand employees. The Group established Formosa Petrochemical Corporation (FPCC) in response to the shortage of upstream materials in the petrochemical industry in 1992. Over the past two decades, we have bridged the past and future by constantly adjusting our development strategy and policy, laying an important foundation for Taiwan's petrochemical industry. The industry has been deeply affected by the international political and economic situation in recent years. The rise of new capacity and new technologies has changed the situation and rules of competition in the petrochemical industry. Furthermore, the impact of climate change on companies is becoming growingly severe, showing the urgency for FPCC's reform and transformation. We have long focused on strategies for industry development, circular economy, labor safety, talent cultivation, and connecting with communities. In this sustainable value model, we will continue to expand the petrochemical market by making innovation and sustainability a part of our DNA.

✦ Driving New Industrial Developments

As the industry leader, we respond to technological innovations and the rise of renewable energy, which has led to the situation of being "first today, last tomorrow," by continuously dedicating efforts into R&D as we actively search for low-carbon alternative sources of energy. Based on the strategy of "quantity on the outside, quality on the inside," we added value to general specifications, increased the value of special specifications, and led industrial upgrade as we enhanced our competitiveness, creating a new paradigm for industrial transformation.

✦ Creating a New Green Appearance

FPCC responds to global climate change from the energy aspect. We planned energy conservation, energy creation, energy storage, and smart energy in coordination with the Group’ s green energy business, and combined it with our core business for gradual transformation, such as: using LED lighting in office buildings and plants; installing solar power systems in gas stations, the Formosa gas station in Madou has obtained the green building rating of diamond grade, and is a representative gas station in Taiwan that operates on green energy; AI is applied in processes in plants, and integrates economic, environmental, and risk controls.

✦ Deepening the New Culture of Labor Safety

It is the responsibility and obligation of FPCC to maintain a safe and healthy workplace. The culture of labor safety is an unchanging core value of FPCC. We strengthened the accountability of employees in operational safety, and implemented management operations at each level, building employees safety responsibility through education, training, and emergency response activities, deeply embedding concepts of self-management in employees' hearts to strengthen safety protection. Furthermore, we require upstream and downstream suppliers to also take labor safety seriously, working together to create safer work environments.

✦ New Concepts for Talent Cultivation

Talent is the key to maintaining our core competitiveness, and employees are our partner in sustainable growth. We provide employees with complete career development to cultivate outstanding talent to form an effective team. We recently began providing managers with cross-level, cross-function learning, training talent with better ability to succeed their predecessors.

✦ New Value of Connecting with Communities

FPCC leads by example and shows its social influence by supporting local development through industry-academia collaboration, giving back and showing care for communities, while driving the development of upstream and downstream industries. We also exert our influence to raise the CSR awareness of suppliers, connecting with each other for Taiwan to flourish.

Looking towards the future, we are fully aware that we must invest even more resources to face more stakeholders, maintain our commitment to stakeholders, focus on the implementation of sustainability issues, and step up communication and disclosure of development related information. Only then will the refining and petrochemical industry be able to achieve sustainable development. FPCC began voluntarily responding to the CDP questionnaire in 2017, and improved our rating to A- (leadership) in 2019 after exerting great effort and maintaining high standards. Our sustainability report received the "Corporate Sustainability Report - Gold Award" from the Taiwan Institute for Sustainable Energy (TAISE) for three consecutive years. Our efforts and results in sustainability issues have gained public recognition.

As a global citizen, we will closely follow international sustainability trends, learn about related information, and collaborate with upstream and downstream industries based on our core business. We will integrate the business development model to create new value and gain influence that can change society.

Formosa Petrochemical Corporation

Chairman

陳金郎 B.L. CHEN

Sincerely

2020

1

Sustainability Plan

1.1 Sustainable development strategy

FPCC bridges the Group's past and future. We will continue to adjust our development strategy and policy, and lay an important and solid foundation for Taiwan's petrochemical industry through our precise business strategies. In the future, FPCC will make innovation and sustainability a part of its DNA, and continue to expand the petrochemical market. We will integrate our business development model, create diverse new values, and gain influence that can change society.

FPCC's Industrial Value Chain

The Company established its value creation process through the identification and evaluation of the industrial chain. We understand important issues in each phase of the value chain through upstream and downstream engagement. W gained an overall understanding of the industry from a macro perspective to evaluate the future direction of our operations and formulate related action plans.

Inputs

Financial capital
- Carry out the HSBC joint venture.
- Carry out the HHCR joint venture.
- Carry out the Louisiana State investment project.
- Carry out the UV LED investment project.

Manufactured Capital
- Invested NT$4.5 billion into MGGH and WESP
- Invested NT$23 million into an AI system to assist in the refining process

Intellectual capital
- Invested NT$480 million into R&D
- Completed the self-inspection electronic system in plants and integrated process and maintenance related inspection functions

Human capital
- Education and training expenses amounted to NT$36 million
- Sent 66 employees who received and completed AI training, and another 4 employees are currently receiving training. Employees that complete training will engage in AI improvements at the production site.

Social and Relationship Capital
- Expenses of free health examinations for local residents amounted to NT$192.22 million
- Donated NT$320 million for community care in 2019

Natural capital
- Invested NT$17 billion in environmental costs
- Cumulative investment in VOCs reduction equipment reached NT$2.54 billion
- Cumulative investment in energy saving equipment reached NT$9.16 billion

Business model

Upstream | **Operations** | **Downstream**

Crude oil purchasing → Crude oil transportation → Refining → Fundamental materials → Sales service

Value chain

Physical impact

	Upstream	Operations	Downstream
Group	• Oil producing country/Oil company • Investors/shareholders	• Local residents, employees • Investors/shareholders	• Customers • Consumers
Issue	• Climate change • Energy transformation • Human rights	• Operational performance • Corporate Governance • Energy management • Waste Management • Compliance with environmental laws • Occupational health and safety	• Corporate Governance • Compliance with environmental laws • Product transportation safety

Outputs

Financial capital
- Consolidated revenue was NT$646,022,810,000
- Continue to be selected into the Taiwan High Compensation 100 Index
- Continue to be selected into the FTSE4Good TIP Taiwan ESG Index

Manufactured Capital
- NOx emissions per unit of product decreased 0.81% compared to the average of the most recent five years
- The AI refining process successfully generated nearly NT$120 million revenue and reduced the cost of steam by NT$830,000.

Intellectual capital
- Developed 28 technologies including the crude oil database
- Established public safety culture and EHS promotion and training, a total of 1,158 sessions was held for 44,398 participants.

Human capital
- A total of 64,000 employees received internal education and training
- Ratio of employees who received general and special physical examinations reached 100%

Social and Relationship Capital
- Free health examinations for 12,862 local residents, goal attainment reaching 130%
- Collaboration with gas stations and non-profit organizations benefit over ten thousand people

Natural capital
- 46 cases of VOCs reduction reduced 129.14 (tons/year)
- 2,029 cases of CO_2 reduction reduced 5.32 million (tons/year)
- CDP questionnaire: Received A- in both the carbon questionnaire and water questionnaire

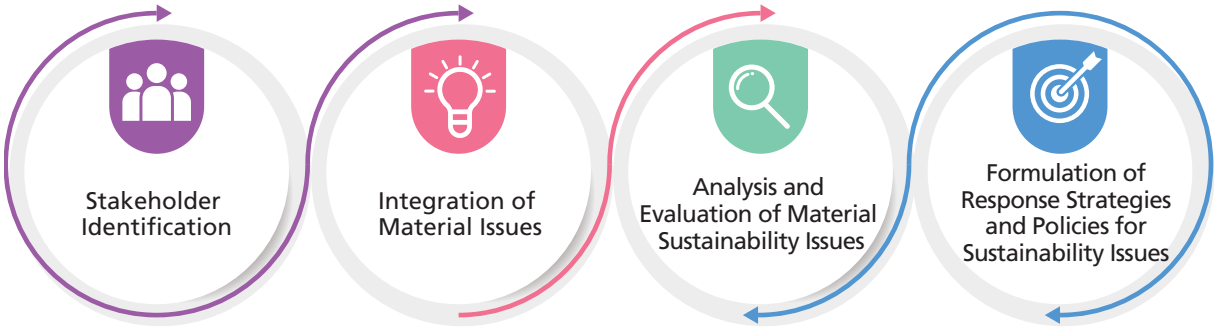
1.2 Sustainability Issue Management

Analysis of material issues

We are fully aware that communication with stakeholders is key to making continuous improvement and achieving long-term development. We periodically analyze stakeholders and collect related responses and recommendations through different channels, and include them into the Company's business plan.

Stakeholder Communication and Engagement

The Company comprehensively evaluates global sustainability trends and FPCC's business development goals, analyzes issues in governance, economy, environment, and society, and collects sustainability issues that stakeholders are concerned about through different communication channels. After discussions between internal and external experts on sustainability trends and impact analysis, and referencing the AA1000 Stakeholder Engagement Standard, the stakeholder communication process was established based on five principles, namely dependence, level of concern, influence, responsibility, and diverse perspective.

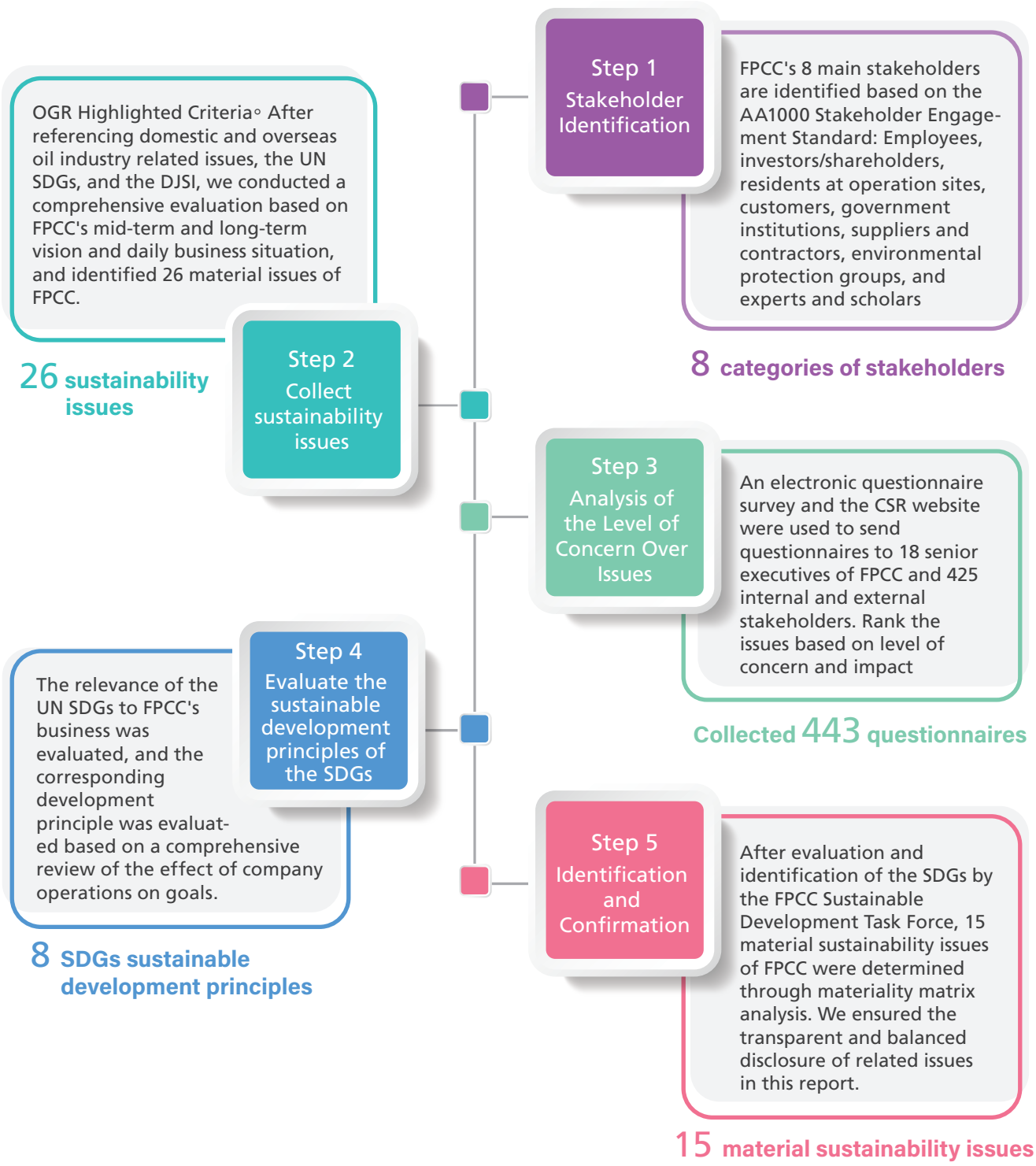


FPCC's 8 main stakeholders were jointly identified by departments with the FPCC Sustainable Development Task Force. By analyzing the issues stakeholders are concerned about, departments were selected to gain a better understanding and communicate with their corresponding stakeholders. FPCC has designated departments responsible for communicating with, listening to the opinions of, and responding to the needs of different stakeholders.

Stakeholders	Meaning to FPCC	Responsible Department	Communication channel and frequency	Main Points of Communication	Response and Engagement
Employees	Employees are the key to maintaining our core competitiveness, and also our partner in sustainable growth. Employee engagement is enhanced through sound educational training and a friendly working environment.	President's Office	• Employee-employer coordination meetings (Once/2 months) • Welfare Committee (Once/2 months) • Opinion box/email (Whenever they occur) • Release letter (As needed)	Employee welfare	✓ 94% completion of proposals at employer-employee meetings ✓ 100% completion of Welfare Committee proposals
Investors/ shareholders	Investors and shareholders are important roles that support FPCC's sustainable development. As an enterprise that has attracted great attention, we have upheld the principles of ethical corporate management and sustainable governance as our core philosophy for business management.	President's Office	• Shareholders' meeting (Once) • Investor conference (4 times/year) • Email/phone number (Whenever they occur)	Corporate Governance Business Performance	✓ Maintain top 20% in the Corporate Governance Review ✓ Compiled the English version annual report for the shareholders' meeting for the first time
Residents at the operation site	Maintaining good interactions with residents at operation sites is a key point of FPCC's operations. When formulating annual strategies and goals, this is a factor considered in evaluations for operations planning, so as to realize the vision of becoming like family to residents at plants.	Regional Management Department	• Email/phone number (Whenever they occur)	Local community development and ommunication	✓ Promotion in coordination with government knowledge of the environment ✓ Improve the living environment for local residents
Customers	To provide customers with high value products, we are devoted to becoming a trustworthy business partner of our customers that grows together with them	Operation units under each business department	• Satisfaction survey (2 times/year) • Email/phone number (Whenever they occur) • Meeting (Once a month)	Customer service satisfaction	✓ Our satisfaction survey performance was all higher than "Satisfied"
Government agencies	Apart from abiding by applicable laws and regulations, FPCC also engages in two-way communication with the government, and provides its own industry experience to jointly promote sustainable industrial development.	President's Office	• Meeting(at least 4 times/year) • Email/official letter (As needed)	Industrial and public safety Emergency response and drills	✓ 0 deaths from major occupational disasters ✓ 245 emergency response operations were executed
Suppliers and Contractors	Suppliers and contractors provide high quality products and services, and mutual trust strengthens FPCC's relationship with its supply chain	Safety and Health Management Office of each business department	• Meeting (As needed) • Contractor audit (As needed) • Email/phone number (Whenever they occur)	Industrial and public safety	✓ 665 Supplier educational training sessions
Environmental Protection Organizations	Due to industry characteristics, FPCC takes environmental protection issues very seriously. We exchange opinions with environmental protection groups and jointly work towards environmental sustainability.	President's Office	• Email/phone number (Whenever they occur) • Meeting (once/quarter)	GHG management	✓ Energy conservation reduced carbon emission by 180,000 tons CO_2e
Experts and scholars	We value the advice provided on the sustainability issue in academic theories and put the theories into practice to enhance the competitive advantages of industries in Taiwan as a whole.	President's Office	• Email (Whenever they occur) • Meeting (once/quarter)	Environmental assessment	✓ Industry-academia collaboration projects with Academia Sinica ✓ Phase 1 of the Research Project on Wastewater Microbiology was completed

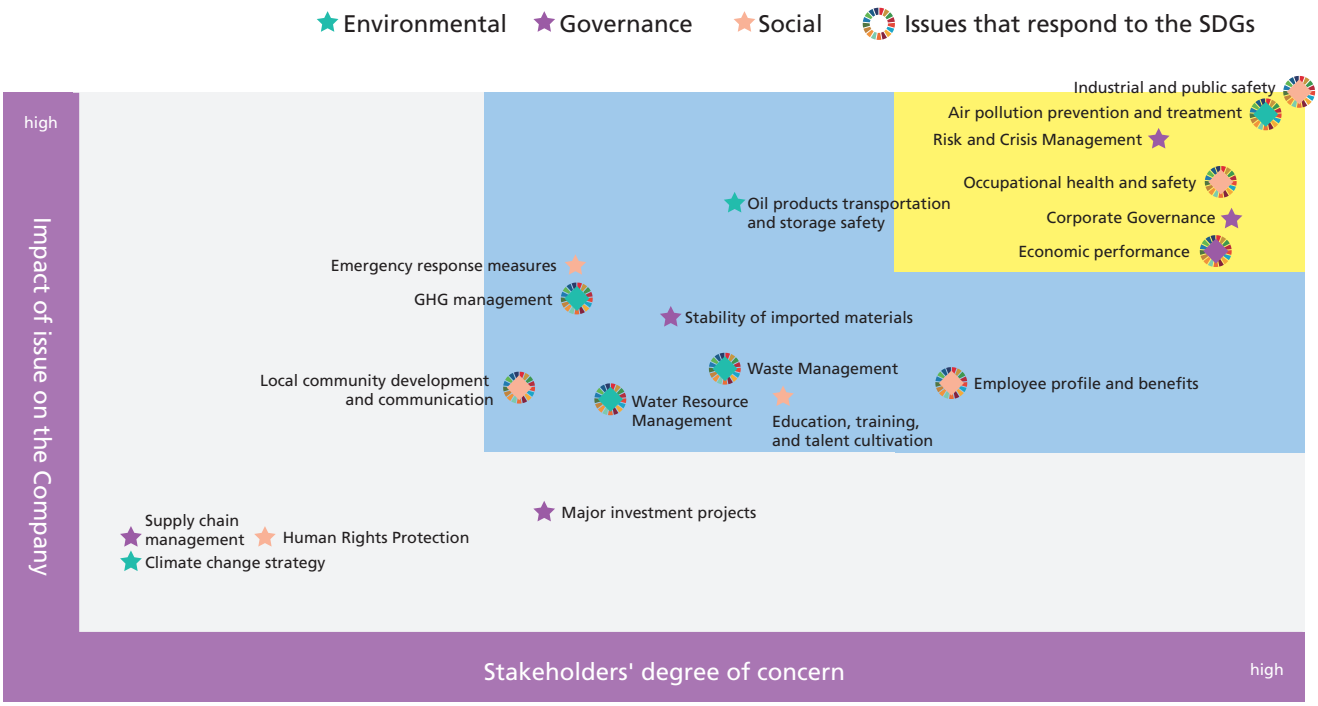
Material Issue Analysis Process

FPCC analyzes issues of concern to stakeholders through the materiality analysis process, and ranks issues based on level of concern to effectively respond to the issues that stakeholders are most concerned about.



Materiality Analysis Matrix

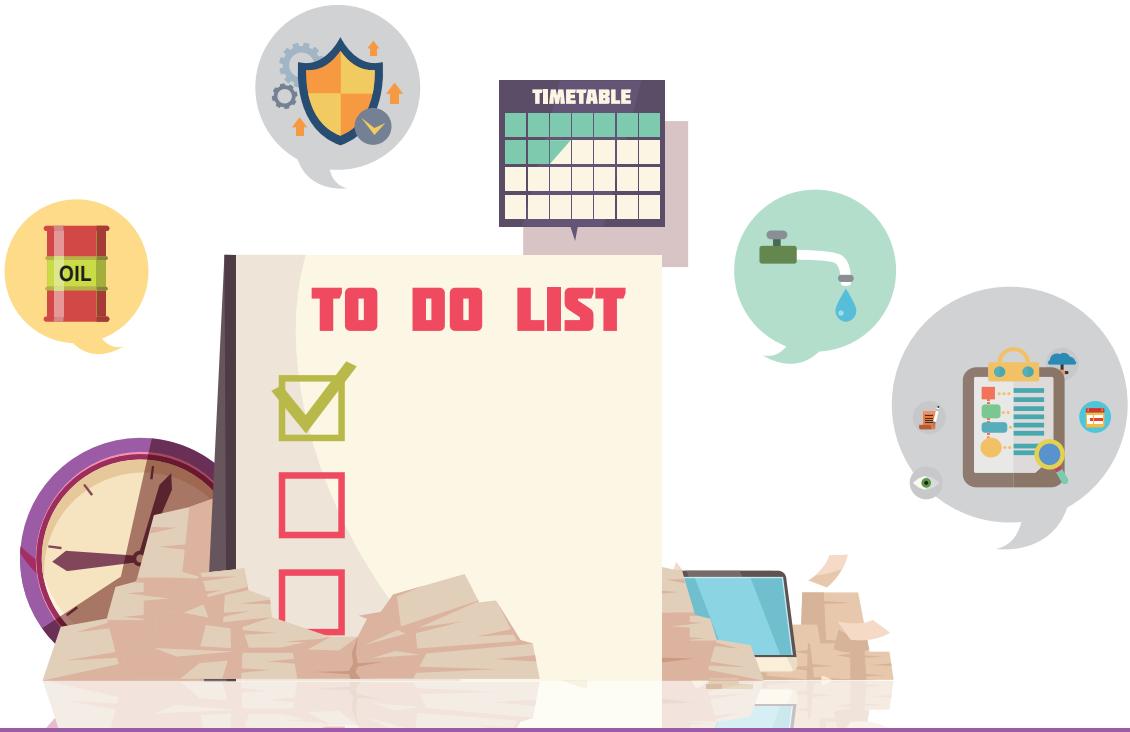
FPCC identified 26 sustainability issues that stakeholders were concerned about. After discussions between each department and the FPCC Sustainable Development Task Force, 15 material sustainability issues with moderate and high levels of influence were used as the foundation for preparing this report, and their management method and performance results are disclosed in this report.



Note: The blue area contains sustainability issues with moderate impact; the pink area contains high impact sustainability issues.

Meaning and impact of sustainability issue on FPCC

Sustainability Issue	Meaning and impact on FPCC	Issue changes compared to 2018
Risk and Crisis Management	FPCC formulates risk assessment methods and management processes in response to international trends, so as to lower the impact of social and environmental changes on its operations.	Moderate impact sustainability issue - High impact sustainability issue As climate change continues to accelerate, issues such as the stability of oil products and alternative energy have all impacted the petrochemical industry. Hence, risk and crisis management has become even more important compared with previous years.
Oil products transportation and storage safety	We take every process and detail of oil transportation very seriously, and implement thorough controls to reduce the impact brought by the transportation process of oil products.	Low impact sustainability issue - Moderate impact sustainability issue The impact brought by oil transportation and storage is not only an issue for business operations, but may also cause labor safety or environmental hazards. This is an issue that has attracted the attention of the global petrochemical industry. Hence, it has raised stakeholders' concern over this issue.
Water Resource Management	Manage water resources from the source and set standards above regulatory requirements to minimize the environmental impact of operations.	High impact sustainability issue - Moderate impact sustainability issue The two issues wastewater treatment and water resource management were integrated this year. Water is an issue that we continue to optimize, and we have developed a stable treatment method.
Emergency response measures	FPCC continues to formulate emergency response plans and carries out disaster prevention drills, minimizing risks in order to maintain public safety and a health risk.	Low impact sustainability issue - Moderate impact sustainability issue The culture of labor safety is an unchanging core value of FPCC. Emergency response measures can reduce damages to equipment and property caused by accidents, and indirectly impact the Company's operations.



Boundaries of material sustainability issues

Impacts: Direct: ○ ; Indirect / Business relationship: △ Indirect / Cause: ★

Facets of issues	Material Sustainability Issue	Corresponding material issues in the GRI Standards	Chapter	Value chain		
				Upstream	Operations	Downstream
Economic	Economic Performance	GRI 201	2.2	○	○	○
	Corporate Governance	Self-defined Material Sustainability Issue GRI 102-18	2.1		○	△
	Risk and Crisis Management	Self-defined Material Sustainability Issue	1.2	○	○	○
	Stability of imported materials	Self-defined Material Sustainability Issue	4.3	○	○	
Environmental	Air pollution prevention	GRI 305；GRI-OG6	3.2		○	△
	Oil products transportation and storage safety	Self-defined Material Sustainability Issue	4.2	○	○	△
	GHG management	GRI 302；305	3.2		○	△
	Waste Management	GRI OG5 GRI 306	3.4		○	△
	Water Management	GRI 303 GRI OG5 GRI OG8	3.4		○	△
Social	Employee profile and benefits	GRI 401	5.3		○	
	Education, training, and talent cultivation	GRI 404	5.2		○	
	Occupational health and safety	GRI 403	5.4		○	○
	Emergency response measures	Self-defined Material Sustainability Issue	4.4		○	
	Industrial and public safety	GRI 403 GRI-OG13	4.1		○	
	Local community development and communication	GRI 413	6.1			★

Risk and Crisis Management

Management approach (MA)

Self-defined Material Sustainability Issue

- Sustainability Issue: Risk and Crisis Management
- Our commitment and responsibilities: We will respond to and analyze business risks in a timely manner, and understand the probability and subsequent impact of the risks to implement appropriate risk aversion strategies.
- Our goals: Establish effective risk analysis and management mechanisms and suitably identify risks, effects, and level of impact.

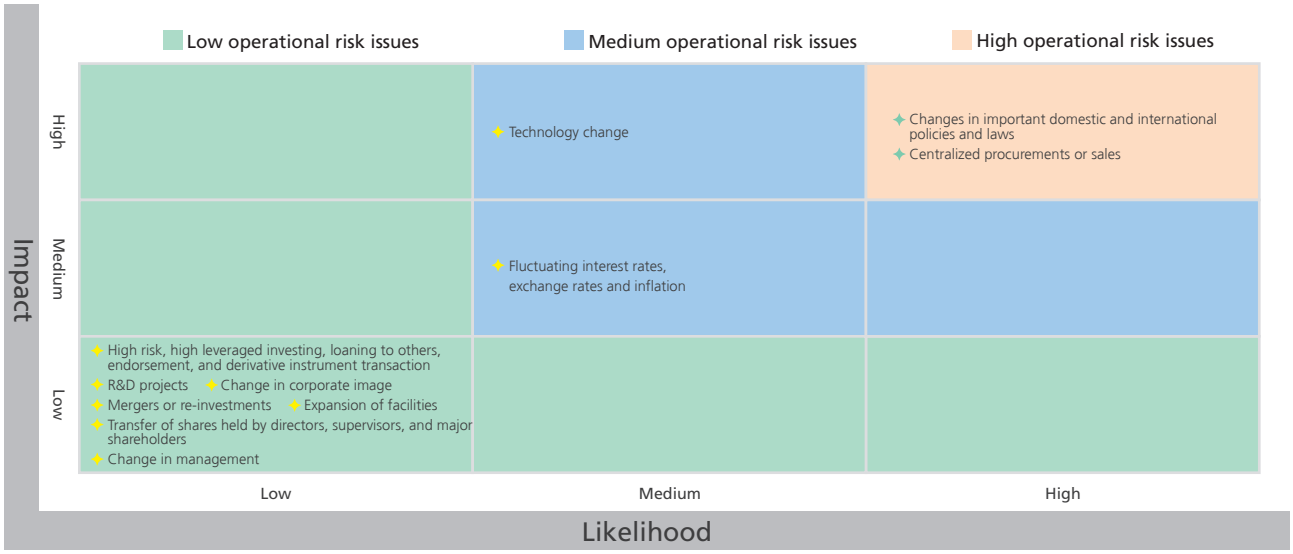
Risk management system

To achieve sustainable development, companies must consider potential risks and evaluate their operations. FPCC continues to observe trends in global risks to achieve sustainable development. Risk topics have been extended from economy to many different aspects, including: environment, society, technology, and geopolitics. FPCC's risk management is mainly carried out by the FPCC Sustainable Development Task Force, which identifies potential business risks and jointly evaluates the probability and impact of the risks together with related business departments based on the nature of the risks, appropriately informing management to adjust the Company's business strategy.

Risks are divided into inherent operational risks and emerging risks for risk management, in which operational risks include the 12 risks that are required to be disclosed in accordance with the Regulations Governing Information to be Published in Annual Reports of Public Companies, and each risk is analyzed and assessed by the Sustainable Development Task Force. Emerging risks are operational risks that may be encountered in the next five years, and issues are collected using the COSO Enterprise Risk Management (ERM) framework, inviting CSR experts to collaborate in the analysis of the Company's emerging risks.

Inherent operational risk assessment

Inherent operational risk analysis matrix



Emerging risk assessment and identification

Emerging Risk Issue Analysis Process

step 1

Collection

Scope of data collection:
1. Report of same industry
2. Industry alliance
3. International risks and trends research organization

22 issues

step 2

Summarize

Summarize principles:
1. Integrate issues with the same concepts
2. Delete issues that already have a MA in FPCC's CSR report
3. Issues that will affect the formulation and implementation of business strategies and attainment of business goals in the next five years

11 issues

step 3

Interviews

1. Interview 5 senior managers to focus on emerging risks in the next five years
2. Verify emerging risks with the FPCC Sustainable Development Task Force

5 senior managers

step 4

Distribute questionnaires

1. Distribution method: Questionnaires consist of two aspects, namely level of impact and probability.
2. Subjects: Senior managers of FPCC (chairperson, president, executive president, vice president, vice president)

Collected 17 questionnaires

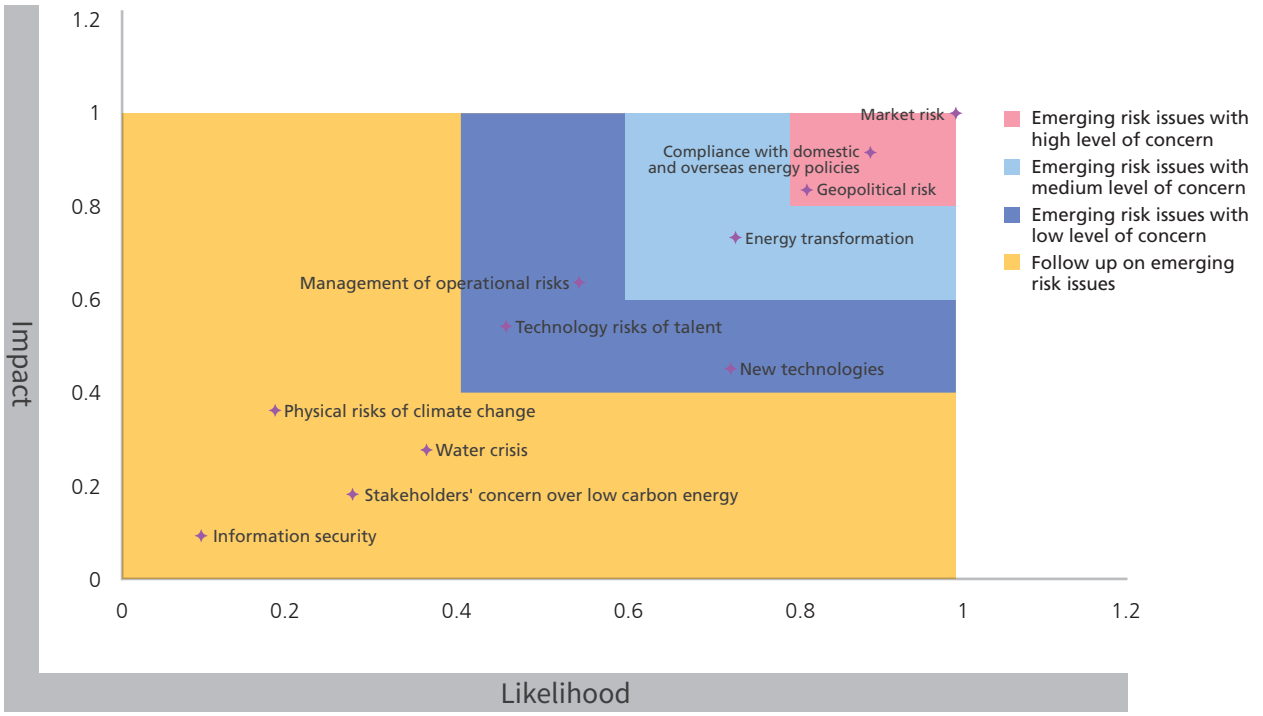
step 5

Results analysis

◆ The FPCC Sustainable Development Task Force verifies emerging risks

◆ Emerging risk issues with high level of impact on FPCC and high probability include:
- Market risk
- Compliance with domestic and overseas energy policies
- Geopolitical risk

Emerging risk analysis matrix



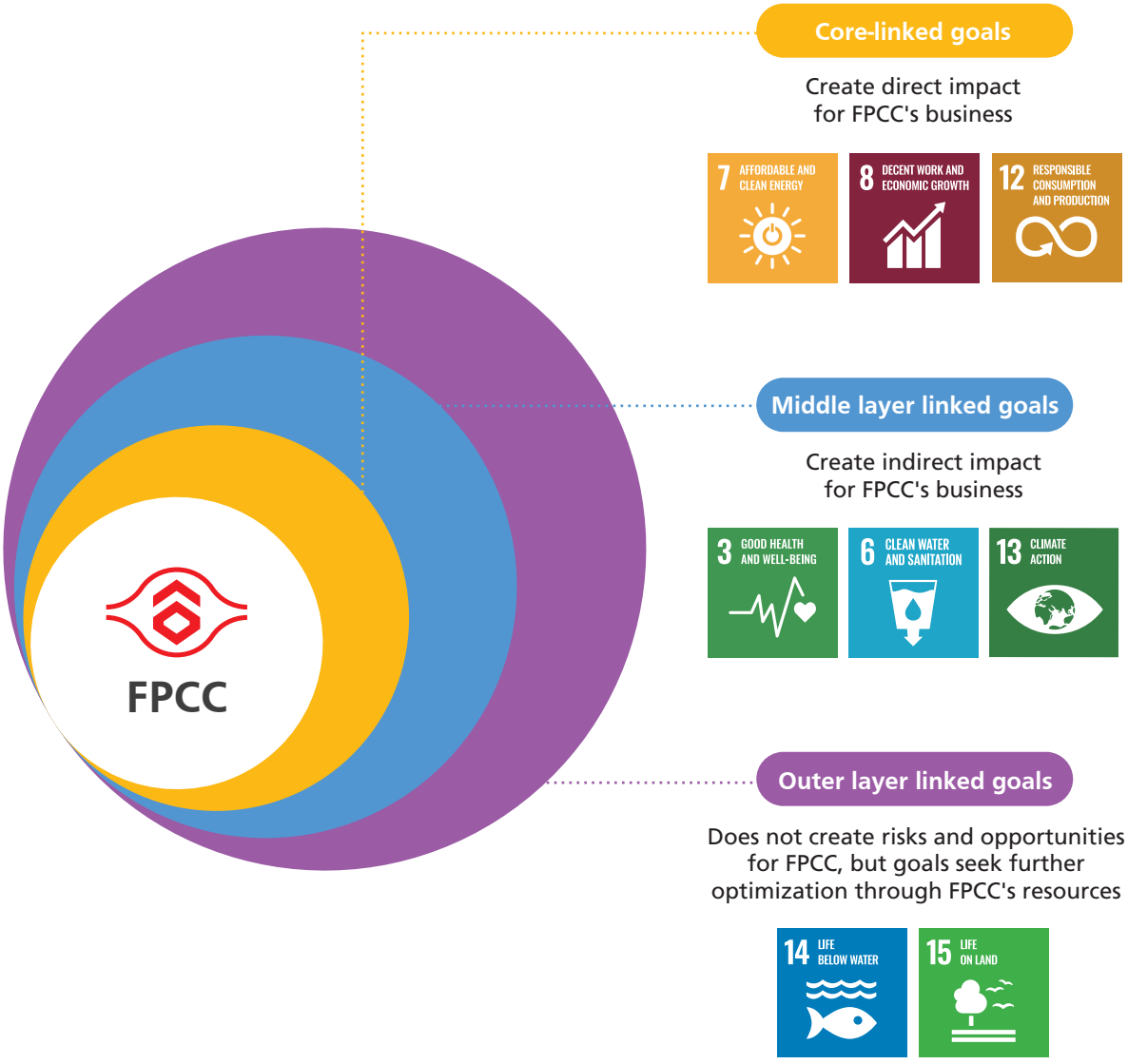
Risk Issue Assessment and Management

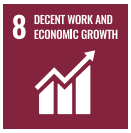
Response measures for risks that were assessed to have greater impact are disclosed below. Please refer to the annual report for the Company's shareholders' meeting for response methods to other risks.

Category	Risk assessment item	Risk management unit	Risk review	Response measure
Inherent	Risk of changes in important domestic and international policies and laws	Sustainable Development Task Force, Legal Affairs Office	The Company is significantly affected by the government's energy policy, and the Petroleum Administration Act, Electricity Act, and various environmental protection related laws and regulations all have a significant effect on the Company.	FPCC remains highly attentive to any changes to domestic and international political and economic situations, establishment of major policies, and regulatory changes, and arranges staff to receive professional training if necessary.
Emerging	Compliance with domestic and overseas energy policies			
Inherent	Centralized procurements or sales	Sustainable Development Task Force, Manager's Office at each business department	The Company's main source of raw materials is major oil producing countries in the Middle East, which occasionally has the risk of supply being cut off and shipping risks resulting in unstable raw material supply. We have signed sales contracts with major customers, which are relatively concentrated.	In response to the risk of purchase concentration, we utilize refining technologies and processes that allow flexible feed, and sign long-term contracts with foreign suppliers to disperse risk. With regard to sales, we periodically respond to customers' credit checks for domestic sales, which has been stable; for exports, we make adjustments based on the production and sales of oil refineries and the international market for oil products.
Emerging	Geopolitical risk	Sustainable Development Task Force		
Emerging	Market risk	Sustainable Development Task Force, Manager's Office at each business department	Mainly due to the change in energy use structure, such as more energy-efficient electric vehicles and regular vehicles, and many competitors have gained the support of policies from their local government, increasing the difficulty of competition.	In response, we are seeking to increase the value of products, diversify products, and find new opportunities for investment in other regions, so as to diversify our market risk.

1.3 Sustainable Development Goals (SDGs)

As a leading industry that is closely connected to the economy, FPCC sets out from its core business on the path towards sustainable development, closely follows international trends in sustainability issues, and comprehensively reviewed the connection between its sustainability practices and the 17 SDGs of the UN, actively responding to targets of each SDG. SDGs are integrated with FPCC's material sustainability issues for a comprehensive evaluation, sequentially incorporating the SDGs into the decision-making process for corporate sustainability, laying out the blueprint for FPCC's sustainability. The Company identified 8 SDGs to provide the framework for the sustainability blueprint. After a comprehensive evaluation of global sustainability trends, industry issues, and material sustainability issues, the SDGs are prioritized and incorporated into the sustainability strategies and policies of business plans.



Identification and Prioritizing	UN SDGs		Material Sustainability Issue	Sustainability Measures of FPCC in 2019	Goal achievement	FPCC's long-term vision
	Goals	Targets				
Tier 1 Core-linked goals		7.2 Double energy efficiency	• Business Performance • GHG management	1,598 improvement cases in total Cumulative investment amount of NT$6.25 billion	Ongoing	Expand the provision of sustainable energy worldwide through the improvement of energy efficiency
		8.2 Increase production capacity through diversification, technology upgrade, and innovation	• Business Performance • Occupational health and safety • Risk and Crisis Management	Invested NT$23 million into an AI system to assist in processes, and successfully increased revenue by nearly NT$120 million	Achieved	Promote local employment development, improve work environment safety, and lead the industry towards higher added value
		12.2 Achieve the sustainable management and efficient use of natural resources 12.5 Substantially reduce waste generation through prevention, reduction, recycling and reuse	• Waste Management	Continue to implement waste reduction measures	Ongoing	Implement reuse projects for waste that is buried to significantly reduce the amount of waste generated
Tier 2 Middle layer linked goals		3.4 Reduce non-communicable diseases through prevention and treatment and promote mental health and well-being	• Employee profile and benefits • Occupational health and safety • Local community development and communication	Completed "i-Medical+APP," establishing a management platform for scientific management of employee health	Ongoing	Implement local healthcare and occupational health management, collect big data, and actively provide employees with individual health education and tracking
		6.3 Improve water quality, reduce pollution, and reduce the release of toxic chemical substances and hazardous materials	• Water Resource Management	Obtain environmental impact assessment and design documents for desalination plant. Rain water storage rate of 97.6%	Achieved	Increase water usage and properly carry out wastewater treatment to protect water ecological systems

Identification and Prioritizing	UN SDGs		Material Sustainability Issue	Sustainability Measures of FPCC in 2019	Goal achievement	FPCC's long-term vision
	Goals	Targets				
Tier 2 Middle layer linked goals	13 CLIMATE ACTION	13.3 Mitigation and adaptation of climate change, improvement of education, and improve human and institutional capabilities	• GHG management • Air pollution prevention	Reduced GHG emissions by 44,349 tons CO_2e	Ongoing	Reduce the impact on climate change through the control and reduction of GHG emissions, and implement energy conservation and carbon reduction measures in coordination with the Greenhouse Gas Reduction and Management Act
Tier 3 Outer layer linked goals	14 LIFE BELOW WATER	14.2 Implement sustainable management and protection of marine and coastal ecology	• Local community development and communication	Pass the EcoPorts Certification and obtain a certificate	Achieved	Reduce the impact of land waste on the ocean to protect marine ecology
	15 LIFE ON LAND	15.4 Implement protection of mountain ecosystems	• Local community development and communication	Conduct local species surveys for at least 10 consecutive years to fulfill our responsibility to species conservation at operation sites	Ongoing	Reduce actions that damage natural habitats to protect ecological resources and species on land

2

Driving New Industrial Developments

Chapter Summary

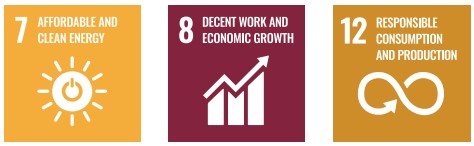
Global economic growth slowed in 2019 due to the US-China Trade War and international political and economic turmoil. Industries all faced the dilemma of an economic slump, and FPCC was no exception. New petrochemical plants and expansions of existing petrochemical plants in China and the United States were completed one after another, and the large inflow of product in the petrochemical market caused an imbalance in supply and demand. Price cuts were inevitable and resulted in lower profit for the year. With regard to corporate governance, we continued to uphold steadiness and made steady progress.

Upstream → Crude oil purchasing → Crude oil transportation → **Operations** → Refining → Fundamental materials → **Downstream** → Sales service

Strategy

- Sustainable development – Develop high value products for continued business expansion
- Steady operation – Robust corporate governance
- Protect the Rights and Interests of Shareholders – Information transparency, stable return on equity

Sustainable Development Goals (SDGs)



Sustainability Issue: Corporate governance, economic performance

Stakeholders: Investors/shareholders, customers, government agencies, environmental protection groups, suppliers and contractors, experts and scholars, local residents, and employees

Targets in 2019	2019 Performance	Targets in 2020	Mid-term and Long-term Goals
Sustainable development			
✦ Carry out the HSBC joint venture. ✦ Carry out the HHCR joint venture. ✦ Carry out the Louisiana State investment project. ✦ Carry out the UV LED investment project.	✦ Enter the steady production phase ✦ Complete plant construction ✦ Passed the environmental impact assessment for the investment in Louisiana, and began site preparation ✦ NKFG Corporation completed the first phase of the joint venture plan and released sterilization products	✦ Evaluate overall investment benefits after operations stabilize ✦ Formally begin production after completing trial production ✦ Continue to implement the Louisiana State investment project ✦ Continue to implement the UV LED investment project	To achieve sustainable development, besides ensuring the competitiveness of the Company's current products and further developing high value petrochemical products, we are also searching for new investment and development opportunities
Steady operation			
✦ Held at least 6 Board of Directors meetings with an average attendance rate of at least 80%. ✦ Top 20% in the Corporate Governance Review. ✦ Completed the internal audit plan approved by the Board of Directors, and effectively improved deficiencies. ✦ Evaluate the effectiveness of the internal control system.	✦ Held 6 Board of Directors meetings with an average attendance rate of 88%. ✦ Maintain Top 20% in the Fifth Corporate Governance Evaluation ✦ All 52 audit plans approved by the Board of Directors were completed, and all deficiencies found were improved. ✦ Completed an assessment of the effectiveness of the internal control system, verified the effectiveness of internal controls and issued a statement.	✦ Held at least 6 Board of Directors meetings with an average attendance rate of at least 80%. ✦ Top 20% in the Corporate Governance Review. ✦ Completed the internal audit plan approved by the Board of Directors, and effectively improved deficiencies. ✦ Evaluate the effectiveness of the internal control system.	Ensure corporate governance operations strictly comply with regulatory requirements and achieve the purpose of steady operation
Protect the rights and interests of shareholders			
✦ Strengthen disclosures in Chinese and English ✦ We fulfilled our obligation of information disclosure and were not fined for any violation of this obligation ✦ Participated in at least 4 investor seminars, at least once each quarter ✦ Stable return on equity	✦ Compiled the English version annual report for the shareholders' meeting for the first time ✦ We were not fined for any violations of our reporting obligation in 2019 ✦ Attended four sessions on 3/26, 6/10, 9/10, and 12/10. ✦ A yield of 3.99% is higher than the interest rate of 1.04% for one-year term deposits	✦ Added announcements of material information in English ✦ We fulfilled our obligation of information disclosure and were not fined for any violation of this obligation ✦ Participated in at least 4 investor seminars, at least once each quarter ✦ Stable return on equity	Material information of the Company is immediately disclosed and transparent in accordance with regulatory requirements, and the Company's dividend policy is stably executed to protect shareholders' rights and interests

2.1 Business Philosophy, Organizational Structure, and Corporate Governance

Management approach (MA) GRI Standards: Governance

- Sustainability Issue: Corporate Governance
- Our commitment and responsibilities: The Board of Directors is FPCC's highest governance unit, and upholds the Company's business philosophy by complying with laws and the Company's Articles of Incorporation. The internal control system was established to ensure that corporate governance tasks are carried out according to regulations. We also ensure that stakeholders can immediately access material information of the Company.
- Our goals: Ensure corporate governance operations strictly comply with regulatory requirements; material information of the Company is immediately disclosed and transparent in accordance with regulatory requirements; the Board of Directors, functional committees, and the Company's internal controls are effectively executed.

Organizational Structure, Ethical Corporate Management

Company Overview

Formosa Petrochemical Corporation (FPCC) was founded in 1992 and deals mainly with the production and sales of oil products and fundamental petrochemical materials. It was the first private oil refining business in Taiwan to produce and sell various oil products such as gasoline and diesel. Its naphtha crackers, on the other hand, produce fundamental petrochemical materials such as ethylene, propylene, and butadiene, with a throughput scale topping the domestic list. In addition, there are the qualified heat and power combined co-generation system to supply various public utility fluids such as steam and power at its facilities in the Formosa Plastics Group Mailiao Industrial Park.

Formosa Petrochemical Corporation

Date of Establishment	April 6, 1992
Listing Date	December 26, 2003
Total Capital Assets	NT$95,259,596,520
Number of employees in 2019	5,338
2019 Consolidated Revenue	NT$646,022,810,000
Business office	Headquarters: No. 1-1, Formosa Plastics Group Industrial Zone, Zhongxing Village, Mailiao Township, Yunlin County Taipei Office: 4F, No. 201, Formosa Building, Dunhua N. Rd., Songshan Dist., Taipei City
Credit rating	Taiwan Ratings: twAA; Standard & Poor's A-

Note: (As of December 31, 2019)

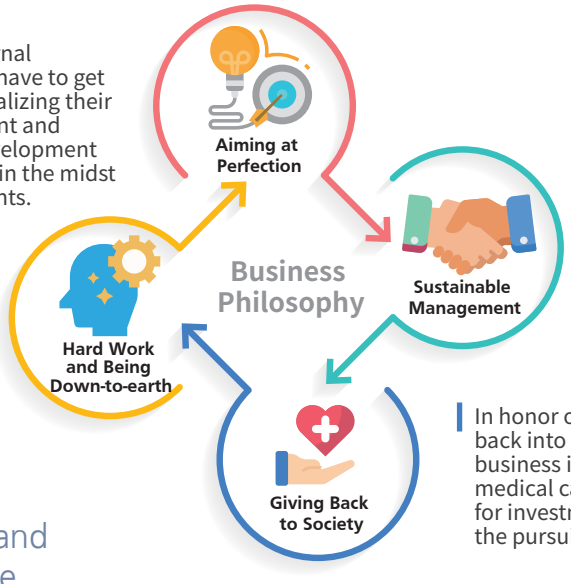
FPCC is a member of the Formosa Plastics Group Identification System. The corporate identification system features a stylized chain as its common symbol, indicating the horizontal and longitudinal connections, assistance and cooperation, harmony and smooth fusion among all members, and is symbolic of the consistency, sustainability, and continuous development power of the Formosa Plastics Group.

Business Philosophy

The Formosa Plastics Group has now developed into a comprehensive industrial group, and is active in a variety of fields. The Formosa Plastics Group has now developed into a comprehensive industrial group, and is active in a variety of fields. The momentum that drives the organization to constantly expand itself, grow, and become strong is exactly the underlying spirit that its two founders, Mr. Yung-Ching Wang and Mr. Yung-Tsai Wang, have emphasized and lived up to: hard work, being down-to-earth, aiming at perfection, sustainable management, and giving back to society.

In a rapidly changing external environment, enterprises have to get better and better in rationalizing their operation and management and realize innovation and development by making breakthroughs in the midst of continuous improvements.

Diligence is demonstrated in applying intelligence, and simplicity is a down-to-earth attitude at work. Improvements are sought in honor of the spirit to get to the bottom of everything and every effort is made to seek reasonable management.



Individual operations are in explicit compliance with rules and regulations to improve quality and efficiency at work. Long-term profit-making potential is strengthened through rationalized management and quality fair-priced raw materials are provided to customers, creating a win-win and robust partnership.

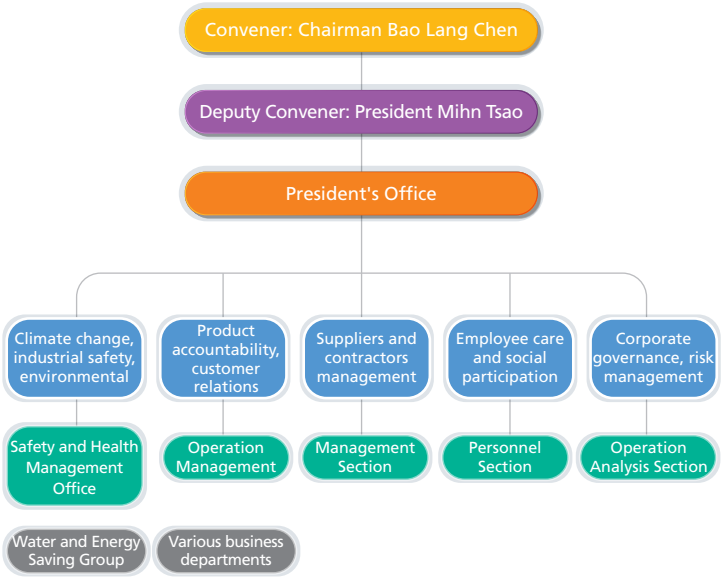
In honor of the theme that you must put back into society what you have taken out, business in the public interest such as medical care and education is prioritized for investment of corporate resources in the pursuit of overall mankind welfare.

Governance Structure and Sustainable Governance Organization

The Board of Directors is the highest level governance unit of FPCC, and organizational framework of FPCC features specific responsibilities. The Chairman is not involved in any administrative affairs in order to ensure the independent operation of the company. Please refer to disclosures on the Company's website (http://www.fpcc.com.tw/tw/about/organization) for the organizational structure.

We implement risk management, CSR, and climate change adaptation through the FPCC Sustainable Development Task Force, in order to achieve sustainable development. Multiple smooth communication channels are used to understand what stakeholders are concerned about and their needs, which serve as an important basis for establishing the corporate sustainability policy.

Organizational chart of the FPCC Sustainable Development Task Force



Board of Directors, Audit Committee, Compensation Committee

Overview of the Board of Directors

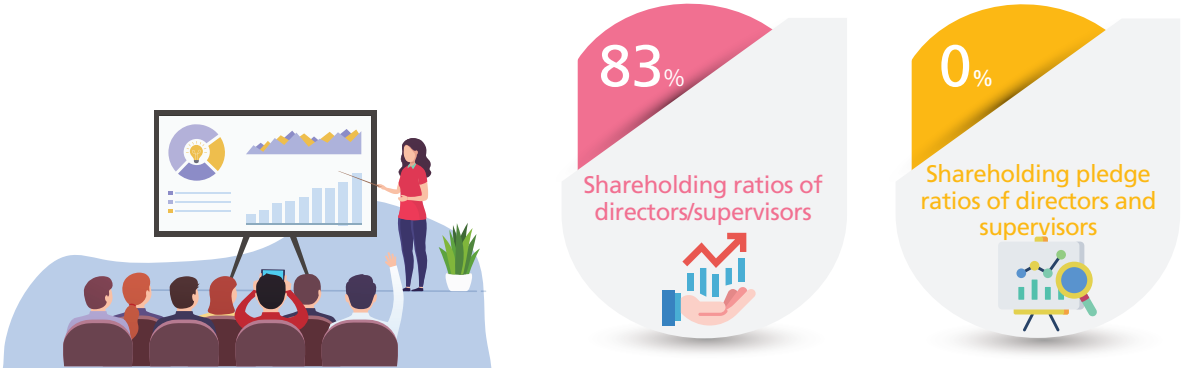
FPCC directors are elected to three-year terms via the candidate nomination system. The Corporate Governance Best Practice Principles was established to ensure the Board of Directors diversity policy is implemented and that directors have the knowledge, skills and the competencies required to perform their duties.

The Board of Directors currently has 15 members with an average age of 67 years old, and the average period that directors serve at FPCC is about 10 years, providing the most suitable strategies and guidance for the Company's development. To improve the professional competencies and legal literacy, FPCC arranges courses for directors to gain new knowledge each year. For details on the academic background and experience of directors, their professional knowledge and independence, continuing education, and shareholding, please refer to our website (http://www.fpcc.com.tw/tw/corporate/board-of-directors) and the annual report disclosed at shareholders' meetings.

The Board of Directors, in principle, meets at least once a quarter. A total of 6 board meetings were held in 2019 with an attendance rate of 89%.

Company	Number of directors (including independent directors)	Independent directors		Female directors		Average age	Average period that directors serve at FPCC
		Number of seats	Percentage	Number of seats	Percentage		
FPCC	15	3	21.43%	1	7.14%	67	10

The shareholding ratios of directors and supervisors at FPCC has been around 83% for the past five years, which is far greater than the FSC's requirement of 2% at minimum for public offering companies of the same size. Meanwhile, the shareholding pledge ratio of directors and supervisors is 0%. These ratios show that the Board of Directors and shareholders of FPCC are highly correlated in terms of interest and hence the former is trustworthy for the latter.



Operation of the Audit Committee

FPCC's Audit Committee is formed by independent directors. The Audit Committee supervises the Company's business condition and financial position based on the principles of integrity and independence. It helps the Board of Directors carry out supervisory and other duties as set forth in the Company Act, the Securities and Exchange Act, and other related laws. The Audit Committee met 5 times in 2019 with an actual attendance rate of 100%. Details are disclosed on the Company website (http://www.fpcc.com.tw/tw/corporate/board-of-directors).

Title	Name	2016		2017		2018		2019	
		Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate
Convener	C.P. Chang	5	100%	5	100%	6	100%	5	100%
Committee Members	Sush-der Lee	-	-	-	-	4	100%	5	100%
Committee Members	Yu Cheng	5	100%	5	100%	6	100%	5	100%
Committee Members	Chi-Tang Lo	3	60%	5	100%	2	100%	-	-
Total		13	86.67%	15	100%	18	100%	15	100%

Note: After the reelection of directors in the shareholders' meeting on 2018/6/14, Chi-Tang Lo was relieved and Sush-der Lee assumed the position of committee member.

Overview of Operation of the Compensation Committee

FPCC set up the Compensation Committee in August 2011 to review compensation policies and systems for the corporate directors and managers and provide the Board of Directors with suggestions; this helped prevent compensation policies guiding directors and managers to be engaged in corporate risky appetite behavior.

At present, all the three members serving on the Compensation Committee are independent directors. The committee met three times in 2019 with an actual attendance rate of 100%. Details are disclosed in the corporate governance section of the Company website (http://www.fpcc.com.tw/tw/corporate/committee).

Title	Name	2016		2017		2018		2019	
		Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate
Convener	C.P. Chang	2	100%	2	100%	3	100%	3	100%
Committee Members	Sush-der Lee	-	-	-	-	2	100%	3	100%
Committee Members	Yu Cheng	2	100%	2	100%	3	100%	3	100%
Committee Members	Chi-Tang Lo	1	50%	2	100%	1	100%	-	-
Total		5	83%	6	100%	9	100%	9	100%

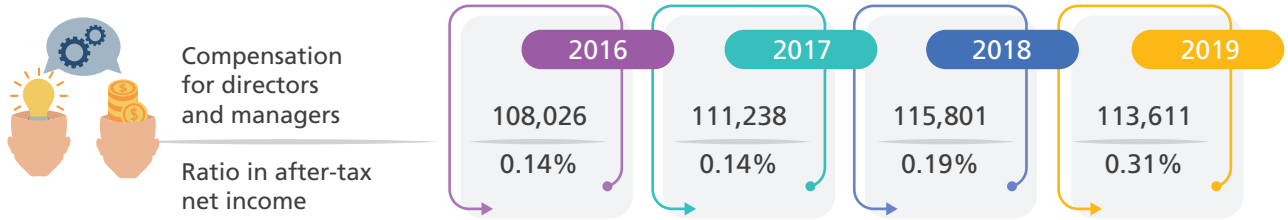
Note: After the reappointment of committee members in the Board of Directors meeting on 2018/6/14, Chi-Tang Lo was relieved and Sush-der Lee assumed the position of committee member.

Remuneration of directors and managers

For remuneration of directors and managers, independent directors receive fixed compensation on a monthly basis. All directors do not receive variable compensation, and only receive transportation subsidies based on their actual attendance in Board meetings. Annual compensation for managers mainly includes the salary, incentives, and bonuses in addition to the pension fund and the welfare fund. The Chairperson rates the overall performance and fulfillment of personal "annual objectives at work" within the scope of responsibilities for managers in terms of performance assessment, to ensure that executives understand and work together to accomplish corporate strategic goals and to combine the incentive system and the personal performance of supervisors as well as the overall corporate performance.

The total value of compensation and its ratio in after-tax net income for directors and managers at FPCC:

Unit: Thousand NTD



Strengthening Information Transparency

FPCC's measures to strengthen two-way communication with stakeholders:

- Information is regularly and irregularly disclosed on the Market Observation Post System in accordance with the law. All information was disclosed in accordance with the law in 2019, and we were not fined by the Taiwan Stock Exchange and Financial Supervisory Commission for violating our reporting obligation.
- Attend 4 investor seminars each year.
- Continue to optimize the Company website and strengthen information disclosures, including disclosing the human rights policy in the corporate governance section, employee compensation and salary adjustment mechanism, and implementing ethical corporate management education.
- Set up an Investor Section on the company's website to provide investors with related information, appoint a dedicated contact person to answer related questions,
- and appoint a spokesperson as the liaison with shareholders and institutional investors.

Concrete results are reflected in each accreditation performance review. In the Information Disclosure and Transparency Ranking System of the Taiwan Stock Exchange, FPCC has secured a Grade A or higher rating for ten consecutive years, starting from the 3rd session of the ranking system in 2006. In addition, in the first corporate governance accreditation that started in 2014, FPCC ranked in the Top 20% for five consecutive years among listed companies that took part in the rating.

Code of Conduct, Anti-corruption Policy, Internal Audit System

Code of Conduct

We established 17 regulations, including the Corporate Governance Best Practice Principles and Ethical Corporate Management Best Practice Principles based on anti-corruption, prevention against malfeasance, and strict discipline, to ensure that the business philosophy is upheld. We also organize education and training, sign self-discipline documents, and provide grievance channels in coordination. The regulations are disclosed in the corporate governance section of the Company website (http://www.fpcc.com.tw/tw/corporate/policies).

Anti-corruption policy

Anti-corruption

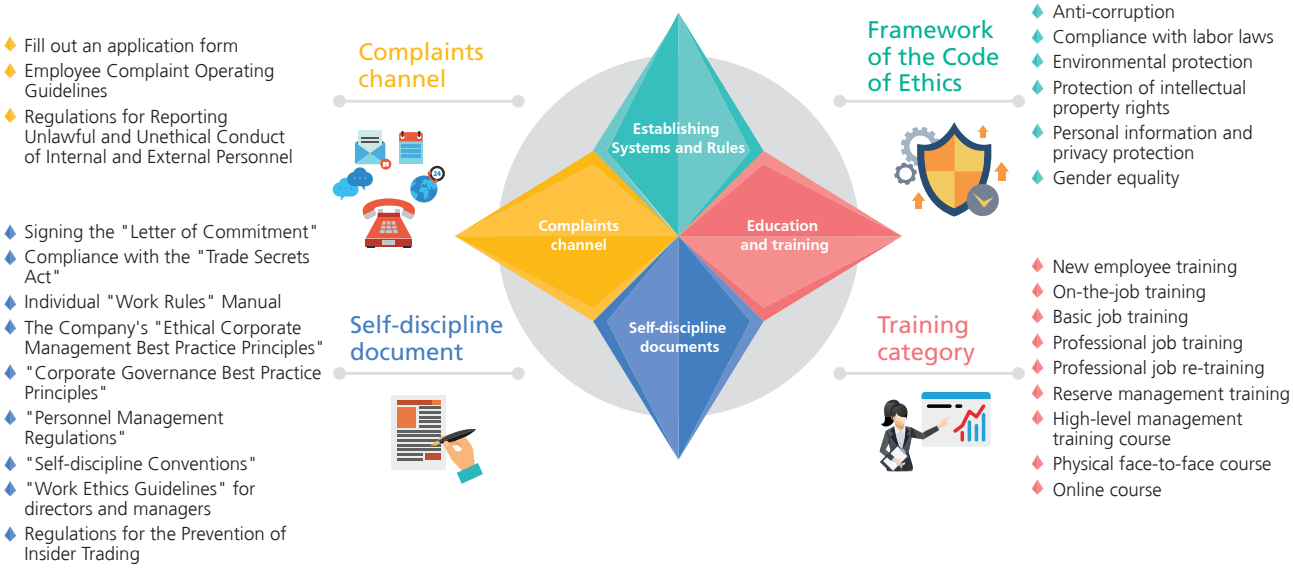
Accepting invitations to social events and financial offers by manufacturers is explicitly prohibited in the internal system, and anyone found with fraudulent personal gains, embezzlement of public funds, receipt of briberies, or commissions will be dismissed.

Prevention against malfeasance

The periodic rotation policy is enforced comprehensively among people involved in business operation, procurement, warehousing of final products, construction supervision, and budgeting, thereby preventing improper conduct with vendors.

Strict discipline

Employees violating regulations will absolutely not be pardoned once it is found to be true and their direct supervisors will be punished together, depending on the circumstances, for warning purposes and to earn public trust.



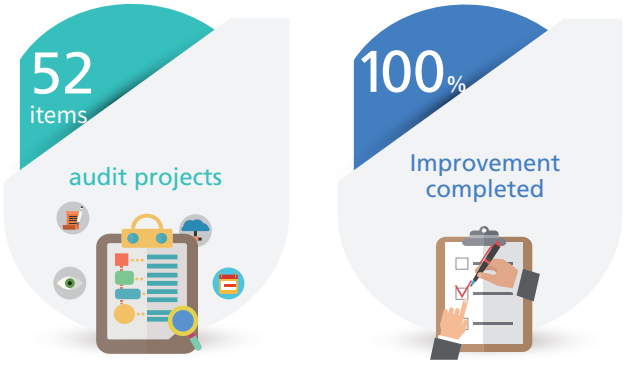
Execution

Based on the policy described above, we conducted a corruption risk assessment for all of our business locations in 2019, and found there was no severe corruption risk.

Internal Audit

FPCC has computerized all operations, and uses technology-based management to link together six major functions, namely personnel, finance, business operation, production, materials, and engineering. The effectiveness of the internal control system is evaluated by the Board of Directors each year, and a statement of the internal control system's effectiveness is issued. The 2019 effectiveness evaluation was approved by the Board of Directors on March 9, 2020.

According to the 2019 audit plan approved by the Board of Directors, items to be audited include sales and receivables, purchase and payment, production, salaries and wages, financing, fixed assets, computer information, and investment in a transaction cycle – 52 items in total, in order to accomplish goals relating operational effectiveness and efficiency, reliability of financial reports, and compliance with applicable laws. Results of the actual audit showed 11 areas with deficiency and most of them had to do with documentation or incomplete data; they were not major deficiencies. Internal control system deficiencies and abnormalities found in the inspection were already included in the produced audit report and have been followed up periodically, and have been completed corrected as of now. The improvement rate is 100%.



Implementation of internal audit

	2016	2017	2018	2019
audit projects	50 items	53 items	52 items	52 items
Number of deficiencies found	9 cases	13 cases	15 cases	11 cases
Number of improvements completed	9 cases	13 cases	15 cases	11 cases
Improvement rate	100%	100%	100%	100%

2.2 Business Model and Operational Performance

Management approach (MA)

GRI Standards:
Economic Performance GRI 201

Our operations focus on steady production, and we make flexible adjustments to production and sales based on the market situation, aiming to maximize shareholder equity and maintain stable finances. We do not engage in unrelated financial operations to maintain the Company's stability.

- Sustainability Issue: Economic performance
- Our commitment and responsibilities:To ensure the Company's steady operation, execution of the dividend policy, and for shareholders to gain stable return on their investment.
- Our goals:Ensure the steady operation of processes while strictly abiding by labor safety and environmental protection principles. Implement management for strict cost control. Steady dividend yield better than the interest rate in the financial market.

Industry overview

The domestic petrochemical industry is affected by the direction of policies. There have been no major expansions in recent years. However, Asian countries including China and South Korea have been adding new production capacity. Facing this pressure from competitors, FPCC continues to utilize artificial intelligence to increase productivity. We maintained steady production and did not make any material changes to production in 2019.

Company Business Model, Products, and Production Capacity

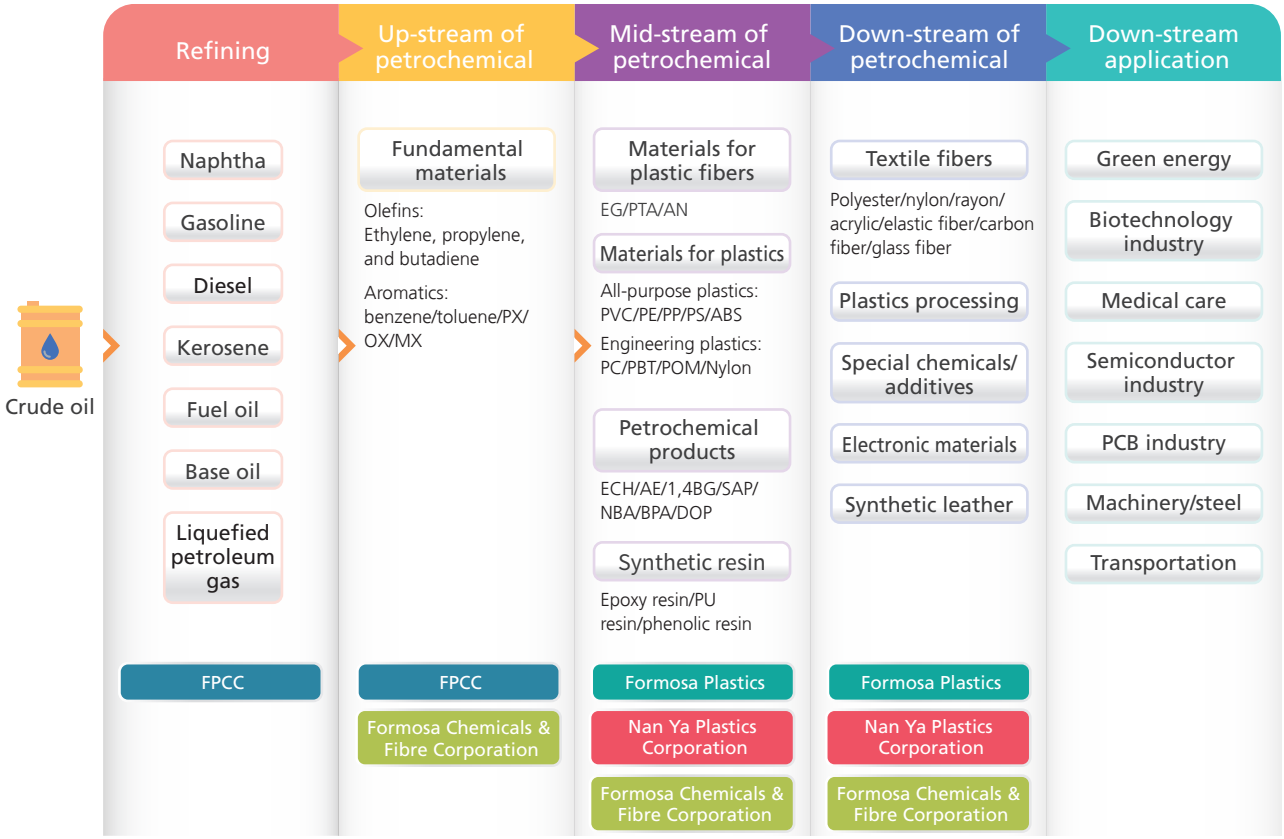
About the sixth naphtha cracker

The offshore industrial park in Mailiao, Yunlin County is located at the estuary of Zhuoshui River at the northmost point of Yunlin County. It stretches about 8 km to the north and south and extends over 4 km off the coastline.

The area is commonly known as "Feng Tou Shui Wei" and is not easily accessible. There is strong northeast monsoon for six months every year, and the strict environment and climate makes construction very difficult. It took the collective efforts of all employees to complete the construction of 54 plants in phases 1-4 of the sixth naphtha cracker project, which we invested a total of NT$841.7 billion (including industrial harbor and power plant). Details are disclosed on the Company website (http://www.fpcc.com.tw/tw/about/no6).

Correlation map of products manufactured by the Formosa Plastics Group:

The petrochemical industry generally consists of fundamental materials, intermediate materials, and applied and processed products in the down-stream, which are quite closely related with one another. The fundamental materials it produces include olefins and aromatics, which are made with naphtha refined from crude oil and having gone through high-temperature and high-pressure cracking or recombination. FPCC is located at the upstream of the industrial chain and its main material is crude oil imported from overseas. Main products include a variety of oil products and petrochemical basic raw materials. Please refer to the annual report for information on the supply of main raw materials and main suppliers and customers.



FPCC's production capacity and organizational scale in 2019:

Business Department	Main production capacity	
Refining business	Daily volume refined of crude oil	540 thousand barrels/day
Olefins business	Ethylene	2,935 thousand tons/year
Utilities business	Power generated	2,750 MW

✦ Refining business

The daily refining volume is 540 thousand barrels. The production volume of naphtha, in particular, can reach 3.75 million tons, to supply the requirements at related factories within the Mailiao Industrial Park. Meanwhile, gasoline, diesel, aviation fuels, and liquefied petroleum gas are produced.

✦ Olefins business

There are three naphtha crackers in total and total ethylene throughput reaches 2,935 thousand tons a year.

✦ Utilities business

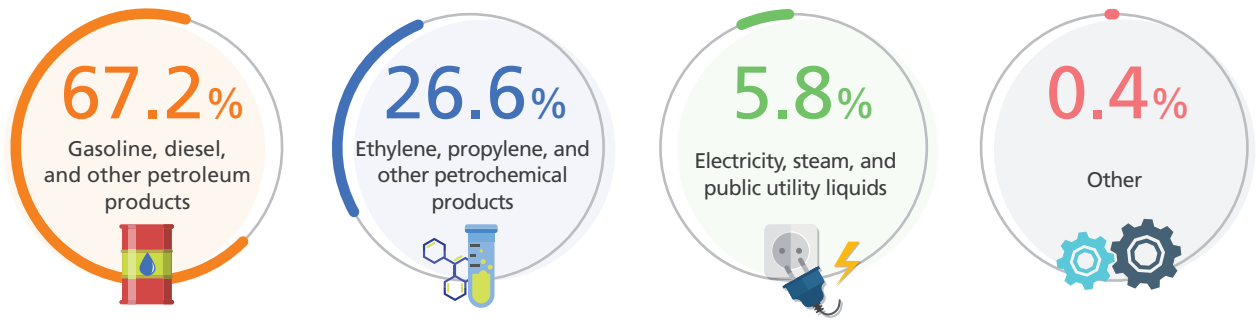
There are currently 16 sets of machines configured for the qualified heat and power combined co-generation system. The gross installed capacity is 2,750 MW. It is the largest heat and power combined co-generation plant throughout Taiwan, and generates electricity, steam, industrial water, ultra pure water, nitrogen, oxygen, and compressed air.

2019 Production Volume

With regard to production volume, we maintained steady production throughout 2019 and production is not significantly different compared to the previous year. Please refer to our website (http://www.fpcc.com.tw/) and the annual report disclosed at shareholders' meetings for details.

Main products and services:

FPCC's main products and services include gasoline, diesel and other petroleum products, ethylene, propylene and other petrochemical products, and public utility liquids. Oil products accounted for 67.2% of our business revenue in 2019, while petrochemical products accounted for 26.6%. These are the most important core business items.



For details on products and services, please refer to our website (http://www.fpcc.com.tw/) and the annual report disclosed at shareholders' meetings.

Quality certified products and services:

Energy that is new and better – Formosa 95+ Lead-free Gasoline "steady, cost-effective, powerful, and clean"

As a local brand of Taiwan, FPC has been devoted to producing high-quality products to be sold domestically and internationally. On the international oil product market, FPC's products are widely recognized for their good quality. They are sold to advanced countries such as Germany, the US, Japan, and Australia. FPC conducts in-depth research into the development of global engine technology. With its refining techniques and experiences accumulated over the years, the new formula "95 Plus Lead-free Gasoline" has been developed through improved processes and research studies in engine laboratories. It fulfills international standards and actual road tests, so that new products are equipped with more outstanding driving stability, fuel efficiency, and horsepower performance, among other characteristics.

Formosa Oil – Whole new formula super diesel

Facing the rapid development of vehicle engine technology, Formosa Oil released the whole new formula super diesel in response to the strict environmental protection laws worldwide and consumers' high expectations for a good product. The new super diesel meet the standards for the highest level diesel used in Japan and Euro 5 vehicles. It offers the advantages of smooth flow, good mileage at a low price, greater power climbing slopes, and less carbon deposit, making it the best choice for commercial vehicles.

TAF (Taiwan Accreditation Foundation) Certification

The Flow Calibration Laboratory at FPCC's Maintenance Center obtained the Chinese National Laboratory Accreditation (CNLA) certification in 2003, and the Gasoline and Diesel Engine Laboratory under the Refining Department obtained it in 2004. CNLA is also the former of the Taiwan Accreditation Foundation–Department of Laboratory Accreditation (TAF), in order to enhance the skills and capabilities and quality levels of its laboratories to accordingly achieve certification in the international community and facilitate economic activities and trade. Once certified, test reports and calibration certificates issued by the laboratories can bear the certification symbol to prove applicable capabilities.

REACH Registration of Chemicals

Ethylene, propylene, butadiene, Isoprene (IPM), piperylene (PIPS), dicyclopentadiene (DCPD) produced by FPCC have been registered under REACH, which is a safety regulation of the European Union requiring registration, evaluation, authorization, and access control of chemicals. Registration under REACH will help distribution of our products to the European Union and facilitate promotion of business.

JHOSPA (Japan Hygienic Olefin and Styrene Plastics Association)

JHOSPA was founded in 1973 in response to the Food Hygiene Act in Japan and has established regulatory standards for the raw materials of food containers/packages, additives, and hygiene of finished products. FPCC has food-grade white oil products 380N and 550N certified by the JHOSPA to be qualified additives.

Pursing higher value products for continued business expansion:

- Factory construction for the joint venture with Idemitsu Kosan Co., Ltd. to produce 43,800 tons of HHCR was completed in 2019. A test run is currently being carried out and formal production will soon begin.
- We are planning the construction of a desalination plant to replace a portion of industrial water use, making our water use more flexible.
- As the number of domestic investment opportunities has significantly decreased, we are actively carrying out our Louisiana State investment project, which constructs an ethane cracker and downstream plants, in hopes of achieving sustainable development.
- We jointly developed UV LED sterilization equipment with the Japanese company Nikkiso. The equipment can be used for air purification, drinking water sterilization, and other deodorizing and sterilization equipment. The preliminary framework of the joint venture was completed in 2019, and the first product UVC LED Portable Sterilizer was released, achieving excellent sales due to the demand on sterilization in the current pandemic.

Creative Thinking, Integrated Research and Development, Lower Risk

Individual facilities under FPCC are configured with their own process improvement department, where professional chemical engineering technicians are devoted to researching process improvements; they research and develop technologies to improve specific items so as to stabilize production, enhance the production volume, bring down costs, increase the production value, reduce energy consumption, and minimize pollution and emissions, among other goals to lower operating risks.

Unit: Thousand NTD

Year	2016	2017	2018	2019
R&D expenses	621,603	550,887	603,134	483,118

Operational performance

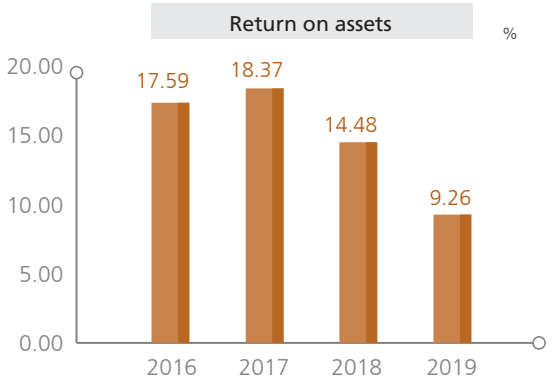
Operational performance:

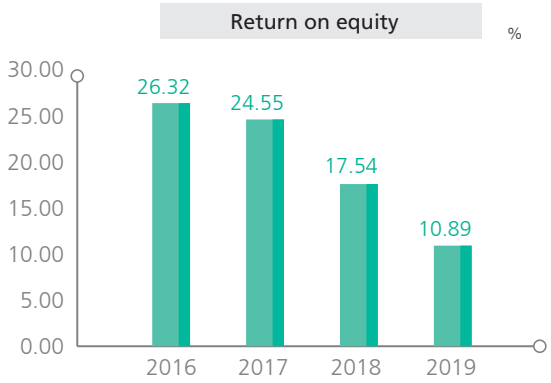
FPCC's consolidated revenue was NT$646,022,809 thousand in 2019, down 15.8% compared to the NT$767,550,218 thousand in 2018. Consolidated pre-tax net profit of NT$44,898,351 thousand was down 39.8% compared to the NT$74,547,113 thousand in the previous year, and was mainly due to the US-China Trade War and international political and economic turmoil, economic slump, and imbalanced market supply and demand.

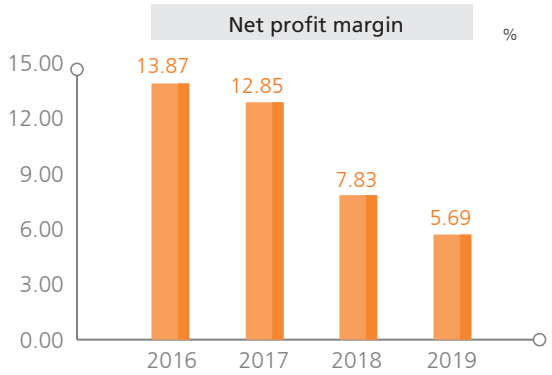
Unit: Thousand NTD

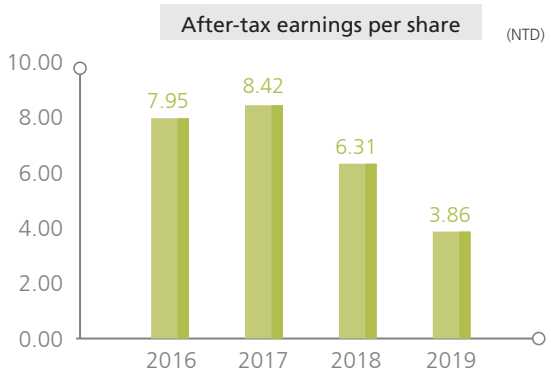
Item \ Year	2016	2017	2018	2019
Operating income	546,161,413	624,107,892	767,550,218	646,022,809
Operating cost	449,702,499	521,485,633	689,934,663	598,303,798
Net operating margin (loss)	96,458,914	102,622,259	77,615,555	47,719,011
Total operating expenses	10,249,581	10,964,886	11,146,231	10,933,355
Operating profit (loss)	86,209,333	91,657,373	66,469,324	36,785,656
Total non-operating income and expenses	4,468,821	4,437,172	8,077,789	8,112,695
Pre-tax profit	90,678,154	96,094,545	74,547,113	44,898,351
Income tax costs (profit)	14,909,685	15,919,124	14,476,282	8,150,178
Current after-tax net profit	75,768,469	80,175,421	60,070,831	36,748,173

Financial ratios

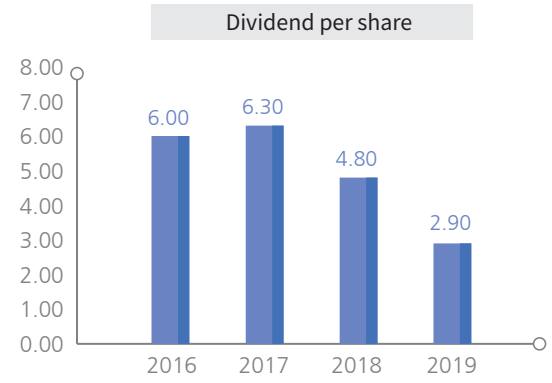


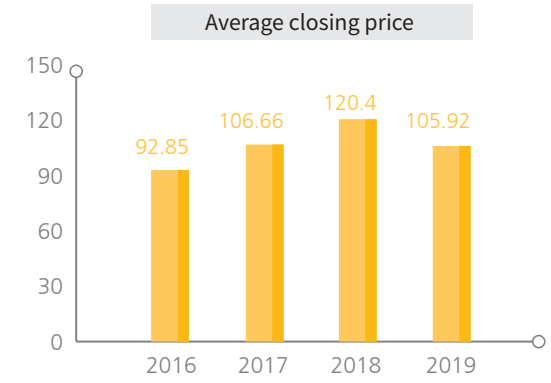


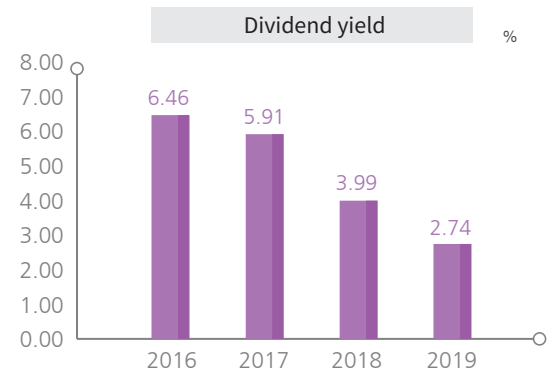


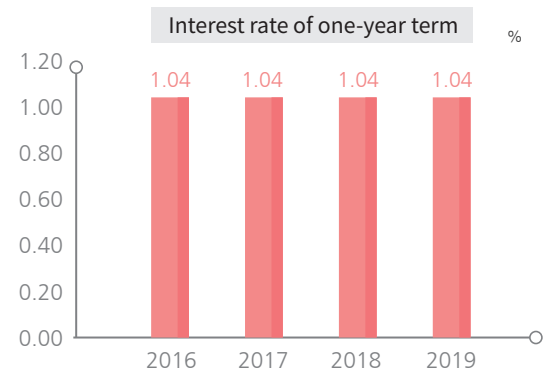


Dividend distribution:









2.3 Partnership maintenance

Customer Relations, Satisfaction Survey

Building good partnerships is an important issue that FPCC has always been highly concerned about. We are constantly engaging in innovation and assist customers in obtaining high quality competitive products. We strive to become a trustworthy business partner of our customers that grows together with them. In order to strengthen customer relations, representatives from our business department will periodically visit customers and create interactive and timely communication channels that help include feedback from customers in our operations, and use the feedback to make future improvements.

Transport Fleet Deal

In light of the hard work of professional drivers, we issued the TAXI card to help them cut down gas expenditure. Starting in 2018, we further worked with Taiwan Taxi Co., Ltd. in issuing team member cards, and also released a gas card in cooperation with Uber, so that they will get preferred deals when they fill up at FPCC gas stations. The cards allow even more professional drivers to benefit from preferred deals.

In addition, with joined effort from these gas stations, we issue the FPCC Business Card so that large forwarding fleets can enjoy more convenient gasoline adding service. The expenses are settled at the end of each month and an invoice will be issued. It is a relatively simple declaration/write-off process compared to the traditional way of issuing receipts car by car. In addition, inquiries and download of transaction details can be done through e-Commerce to facilitate gas mileage management by customers and improve gas-saving efficacy.

Disclosure of Product Information

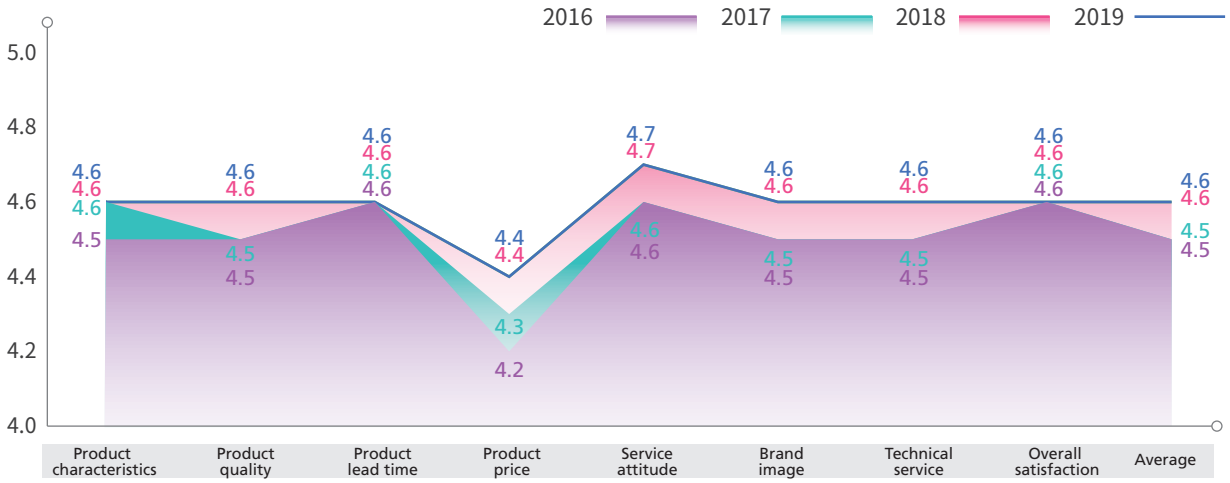
On the FPCC's official website (http://www.fpcc.com.tw/tc/products1.php), descriptions of specifications and safety data sheets of various oil products and the latest oil price information are available in the "Products and Services" section.

Customer Feedback and Management

To understand the precious opinions of our customers, we have defined specific procedures for customers to file complaints, return or exchange goods, and apply for compensation. Customers can express their opinions through the Customer Feedback Form, service hotline provided on our website, and e-mail. We will periodically summarize issues of concern to customers, and then classify and analyze the issues based on their importance and urgency. The priority of improvements that need to be made is determined on this basis. For complaints about products, sales representatives fill out the "Complaint Handling Form" and keep records of the handling status in the computer. With regard to channels for customers to express their opinions, we did not receive any customer complaints about privacy violation or data leakage in 2019.

Customer satisfaction survey

In order to enhance customer satisfaction, opinions about and suggestions for various products and services of FPCC are collected from customers. Meanwhile, to fulfill the commitment to quality of ISO 9001 and to demonstrate our emphasis on customer satisfaction, we will perform customer satisfaction survey at least once a year at present targeting domestic and international customers. The survey covers eight major domains, namely, product characteristics, product quality, product lead time, product price, service attitude, technical service, brand image, and overall satisfaction. Questions included in the survey will be modified as per issues of concern for customers.



Note: 5 represents "very satisfied"; 4 indicates "satisfied"; 3 is "no comments"; 2 means "dissatisfied"; and 1 is "very dissatisfied."

The results of the 2019 Customer Satisfaction Survey show that we received a score higher than "satisfied" in all aspects. FPCC will include the suggestions provided by customers into our operational policy in order to live up to the expectations of the general public.

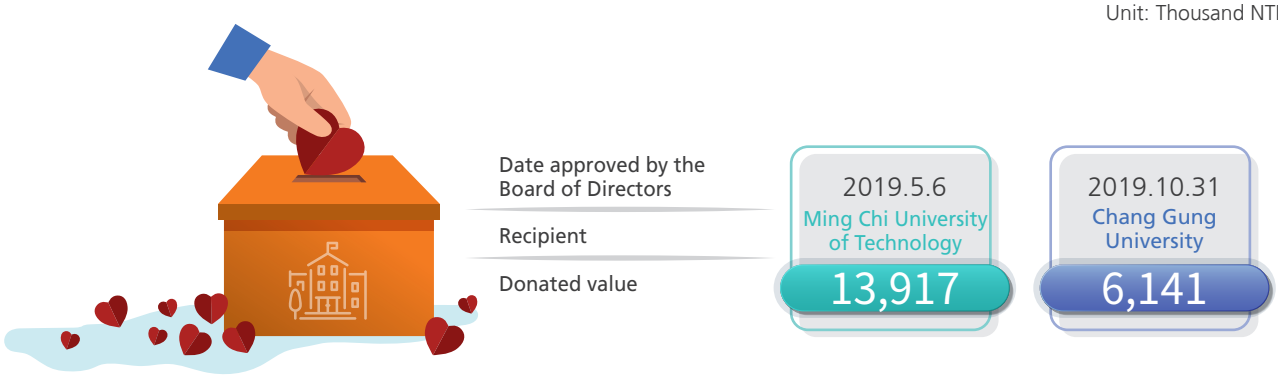
Public Policy and Membership in Associations

Donation and political contribution policy

Donations made in 2019 were based on considerations to give back to communities and fulfill our CSR. We did not make any political donations for lobbying, and any donations to a related party or a major donation to a non-related party must be approved by the Board of Directors.

Donation proposals submitted to the Board of Directors for approval in 2019:

Unit: Thousand NTD



Public policy engagement:

FPCC reflects its advice regarding the energy industry mainly through the annual advice white paper of the Chinese National Federation of Industries and expresses its opinions and viewpoints on applicable industrial regulations when consulted by government authorities to keep smooth communications with government authorities going. The 2019 white paper of the Chinese National Federation of Industries provides recommendations for the allocation of centrally-funded tax revenues, energy policy, and labor issues to the government.

Participation in non-profit organizations:

In order to help industries in Taiwan improve their operation outlook, FPCC has been proactively participating in various industrial associations and societies by serving as chairman, director/supervisor, and representative at the said organizations. We conduct exchanges with counterparts on operational experience through associations and organizations, and share the latest market intelligence, supply and demand changes, and technical information, in hopes of making contributions to the industry as a whole.

Name	Role	The Company's representative
Petrochemical Industry Association of Taiwan	Standing Supervisor	Chairman Bao Lang Chen
Chinese Petroleum Institute	Standing director	Chairman Bao Lang Chen
Sino-Arabian Cultural & Economic Association	Standing director	Chairman Bao Lang Chen
Taiwan Institute of Chemical Engineers	Standing director	Chairman Bao Lang Chen
Center for Corporate Sustainability	Director	Chairman Bao Lang Chen
Sino-Indonesia Cultural & Economic Association	Director	Chairman Bao Lang Chen
Taiwan Responsible Care Association	Director	Director Heng-Sheng Wu
Chinese Association for Energy Economics	(General member)	—
Chinese Chemical Society	(General member)	—
Association of Ocean Pollution Control	(General member)	—
Pressure Vessel Association of the ROC	(General member)	—
Taiwan Safety Council	(General member)	—
Water Industry Development and Promotion Association	(General member)	—
The Society for Nondestructive Testing & Certification of Taiwan	(General member)	—
Yunlin Hsien Industrial Association	(General member)	—
Yunlin County Employment Relations Association	(General member)	—

Achievements

Awards in 2019

- Recognized by the Industrial Development Bureau, MOEA with the Best Performance Award for GHG reduction
- Recognized by the Water Resources Agency, MOEA with the Excellence Award in the Industry Division for water conservation
- Recognized with the Gold Award, Category 1, CS Report Category of the Taiwan Corporate Sustainability Awards from the Taiwan Institute for Sustainable Energy
- Continue to be selected into the Taiwan High Compensation 100 Index of Taiwan Index Plus Corporation
- Continue to be selected into the FTSE4Good TIP Taiwan ESG Index of Taiwan Index Plus Corporation

3

Creating a New Green Appearance

Chapter Summary

Industries are changing at a growing pace due to globalization. To achieve sustainable development and allow the sustainable use of resources, FPCC established a dedicated unit for energy conservation and carbon reduction. The unit promotes the circular economy of raw materials, water resources, energy, and waste across plants and companies, and aims to achieve energy conservation and carbon reduction, resource integration, and zero waste.

Upstream — Crude oil purchasing → Crude oil transportation

Operations — Refining → Fundamental materials

Downstream — Sales service

Strategy

Effective management is carried out in four aspects, namely GHG management, air pollution prevention, water resources and wastewater treatment, and waste management (the goal is to achieve energy conservation and carbon reduction, resource integration, and zero waste)

- Strengthen industry-academia collaboration
- Promotion of green events
- Implement circular economy across plants and companies

Sustainable Development Goals (SDGs)

Sustainability Issue: GHG management, air pollution prevention, water resources, and waste management

Stakeholders: Investors/shareholders, customers, government agencies, suppliers and contractors, environmental protection groups, experts and scholars, local residents, and employees

Targets in 2019	2019 Performance	Targets in 2020	Mid-term and Long-term Goals
Greenhouse Gas			
✦ Cooperate with the government's "industry GHG reduction audit" ✦ Implement energy conservation measures ✦ Implementation of GHG offset project (recycling of waste heat) ✦ Plan the use of solid recycled fuel (RDF or SRF) to reduce GHG emissions	✦ Reduced GHG emissions by 44,349 tons CO_2e in response to the voluntary GHG reduction audit by the Industrial Development Bureau, Ministry of Economic Affairs ✦ Energy conservation measures reduced 180,000 tons CO_2e in 2019 ✦ GHG offset project (recycling of waste heat) was certified by the EPA and reduced emissions by 1,322 tons CO_2e each year ✦ Began using solid recycled fuel (RDF or SRF) and reduced GHG emissions	✦ Continue to cooperate with the government's "industry GHG reduction audit" ✦ Implement energy conservation measures	✦ Take energy conservation and carbon reduction measures in coordination with the national goal to reduce emissions in 2030 by 20% compared to 2005
Air pollution prevention			
✦ Promote SOx and NOx emission reduction per unit of product. ✦ Install MGGH and WESP ✦ Plan the use of low sulfur fuels in processes ✦ Continue to implement the oil product quality improvement plan (apply for environmental impact assessment) ✦ Plan a new high voltage shore power system for cargo ships ✦ Added oil-gas recycling pipes at the top of storage tanks and collected oil-gas to recycling equipment	✦ SOx emissions per unit of product decreased 5.21% compared to the average of the most recent five years ✦ NOx emissions per unit of product decreased 0.81% compared to the average of the most recent five years ✦ Completed the installation of 6 MGGH and 1 WESP ✦ Submitted an application for an environmental impact assessment for the oil product quality improvement plan ✦ The high voltage shore power system for cargo ships is currently being installed ✦ Completed the installation of oil-gas recycling pipes at the top of storage tanks to collect oil-gas to recycling equipment	✦ Continue to install MGGH and WESP ✦ Modify perforated plate in FGD prevention equipment to improve the efficiency of SOx removal ✦ Complete the installation of high voltage shore power system for cargo ships	✦ Continue to implement the oil product quality improvement plan (complete installation) ✦ Plan a new waste heat boiler to recycle process gas ✦ Install catalyst separators to increase the recycling rate of catalyst and reduce emissions of particulate pollutants ✦ Install storage tank pipes for collection to CFB or waste heat boiler

Targets in 2019	2019 Performance	Targets in 2020	Mid-term and Long-term Goals
Water Resource Management			
✦ Comprehensively evaluate the water resource management life cycle and establish water conservation measures ✦ Improve the efficiency of water resource use through reduction from the source and treatment at the end, in order to achieve water conservation ✦ Increase the rain water storage rate ✦ Plan phase 2 of the Wastewater Microorganism Research Project jointly implemented with Academia Sinica	✦ Water conservation measures reduced water use by 4,391 tons/day in 2019 ✦ Obtain the letter of approval to establish the desalination plant ✦ Rain water storage rate reached 100% ✦ Jointly implemented phase 2 of the Wastewater Microorganism Research Project with Academia Sinica ✦ Unit product water consumption in 2019 decreased 0.9% compared to 2018	✦ Implement water use reduction and water conservation measures ✦ Continue to implement wastewater reduction measures ✦ The public area used for rainwater collection reaches 589.5 ha ✦ Obtain the letter of approval for trial operation to obtain the desalination plant's water pollution prevention permit ✦ Unit product water consumption in 2020 decreased 0.9% compared to 2019	✦ Complete the establishment of the desalination plant and begin operation and water supply.
Waste Management			
✦ Continue to implement waste reduction measures in plants towards the goal of zero waste ✦ Submit applications for waste reuse projects, and process inorganic sludge into plaster products	✦ The implementation of sandblasting waste reuse projects is expected to reuse 1,000 tons each year ✦ The implementation of inorganic sludge reuse projects is expected to reuse 1,500 tons each year	✦ Implement waste refractory and construction waste recycling and treatment	✦ Implement reuse projects for waste that is buried ✦ Plan the establishment of waste liquid and oil sludge incineration facilities to independently handle wastewater and oil sludge from washing ship cabins

3.1 Environmental Protection Strategies and Policies

FPCC aims to achieve a win-win situation for "labor safety, environmental protection, and economy", and creates and maintains a safety and health and environmental management system. In 2003, FPCC established the Safety, health, and environment policy: strict compliance with regulatory requirements, reinforced communication, prevention against pollution, plant waste reduction, hazard identification, risk control, plenary participation, and constant improvement, 8 consistent principles in total in order to accomplish the goal of sustainable management.

To fulfill its commitment to environmental protection and prevention against pollution, FPCC adopts the latest process equipment and technology as well as management method:

Air pollution and GHG management

Comprehensive adoption of the best available control technology (BACT). All the production units are equipped with a continuous automatic surveillance control system that is connected with the environmental protection authority.

Water Resources and Wastewater Management

For wastewater collection, a rainfall-sewage separation system has been adopted. There is a wastewater treatment plant to exclusively process wastewater from the industrial park. After it is treated, the effluent is capable of sustaining aquarium fish. In addition, the continuous wastewater recycling helps lessen the stress on water resources.

Waste Management

Classification and recycling is thoroughly enforced. By means of the enterprise resources planning system (ERP) and the online declaration system, the storage, clearance, and treatment processes are kept track of, and comprehensive follow-ups are also conducted.

Green and Environmental Protection Policy

Fundamental petrochemical materials in the upstream of the petrochemical industry in Taiwan were produced and provided by CPC Taiwan in the early days. Because the domestic demand could not be satisfied, the Formosa Plastics Group started its sixth naphtha cracker program in the region of Mailiao, Yunlin to help address the issue. We are actively searching for a balance between industrial development and the environment and ecology in response to trend changes. The practice of circular economy not only ensures product safety and reduces impact on the environment, but is also part of our competitiveness.

Goal:

Show concern about environmental issues such as the GHG, air pollution, wastewater, and waste at plants with the goal of achieving zero pollution and developing an ecological park.

Plant construction stage:

FPCC applied the best available technology (BAT) and best available control technology (BACT) ideas during the design stage of the plant already by adopting the most advanced pollution prevention and control equipment with the best energy efficiency. After the operation began, water resources and energy consumption have been strictly controlled through constant discussions of possibilities to seek improvements.

During operation:

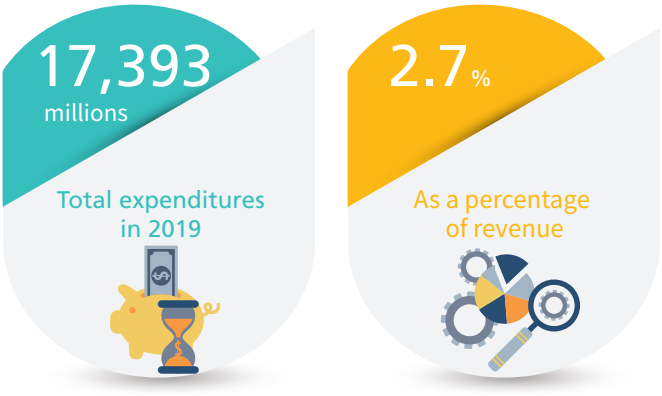
FPCC has been proactively promoting various environmental protection efforts. The KPI and annual goals are established to periodically keep track of how individual indicators are implemented and the fulfillment of goals. Efforts are made to reinforce guidance provided to departments lagging in their performance while those with outstanding performance are rewarded in order to boost the sense of participation and accomplishment among employees.

- Experience sharing:
  FPCC organizes seminars and observational tours to share its experience and accomplishments in energy-saving and carbon reduction as well as pollution prevention and treatment.

- Information transparency:
  FPCC continues to authorize impartial professional institutions to perform investigations, and releases the results in its CSR reports and environment monitoring information (disclosed at https://airtw.epa.gov.tw/) in order to clarify and explain improvements.

Environmental Expenditures and Benefits:

The environmental accounting system ensures specific documentation of financial information concerning environmental activities such as the investment, maintenance of environmental equipment, research and development, and processing fees so that FPCC can make decisions and perform analyses from the perspective of environmental protection; it helps increase FPCC's competitive advantages.



Breakdown of environmental cost in past years

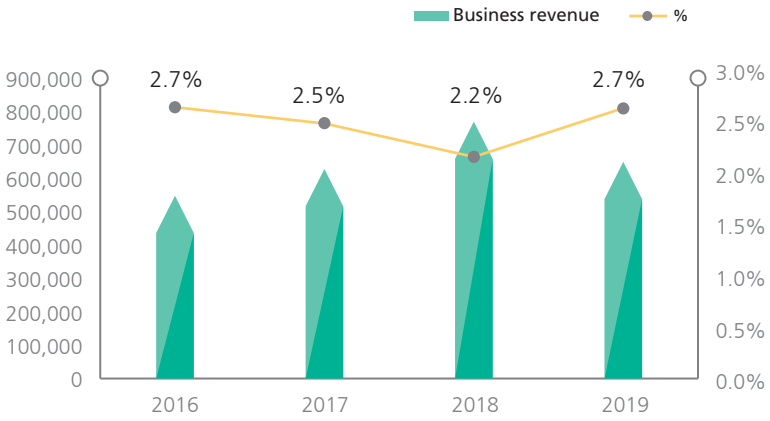
Unit: NTD million

Item	2016	2017	2018	2019
Business overhead	13,219	14,131	15,072	15,411
Related costs from the downstream and upstream of suppliers and customers	24	26	26	23
Activity management cost	343	456	392	465
R&D cost	7	10	6	2
Social events cost	144	148	133	128
Losses and compensation	7	17	13	6
Other expenses such as processing fees, taxes, and energy tax	947	1,046	1,258	1,358
Total	14,691	15,834	16,900	17,393

Note: Business overhead in the table includes costs derived from green purchases, recycling and reproduction of manufactured or sold products, and product services as part of the environmental protection effort.

Ratio of environmental cost to business revenue over past years

Unit: NTD million



Environmental protection violations

We received 16 environmental protection fines in 2019, in which 5 were major environmental protection violations (major events involving NT$1 million or more disclosed on the Market Observation Post System). Fines were mainly due to incorrect determination of construction work air pollution fee, and we have strengthened education and training on regulations related to construction work air pollution fee. We further analyzed our fines, and found that it was mainly due to disputes over the determination of products and waste, we have filed administrative appeals in accordance with the law.

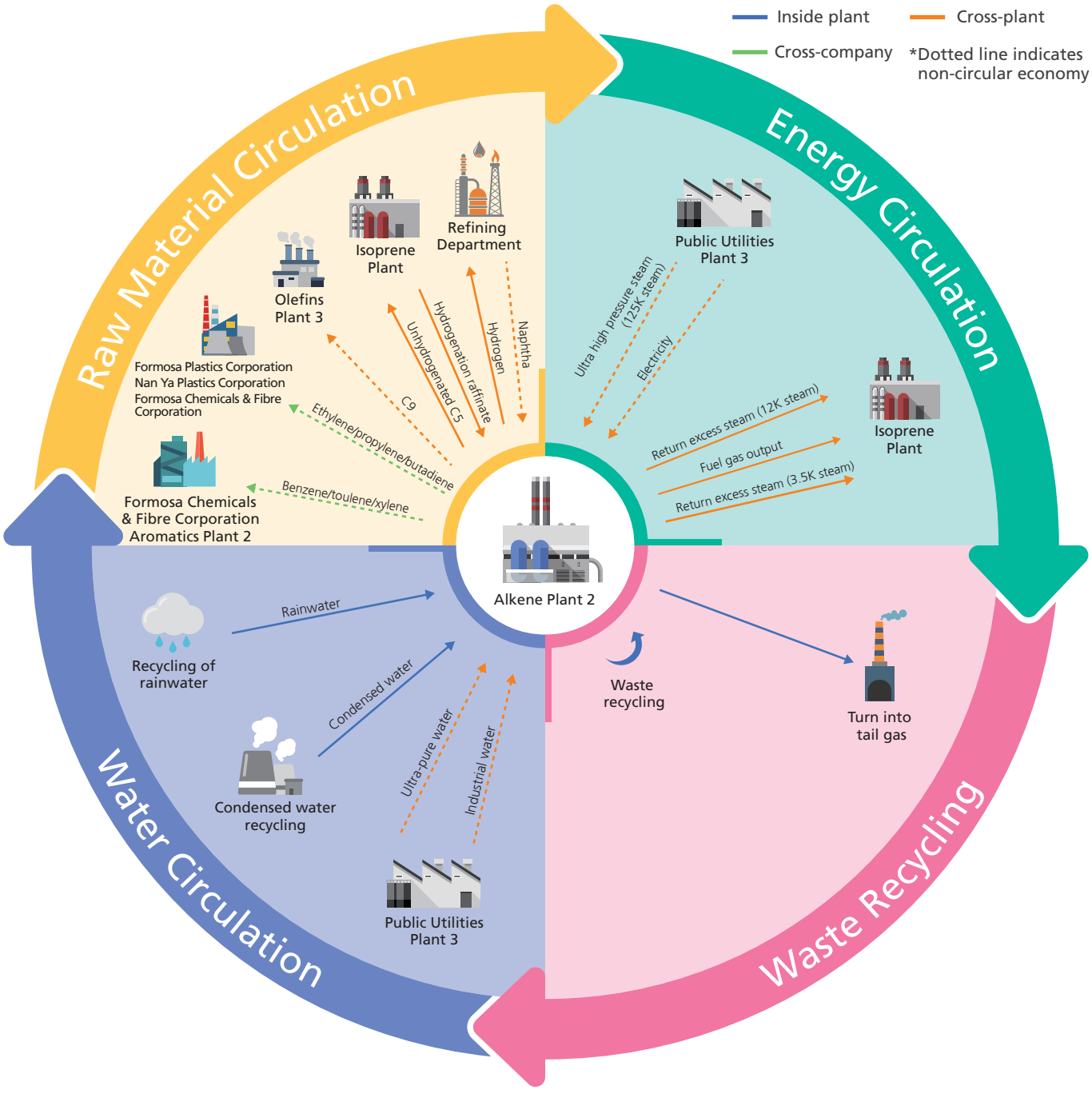
	2019
Air pollution	12/NT$6,200,000
Water pollution	0/NT$0
Waste pollution	4/NT$12,000,000
Other	0/NT$0

Circular economy

FPCC attaches great importance to circular economy. We hope that the practice of this concept will take into consideration raw materials, water resources, energy, and waste, unlike the linear economy model of "manufacturing, production, and disposal." We are implementing cross-plant, cross-company energy and resource integration. The environment and resources are fully utilized and repetitive use is increased, which increases the usage efficiency of resources and effectively reduces resource waste.

We found that many types of energy and resources, such as waste heat, wastewater, and by-products, are not being fully utilized, and combined the resources of different units for cross-plant, cross-company energy and resource integration, in order to develop an ecological and circular park with zero waste. FPCC's energy conservation measures reduced 180,000 tons CO_2e and water conservation measures reduced water consumption by 4,391 tons/day in 2019.

Circular economy integration at FPCC's olefins plant 2

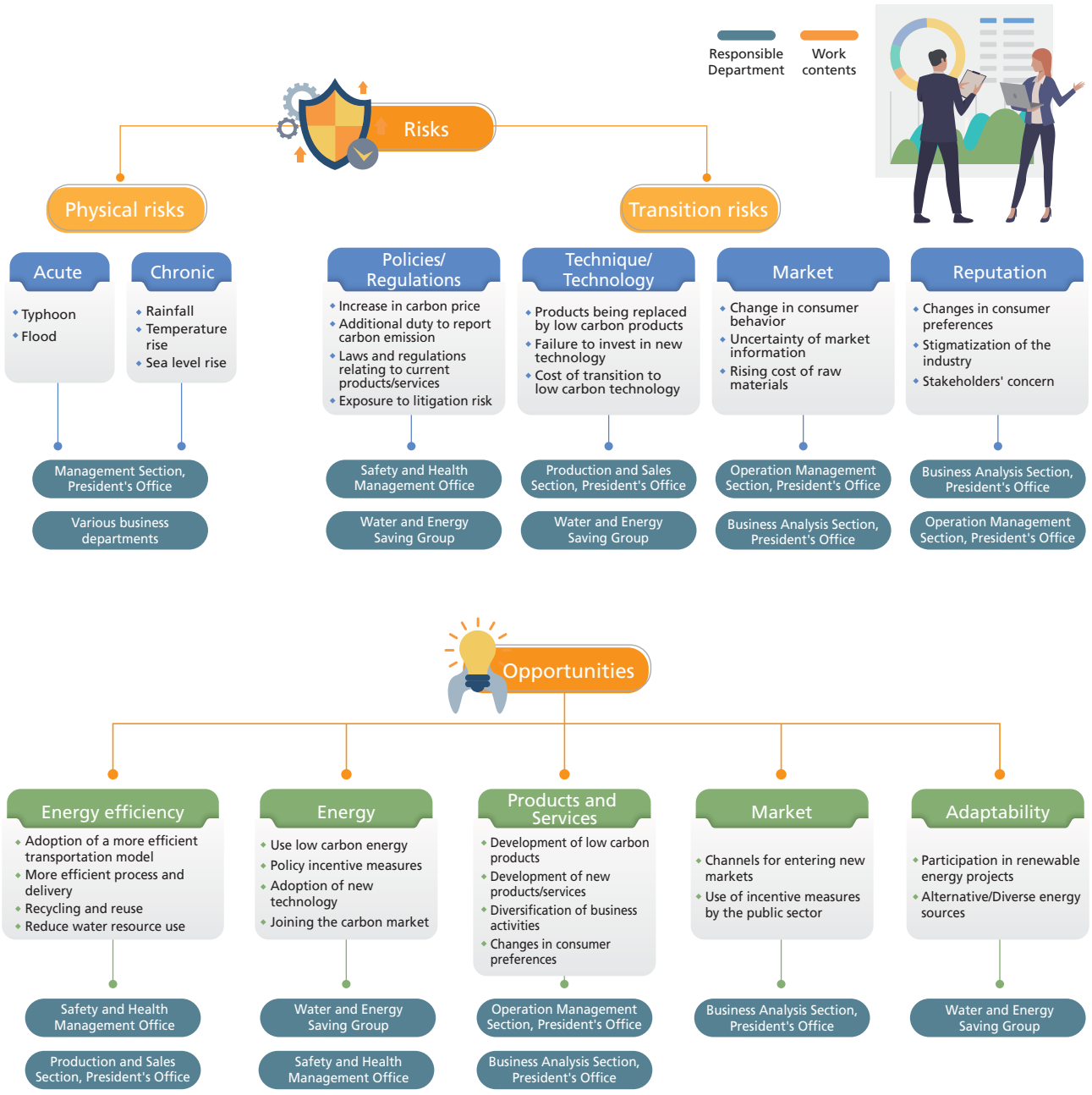


3.2 Climate change resilience

3.2.1 Management of climate risks and opportunities

Extreme climate changes have significantly affected the planet and enterprises. We identified climate change risks and opportunities to reduce the effect of climate change on FPCC. We followed the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in June 2017, and took into consideration transition risks (policy and law/market/technology/reputation) and physical risks (chronic and acute) in risk scenarios. We also provided descriptions for the risk of potential events, including financial impact, time of impact (short, medium, long), subjects in the value chain that are impact, and probability of the risk. Aspects considered in the evaluation of opportunities include resource efficiency, energy, products and services, market, and adaptability.

Climate change risks/opportunities identification and analysis structure



Evaluation and management of issues in each risk/opportunity category that has the greatest financial impact:

Climate issue	Decrease in rainfall	Compliance with the climate change policy	Application of new technologies	Low carbon transformation
Description of risk/opportunity issue	According to projections of RCP 2.6, Yunlin County's annual rainfall in 2040 may decreased 47.75 mm compared to 1985-2005. The potential water shortage may result in insufficient process water and cause production capacity to decrease.	The Greenhouse Gas Reduction and Management Act set the goal to reduce GHG emissions in 2050 to 50% of that in 2005. After Taiwan began implementing GHG emission cap control, FPCC will face the risk of fines or suspension if it does not respond to the act maintains current carbon emissions.	The petrochemical industry has always been considered an energy-intensive industry with high environmental risk. Hence, the industry should continue optimize processes and improve its efficiency to achieve sustainable development.	Provide fuel with low carbon emission in coordination with Yunlin County using domestic waste to produce refuse derived fuel (RDF).
Issue	Physical risks – Chronic	Transition risks – Policy and law	Opportunity – Energy efficiency	Opportunity – Energy
Financial impact	High	High	Medium	Low
Risk management plan	FPCC established a desalination plant in response to the potential risks brought by water shortage	Establish an energy conservation and carbon reduction group to continue implementing energy conservation measures for processes, and reduce GHG emissions	Integrate big data collected by the DCS using AI technology, establish a process operation model, optimize operations management, reduce fluctuations in product quality, and increase output value	Use RDF produced by Yunlin County using domestic waste to replace coal, and thereby reduce GHG emission
Performance/ Goal	The management goal is to comprehensively evaluate the water resource management life cycle and establish water conservation measures; water conservation performance in 2019 was the reduction of water consumption by 4,391 tons/day. Please see 3.4.1 Water Resource Management of this report for specific management indicators.	The management goal is to implement various energy conservation measures, which reduced emissions by 180,000 tons CO_2e in 2019. Please see 3.2.1 GHG Management of this report for specific management indicators	Management goals and indicators include the amount invested in AI and increase in output value; revenue increased by nearly NT$120 million and steam expenses was reduced by NT$830 thousand in 2019.	-

3.2.2 GHG management

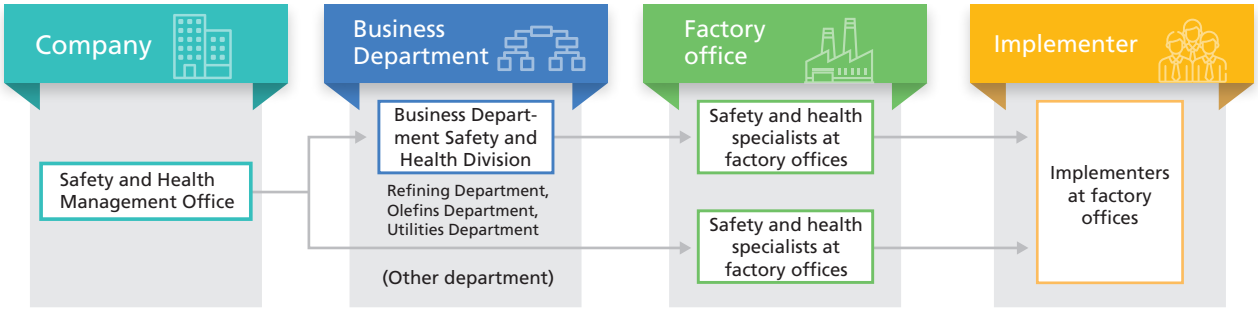
Management approach (MA)

GRI Standards: Energy GRI 302; Emission GRI 305

- Sustainability Issue: GHG management
- Our commitment and responsibilities:
  In coordination with the national goal to reduce emissions in 2030 by 20% compared to 2005, we have implemented numerous process improvement and energy management projects, and also established a dedicated unit for implementing energy conservation and carbon reduction.
- Our goals: Reduce the effect on climate change

Inventory framework

FPCC began compiling GHG inventories in accordance with ISO 14064-1 in 2005, and commissioned BSI Taiwan to verify the GHG inventory.



Greenhouse gas emission status

Unit: Tons CO_2e

	2015	2016	2017	2018
Scope 1	29,225,312	27,910,823	26,952,581	28,070,653
Scope 2	129,452	111,809	162,266	108,520
Gross emissions (Scope 1 + Scope 2)	29,354,764	28,022,632	27,114,847	28,179,173

Note 1: Scope 1 means direct emissions of greenhouse gases.
Note 2: Scope 2 means indirect emissions of greenhouse gases.
Note 3: Global warming potential (GWP) before 2016 is based on the second assessment report (SAR) of IPCC in 1995. GWP after 2016 (inclusive) is based on the fourth assessment report of the IPCC in 2007. The emission factors for electricity and steam are in-house factors that have been validated by verification institutions.
Note 4: GHG emissions data for 2019 had not been verified by the verification institution when this year's report was published, so the data will be disclosed next year.

Analysis of GHG emissions over the years (for the entire company)

	2015	2016	2017(A)	2018(B)	(B-A)/A
Greenhouse gas emissions (CO_2e thousand tons)	29,355	28,023	27,115	28,179	3.9%
Business revenue (NTD million)	629,514	546,161	624,108	767,550	23.0%
GHG emission per unit revenue (CO_2e thousand tons/NT$1 million)	0.047	0.051	0.043	0.037	-14.0%

Further analysis of GHG emission per unit revenue shows that GHG emissions in 2018 increased 3.9% compared to the previous year while revenue increased 23%. Hence, GHG emission per unit revenue decreased to 0.037 thousand tons/NT$1 million.

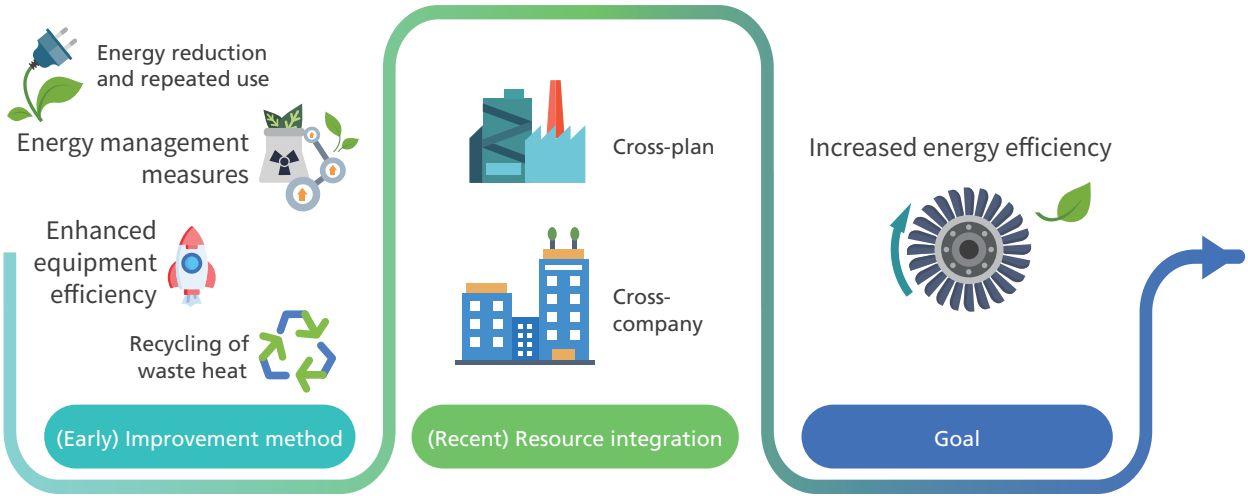
Analysis of GHG emissions over the years (oil-gas industry)

	2015	2016	2017(A)	2018(B)	(B-A)/A
Greenhouse gas emissions (CO_2e thousand tons)	12,518	12,287	12,180	11,999	-1.5%
Business revenue (NTD million)	589,508	509,093	583,769	722,848	23.8%
GHG emission per unit revenue (CO_2e thousand tons/NT$1 million)	0.021	0.024	0.021	0.017	-19.0%

Note: Only GHG emissions and revenues for refining and olefin related processes are presented

The Company's scope of business mainly covers that oil-gas industry and power generation industry. Due to the significant differences between the two industries, we separated the oil-gas and olefin (refining) industries, and further analyzed GHG emission per unit revenue. We found that GHG emissions in 2018 decreased 1.5% compared to the previous year while revenue increased 23.8%. Hence, GHG emission per unit revenue decreased to 0.017 thousand tons/NT$1 million.

Energy management:



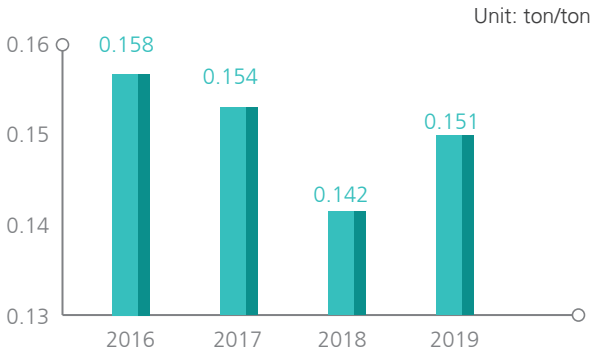
We appointed dedicated personnel at business departments and factory offices to implement numerous process improvement and energy management projects, so as to continue reducing emissions.

Summary of historical energy-saving performance

	Accumulated volume (1999-2018)	2019	Accumulated volume (1999-2019)	Ongoing	Total
Number of cases improved	1,410	188	1,598	431	2,029
Steam saved (ton/hour)	854.5	43.0	897.5	97.1	994.6
Electricity saved (Thousand kWh/hour)	134.5	6.6	141.1	17.2	158.3
Fuels saved (ton/hour)	87.0	1.6	88.6	6.4	95.0
CO_2e reduction (Ten thousand tons/year)	470.6	18.0	488.6	43.5	532.1
Investment amount (NTD 100 million)	57.1	5.4	62.5	29.1	91.6

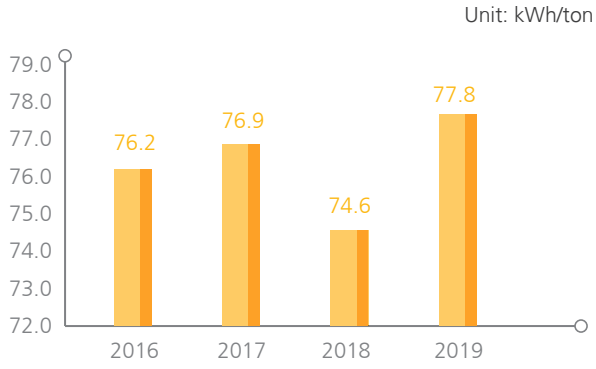
Note: 1. Source: The Formosa Plastics Group computer-based database for environmental protection improvements
2. Type of fuel: Coal, fuel gas, etc. are all converted to standard coal.

Summary of historical consumption of steam per unit of product



Note: Source: Formosa Plastics Group Business Intelligence system database

Summary of historical consumption of electricity per unit of product



Note: Source: Formosa Plastics Group Business Intelligence system database

FPCC used 5,188.8 thousand tons of gases in 2019, on average the volume of gases used per hour was 592.3 tons, which is equivalent to 0.15 ton/ton per unit. The volume of electricity used throughout the year was 2,673 million kWh, and on average 305,191 kWh was used per hour, which is equivalent to 77.8 kWh/ton per unit. All were controlled within a reasonable range.

Carbon Disclosure Project (CDP):

We began filling out the CDP questionnaire in 2017. We reviewed each questionnaire item and continued to make improvements each year, improving our rating in the climate change questionnaire from C in 2017 to B in 2018, and further to A- in 2019, which is the level for industry leaders. Our rating in the water questionnaire also improved from B in 2017 and 2018 to A- in 2019, and we will continue to carry out GHG-related management, actions, and disclosures.

3.3 Air pollution management and prevention

Management approach (MA)

GRI Standards: GRI 305 Emissions; GRI-OG6

- Sustainability Issue: Air pollution prevention
- Our commitment and responsibilities:
  We will continue to reduce pollution and prevent odor, and will also execute pollution emission inspections (monitoring) to achieve environmental and corporate sustainability goals.
- Our goals:
  To lower the impact of air pollutants generated from our operations on the environment and local communities.

Air Quality Impacts Evaluation and Consultation Committee

Due to public concern of air pollutant emission from Mailiao Industrial Park affecting the air quality in Yunlin, Chiayi, and Tainan, we established the "Evaluation and Consultation Committee for Impacts on Air Quality by Mailiao Industrial Park," and actively communicate with stakeholders through industry-academia collaboration and community communication.

Air pollution and waste gas management:

To understand the impacts of emissions on the environment and people's health, we comprehensively adopted the best available control technology (BACT), as well as the world's most advanced process improvement and pollution prevention technologies.

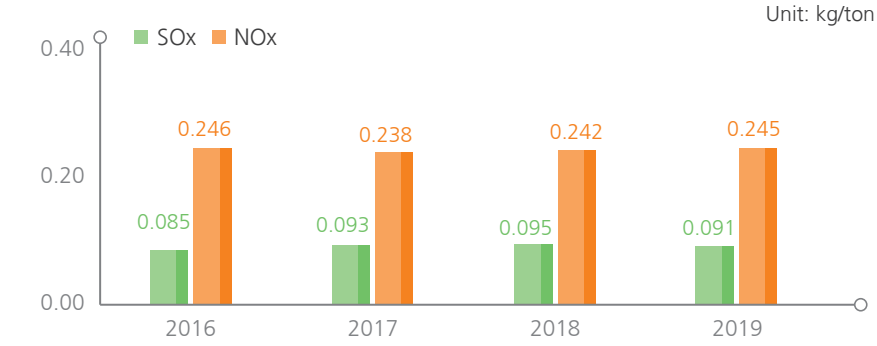
Best Available Control Technology (BACT)	Low-contamination gases and fuels are used. Oil-gas recycling systems are established. Static dust collectors and bagged dust collectors are set up. Low nitrogen oxide burners and denitrification exhaust facilities as well as desulfurization exhaust facilities (FGD) are created. There is also other advanced equipment available to prevent air pollution, such as high-temperature oxidizers, active carbon absorption systems, and closed-end coal pocket and transmission systems. Along with precise prevention and care and training and operation, individual pieces of equipment can perform optimally in terms of the treatment efficacy to effectively prevent contamination.
Monitoring (Inspection) Operations Management	Continuous Emission Monitoring System (CEMS), factory-wide chimney monitoring and filming, Fourier Transform InfraRed (FTIR) surrounding surveillance, (GasFindIR) gas detection infrared camera, external air quality monitoring, weekly joint (roving) testing for foreign odors, periodic testing of equipment elements, periodic testing of discharge channels, waste gas burning tower monitoring facilities.
Volume Reduction Measures Management	The wastewater site is covered and waste gases are collected and treated. Tail gases that contain sulfur from the manufacturing process are recycled, treated, and reused. Residual fuels from the manufacturing process are supplied to other plants to be reused. The amount of required equipment is reduced. Waste gases from the cleaning of storage tanks are collected and treated. Tail gases from storage tank nitrogen sealing and waste gas burning towers are all recycled and reused.
Pollution Emission Control	Air pollutant emissions cap, fixed air pollutant operation certificate control, environmental evaluation-based commitment to emission control.

FPCC began complying with international standards and follows the government's policy to ban the use of halons, CFC-11, and CFC-12 since it was established in 1992. Now, R-134a, R-401a, and R-410a are the main coolants used, and sulfur and benzene contents in gasoline and diesel products strictly follow regulations of the European Union.

Category	Ingredient	Domestic market		International market	
		Guidelines	Actual value	Guidelines	Actual value
Gasoline 	Benzene	1.0 vol%,max	0.52	1.5 vol%,max	1.19
	Lead	0.013 g/l,max	<0.003	0.01 g/l,max	<0.003
	Sulfur	10ppm,max	6.40	50ppm,max	42.80
				150ppm,max	105.30
Diesel 	Sulfur	10ppm,max	8.10	10ppm,max	8.00
				500ppm, max	367

The best available pollution prevention equipment is used for air pollution prevention. In 2019, sulfur oxides (SOx) emission per unit of product was 0.091 kg/tons and nitrogen oxides (NOx) was 0.245 kg/tons.

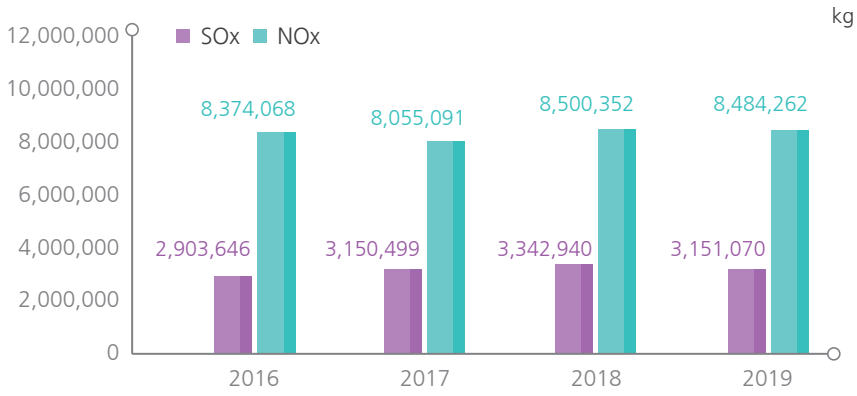
Historical SOx and NOx discharge per unit of product



Note: Source: Quarterly summary reports from each department at FPCC to declare total volume of air pollutants discharged

SOx emissions was 3,151,070 kg/year and NOx emissions was 8,484,262 kg/year in 2019.

Historical SOx and NOx discharge at FPCC



Our NOx emission in 2019 was lower than 2018. In the future, we will continue to reduce emissions of SOx, NOx, and particulate pollutants per unit product, increase MGGH, ultra low nitrogen oxide burners, and WESP, and plan the use of low sulfur fuels in processes.

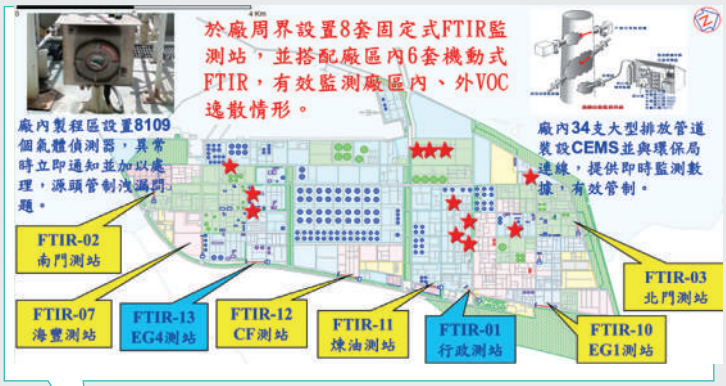
Park_Air Quality Assessment:

The sixth naphtha cracker has an eight-layer intensive environmental monitoring grid for rapidly tracing emissions to the source and ensuring the quality of the local environment.

Illustration of the geographical location of the eight-layer environmental monitoring grid of the sixth naphtha cracker

Air quality monitoring stations of the sixth naphtha cracker and EPA air quality monitoring stations

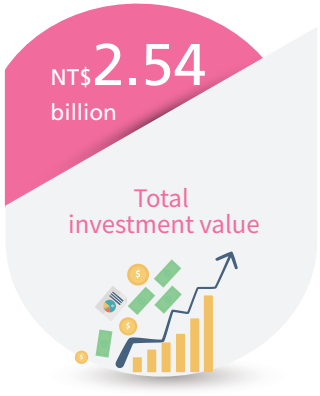
Locations of monitoring equipment inside the premises



1. There are 8 fixed FTIRs set up on the borders of the premises. Along with six mobile FTIRs within the premises, they can effectively monitor fugitive VOC inside and outside the premises.
2. There are 8109 gas detectors on the premises. Once abnormalities are found, related staff will immediately be notified to handle the situation and control the leakage from the source.
3. There are 34 large emission pipelines installed with CEMS on the premises and connected to the Environmental Protection Bureau, providing real-time monitoring data for effective control.

VOCs Reduction and Foreign Odor Control

Mailiao Industrial Park is the first of its kind throughout Taiwan that implements cap control. Apart from the pollutants that have already fulfilled environmental assessment requirements, FPCC continues to actively make improvements to reduce the quantity of volatile organic compounds (VOCs). FPCC invested a total of approximately NT$2.54 billion in 46 improvement projects as of 2019.



VOCs discharge reduction and improvement over the years

Item \ Year	2016	2017	2018	2019	Cumulative for 1999~2019
Number of cases improved	2	1	2 (Ongoing)	1	46
Discharge channels (tons/year)	2.28	10.06	0	0.14	29.04
Equipment elements (tons/year)	0	0	0	0	5.25
Storage tanks (tons/year)	0	0	71.90	0	94.54
Loading facilities (tons/year)	0	0	0	0	0.31
Total (tons/year)	2.28	10.06	71.90	0.14	129.14
Investment amount (NT$ Thousands)	640,908	560,000	376,123	15	2,540,194

Note: Source: The Formosa Plastics Group computer-based database for environmental protection improvements

In addition, the original open aerators that tend to give rise to VOCs and foreign odor emission in the wastewater treatment area are now covered with lids and piping is configured to collect discharged gases for biological treatment at activated sludge aeration tanks, in order to remove foreign odor associated with waste gases and prevent emission of VOCs.

Wastewater treatment plant (Before improvement)

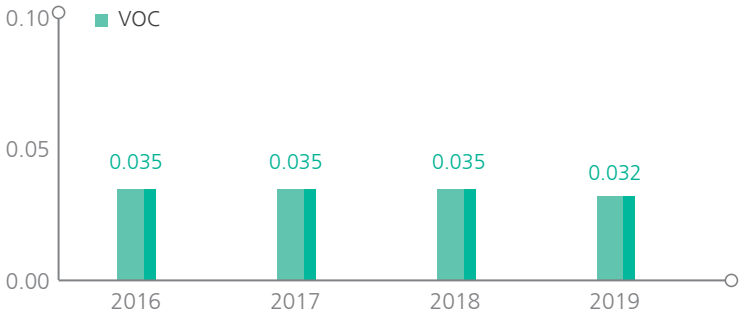
Wastewater treatment plant (After improvement)

Discharge Management of VOCs

VOCs mainly come from processes (discharge channels), storage tanks, loading operations, wastewater treatment area, and grease-water separation pond, waste gas burning tower, and equipment elements. Our VOCs discharge in 2019 decreased 8.6% compared to the previous year. In the future, we will increase air pollution reduction equipment (oil-gas recycling system and collection from storage tank to CFB or waste heat boiler), and continue to reduce VOCs discharge per unit product.

Historical VOCs discharge per unit of product

Unit: kg/ton

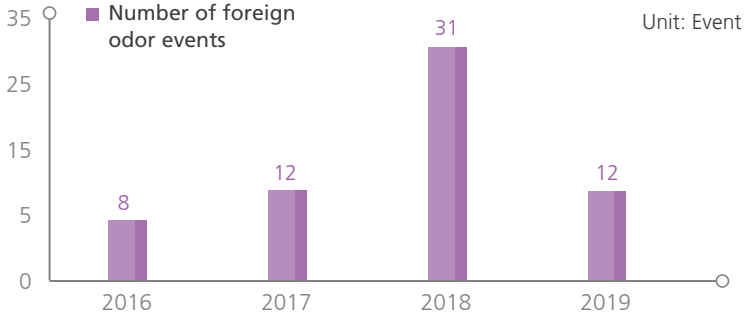


Note: Source: Quarterly summary reports from each department at FPCC to declare total volume of air pollutants discharged

Foreign Odor Improvement Project

We began implementing the process foreign odor source improvement project in 2014. The number of foreign odor events increased in 2018 due to the application of stricter standards (any odor is determined to be foreign odor) and including annual process maintenance into control. he number of foreign odor events found during self-inspections in 2019 declined after making improvements, and overall foreign odor control has significantly improved. In the future, we will review and improve annual maintenance emission control measures to effectively lower the number of foreign odor events.

Number of foreign odor events found during self-inspections over the years



Source: Quarterly summary reports from each department at FPCC to declare total volume of air pollutants discharged

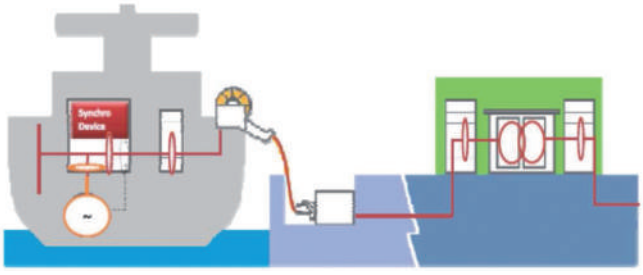
Monitoring of moving pollution sources

To maintain the air quality in Yunlin County, we require diesel vehicles that enter Mailiao Industrial Park to submit exhaust inspection qualification documents when applying for an entry permit. If a diesel vehicle is reported by the competent authority due to its exhaust, the vendor must be re-inspected to obtain a qualification document, otherwise the vehicle will be prohibited from entering the premises. According to diesel vehicle exhaust inspection statistics of the Environmental Protection Bureau of Yunlin County, all 438 diesel vehicles stopped on roads (the exhaust inspection was performed if the vehicle has not yet been inspected for the year) near Mailiao Industrial Park in 2019 conformed to standards, and the non-conforming rate was 0%, showing significant improvement. Results of stopping diesel vehicles in recent years are as follows:

Year	Traffic flow (A)	Number of diesel vehicles stopped (B)	Number of inspections (C)	Number of non-conforming vehicles (D)	Non-conforming rate of inspections (D/C)	Non-conforming rate of stopped vehicles (D/B)	Non-conforming rate of traffic flow (D/A)
2016	1,875	375	126	2	1.6%	0.5%	0.1%
2017	1,850	393	156	0	0.0%	0.0%	0.0%
2018	3,240	223	108	0	0.0%	0.0%	0.0%
2019	1,245	438	80	0	0.0%	0.0%	0.0%

We plan to install a high voltage shore power system in coordination with Mailiao Harbor's need to pass the EcoPorts certification. The system is expected to be completed and begin operation before December 2020, so as to maintain air quality in the harbor.

Figure Connecting facilities of the high voltage shore power system.



3.4 Water Resources, Effluents, and Waste Management

Management approach (MA)

GRI Standards: Water and Effluents 2018
GRI303, Effluents and Waste GRI306

- Sustainability Issue: Water Management
- Our commitment and responsibilities:
  We will properly manage resources based on the principles of source management, process waste reduction, recycling, and terminal control, and actively implement water conservation, wastewater recycling, and waste management plans to ensure that our impact on the environment is minimal
- Our goals:To improve resource reuse and accelerate treatment processes, increase resource usage efficiency, and lower the impact on the environment.

3.4.1 Water Management

Source of water resources and water consumption

Our plants have three types of water sources, specifically third party sources, surface freshwater, and seawater. The wastewater (sludge) discharged along Taiwan's west coast includes third party terminals and seawater.

FPCC water withdrawal and discharge scenario

Plant name	River basin	Water source	Type of water source	Effluent	Type of effluent
FPCC Mailiao Plant	Coastal area of Lunbei	Water treatment plant industrial water (Jiji Weir)	Third party source	Coastal area of Western Taiwan	Surface brackish water/seawater
		Rainwater (Collected in plants)	Surface freshwater		
		Seawater (Coastal area of Lunbei)	Surface brackish water/seawater		
		Tap water (5th Branch – Well water)	Third party source		

Water withdrawal from source

Unit: Ton

Water source	2016	2017	2018	2019
Surface runoff (Industrial water)	46,560,566	47,594,068	48,638,531	46,361,055
Groundwater	0	0	0	0
Seawater	1,949,219,019	1,713,295,624	1,796,063,179	2,113,824,000
Rainwater	3,117,658	2,825,648	2,876,568	3,669,710
Tap water	126,012	145,718	125,395	110,869
Total water withdrawal	1,999,023,255	1,763,861,058	1,847,703,673	2,163,965,634

Water resource risk and impact assessment

The AWARE method is used for assessing water resource risk and impact assessment. The method assumes decreasing water supply in each area to assess the potential effect of water shortage on human beings or the ecosystem (Boulay et al. 2016). The method divides Taiwan into 14 areas, which are shown in the figure below, in which Yunlin County is not an area with high risk of water shortage (water consumption is lower than the global average 75% of the time).

Based on the method proposed by Boulay et al. (2016), we divided Mailiao Plant into the following areas:

Plants included	River basin	WULCA (Water Use Life Cycle Assessment) coefficient	
		Basin code	Monthly average for the year
Formosa Petrochemical Corporation Mailiao Plant 1	Coastal area of Lunbei	7375	0.70
Formosa Petrochemical Corporation Mailiao Plant 2			
Formosa Petrochemical Corporation Mailiao Plant 3			

Water situation response measures

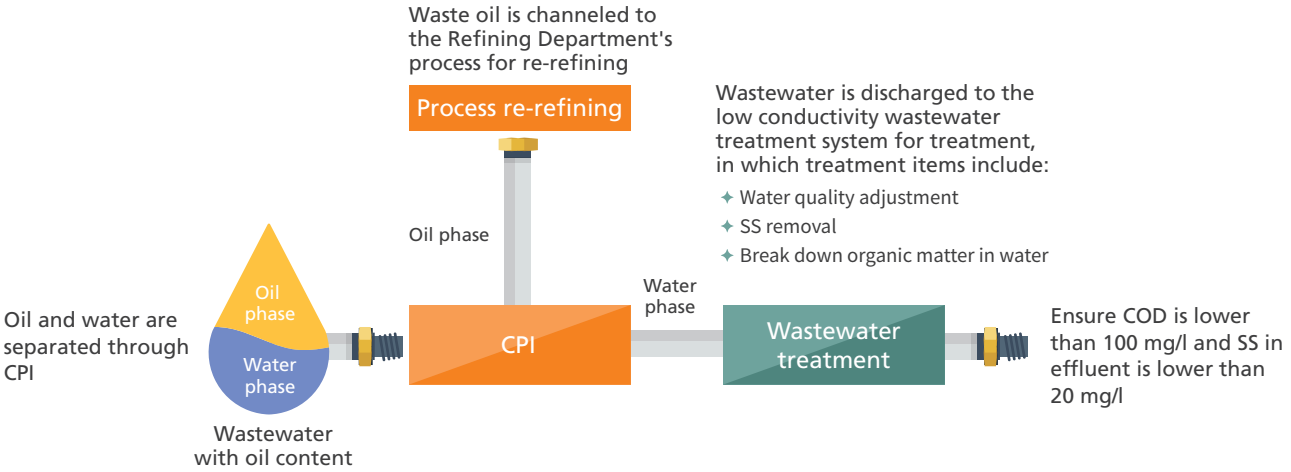
Water situation light	FPCC's water situation response measures	Situations in 2019
Normal water supply	Water rationing not necessary	Normal water supply throughout the year
Slight water shortage	Suspend unnecessary irrigation, washing, and domestic water use	Did not occur
Reduced pressure water supply	Suspend industrial water consumption unrelated to production	Did not occur
Reduced water supply	1. Increase the concentration times of cooling water tower 2. Gradually suspend the operations of some processes	Did not occur
Water supply by area or at fixed location	Suspend the operations of at least half of all processes and only provide necessary water for process safety and fire safety	Did not occur

Source: Website of the Water Resources Agency (http://www.edf.org.tw/drought/)

Water Improvements Over the Years

Item	Accumulated volume(1999-2018)	2019	Accumulated volume(1999-2019)	Ongoing	Total
Number of cases improved	441	62	503	108	611
Volume of water conserved (ton/day)	92,857	3,961	96,818.29	8,869	105,688
Investment amount (NT$100 million)	94.6	3.1	97.72	8.6	106
Improvement results (NT$100 million/year)	35.5	0.2	35.68	0.365	36

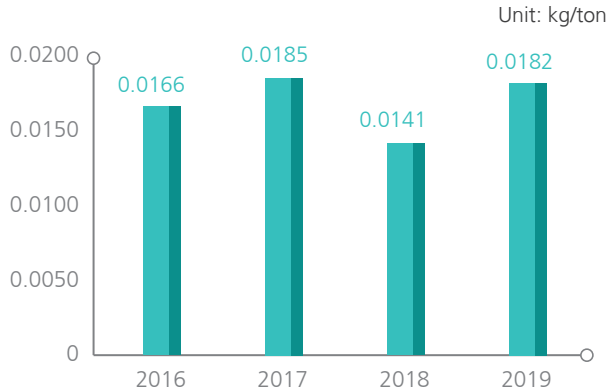
3.4.2 Water Pollution Prevention and Treatment Guidelines and Wastewater Management



Water resources used in product manufacturing include industrial ultra pure water and steam, which are mainly used for equipment heating, heat exchange, heat recovery, equipment cooling, and power generation facilities, allowing raw materials to be made into high quality products through the manufacturing process.

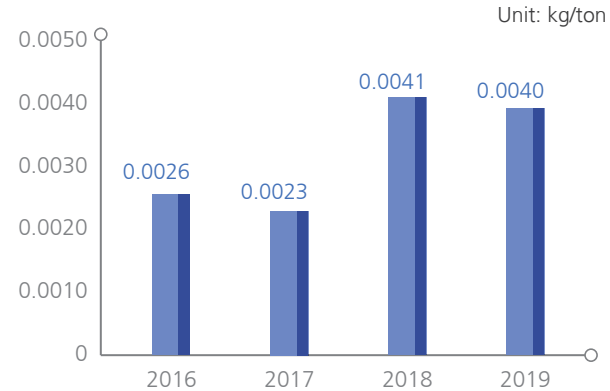
COD discharge per unit of product was 0.0182 kg/ton and SS discharge per unit of product was 0.004 kg/ton in 2019, stably fluctuating compared with the past few years. This shows that biological treatment of wastewater has been mostly stable, but we will continue to improve the performance of wastewater treatment to ensure compliance with regulatory standards.

Historical COD discharge per unit of product



Note: Source: The Formosa Plastics Group water pollution prevention and treatment management computer-based database

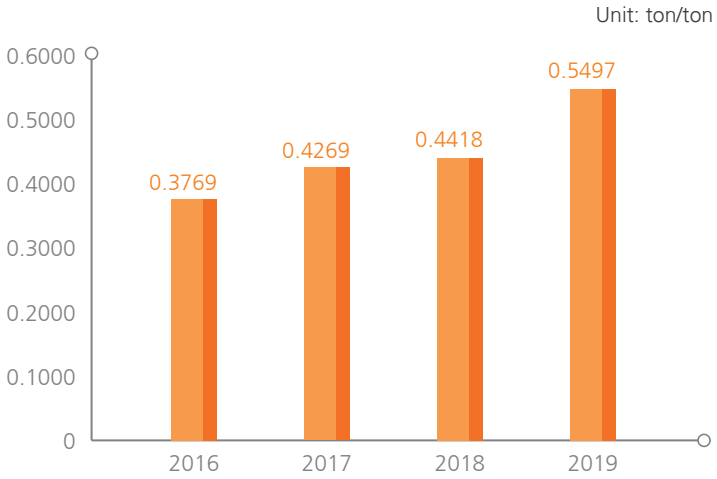
Historical SS discharge per unit of product



Note: Source: The Formosa Plastics Group water pollution prevention and treatment management computer-based database

The effluent volume generated by FPCC at Mailiao Industrial Park throughout 2019 was 45.8 thousand tons per day. Quality of water eventually discharged into the Taiwan Strait seawaters met the effluent criteria. The volume of wastewater discharged per unit of throughput in 2019 increased 9.98% compared to the previous year to 0.549 ton/ton. This was mainly due to the water quality optimization and adjustment process of the cooling water tower causing an increase in turbidity and discharge, MBR sour water stripping for water quality improvement suspended water recycling to the water tower, and scaling in FGD facilities reduced cooling water and wastewater reuse, which increased usage of industrial water. After optimization of treatment facilities is completed and suitable recycled water quality conditions are adjusted, wastewater discharge per unit of product will be improved and decrease.

Historical wastewater discharge per unit of product

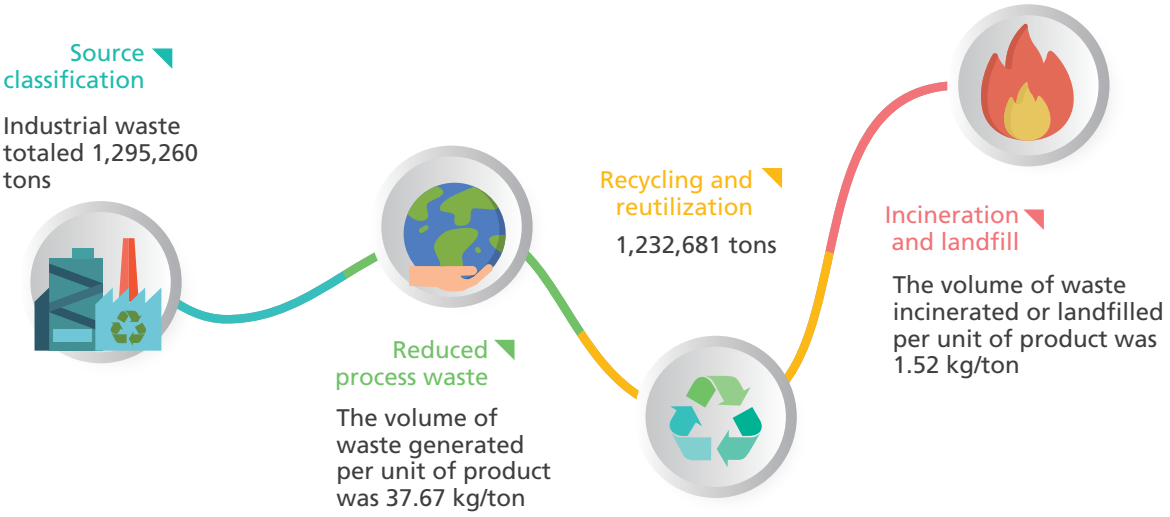


Note: Source: The Formosa Plastics Group water pollution prevention and treatment management computer-based database

Effluent water quality control statistics

Year	CMD		pH value		COD (mg/L)			SS (mg/L)		
	Permitted volume	Discharge	Regulation (environmental impact assessment)	Internal control value	Regulation (environmental impact assessment)	Internal control value	Average	Regulation (environmental impact assessment)	Internal control value	Average
2016	119,395	35711	6-9	6.5-8.5	100	80	33.71	20	16	6.96
2017	119,395	45196	6-9	6.5-8.5	100	80	34	20	16	7.93
2018	119,395	42540	6-9	6.5-8.5	100	80	28.54	20	16	8.98
2019	119,395	45767	6-9	6.5-8.5	100	80	21.82	20	16	5.99

3.4.3 Waste Management

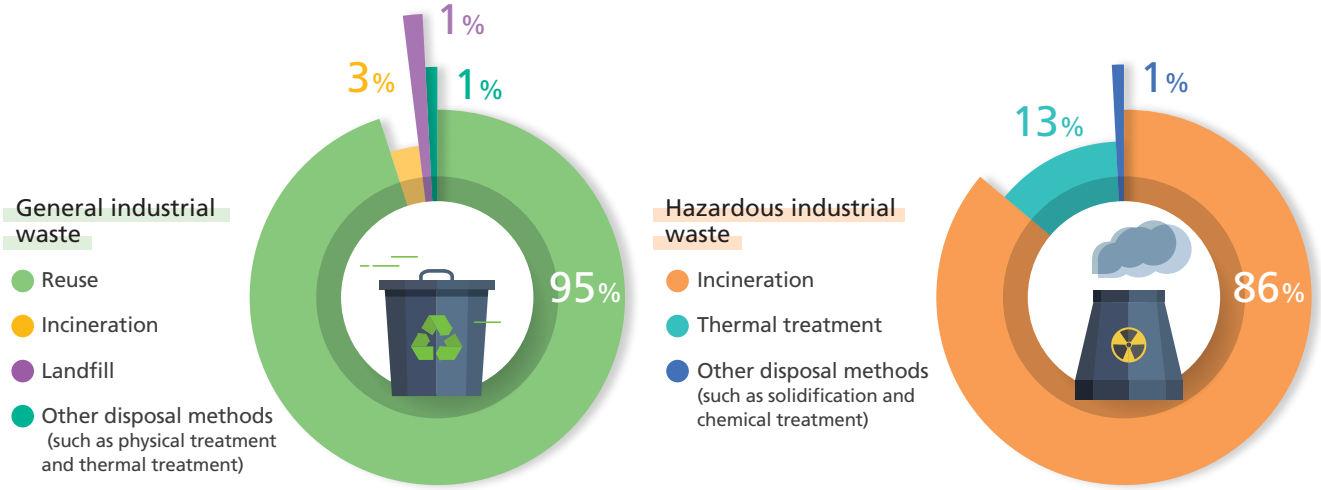


We hope to achieve the vision of zero waste through source classification, process waste reduction, recycling and reuse, and incineration and landfill. Industrial waste cleared in 2019 totaled 1,295,260 tons, in which general industrial waste accounted for 1,294,358 tons and hazardous waste accounted for 902 tons.

Overview of waste management over the years

	2016	2017	2018	2019
Waste clearance quantity (Tons)	1,000,888	1,045,509	1,190,158	1,295,260
Product (Tons)	34,100,586	33,807,030	35,143,295	34,381,905
The volume of waste cleared per unit of product (kg/ton)	29.35	30.93	33.87	37.67
Incineration and landfill (kg)	37,945,880	44,945,390	51,754,636	52,115,577
The volume of waste incinerated or land filled per unit of product (kg/ton)	1.11	1.33	1.47	1.52

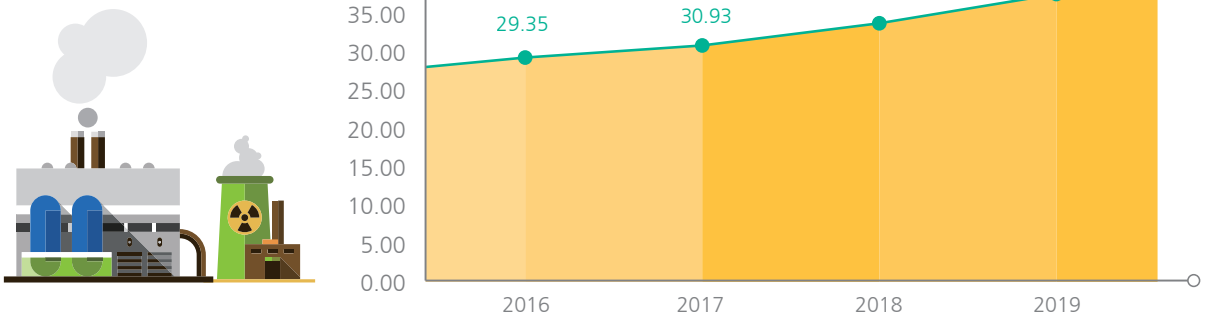
Note: Source: The Formosa Plastics Group waste management computer-based database



Of the general industrial waste, 95% (1,232,681 tons) was recycled, 3% (38,363 tons) was incinerated, 1% (12,975 tons) was landfilled, and 1% (10,339 tons) was treated using other methods (e.g., physical treatment and thermal treatment. Of the hazardous waste, 86% (778 tons) was incinerated, 13% (120 tons) used thermal treatment, and 1% (4 tons) was treated using other methods (e.g., solidification and chemical treatment).

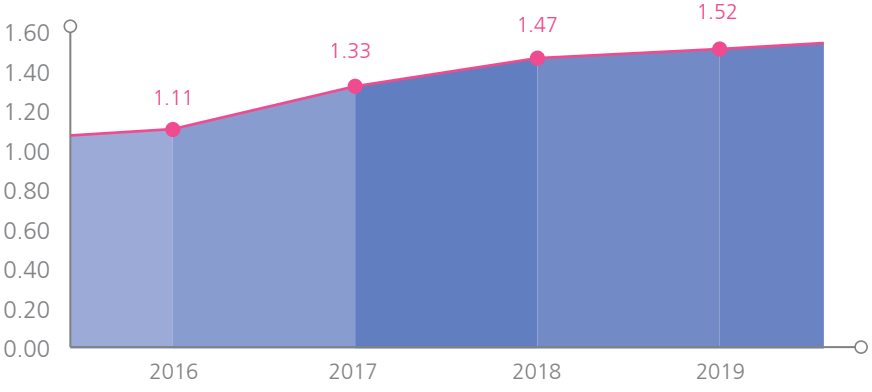
The volume of waste generated per unit of product over the years

Unit: kg/ton



The volume of waste incinerated or landfilled per unit of product over the years

Unit: kg/ton



The volume of waste generated per unit of product was 37.67 kg/ton in 2019, an increase of 3.8 kg/ton compared with last year. The volume of waste incinerated and landfilled per unit of product was 1.52 kg/ton in 2019, an increase of 0.05 kg/ton compared with last year. We found that unit waste clearance quantity increased due to the increased hours of boiler operation and lower production capacity.

Issues of concern

Clarification by FPG in response to the United Daily News article "Yunlin, Chiayi, and Tainan have the most severe air pollution"

With regard to the article "Yunlin, Chiayi, and Tainan have the most severe air pollution" on United Daily News on July 12, Vice CEO of Citizen of the Earth, Taiwan pointed out that the relatively high PM2.5 in Yunlin was due to pollution from the sixth naphtha cracker, and Chiayi City and Tainan City are leeward. This does not match the survey results of the EPA and professional research institutes. FPG provided the following clarification:

1. Based on research results of the EPA's Air Quality Modeling System Implementation Project (Year 2) in 2017, 36.6% of PM2.5 concentration in Yunlin, Chiayi, and Tainan is caused by cross-border transfer, while stationary pollution sources, transportation, and area sources (e.g., dust and cooking fumes from restaurants) cause 19.3%, 20.0%, and 18.8%, respectively. The petrochemical industry and electricity industry related to the sixth naphtha cracker only cause 5.94%.
2. Based on the research report on "air quality planning in response to projects related to the sixth naphtha cracker," which was reviewed by the EPA, the effect of emissions from the sixth naphtha cracker on PM2.5 in Yunlin, Chiayi, and Tainan is only 0.44%-2.34%. Other main pollution sources include diesel vehicles (13.3%-16.7%), gasoline vehicles (7.6%-11.5%), and dust (5.31%-8.82%).
3. In summary, there is a wide range of factors that affect the air quality in Yunlin, Chiayi, and Tainan. Similar to the description of the Environmental Protection Bureau, Yunlin County on July 12, the sixth naphtha cracker is not the main source.

FPG's Mailiao Industrial Park has always upheld the spirit of placing equal emphasis on economic development and environmental protection, and strives to properly manage air pollution. We welcome members of all sectors to personally visit Mailiao Industrial Park to see its current state and offer advice on environmental protection issues.

4

Deepening the New Culture of Labor Safety

Chapter Summary

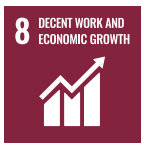
Ever since the Company was founded, we have upheld the spirit to get to the bottom of things and seek constant improvement, and established a safety and health management system on this basis. Besides complying with basic regulatory requirements, we are also implementing hazard prevention and risk control, and aim to implement the responsible care system to achieve the goal of "zero accidents."

Upstream Crude oil purchasing → Crude oil transportation → **Operations** Refining → Fundamental materials → **Downstream** Sales service

Strategy

Lead the development of safety and health in the industry through the implementation of safety and health management at all levels, and by creating a safety and health culture in the Company.

Sustainable Development Goals (SDGs)



Sustainability Issue: Industrial and public safety, oil products transportation and storage safety, stability of imported materials, and emergency response measures

Stakeholders: Employees, customers, residents at operation sites, environmental protection groups, government institutions, experts and scholars, investors/shareholders, and suppliers and contractors

Targets in 2019	2019 Performance	Targets in 2020	Mid-term and long-term vision
Safety and Health Culture			
✦ Formulate 10 improvement plans for accidents to eliminate the root cause ✦ Completed the self-inspection electronic system and integrated process and maintenance related inspection functions	✦ Accident analysis and countermeasure formulation and implementation results are as follows: 6 accidents, death rate per thousand people in major occupational accidents was 0; frequency of disabling injuries was 0.56; severity of disabling injuries was 58, higher than 2018. ✦ The self-inspection electronic system was completed and has been formally launched	✦ Implement improvement plans formulated based on the cause of accidents in 2019 ✦ Conduct self-inspections, take precautions, handle, and reduce abnormalities	✦ Aim to achieve zero accidents ✦ Enhance the Company's safety culture
Labor safety risk management			
✦ Establish a false alarm management platform ✦ Provide guidance to contractors with self-management, and establish 14 JSA templates ✦ Improvement of employee SOP/JSA quality ✦ Analyze, compare, and share hazards of the same (similar) processes	✦ There were 3 process safety incidents in 2019 ✦ Reported false alarms in the corporate OA system and transferred them into the ERP system to establish a database ✦ Strengthen contractors' accident management; the number of accidents involving contractors in 2019 was 9 ✦ Added 5 JSA templates for reference by contractors (19 in total) ✦ The original goal to improve employees' JSA work quality was suspended due to modification of the corporate risk management platform ✦ Completed the first process safety evaluation report for all Class A Business Entities in accordance with Article 15 of the Occupational Safety and Health Act. ✦ 2019 PSM certification: "Six certifications including employee participation," "Five certifications including incident investigation" and "3 PHA certifications" were obtained by 10, 11, and 20 people, respectively. ✦ EHS promotion and training sessions totaled 1,158 sessions with 44,398 participants. ✦ Contractor two door access control safety and health training: 665 sessions with 23,382 participants from 2,428 contractors	✦ Statistical analysis of false alarm events and establish a database of own incidents ✦ Improve employee SOP/JSA quality ✦ Strengthen contractor management: ✦ Continue to summarize construction accidents of contractors in the most recent five years and add a JSA template for reference. ✦ Compile JSA checklists to improve implementation ✦ Supervise the implementation of chemical assessments and classification management as well as general hazard knowledge plans on site ✦ Continue to analyze, compare, and share hazards of the same (similar) processes in each business department ✦ Update the occupational safety and health management system and transition from OHSAS 18001 to ISO 45001	✦ Completed a database of company events to pass down experience for employees to learn from. ✦ Encourage contractors to improve their self-management ability and lower their accident rate. ✦ Implement comprehensive chemical management in the Company. ✦ Continue to improve the completeness of PHA

4.1 Creating a Labor Safety Culture

Management approach (MA)

GRI Standards: Occupational Health and Safety GRI 403; GRI-OG13

- Sustainability Issue: Industrial and public safety
- Our commitment and responsibilities:
  We will actively comply with international standards, technologies, and provide personnel with professional training to achieve zero accidents, improving the industry's work environment
- Our goals:
  To establish risk management concepts, manage processes, equipment, and personnel based on their risk level, more quickly eliminate current risks, implement safety and health management at all levels, and create a safety and health culture in the Company

4.1.1 Labor safety culture promotion

FPCC understands that stable production performance must be maintained to achieve sustainable development, and a good safety culture is indispensable to maintaining stable production. We have created a labor safety culture based on our safety and health policy. The meaning of this culture is not only about the Company's occupational safety and health performance, but also the safety performance and atmosphere among employees, how they think and act, and the Company's environment.

4.1.2 Occupational Accident Statistics, Prevention, Methods, and Follow-up

In 2019, our death rate due to occupational accidents was 0, frequency of disabling injuries was 0.56, severity of disabling injuries was 58, and comprehensive injury index was 0.18. The number of accidents, death rate per thousand people due to major occupational accidents, and injury severity rate all increased compared to last year, while comprehensive injury index was lower compared with similar industries.

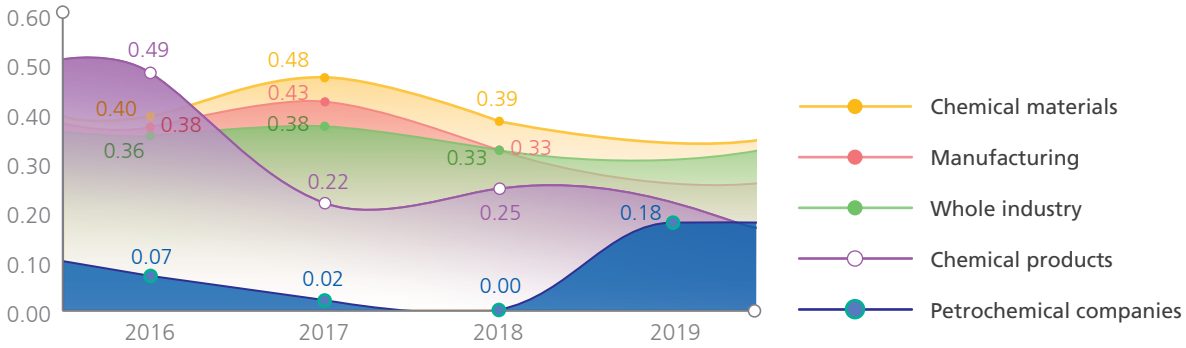
Findings from accident analysis are as follows: The main causes of accidents were neglecting operational risks, not wearing personal protective equipment, and failure to maintain discipline. Based on annual statistical analysis results, our main goal in 2020 is for "related management personnel (supervisor, construction safety personnel, safety supervisors, and construction supervisors) to maintain safety standards before and during operations."

Ratio of injuries at work in the most recent four years

year	Mean number of employees throughout the year			Total work hours and days elapsed		Number of cases	Total days lost	Frequency of disabling injuries	Severity of disabling injuries	Comprehensive injury index
	Male	Female	Total	Total work days	Total work hours elapsed					
2016	4,592	374	4,966	1,211,953	10,118,292	2	251	0.20	25	0.07
2017	4,594	379	4,973	1,233,714	10,226,585	1	59	0.10	5.8	0.02
2018	4,665	401	5,066	1,266,763	10,532,797	0	0	0	0	0.0
2019	4,712	429	5,141	1,279,992	10,688,713	6	621	0.56	58	0.18

- Severity of disabling injuries (SR) = (Total number of days lost × 10^6)/Total work hours elapsed
- Frequency of disabling injuries (FR) = (Number of disabling injuries × 10^6)/Total work hours elapsed
- Comprehensive injury index = ((FR*SR)/1,000)^(1/2)
- For the past four years, accidents at work have only happened to men and all of them happened in our Mailiao Plant in Yunlin County; the number of employees injured at work in 2019 was 2.
- Statistics are only for formal employees of FPCC.

Comparison of FPCC and the Industry's Comprehensive Injury Index in 2016-2019



Note: Industry data for 2019 was not provided because it has not been announced by the Ministry of Labor yet.

Ratio of occupational injuries of contractors in the most recent three years

Year	Total work hours and days elapsed		Number of cases	Total days lost	Frequency of injuries	Severity of injuries	Comprehensive injury index
	Total work days	Total work hours elapsed					
2017	1,703,850	13,630,797	13	89	0.95	6.5	0.08
2018	1,262,167	10,097,336	7	104	0.69	10.3	0.08
2019	1,362,547	10,900,376	9	6,078	0.83	557.6	0.68

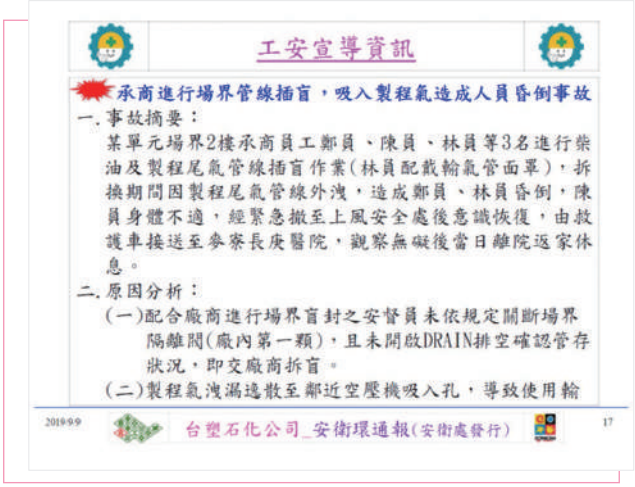
- Severity of disabling injuries (SR) = (Total number of days lost × 10^6)/Total work hours elapsed
- Frequency of disabling injuries (FR) = (Number of disabling injuries × 10^6)/Total work hours elapsed
- Comprehensive injury index = ((FR*SR)/1,000)^(1/2)
- Statistics are for contractors of FPCC, in which statistics for total work hours and days elapsed start from 2017.
- Occupational deaths in 2019: 1 male.

Occupational Accident Prevention

We analyzed the cause of incidents and formulated prevention plans based on investigation results for parallel implementation. We assess and control risks through JSA and PHA to discover potential hazards and implement controls in advance, thereby ensuring employee safety and health.

There were 6 occupational accidents involving employees and 9 occupational accidents involving contractors in 2019, causing 15 disabling injuries, specifically collision injury (3 people), inhaled process gas/burn/fell/falling from height (2 each), and suffocation/scald/moving/pinch (1 each). We will continue to strengthen contractors' safety management through monthly EHS reports, designated training, and reinforcement measures to reduce risk.

Promotion of occupational accident prevention and EHS reporting


工安宣導資訊

承商進行場界管線插盲，吸入製程氣造成人員昏倒事故

一.事故摘要：

某單元場界2樓承商員工鄭員、陳員、林員等3名進行柴油及製程尾氣管線插盲作業(林員配戴輸氣管面罩)，拆換期間因製程尾氣管線外洩，造成鄭員、林員昏倒，陳員身體不適，經緊急撤至上風安全處後意識恢復，由救護車接送至參察長庚醫院，觀察無礙後當日離院返家休息。

二.原因分析：

(一)配合廠商進行場界盲封之安督員未依規定關斷場界隔離閥(廠內第一顆)，且未開啟DRAIN排空確認管存狀況，即交廠商拆盲。

(二)製程氣洩漏逸散至鄰近空壓機吸入孔，導致使用輸

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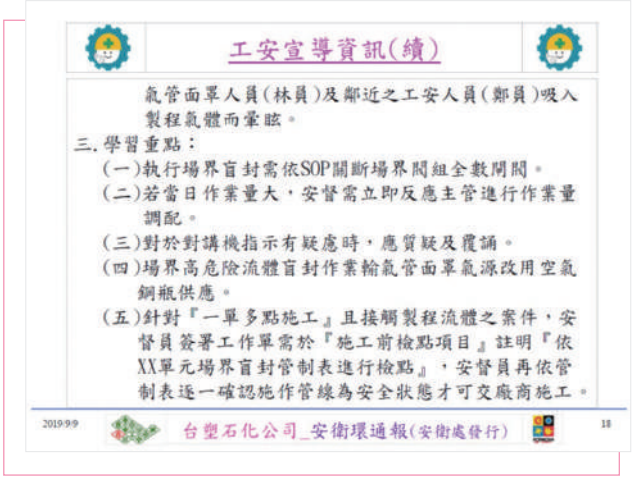
工安宣導資訊(續)

氣管面罩人員(林員)及鄰近之工安人員(鄭員)吸入製程氣體而暈眩。

三.學習重點：

(一)執行場界盲封需依SOP關斷場界閥組全數閉鎖。

(二)若當日作業量大，安督需立即反應主管進行作業量調配。

(三)對於對講機指示有疑慮時，應質疑及覆誦。

(四)場界高危險流體盲封作業輸氣管面罩氣源改用空氣鋼瓶供應。

(五)針對『一單多點施工』且接觸製程流體之案件，安督員簽署工作單需於『施工前檢點項目』註明『依XX單元場界盲封管制表進行檢點』，安督員再依管制表逐一確認施作管線為安全狀態才可交廠商施工。

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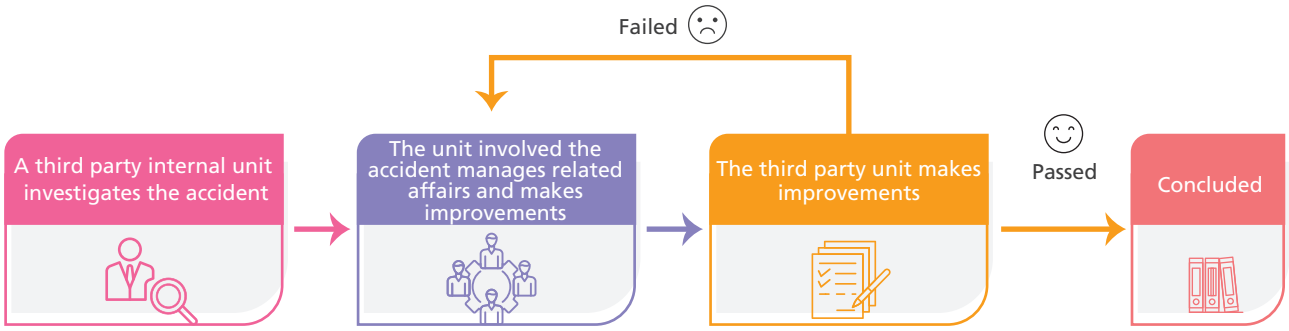
Handling and Follow-up of Occupational Accidents

Besides following regulatory procedures when handling occupational accidents, we utilize objective, professional investigation procedures to find the true cause of accidents and blind spots in management, so as to make thorough improvements.

The Company's nurse and collaborative psychological institution and physician provide healthcare, consultation, and reinstatement evaluation based on the psychological condition of personnel and reinstatement requirements.

Occupational accident handling and follow-up process



Traffic Accident Prevention

The majority of employee work hours lost was due to "traffic accidents during commute." Employees were involved in a total of 23 traffic accidents in 2019, and the number of days lost was 946 days. We compile cases each quarter and use the defensive driving database to produce a video to raise employees' safety awareness. We hope that the collective efforts of all employees will continue to lower the rate of traffic accidents.

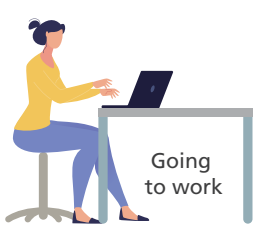
Promotion of traffic regulations and examples

Implement new approaches to traffic safety management

Promotion on labor safety and environmental protection day

Provide traffic information

Number of employee traffic accidents while commuting and days lost in the most recent four years



Number of cases

Days lost

	Going to work		Leaving work		Days lost
2016	10	63%	6	37%	12,418
2017	14	67%	7	33%	157
2018	7	63%	4	37%	532
2019	10	44%	13	56%	946

4.2 Labor safety risk management

4.2.1 Process Safety Management (PSM)

Besides complying with government regulations, we manage production processes, equipment, and personnel based on PSM, and also refer to the PSM laws of the U.S. OSHA and technical document specifications issued by the CCPS of the AIChE.

No process safety incidents occurred during business activities in 2015-2018; 3 occurred in 2019. Once a process safety incident occurs in a plant, we assemble an investigation team with experts in each field to verify the facts and cause. Measures are simultaneously implemented in all factory offices and tracked until all improvements are completed.

We periodically commission an impartial third party to conduct an external audit, subject to guidance and supervision of the Industrial Development Bureau, Ministry of Economic Affairs to verify our implementation progress.

Item	Date of abnormality	Number of days affected	Reason for abnormality	Improvement measure
1	January 4, 2019	-	While reassembling PSV, a contractor accidentally inhaled process gas in the process of taking apart a blind flange, and was sent to the hospital.	Before taking apart a safety valve, clear any residual pressure in pipes and verify that there is no leakage in the valve
2	February 20, 2019	30 days (March 22, 2019	The outgoing pipe of the steam heat exchanger cracked due to corrosion, and caused the leakage of a considerable amount of steam	1. Increase sampling inspections of heat exchange pipes 2. Monitor changes in the thickness of pipes, and adjust the cycle and scope of inspections based on operations
3	October 1, 2019	36 days (November 5, 2019)	When repairing the LPF safety valve, fugitive flare gas comes in contact with metal sparks and flash over occurs	Revised the online PSV repair principles

With regard to PSM training, the EHS Center continues to commission the Technical Training Center to assist in personnel training, hoping that the training mission will establish more accurate knowledge and management of process safety.

Item / Year	MOC	PHA	PSM			
			5 certifications	6 certifications	MI certification	3 certifications
2016 (including previous years)	81	95	-	26	-	-
2017	-	-	46	7	32	-
2018	-	-	21	33	11	-
2019	-	-	11	10	-	20
Total	81	95	78	76	43	20

Description: PSM personnel certificates are divided into three categories: 1. "Six certifications including employee participation," 2. "Five certifications including incident investigation," 3. "MI certification," and 4. "Five certifications include PHA"; factory offices not involved in processes are not required to obtain MI certification.

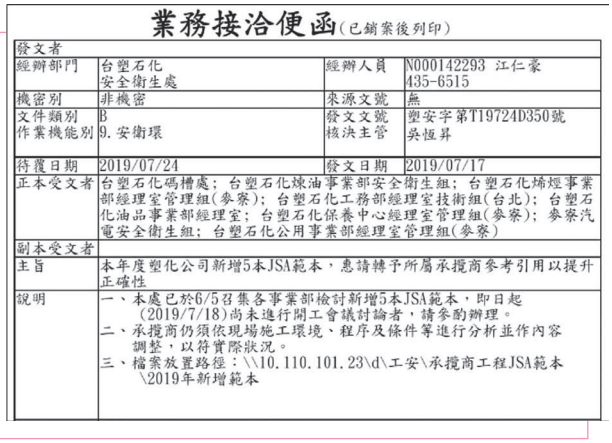
4.2.2Contractor Operational Safety Management

Training in Lifting Operations Safety Management Practices

Based on analysis of contractor accidents in the previous year, the main issue was found to be "insufficient safety awareness of lifting personnel." Construction site lifting operations safety management practices were organized to teach contractors the standard method for on-site supervision; a total of 5 sessions including indoor (laws, company regulations, and accident examples) and outdoor (lifting operations practices) courses were organized with a total of 191 participants.

Promotion of correct JSA and implementation of on-site inspections

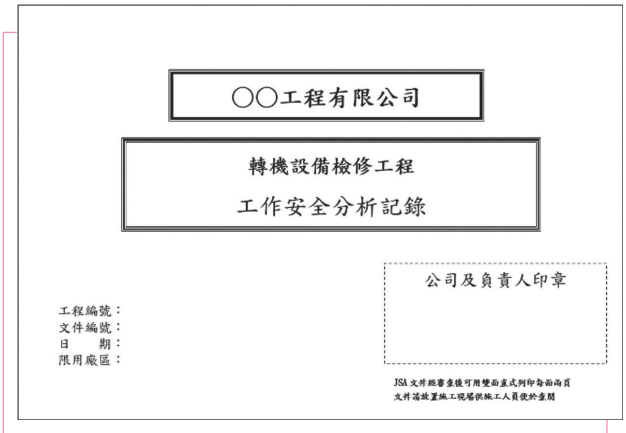
To improve the correctness of JSA, we continue to analyze contractor accidents in the past 5 years, and provide related templates for contractors to reference. Furthermore, we require the worksite director of contractors or safety and health personnel to check JSA contents for the construction each day, and document it in the daily safety and health inspection form.



業務接洽便函(已銷案後列印)

發文者			
經辦部門	台塑石化 安全衛生處	經辦人員	N000142293 江仁豪 435-6515
機密別	非機密	來源文號	無
文件類別 作業機能別	B 9.安衛環	發文文號 核決主管	塑安字第T19724D350號 吳恆昇
待覆日期	2019/07/24	發文日期	2019/07/17
正本受文者	台塑石化碼槽處；台塑石化球油事業部安全衛生組；台塑石化烯烴事業部經理室管理組(參案)；台塑石化工務部經理室技術組(台北)；台塑石化油品事業部經理室；台塑石化保養中心經理室管理組(參案)；參案汽電安全衛生組；台塑石化公用事業部經理室管理組(參案)		
副本受文者			
主旨	本年度塑化公司新增5本JSA範本，惠請轉予所屬承攬商參考引用以提升正確性		
說明	一、本處已於6/5召集各事業部檢討新增5本JSA範本，即日起(2019/7/18)尚未進行開工會議討論者，請參酌辦理。 二、承攬商仍須依現場施工環境、程序及條件等進行分析並作內容調整，以符實際狀況。 三、檔案放置路徑：\\10.110.101.23\d\工安\承攬商工程JSA範本\2019年新增範本		

Announcement of References



○○工程有限公司

轉機設備檢修工程

工作安全分析記錄

公司及負責人印章

工程編號：
文件編號：
日　　期：
限用廠區：

JSA文件經審查後可用雙面並式列印每兩頁文件落放置施工現場供施工人員使於查閱

Contractor JSA Template

Water jet machinery entry control

Water jet operations are indispensable to dust and paint removal. Analysis of accidents in recent years shows that accidents can only be effectively prevented by safely using machinery. Hence, water jet machinery entry verification and control was added to ensure operational safety.

When a contractor intends to bring a water jet cutter into the Company, it is inspected and numbered according to the "water jet equipment quarterly inspection form." After completing inspection, it is registered and handed over to the engineering department for verification, and then submitted to the Safety and Health Management Office for a "water jet machinery inspection card," which is pasted on the water jet cutter for inspection.


水刀機具檢查卡 7-9 月

廠商名稱：	
設備編號	
檢查日期	年 月 日
檢查者	

Water jet machinery inspection card

Paste on apparent place on water jet cutter

Inspection by operations supervisor of contractor and JSA inspection by construction safety personnel

Rules for "inspections by operations supervisor of contractors and JSA inspection by construction safety personnel" were implemented with consideration to the regulatory requirement for operations supervisors to conduct inspections and to improve the implementation of JSA by contractors.

1.Inspection by operations supervisor of contractor:
Operations supervisors appointed by contractors in accordance with the law must evaluate different hazards based on the actual situation of construction, and establish an operations inspection list, in which inspection items must comply with occupational safety laws. The operations supervisor must prepare an operations inspection list before construction each day, supervise operations on site, and sign the inspection list for confirmation.

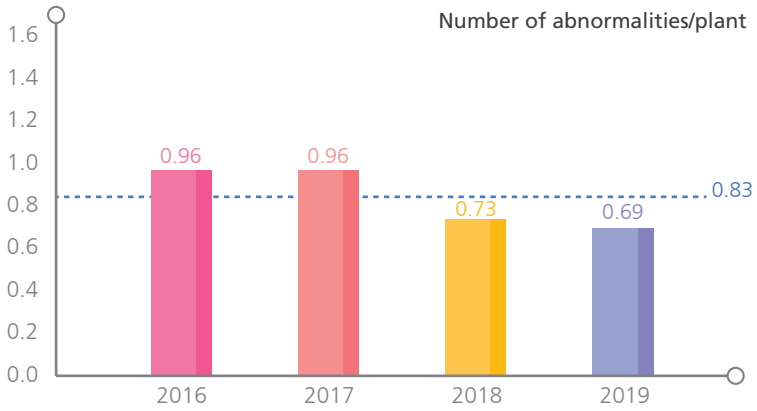
2.JSA inspection by construction safety personnel:
Construction safety personnel of contractors must write down protective equipment required for JSA operations that day before construction commences. They must write down the code or item number for the corresponding JSA procedure during construction, and verify if personnel are properly using protective equipment.

Compliance audit

We verify the implementation results of all related systems and compliance of all units through monthly compliance audits. With regard to on-site safety management by each unit, average number of abnormalities was 0.69 abnormalities/plant in 2019, lower than the average of 0.83 abnormalities/plant in the most recent 4 years.

Year	2016	2017	2018	2019	Total
Number of abnormalities	44	43	44	58	189
Number of times at the plant	46	45	60	84	235
Number of abnormalities/plant	0.96	0.96	0.73	0.69	0.83

Average number of abnormalities in the most recent 4 years



Employee and Contractor Professional Training and Certification

We improve the specialized knowledge and skills of employees and contractors through solid training, and further improve operational safety and quality, lower abnormality rate, and achieve process safety, stability, and continuous operation.

Training and Certification Category	Safety and Health Training Required by Law	EHS Promotion and Training	Position-specific certification	On-site Education and Training	Contractor Certification	
Trainees	Employees			Contractors		
Training item	Employee Safety and Health Training Required by Law	EHS Promotion and Training	Employee position-specific certification	On-site Education and Training	Safety and health management personnel certification	Professional technology certification
Training direction and purpose	To strengthen employees' safety and health knowledge, and ensure that employees (from Occupational Health and Safety supervisors to basic level operators) have the necessary professional knowledge and skills. To enable employees to actively discover potential hazards during operations, and take precautions to lower operating risks.	For employees to understand company regulations and systems, occupational safety and health related laws, general knowledge on hazards, personal protective equipment/first aid equipment, traffic safety, accident examples, emergency response drills, and health seminars	To improve employees' work ability and quality and ensure their professional competency	Before entering the plant, construction personnel of contractors must complete the safety and health educational training and test (first line of access control), and must complete the safety and health educational training and test organized by each business department (second line of access control) to obtain formal construction qualifications.	Strengthen the basic management skills of contractors' safety and health management personnel	For contractors' construction workers to gain professional skills for construction scaffold installation and dismantling, general machinery installation and dismantling, bolt installation and removal, control valve repair, switchgear repair, general meter calibration, wiring repair, painting, electric welding, temperature control, steel bars, and piping, so as to improve construction quality
2019 training results	✦ 13 training sessions ✦ 9 types ✦ 421 Participants	✦ Organized 1,158 sessions ✦ 44,398 Participants	✦ 40 certifications for PSM personnel ✦ 1,673 Participants	✦ 665 Education and training sessions ✦ 2,428 Contractors ✦ 23,382 Participants	✦ 148 Participants	✦ 1,329 Participants

4.2.3Finished Goods Transportation and Traffic Safety

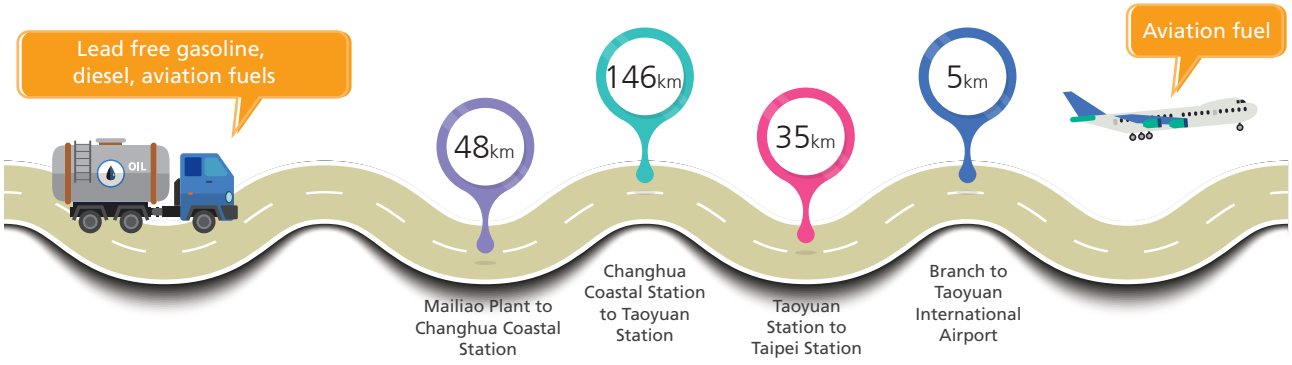
Management approach (MA)

Self-defined Material Sustainability Issue

- Sustainability Issue: Oil products transportation and storage safety
- Our commitment and responsibilities:
  We use long-distance pipelines to replace oil tankers for domestic oil product transportation, in order to achieve energy conservation and carbon reduction and reduce traffic accidents
- Our goals:
  To ensure zero accidents during transportation and lower the hazardous risks of road users through complete pipeline safety management and a smart positioning system

Oil products transportation safety

FPCC has four 12" pipelines for long-distance storage and transportation. These pipelines are buried along the west coast highway from the Mailiao plant to the Taipei storage and shipping station at Taipei Harbor in Bali, stretching 229 km long and channeling unleaded gasoline, aviation fuel, and diesel.



Long-distance Pipeline Safety Management

To ensure that transportation through long-distance pipelines outside the premises is safe, we inspect the pipelines on a daily basis. In addition, we perform cathodic protection potential tests on a quarterly basis to effectively protect the pipelines from corrosion-resultant leaks. We also authorize professional service providers to do pipeline current mapping (PCM) or close interval potential survey (CIPS) for the testing of the integrity of the enveloping layer of underground pipelines, and use a smart pipeline inspection gauge (PIG) to inspect the thickness of pipelines. Meanwhile, we have set up surveillance systems at important facilities in addition to transportation and storage monitoring systems to ensure the safety of transportation operations.

Statistical Analysis of Accidents

The number of traffic accidents that occurred in the most recent four years (2016-2019) was 2, 0, 1, and 3; the number of traffic accidents per million kilometers was 0.23, 0, 0.13, and 0.37. The transportation company (Sixth Naphtha Cracker Forwarding) we have worked with for years has been involved in fewer traffic accidents compared with the average in Taiwan.

	Number of traffic accidents	Number of traffic accidents per million kilometers[Note]	
		Transportation Company	Taiwan
2016	2	0.23	3.66
2017	0	0	3.47
2018	1	0.13	3.24
2019	3	0.37	3.25

Note: Using the data announced by the Department of Statistics, Ministry of Transportation and Communications for calculation, we multiplied the number of traffic accidents by the ratio of trucks to all registered vehicles, and divided it by a million kilometers to obtain the number of traffic accidents per million kilometers.

Implementation of Driving Safety Improvement Measures

To ensure traffic safety and lower the number of traffic accidents, we required our subordinate transportation company (Sixth Naphtha Cracker Forwarding) to make improvements in personnel training, equipment upgrade, in hopes of maintaining zero accidents, reducing the hazards and risks of drivers, and fulfilling our CSR.

Carrying out tank truck accident emergency response drills

Safety training We periodically organized transportation company safety meetings, including descriptions of the implementation of the Management Regulations for External Vehicles Assisting with Transportation, vehicle safety device explanation, implementation of joint defense organization for emergency response to hazardous objects, and review of abnormalities in driving and loading/unloading operations, in hopes of jointly improving traffic safety capabilities.

Transportation safety meetings for transportation companies

4.3 Supply chain, supplier, and contractor management

Management approach (MA) Self-defined Material Sustainability Issue

- Sustainability Issue: Stability of imported materials
- Our commitment and responsibilities:
  Our main raw materials include crude oil and naphtha. Raw material purchase affects the steady operation and production cost of our processes. Hence, it is necessary to effectively maintain stable raw material supply.
- Our goals:
  To ensure the steady operation of process with stable raw material supply, and maintain stable purchase prices to effectively control production cost.

Supply chain management policy

Raw material imports account for 95% of all procurement amount in our supply chain. Hence, raw material procurement have a significant effect on the Company, and we have adopted the following methods to maintain stable raw material supply:

Raw material imports account for 95% of all procurement amount in our supply chain.

1. Crude oil import: FPCC, with our optimal refining techniques and sufficiently flexible processes, can purchase different types of crude oil from different oil producing countries.
2. Development of diversified feed: We replaced part of naphtha operations with LPG, and minimized our dependency on naphtha. This helps properly mitigate the effects of an unstable supply of raw materials and controls our material purchase costs.
3. Adjustment of own capabilities: Ensures stable supply for processes.
4. We use financial derivatives for hedging against raw material purchases.
5. We have entered into long-term purchase agreements with overseas oil and coal suppliers to diverge risks.

Suppliers and contractors management

In the industrial value chain, FPCC has been keeping a desirable relationship with all partners. Our suppliers and contractors mainly include manufacturers, distributors, or dealers and engineering contractors (construction or outsourced design, etc.).

Management Policy

We have MAs in place for the management of suppliers and contractors. These policies fulfill quality and industrial safety requirements. In addition, efforts are made to require that manufacturers doing business with us meet environmental protection, industrial safety, and human right requirements in compliance with fair trade principles. Suppliers are required to 100% comply with the Company's suppliers and contractors management policy. If suppliers are found to have a negative impact on the environment and do not comply with the Company's regulations, they will be rejected and rated for subsequent dispositions. It is our hope to jointly pay attention to and minimize environmental impacts associated with operations with the value chain, and help each other on the road to sustainability.

Sustainability Issue

We require upstream suppliers to comply with government laws and regulations during each procurement. Such requirements include: applicable industrial safety qualification, ISO qualification, indication of hazardous materials, and illustration. In addition, manufacturers need to properly recycle used containers or carrying aids. Suppliers are asked to precisely follow the requirements in the Quotation and Order Notice, and the stance of the Group in sustainable management should be declared in forms.

We began requiring vendors to sign the "supplier/contractor social responsibility commitment" and administering the "supplier/contractor social responsibility questionnaire" in 2019, so that vendors will understand our philosophy and jointly fulfill their social responsibility. Vendors are required the sign the commitment and respond to the questionnaire when they log into Formosa Technology E-Market Place or after placing an order, and are required to comply with related regulations. In 2019, the social responsibility commitment's response rate reached 79%, and social responsibility questionnaire's response rate reached 61%.

Manufacturer Rating

All the suppliers that deal with us have to go through written evaluation and also site evaluation if it is considered necessary. We will only work with qualified suppliers, and select high quality partners suitable for long-term cooperation from qualified suppliers. We also implement contractors differential management, education and training, and construction safety management.

Vendor evaluations will be arranged in 2020 as needed based on the response to the "supplier/contractor social responsibility commitment" and "supplier/contractor social responsibility questionnaire" in 2019, ensuring that our vendors fulfill their CSR according to requirements.

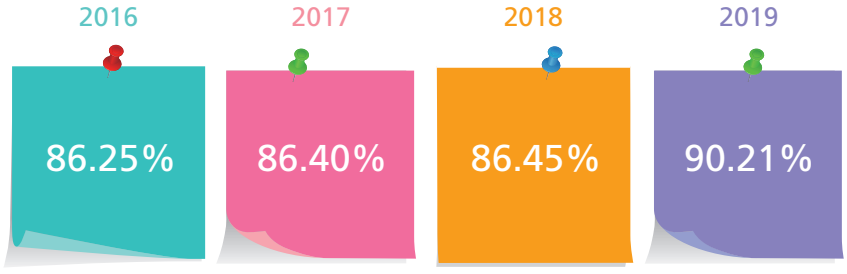
Evaluations of our suppliers and contractors in 2019 found that there were no major risks, such as child labor, forced labor, freedom of association, and collective bargaining.

Green Procurement

To reduce carbon emissions from vehicles making deliveries, we worked together with freight forwarders in implementing electronic operations for concentrated delivery by suppliers. As of the end of 2019, electronic operations for concentrated delivery by suppliers reached 96.17% in 2019.

Furthermore, we have replaced paper invoices with electronic invoices, and 90.21% of the vendors we do business with are also using electronic invoices.

Ratio of electronic invoices over the years



The use of products with the Green Mark reduces resource consumption, reduces environmental pollution, and mitigates the impact on Earth. It can also drive suppliers to develop green products, and elevate the production of green products in Taiwan. We procure 552 green products, including computers, toner cartridges, and fluorescent lamps, and the procurement amount of green products recognized by the government was NT$8.75 million in 2019.

Authorized Economic Operator (AEO) Certification

AEO certification means that government-approved businesses and their up-stream and down-stream partners, that is, the overall supply chain, are safe and the trade safety measures meet the criteria for quality businesses. This will be a growing trend for international trade in the future, and also one of the prioritized policies to be promoted by our customs authority.

We started the AEO certification process in June 2013 and completed all the items requiring certification in less than six months. We became a certified AEO on December 6, and also became the largest business to obtain the AEO certification in Taichung Customs' history. The acquisition of the AEO certification allows goods imported and exported us to enjoy the lowest inspection ratio and other preferred arrangements, such as payment of the import/export taxes according to the monthly summary.

4.4 Public Safety Emergency Response

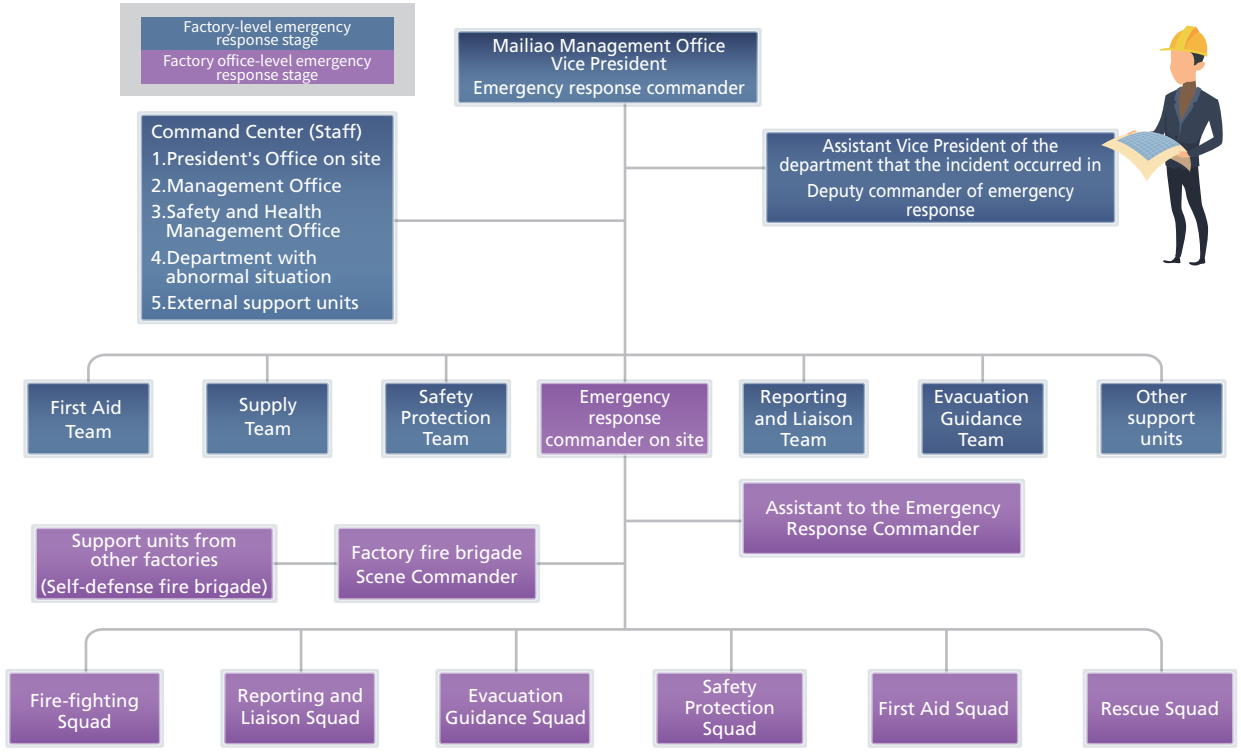
Management approach (MA) Self-defined Material Sustainability Issue

- Sustainability Issue: Emergency response measures
- Our commitment and responsibilities:
  To implement emergency response education and training, improve response time, mitigate disasters, and reduce damages
- Our goals:
  All personnel are first responders to ensure that abnormalities are immediately resolved within the shortest amount of time, thereby reducing the scope of disaster and damages

Emergency Response Management System

Emergency response management operations are implemented in two parts, "prevention" and "disaster mitigation"
Prevention: An emergency response plan and emergency response organization are established during normal times, and live drills, education, and training are implemented to improve the response knowledge and capabilities of personnel on site.
Disaster mitigation: Emergency response mechanisms are immediately implemented when an incident occurs to rapidly carry out disaster relief.

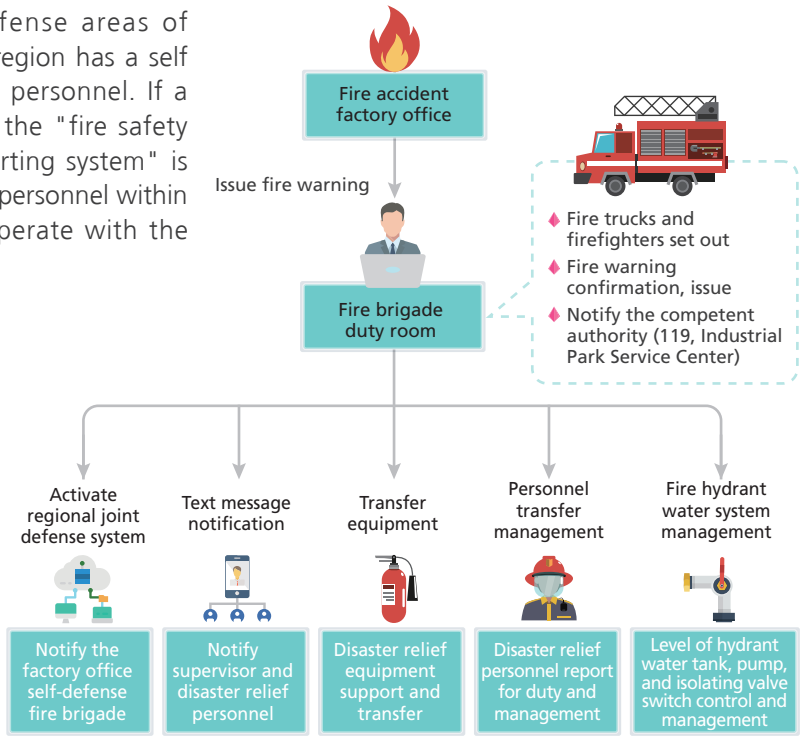
Organizational chart of the emergency response organization



Regional Joint Defense Organization of Plants

FPCC planned four regional joint defense areas of responsibility by region and plants. Each region has a self defense fire brigade with a total of 424 personnel. If a process plant encounters an emergency, the "fire safety regional joint defense computerized reporting system" is immediately utilized to notify all fire safety personnel within the region to go to the scene, and cooperate with the plant's fire brigade in disaster relief work.

The control room of each plant has a "fire safety regional joint defense computerized reporting system" for emergency response and management. The system can issue fire warnings and gather the disaster relief capabilities of different plants. The system's functions are as follows: issue fire warnings, call together members of the plant's fire brigade and self-defense fire brigade, text message notification, disaster relief equipment support, disaster relief personnel management, firefighting pump reporting and management.



Emergency response groups shift handover system

For on-site operators to carry out emergency response operations within the shortest time when an emergency incident occurs, the supervisor on duty assigns operators to emergency response groups during shift handover based on emergency response personnel requirements. The equipment required for response are entered in the work items during shift handover to determine the functions and manpower of emergency response groups.

Personnel training

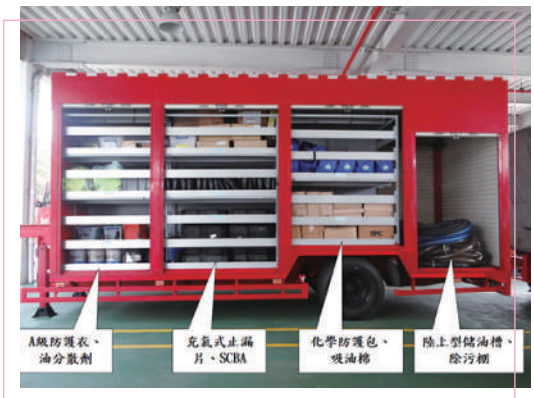
To help personnel on site to understand and become familiar with emergency response procedures, methods, techniques, and handling measures, we arrange different levels of training contents that become progressively harder to improve the emergency response abilities of personnel.

Training level		Training item	Trainees	Training frequency
Level 1	Level of general knowledge	Basic fire safety concepts and reporting measures	New recruits	Carried out after reporting for duty
Level 2	Level of operation	Handheld fire extinguisher and smoke room training	Direct labor	Once every two years
			Indirect labor	Once every four years
Level 3	Technical	Self-defense fire brigade training (including hose and mobile nozzle operations)	Self-defense fire brigade reserve personnel	Once every six months
		Self-defense fire brigade periodic training (operation of various equipment and large flow fire hose nozzle)	Current personnel of the self-defense fire brigade	Once a quarter
Level 4	Professional	Specialized training for various firefighting equipment and vehicle operation	Full-time fire brigade	Once a month
Level 5	Emergency response commander	Emergency response operations training	Cadre members of the full-time fire brigade and all level supervisors on site	As needed

Firefighting vehicles and emergency rescue equipment

The park has a plant-level fire brigade with 30 firefighting and emergency vehicles, foam concentrate, and emergency rescue equipment. This includes a 10,000 gallon/minute large flow nozzle to effectively extinguish large storage tank fires.

We also have chemical incident response vehicles equipped with various chemical protection equipment, decontamination equipment, and leakage prevention equipment for emergency response personnel to use. Furthermore, we purchased the "Mailiao Marine", which is the first oil spill vessel in Taiwan, to respond to marine pollution.



Execution of Emergency Response Drills

FPCC treats drills as actual incidents and takes every drill very seriously. Besides organizing emergency response drills every six months, the park conducts joint drills with the county government every year, expanded joint drills with Mailiao Association for Safety & Health, annual ocean pollution drills, and public area pipe carrier drills. The cross-departmental joint drills allow departments to work better together in disaster relief, while strengthening the mutual assistance and joint defense mechanisms of joint defense organizations.

FPCC continued to strengthen the disaster relief capabilities of front line emergency response personnel in 2019 through the semi-annual complex disaster emergency response drills. The drills combine process blackout emergency stop, fire accident, and toxic chemical incident to train the use of emergency response equipment and reporting, and review the completeness of SOPs for response to different situations.

Number of drills executed in 2019 **245**

Type of drill	Number of drills required by the law(Annually)	Number of drills executed (Annually)	Remarks
Marine pollution prevention drills	3	9	Mailiao Industrial Park's exclusive port co-organizes drills with government disaster relief units such as the Environmental Protection Bureau each year.
Joint emergency response drills with the county government	No regulations	4	Mailiao Industrial Park co-organizes emergency response drills with disaster relief units, such as the Fire Department and Environmental Protection Bureau of Yunlin County Government, each quarter.
Expanded joint drills with Mailiao Association for Safety & Health	No regulations	2	The emergency response drills organized by the Mailiao Industrial Park joint defense organization allows different joint defense organizations to work better together in disaster relief.
Public area pipe carrier drills	No regulations	4	In the Mailiao Industrial Park public area pipe carrier drills, pipeline companies and nearby factory offices work together in emergency response.
Toxic chemical incident response drills	15 (1 formal, 2 unscheduled)	32	Emergency response drills organized by factory offices involved in toxic chemicals mainly strengthen training of emergency response procedures for toxic chemical incidents, including reporting, division of hazard area, environment concentration monitoring, and personnel decontamination.
Factory office emergency response drills	46	194	The emergency response drills held every six months in accordance with the law focus on first response, evacuation of unrelated personnel, rescue, and first aid. We began organizing complex disaster drills in 2019, combining process black out, fire accident, toxic chemical incidents for training.

Mailiao Park joint drill to strengthen emergency response during Chinese New Year and disaster prevention and relief in 2019 Q1

Marine pollution prevention drills in 2019

Issues of concern

Employees replacing a pressure gauge on November 12, 2019 caused a fire accident due to naphtha leakage. The competent authority of environmental protection immediately began monitoring the site, and all monitoring data complied with air quality standards. When the incident occurred, it was immediately covered with water mist, so there was no apparent black smoke or fire. We submitted an incident review report to Yunlin County Government within three days.

Besides being investigated by the major incident investigation committee, we also formulated improvement measures for the cause of the incident, and replaced safe gates (4) during the most recent suspension. Its safety was verified by the competent authority on January 14, 2020 and we gained approval to continue operations.

Item	Improvement measures	Improvement completed on
1	After a comprehensive review we found that there were 4 sets of isolating valves with the same cock as the one that caused the incident, and the 4 sets of isolating valves were replaced with safe gates during the most recent suspension.	2019/12/25
2	The two isolating valves not be properly closed was used as an example for promotion and training, and employees receiving training were tested by the supervisor on site.	2019/11/29

5

New Concepts for Talent Cultivation

Chapter Summary

FPCC spares no effort in caring for employees. Besides providing employees with good salaries, benefits, education and training, communication channels, and friendly measures, we also care for employees' mental and physical health and provide assistance. We strengthened the employee care and protection net and created a healthy and happy culture of care.

Strategy

Improve the workplace environment and maintain employee health

Sustainable Development Goals (SDGs)

Sustainability Issue: Employee profile and benefits; education, training, and talent cultivation; occupational health and safety

Stakeholders: Employees, government institutions, investors/shareholders, customers, environmental protection groups, suppliers and contractors, and experts and scholars

Targets in 2019	2019 Performance	Targets in 2020	Mid-term and Long-term Goals
Improve the workplace environment			
✦ Build new employee dormitories, add 966 employee dorm rooms, and add an indoor activity center ✦ Employee turnover rate of 3% and under	✦ Construction of employee dormitories and the indoor activity center is 70% complete. ✦ Employee turnover rate of 1.80% (achieved)	✦ Construction of employee dormitories and the indoor activity center expected to be completed on 2021.3.19 ✦ Employee turnover rate of 3% and under ✦ Employee Care Program Newly promoted supervisor (2018) sensitivity and empathy training	✦ Continued improvement of employee dormitories and the indoor activity center ✦ To reduce the number of employees and contractors' vehicles going into and out of Mailiao Industrial Park during rush hour, we have increased the number of shuttle bus routes ✦ Maintain employee turnover rate at 3% and under
Employee occupational health management			
✦ Body fat of obese employees who participated in the employee healthy lifestyle challenge decreased 1.5% ✦ Ratio of employees who received general and special physical examinations reached 100% ✦ Abnormal results in grade 4 special health examinations decreased to 0.4% ✦ Establish health management big data from the i-health physical fitness instrument ✦ Strengthen emergency response capabilities and provide all employees with CPR+AED re-training ✦ Compile a list of employees with abnormal health conditions to monitor and manage high risk cases.	✦ Organize the fourth employee healthy lifestyle challenge, and lower the body fat of obese employees by 1.7% (achieved) ✦ Ratio of employees who received general and special physical examinations reached 100% (achieved) ✦ Abnormal results in grade 4 special health examinations decreased to 0.35%, 0.14% lower than 2018 ✦ Completed the Formosa Biomedical Technology Corporation i-Health+ App, and management platform functions are gradually being developed ✦ Completed CPR+AED re-training of all employees, and the next re-training is 2023 ✦ Actively follow up on the condition of 52 employees with chronic illness that has not been properly controlled, and show concern with supervisors in the workplace ✦ High risk of cerebral and cardio vascular diseases caused by workload decreased from 1.3% to 0.5%.	✦ Body fat of obese employees who participated in the employee healthy lifestyle challenge decreased 1.5% ✦ Ratio of employees who received general and special physical examinations reached 100% ✦ Abnormal results in grade 4 special health examinations decreased to 0.3% ✦ Average usage of i-health physical fitness instrument reaches 100% ✦ Update basic information on management cases to monitor the actual situation of employees ✦ Continue to follow up on overload, hepatitis, blood pressure, blood cholesterol, and blood sugar management ✦ Jointly complete the electronic health management platform with Formosa Biomedical Technology Corporation, and jointly film an office stretching exercise video for promotion ✦ Co-organize a middle age and elderly health seminar and bone mineral density testing event with Chang Gung Biotechnology	✦ Achieve warning and classified management mechanisms through big data collection, and actively provide employees with individual health education and health follow-up. ✦ Employee actively manage their own health. ✦ All employees participate in CPR+AED skills training.

5.1 Employee Structure

FPCC views employees as its most important asset and provides good work and environment

FPCC supports and complies with the Universal Declaration of Human Rights, UN Global Compact, and International Labour Organization Declaration on Fundamental Principles and Rights at Work, and established the Human Rights Policy to protect employees' rights (see the website for details on the Human Rights Policy and Human Rights Concerns and Methods).

Human Resource Structure

In 2019, the total number of full-time employees at FPCC was 5,338 with an average age of 42. Due to industry characteristics, the men-women ratio was around 10:1. The ratio of employees with a bachelor degree or above was around 67%. 78% of employees hold an entry-level supervisor or a lower-level position, 80% are working in Central Taiwan, and the mean number of years employees have worked for FPCC was 13.4 years.

Formal employees accounted for 96.6% of all employees in 2019 and informal employees (e.g. consultants, fixed-term contract-based personnel, work-study students, directors) accounted for 3.4%. Except for directors, 100% of employees are Taiwanese and hold full-time positions.

Ratios of formal and informal employees over the past four years

Unit: persons

Type of staff	2016			2017			2018			2019		
Gender	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Formal employees (A)	4,592	374	4,966	4,616	386	5,002	4,690	421	5,111	4,726	430	5,156
Consultant	10	2	12	8		8	5	1	6	4	1	5
Fixed-term contract-based employees	120	27	147	110	22	132	113	22	135	114	36	150
Work-study students	16	4	20	26	4	30	19	8	27	16	4	20
Director	7	1	8	6	1	7	5	1	6	6	1	7
Non-official staff subtotal (B)	153	34	187	150	27	177	142	32	174	140	42	182
Total (C=A+B)	4,745	408	5,153	4,766	413	5,179	4,832	453	5,285	4,866	472	5,338
Ratio of formal employees (A/C)	96.4%			96.6%			96.7%			96.6%		

We continue to implement innovative organization management and streamline the organizational structure. In 2019, a total of 93 formal FPCC employees were separated (including 11 retirees), which is an employee turnover rate of 1.80%. The separation rate of our formal employees remained below 3% in the most recent four years, better than the petrochemical industry, which fully demonstrates what we have accomplished in taking care of our employees and their trust in and identification with the Company.

Age distribution of separated formal employees of FPCC

Year	Age group	Male		Female		Average separation rate in Taiwan's industries
		Head count	As a percentage of total	Head count	As a percentage of total	Petroleum and coal product manufacturing sector
2016	Age 30 and below	36	0.72%	6	0.12%	
	Ages 31-50	30	0.6%	7	0.14%	
	Age 51 and above	25	0.5%	0	0	
	Subtotal	91	1.83%	13	0.26%	
2017	Age 30 and below	37	0.74%	5	0.1%	7.9%
	Ages 31-50	30	0.6%	4	0.08%	
	Age 51 and above	20	0.4%	0	0%	
	Subtotal	87	1.74%	9	0.18%	
2018	Age 30 and below	42	0.82%	5	0.1%	8.5%
	Ages 31-50	19	0.37%	7	0.14%	
	Age 51 and above	32	0.63%	0	0%	
	Subtotal	92	1.82%	12	0.23%	
2019	Age 30 and below	33	0.64%	2	0.04%	11.55%
	Ages 31-50	38	0.74%	7	0.14%	
	Age 51 and above	13	0.25%	0	0%	
	Subtotal	84	1.63%	9	0.18%	

Note: Source of industry information: Directorate-General of Budget, Accounting and Statistics (time series data inquiry - exit rate)
Formula: Number of male (female) employees separated/Number of formal employees

FPCC has been fair, impartial, and open with its recruiting operation and has never hired child labor to do any work. We maximize our recruitment sources through multiple channels and hire according to the performance of each examinee. The number of new formal employees totaled 221 in 2019, accounting for 4.29% of all employees. Most new employees were under the age of 30, and accounted for 3.03% of all employees. We will continue to recruit new employees as the source of organizational innovation.

Age distribution of new formal employees of FPCC in 2019

Category	Sub-committee	Male		Female	
		Head count	As a percentage of total	Head count	As a percentage of total
Age	Age 30 and below	147	2.85%	9	0.18%
	Ages 31-50	48	0.93%	10	0.19%
	Age 51 and above	7	0.14%	0	0%
	Subtotal	202	3.92%	19	0.37%

Formula: Number of new male (female) employees/Number of formal employees

There are specific regulations in place for the promotion, evaluating, training, and reward or punishment systems for all employees, so that everyone is treated fairly. As such, no discrimination, violation of human rights, or forced labor incidents occurred in 2019. The ratio of people with physical or mental disorders hired over the most recent four years meets the requirement set forth in the People with Disabilities Rights Protection Act of no less than 1% of the total number of employees.

FPCC takes gender equality very seriously. Even though the ratio of female employees is relatively low due to industry characteristics, promotion channels are transparent and standardized. The ratio of second level female supervisors to all second level supervisors has increased over the past four years, and shows our efforts in creating a workplace environment with gender equality.

Number of female second level supervisors or higher

Percentage (%)

2016	2017	2018	2019
57	65	76	87
5.47%	6.02%	6.89%	8.06%

Number of involuntary absent hours in the most recent four years

Year	Absent hours		Total work hours elapsed	Absentee rate	
	Male	Female		Male	Female
2016	28,728	1,961	10,118,292	0.28%	0.02%
2017	27,333	2,497	10,226,585	0.27%	0.02%
2018	27,247	7,664	10,532,797	0.26%	0.07%
2019	27,315	7,729	10,688,713	0.25%	0.07%

- Number of involuntary absent hours includes: Total hours of occupational sick leave, hospitalized sick leave, non-hospitalized sick leave, and menstrual leave.
- Absent hours include menstrual leave starting in 2018
- Statistics are only for formal employees of FPCC.

Unpaid parental leave

In order to realize the idea of a happy workplace, we set up the nursery room on the premises and created friendly offices to meet the needs of colleagues who need to breastfeed or collect their breast milk during business hours and offers child care leave; colleagues who meet the criteria may adjust their work hours to reflect their needs. Our reinstatement rate and retention rate were both 100% for four consecutive years.

Unit: persons

Status	2016			2017			2018			2019		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Number of employees eligible for parental leave	383	32	415	341	28	369	282	26	308	266	24	290
The actual number of employees who applied for parental leave	3	7	10	3	0	3	2	2	4	4	1	5
Number of employees expected to reinstate their employment status for the year (A)	2	0	2	3	2	5	1	0	1	4	1	5
Number of employees who applied for reinstatement of their employment status for the year (B)	2	0	2	3	2	5	1	0	1	4	1	5
Reinstatement rate % (B/A)	100%	-	100%	100%	-	100%	100%	-	100%	100%	100%	100%
Retention rate	100%	-	100%	100%	-	100%	100%	-	100%	100%	100%	100%

Note: 1."Retention rate" refers to the ratio of employees who were reinstated after parental leave and stayed for at least one year.
2.Retention rate formula: Number of employees still active 12 months after being reinstated from parental leave/Number of employees reinstated from parental leave in the previous reporting period x 100%
3.Statistics on "Number of employees eligible for parental leave" were gathered starting in 2016.

Hiring local workers

FPCC's principle is to prioritize local residents when recruiting entry-level employees in order to give back to local communities. We also proactively develop local residents to become outstanding management staff. The ratio of local residents in second level or higher managerial positions was maintained above 35% in the most recent four years.

Ratio of high-level managerial positions held by local residents in the most recent four years

	2016	2017	2018	2019
Head count	373	386	404	418
Ratio of local residents (%)	36.4%	35.8%	37.4%	37.4%

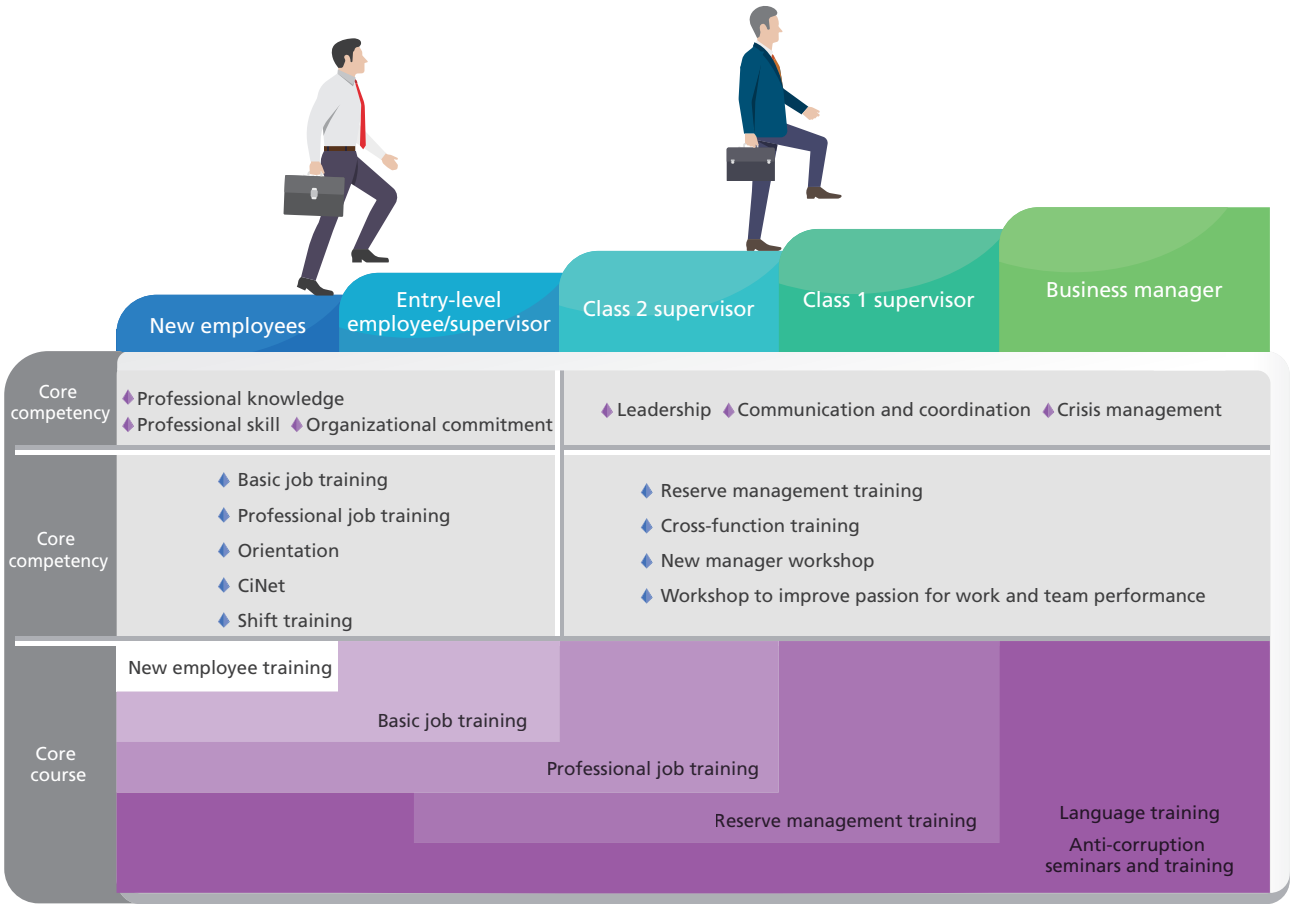
5.2 Employee career development

Management approach (MA)

GRI Standards: GRI 404 Training and Education

- Sustainability Issue: Education, training, and talent cultivation
  As of the end of 2019, FPCC had sent 66 employees to receive AI training, and another 4 employees are currently receiving training. Employees that complete training will engage in AI improvements at the production site.
- Our commitment and responsibilities:
  FPCC views employees as the foundation stone of sustainable development. We use a computerized training management system to organize training of required competencies at each stage, and utilize the latest AI technologies in training to enhance our competitiveness.
- Our goals:
  To provide a good and complete training framework and create an excellent training environment to improve employees' professional skills, so that they can continue to learn and improve when they are not at work. We hope to thus attract and retain outstanding talent and develop an outstanding enterprise.

Career Learning Map



Employee Learning Framework

Employee category	Required core competency	Type of education and training	Training hours
Level 2 supervisors and above (inclusive)	1.Leadership 2.Communication and coordination 3.Crisis management	1. Reserve management training 2. Cross-function training 3. New manager workshop 4. Workshop to improve passion for work and team performance	19,485 hours in total, on average 17.6 hours per person
Entry-level supervisors and under (inclusive)	1.Professional knowledge 2.Professional skill 3.Organizational commitment	1. Basic job training 2. Professional job training 3. Orientation 4. CiNet 5. Shift training	192,294 hours in total, on average 46.1 hours per person

Overall Performance

Total amount invested in education and training: NT$36,071,474

Average hours of training received by each employee: 40.1 hours

Total training participation: 64,317 participants

Major education and training results in 2019

Type of education and training	2019 Results	
Position-specific certification programs	1,027 participants completed certification	We implemented a system with dedicated personnel for each position to improve the quality of operations. Employees are required to obtain certifications for certain positions before being appointed. Our technical training center began providing 25 position-specific certifications in 2019.
VT training	1,323 participants were certified 93% completion rate	The Company began providing VT training for team leaders and professional patrol inspectors in 2014, and will further expand training to operators for all personnel to be capable of performing maintenance, and also to step up professional skills training for employees.
New manager workshop, workshop to improve passion for work and team performance	91 participants in total 51 hours/person	To improve the managerial skills of new managers, we began organizing "New Manager Workshops" and "Workshops to Improve Passion for Work and Team Performance" in 2017. The workshops aim to improve leadership, communication, and coordination abilities, in order to create a good atmosphere in departments, raise morale, and improve team performance.
English Proficiency Improvement Program	First time	We worked together with Chun Shin Limited, the agent of ETS in Taiwan, and planned courses of the program, improving employees' reading and communication abilities

Average education and training at each level

Unit: hour

Year \ Job Level	High-level management			Entry-level supervisors and under			Company-wide mean number of hours		
	Male	Female	Subtotal	Male	Female	Subtotal	Male	Female	Subtotal
2016	23.1	11.3	22.4	50.8	13.0	47.8	45.1	12.8	42.7
2017	24.2	11.0	23.4	53.0	25.8	50.7	46.8	23.3	45.0
2018	22.8	7.1	21.7	52.5	19.1	49.6	46.2	16.9	43.8
2019	18.3	8.5	17.6	49.4	13.3	46.1	42.8	12.4	40.1

Note: The number of training hours received by each male employee in 2019 was around 42.8 and it was around 12.4 for each female employee. This is mainly due to our emphasis on professional training for on-site operations. Female employees required relatively little professional training because most of them held office positions. Senior management focuses on leadership and management ability training, so the number of training hours is lower than entry-level supervisors and under.

5.3 Employee Benefits and Care

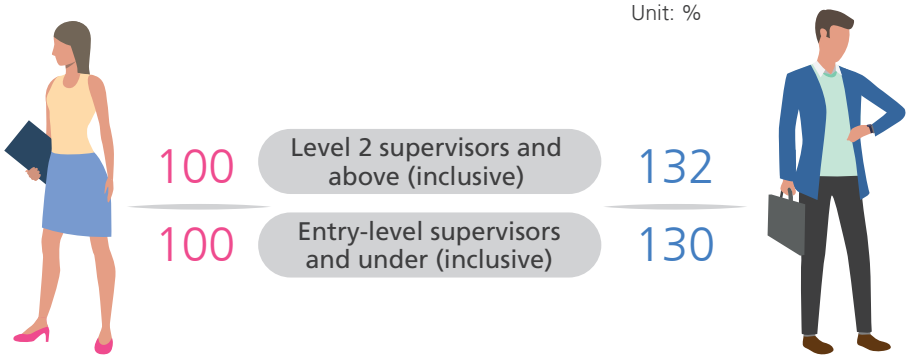
Management approach (MA) GRI Standards: GRI 401 Labor Relations

- Sustainability Issue: Employee profile and benefits
- Our commitment and responsibilities
  FPCC views employees as the foundation stone of sustainable development. We protect labor rights through our salary and benefits system, diverse communication channels, employee care program, and health management and promotion.
- Our goals
  To provide good salaries and benefits, diverse communication channels, and achieve gender equality, and strive to create a high quality work environment to attract and retain outstanding talent and develop a happy enterprise.

5.3.1 Remuneration and Benefits

Our remuneration policy does not discriminate against gender, religion, race, or political party. To attract and retain outstanding talent, we established a complete reward system, and offer salaries far higher than the minimum wage and at a medium-to-high salary level in the industry.

In the case of junior college graduates, their starting salary as basic-level employees is about 153% the minimum wage, and starting salary as a specialist is about 115% the minimum wage. Compensation criteria are established to reflect the required education and experience for the specific talent. They are not different between men and women. We established a Compensation Committee and the policy to periodically review whether if the compensation of management and individuals is reasonable.



Note: Male employees had higher salaries than female employees in 2019 because of the difference in seniority for second level supervisors and above and of the fact that men rotated for field work and received increased allowances for the rotation for entry-level supervisors and under.

In response to the implementation measures of the New Corporate Governance Blueprint (2018-2020) announced by the FSC in April 2018, our "Information on Salaries of Full-time Employees in Non-managerial Positions," which was audited by an accountant and disclosed to improve the quality of corporate governance information disclosures and better fulfill our social responsibility, is as follows:

Unit: persons

Year/Item	Non-managerial position		
	Number of full-time employees	Average salary of full-time employees	Median annual salary
2018	5,166	NT$1,415,000	-
2019	5,327	NT$1,392,088	NT$1,290,645

Note: 1.The number of full-time employees in 2019 increased by 161 compared to 2018, and average salary decreased NT$22,912 compared to 2018
2.The median annual salary in 2018 was not audited by an accountant and therefore was not disclosed.

Welfare System

In order to serve and care for the needs of all employees, there is a Management Office on the premises to take charge of related tasks such as logistic support and welfare services. In addition, a service satisfaction survey is conducted each year to improve quality of services. The Employee Welfare Committee is formed by both labor and management in accordance with the law and handles employee welfare related affairs.

For details on the benefits system, please visit our website

5.3.2 Communication Channels

FPCC ensures that employees are informed in advance of any major changes to its operation in accordance with the Labor Standards Act and other laws and regulations. Employees can provide FPCC with suggestions through the Employee Welfare Committee, labor-management meetings, labor unions, and Occupational Safety and Health Committee; they may also reflect issues through the complaint system. There were no violations of the human rights of local residents by FPCC in 2019. There were no human rights cases filed through the internal complaints mechanism. All employees are 100% protected by any agreement reached in labor-management meetings or with labor unions on salary increase or year-end bonus, for example. Details are provided below:

Item \ Committee	Welfare Committee		Labor-Management Meeting		Labor Union	Occupational Safety and Health Committee	
Tenets	To promote employee benefits		Strengthen labor relations		To protect rights of employees	As per the Occupational Health and Safety Management guideline requirements	
Member	Management	Employee	Management	Employee	Member	Management	Employee
Head count	5	12	9	9	3,521	26	13
Ratio	29%	71%	50%	50%	80%	66.7%	33.3%
Target of communication	All employees		All employees		All union members	All employees	

Purpose of employee engagement	Communication Channels	Frequency of communication	Target of communication	2019 communication results
Statutory use of the employee welfare fund	Welfare Committee	Once every two months	All employees	✦ A total of 63 benefits proposals were made and 100% were passed and implemented.
Coordination of labor relations	Labor-Management Meeting	Once every two months	All employees	✦ A total of 51 proposals were made and 94% was completed. ✦ The proposal that were not completed are extempore motions in the last meeting of 2019, and we plan on conducting an evaluation in the following year.
As per the Occupational Health and Safety Management guideline requirements	Occupational Safety and Health Committee	Once every three months	All employees	✦ A total of 4 meetings were convened and a total of 274 people participated in discussions ✦ Units with outstanding performance are encouraged during routine meetings, and units that had incidents are asked to share their experience, thereby building a consensus with regards to safety and health.
Providing employee consultation channels	Dedicated Personnel for Providing Employee Guidance	Any time	All employees	✦ The 2019 EAP showed care for 238 new employees
Providing employee consultation channels	Teacher Chang Foundation Taichung Branch	Any time	All employees	✦ Consultation services provided 77 times ✦ According to the satisfaction survey, 83.6% of people who received consultation services were satisfied with the service provided by the Company
Communication of labor conditions, labor benefits	Labor Union	Once every three months	All union members	✦ A total of 31 proposals were made and 97% was completed. ✦ The proposal that were not completed are extempore motions in the last meeting of 2019, and we plan on conducting an evaluation in the following year.

5.3.3 Employee participation

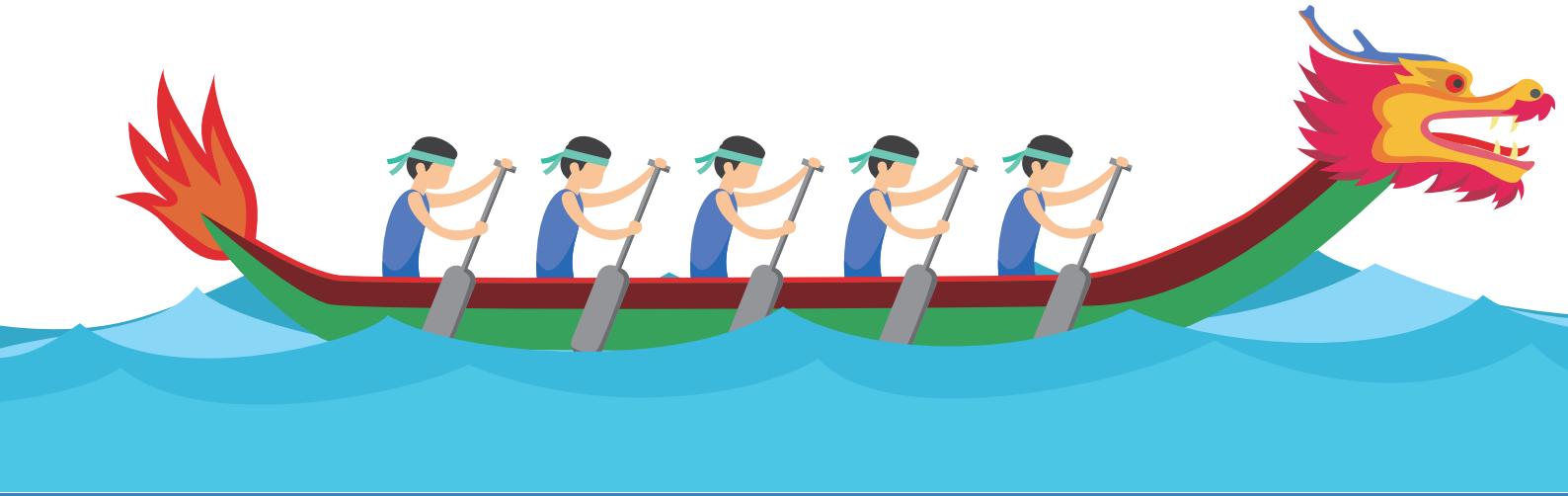
The Company hopes that employees will develop different interests and explore themselves beyond their field of expertise. Employees of FPCC in Mailiao Industrial Park formed a team to compete in the 2nd dragon boat race of Yunlin County. The team trained hard on land in hopes of gaining a good result. On the day of the race, the Employee Welfare Committee mobilized to cheer for the team, and also set up a booth to provide meals to raise morale and also show appreciation for the organizer and volunteers. Flags of "Formosa Oil 95+" were raised at the venue, creating the image of the Company enthusiastically participating in local events.

FPCC's dragon boat team won third place in the men's division of the first dragon boat race in Yunlin County

FPCC's dragon boat team was commended by the magistrate of Yunlin County on stage

Comprehensive training in rowing tank (1)

Comprehensive training in rowing tank (2)



5.4 Employee occupational health management

Management approach (MA)

GRI Standards: Occupational Health and Safety GRI 403

- Sustainability Issue: Occupational health and safety
- Our commitment and responsibilities:
  Create a happy, healthy, and safe workplace
- Our goals:
  To comply with requirements of the Occupational Safety and Health Act, use science-based health risk assessment results for management and follow-up on individuals, and systematically implement workplace health management projects through cross-departmental collaboration to prevent cerebral and cardio vascular diseases caused by work, as well as carry out ergonomic assessments and improvement, epidemic prevention, and first aid.

5.4.1 Occupational Illness Prevention and Management

Special Operations that are Hazardous to Health

There are 13 statutory special operation sites at FPCC. Doctors will visit our sites according to the frequency required by the law, and will evaluate the health of employees performing special operations and the association with their work. The evaluations are jointly conducted together with supervisors, employees, nurses, safety and health personnel, and personnel representatives on site. Based on the situation, job adjustments made as a preventive measure and competency evaluations were carried out for 210 employees, general injury and illness consultation and educational training were provided to 392 employees. Furthermore, Nurses carry out graded management and follow-up on 564 people based on examination results. Employees have gained a higher level of trust due to their familiarity with the services provided by doctors we have worked with over the years, and it has raised their health management awareness. As a result, the abnormality rate in the special health examination this year decreased 0.14% compared to 2018. We will continue to prevent occupational illnesses through health examinations and follow-up, care for individual health of employees, and environment monitoring.

Personnel under grade 4 management all engage in noise operations. Besides on-site improvements and procurement of low noise equipment, we have adopted new personal protective equipment (3M Peltor integrated with Motorola connector) to prevent exposure during operations when personnel need to remove their ear plugs for communication. As of the end of 2019, special health examinations were completed for 100% of employees, and there were no cases of occupational illness.

Item		2016	2017	2018	2019
Physician provides on-site services	Number of people subjected to job adjustment for preventive management or competency evaluations	54	64	206	210
	Number of people who received general injury and illness consultation and educational training	153	163	435	392
Nurses carry out graded management based on examination results and number of people tracked (employees with abnormal results in special health examinations)		540	593	535	564
Number of employees that received annual special health examinations		1,443	1,413	1,414	1,435

Item	2016	2017	2018	2019
Number of employees under grade 1 management	903	814	872	856
Number of employees under grade 2 management	536	593	535	574
Number of employees under grade 4 management	4	6	7	5
Abnormality rate in special health examinations (number of employees under grade 4 management/total number of employees)	0.28%	0.42%	0.49%	0.35%

Preventive management of cerebral and cardio vascular diseases caused by work

We used the electronic evaluation system to continue tracking high risk personnel in 2019, occupational medicine specialists provided one-to-one consultation and health education, and adjustments to work patterns were made based on the situation. The percentage of high risk personnel has decreased from 1.3% to 0.5%. We will continue reduce the risk of cerebral and cardio vascular disease among employees through case management and health promotion events.

Assessment results of diseases caused by abnormal workload

Unit: Number of people (abnormality rate)

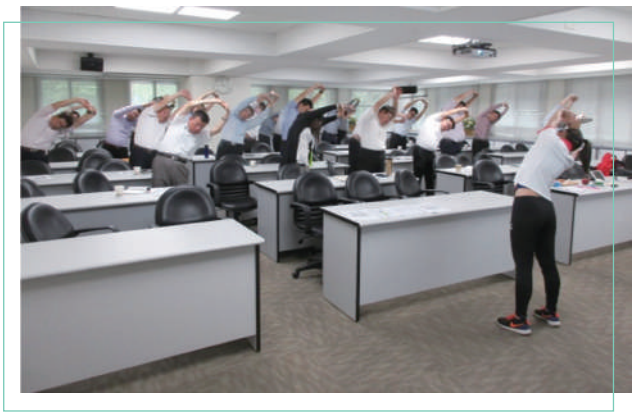
Risk level of cerebral and cardio vascular diseases caused by work		Workload		
		Low workload	Medium workload	High workload
Occurrence cerebral and cardio vascular diseases in the past 10 years	＜ 10%	683(57.8%)	190(16%)	54(4.6%)
	10~20%	169(14.3%)	37(3.1%)	6(0.5%)
	≧ 20%	34(2.9%)	8(0.7%)	1(0.1%)

Low risk
Medium risk
High risk

Other first aid, health education, and health promotion projects:

Artificial Hazard Assessment and Management

Starting in 2015, the Nordic Musculoskeletal Questionnaire is administered to all employees every three years to identify high risk groups. In the 2018 survey, we found that control personnel sitting with poor posture for long periods of time resulted in soreness, and thus commissioned fitness instructors of Formosa Biomedical Technology Corporation to teach stretching exercises in 2019. We also replaced the chairs of control personnel with ergonomic chairs, in hopes of alleviating the soreness caused by sitting for long periods of time and poor posture. We also helped employees develop the habit of moving around and avoiding sitting for long periods of time.



Emerging Infectious Disease Prevention and Health Education

We are actively preventing emerging, notifiable infectious diseases in cooperation with local health centers and the Third Branch (Mailiao) of the CDC, and also organize dengue fever vector prevention activities in the Company. We regularly and irregularly provide infectious disease prevention and health education information through monthly EHS reports and employee healthcare activities. Starting in 2017, we began working with Formosa Biomedical Technology Corporation in providing preventive healthcare knowledge through videos on healthott.com.

Periodic re-training of first aid personnel

We appoint one first aid personnel for every 50 employees in accordance with the Occupational Safety and Health Act to be able to immediately provide first aid. Mailiao Industrial Park has 538 entry-level first aid technicians (EMT-1). To maintain the effectiveness of their professional certification and their first aid skills, we require every first aid technician to complete 8 hours of first aid re-training every year to protect the lives of employees and contractors.

Furthermore, we provide 33 Automated External Defibrillators (AED) and completed the CPR (Cardiopulmonary Resuscitation)+AED training of all employees. We organized 21 CPR+AED re-training courses in 2019, and also prepared 300 inhalers and 25 injections of antidotes for hydrogen sulfide poisoning on site and at a chemical incident responsibility hospital nearby.

CPR+AED training

Beginner First Aid Technician Training

5.4.2 Employee Health Management and Promotion

To prevent employees from temporarily or permanently leaving the workplace due to health issues, which will cause difficulties with personnel transfer, we began organizing health promotion and management activities in 2015. Based on statistical analysis of health examination results in 2019, we found that:

1. Blood pressure, triglyceride, and weight show a gradual increase. Employees aged 30-44 (the prime years), in particular, showed that fastest rise.
2. Continued rise of weight abnormality rate

Abnormal weight is the main risk factor that causes chronic diseases such as high blood pressure, high blood sugar, and high cholesterol. We collaborated with companies in different fields (Chang Gung Memorial Hospital and Formosa Biomedical Technology Corporation) in the promotion of preventive medicine and disease prevention, hoping to raise employees' health awareness and lead a healthy lifestyle.

Health Promotion Activities that Encourage Healthy Lifestyles

We held the "4th Healthy Lifestyle Challenge" in 2019, and utilized the 23 i-health physical fitness instruments company-wide for employees to get into the habit of managing their own health. Employees earn points using the instrument to measure their blood pressure and can exchange the points for a reward. The system then notifies nurses of high risk personnel using the big data warning mechanism, so that they can intervene and manage high risk personnel.

A total of 1,651 employees participated in the event. Participants lost a total of 3,665 kg, on average each person lost 2.2 kg, and body fat decreased 1.7%.

For health promotion events, we continued to work together with Formosa Biomedical Technology Corporation in organizing a series of seminars, including:

1. Sports injury and kinesio taping, which teaches employees how to stretch and use kinesio tape, and prevents sports injuries from causing further harm.
2. Weight loss and healthy diet seminars, during which professional nutritionists teach employees how to design a weight loss diet that meets their needs, and also provide dietary health education.

Furthermore, business departments organize various interesting health promotion contests and ball games for different needs. Senior managers take the lead in the events and jointly create a workplace atmosphere that is health conscious and encourages exercise.

Organizing a women healthcare seminar and bone mineral density testing event

We invited a team from Chang Gung Biotechnology to organize a women healthcare seminar and bone mineral density testing, in order to raise awareness of protecting women's mental and physical health. The seminar mentioned female hormone crisis, how to eat to feel younger, and stress management.

Science-based Employee Health Management and Efficacy

1.After analyzing health examination results in 2019, we found that the abnormality rate for blood pressure, cholesterol, triglyceride, and blood sugar all decreased compared to 2018, and we will continue to direct our efforts towards comprehensive health management and health promotion.

Abnormality rate in annual health examinations over the years

Year	Abnormal blood pressure (>140/90 mmHg)	Abnormal cholesterol (>200 mg/dL)	Abnormal triglyceride (>150mg/dL)	Abnormal blood sugar (>100mg/dL)
2016	29.3%	40.8%	34.1%	20.2%
2017	33.0%	39.1%	37.3%	18.2%
2018	32.9%	43.0%	35.3%	21.3%
2019	23.4%	39.7%	34.6%	19.4%

2.Employee electronic health management system implementation: The employee health management system was completed through software (health management back-end) and hardware (i-health physical fitness instrument).

3.We are raising employees' health awareness by working with the professional team of Formosa Biomedical Technology Corporation, creating a healthy workplace and atmosphere, and using science-based management (big data, app, etc.) to achieve the goal of "healthy workplace."

6

New Value of Connecting with Communities

Chapter Summary

FPCC provides local residents with health promotion and environmental education, and subsidizes local charity activities to increase resident participation, in hopes of realizing the vision of becoming like family to them.

Strategy

Expand social engagement and improve local residents' living environment

Sustainable Development Goals (SDGs)

Sustainability Issue: Local community development and communication

Stakeholders: Employees, residents at operation sites, government institutions, investors/ shareholders, customers, environmental protection groups, suppliers and contractors, and experts and scholars

Targets in 2019	2019 Performance	Targets in 2020	Mid-term and Long-term Goals
✦ Establish Mailiao Social Education Park (library and activity center) ✦ Free health examinations for 9,500 local residents	✦ Continue the construction of Mailiao Social Education Park and cooperate with the schedule of the township office ✦ Free health examinations for 12,862 local residents cost NT$192,220,000, and goal attainment reached 130%	✦ Continue the construction of Mailiao Social Education Park, which is expected to be completed in 2021 ✦ Free health examinations for 9,500 local residents	✦ Assist in the planning and share expenses of Yunlin County Route No. 2 to reduce the traffic load at Mailiao Township; planning is being carried out in coordination with the county government ✦ Being like family to local residents

6.1 Local community development and communication

Management approach (MA)

GRI Standards:
GRI 413 Local Communities

- Sustainability Issue: Local community development and communication
- Our commitment and responsibilities:
  To uphold the philosophy to "take from society; give back to society", utilize our influence to care for communities, and support local development.
- Our goals:
  To give back to local communities, care for communities, and support local development through our business locations, actively engage in industry-academia collaboration, and drive the development of upstream and downstream industries.

Community care –FPCC gas stations cheer for you

FPCC has dedicated years of effort to local communities. Besides caring for the underprivileged, we also assist the development of surrounding areas. In recent years, we have utilized our core business with the goal of creating harmony in society. We began a long-term partnership with the Taiwan Fund for Children and Families in charity starting in 2019, and combined gas station resources in different counties/cities to join the Child Protection Good Neighbor Project.

Project Purpose	To create a good and safe living and employment environment for the underprivileged			To increase workplace and employment abilities
Partnering / Execution Unit	Victory Social Welfare Foundation	Taiwan Fund for Children and Families / Child Protection Good Neighbor	Local gas stations	New Taipei Special Education School
Subjects	Persons with disabilities	Abused children, underprivileged children	Underprivileged groups, children	Teachers/Students, Campus
Target of communication	General public and cardholders of Formosa Oil			
Content	1. Optimization of equipment at Shengli gas station 2. NT$10 donation to Victory Social Welfare Foundation for every transaction	1. Piggy bank gift for 30L of gasoline 2. NT$10 donation for every transaction 3. In response to the Project to End Poverty of the Taiwan Fund for Children and Families 4. Corporate Day Invited social workers and families receiving assistance to jointly celebrate	Giving back to communities through local gas stations: 1. Donation of supplies 2. Event sponsorship	Work study program to prepare for entering the workplace
Description of results	✦ 16,000 people responded ✦ Donated NT$160,000	✦ Donated a total of NT$2,200,000 ✦ 390 gas stations around Taiwan participated in the project	Invited underprivileged groups to participate in events during holidays to increase the number of participants.	The program continues to be implemented to help students successfully enter the workplace.

Event photos in 2019

Participation in Local Events of Mailiao, Giving Back to Communities

Unit/Project category	Mailiao Industrial Park charity event			
Issues for Communication	Subsidies for breakfast of underprivileged families	Scholarships for employees' children	Gifts for low income household during the three holidays	Emergency aid
Target of communication	Residents of townships near Mailiao Township			
Content	1. Subsidized 30 elementary and junior high schools in 7 townships 2. Subsidized NT$35 per meal 3. NT$4,920,000 and 1,490 participants in total	Provided a total of NT$6.43 million in subsidies for 2,321 children in Taixi and Mailiao Townships	1. Consolation money for low income households in 7 townships during the three holidays 2. Employees personally delivered NT$3,000 and the Company's products during holidays 3. NT$12,390,000 in subsidies for 3,739 participants in 2019	1. Emergency aid for seven townships 2. Funeral subsidies of up to NT$55,000, medical subsidies of up to NT$100,000, and living subsidies of up to NT$100,000 3. Provided NT$4,380,000 in subsidies for 83 applications in 2019

Unit/Project category	Mailiao Industrial Park charity event			
Issues for Communication	Culture and Art Performances	Friendly neighbor funds distributed each year	Caring for the health of local residents	Subsidizing forestation expenses of the entire county
Target of communication	Residents of townships near Mailiao Township			
Content	1. Sponsored artistic and cultural performances in coordination with local temple fairs or folk events for local cultural development 2. 28 events, NT$2,660,000, 5,530 participants in 2019	1. National Health Insurance and electricity subsidies of NT$7,200 per Mailiao resident 2. NT$312,830,000 in total benefited 44,266 residents in 2019.	1. Provided free health examinations for local residents of Mailiao and Taixi (including government agencies), and actively notified them to return for follow-up when any abnormal results were found. 2. NT$192,220,000 in subsidies for 12,862 participants in 2019	1. Twenty counties/ townships in the county increased the forestation area for air quality improvement, greening, and beautification, and we matched the amount of government forestation subsidies 2. NT$120,480,000 in 2019

Formosa LOHAS Corporate Beach Cleaning

We set out from the perspective of CSR, environmental sustainability, and social engagement, and worked together with the Society of Wilderness in the International Coastal Cleanup (ICC) on September 21, 2019, in order to raise employees' environmental protection awareness. We cleaned up the beach at Wazihwei, Bali, New Taipei City while complying with guidelines of the ICC. During the cleanup, we compiled statistics on ocean waste, so that employees will understand the spirit to not only pick up waste, but also reduce waste; a total of 514.9 kg of waste was cleared.

Local industrial advancement

The sixth naphtha cracker has created a large amount of work opportunities for local communities since it began production and operations in 1998, driving local economic development. Over the past two decades or so, we have developed four major action plans, including the utilization of technology to provide agricultural assistance, forestation subsidies, aquacultural assistance, and releasing fry into surrounding sea areas, which aim to boost the development of local agriculture, forestry, and fisheries. We will continue to work together with local communities in driving the sustainable development of industries. Please refer to the CSR website for implementation results.

6.2 Local ecological conservation

EcoPorts – Mailiao Port

Our vision for Mailiao Port is to internalize sustainability concepts into the industry's operations, and create a paradigm for sustainable development. Mailiao Port will continue to work towards developing green operations, implement green port control measures, implement its environmental policy to fulfill its CSR, and lead by example in autonomous management.

Mailiao Port began implementing a plan to apply for the EcoPorts Certification of the European Sea Ports Organization in October 2016, in hopes changing the trend of port facilities and activities causing the environment to deteriorate. After years of efforts, Mailiao Port passed the EcoPorts Certification and obtained the certificate on September 7, 2018.

Mailiao Port – Marine Ecology

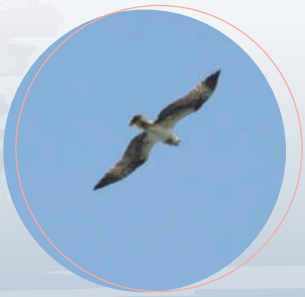
Mailiao Port has a rich underwater ecology, and species documented include Annelida, Cnidaria, Mollusca, Arthropoda, Echinodermata, and Chordata; there are 6 phylums, 72 families, and 148 species in total. The cumulative number of species has increased along with the higher frequency of surveys.

Mailiao Port – Intertidal Zone and Land Ecology

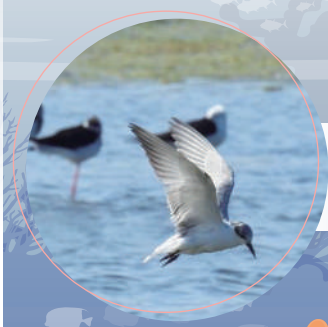
- Birds: Photography of migrant birds in areas around Mailiao Port is listed in the Mailiao Port Marine Ecology and Environment Photography Project. Based on records of bird distribution over the years, there is a total of 69 birds species.
- Beef wood windbreak forest: Mailiao Port has the largest beef wood forestation land in Taiwan.
- Intertidal zone: Mailiao Township is by the sea and has an intertidal zone that covers about 47 km2. The continental shelf is flat and has an abundance of marine organisms, such as fiddler crabs and soldier crabs are everywhere to be seen. There are also many resident birds and migrant birds, which represent the good condition of the marine ecological environment around Mailiao Port.

Scientific name: Nephthea chabrolii
Common name: Indonesian soft coral

Scientific name: Spondylus sp.
Common name: Spiny oysters



Scientific name: Pandion haliaetus
Common name: Western osprey



Scientific name: Chlidonias hybrida
Common name: Whiskered tern

6.3 Joint Effort throughout Formosa Plastics Group

Environmental Knowledge Promotion

The public has become growingly concerned about environmental protection in recent years, and environmental education is a new national movement. To let the public understand our achievements in promoting circular economy and energy and water conservation at the sixth naphtha cracker, as well as our efforts in environmental protection,

Mailiao Industrial Park began using the existing administration building, environmental monitoring center, environmental protection and ecological laboratory, and Mailiao Port in coordination with dedicated personnel and volunteers to provide environmental education starting in 2015, promoting ecological and environmental education through various events.

To provide environmental education, we allow the public to enter Mailiao Industrial Park and personally experience the equal emphasis on environmental protection and industrial development at the sixth naphtha cracker during visits. We hope that citizens will make energy and water conservation methods and ecological conservation a part of their daily life. Environmental education events organized in 2019 are as follows:

Event name	Purpose	Theme	Description of results
Mailiao High School Course Expo	✦ Allows students to understand the importance and fun of science in life ✦ Inspires students' curiosity and imagination ✦ Builds scientific concepts and develops problem solving abilities	We co-organized a science fair and course expo together with National Formosa University and Mailiao High School, and the hands-on activities helped students understand scientific knowledge at each checkpoint, including the environmental protection facility WESP of the sixth naphtha cracker and water purification.	✦ A total of 7 junior high schools participated ✦ 1,200 students participated
The 2019 Clam Festival of Yunlin	✦ Provided professional technical guidance to help farmers and fishermen improve product quality and increase production ✦ Assisted local farmers fishermen in obtaining organic certification and implementing traceability to increase product value	Learned about Yunlin's agriculture and fishery features through the agriculture and fishery results presentation, clam selection contest, description of technical assistance for agriculture and fisheries, Yunlin cuisine DIY teaching, and tasting events for Yunlin County's excellent agriculture and fishery products. These events market and promote local agriculture and fisheries.	✦ Approximately 2,000 people participated in the event
2019 Mailiao Fields of Happiness – Feast of Melons		Agriculture and fisheries assistance results display and promotion, healthcare results display and interaction, display of Mailiao Industrial Park's environmental monitoring capabilities, attracted tourists to experience the place of origin, charity auctions, and combined cuisine of communities in Mailiao Township	✦ 14 communities of Mailiao participated ✦ Approximately 1,500 people participated
2019 National Environmental Protection Professional Knowledge and Games	✦ Increased students interest in learning about environmental issues ✦ Cultivate future environmental protection talent ✦ Understand the spirit of placing equal emphasis on economic development and environmental protection	Assisted the Chinese Institute of Environmental Engineering in organizing environmental protection games in Mailiao Industrial Park's Ama Park, and visited the Environmental Monitoring Center, Environmental Protection and Ecological Laboratory, Ama Park, and Mailiao Port.	A total of 600 people from environmental protection agencies, environmental engineering consulting companies, and college students from the department of environmental engineering participated

Joint Effort throughout Formosa Plastics Group:

The Formosa Plastics Group understands the different needs of society, and subsequently established seven foundations and charitable trusts. In addition, with joint efforts from private professional groups and scholars and experts, individual public interest programs are implemented based on the principles of being "comprehensive, general, and systematic." Over the years, FPG has devoted nearly NT$57.78 billion in social welfare, such as education, healthcare, and social welfare, and continued to help the needy in society.

Summary of corporate social care and public interest donations

Unit: 100 million NTD

Year	Category	Public interest involved	Donated value
1960 | 1980	Education	Organization and continuous donations to Ming Chi University of Technology	280.2
		Organization and continuous donations to Chang Gung University	
		Organization and continuous donations to Chang Gung University of Science and Technology	
	Healthcare	Organization of Chang Gung Memorial Hospital	28.4
		★ Helping poor patients seek medical attention	
1990	Care for the minorities	★ Helping aboriginal students attend school (get a job) and related sponsorships	30.9
		The founder donated 361 cochlear implants, and ★ Chang Gung Memorial Hospital followed up by donating 638 cochlear implants; a total of 999 people benefited.	
2000–present		Promoting quality of service provided at welfare institutions for the physically and mentally disabled and other social welfare units	
		Welfare for children, teenagers, and women	
		Donating to Yunlin Second Prison, Taipei Prison, and Kaohsiung Prison for the AIDS inmate Rainbow Program, and donating to Yunlin Second Prison, Kaohsiung Prison, Tainan Prison, Hualien Prison, and Kaohsiung Women's Prison for the drug crime inmate Sunny Day Program.	
	Care for the environment	Recycling and treatment of kitchen leftover	13.5
		Cultivation of organic vegetables	
		Planting trees for forestation	
	Elderly Care	★ Building Chang Gung Health and Culture Village	7.9
		Donating 1.15 million doses of the pneumococcal conjugate vaccine worth over NT$950 million for old people; Benefits for the elderly, including housing improvement for the elderly, meals delivered to elderly people living alone, and healthy and active aging center	
	Disaster relief	1.Reconstruction of disaster areas and old and dangerous buildings (76 buildings)	48.4
		2.Donation for reconstruction after typhoons and earthquakes	
	Cultural promotion	Donations to cultural theaters symbolic of Taiwan	1.0
	Sporting promotion	Promoting sports and developing outstanding sports talent	2.6
	Health Promotion	Devotion to various health promotion research and academic research at the three universities	2.8
	Local contribution	Friendly neighbor and national-level subsidies of each plant	148.9
	Other	Chang Gung Social Welfare Fund and other donations	13.2
Total			577.8

Note:
1. Items marked " ★ " are donations provided with funds of the three schools and the revenue of Chang Gung Memorial Hospital, and therefore are not included in the total value of donations.
2. This table shows only donations within the region of Taiwan.

Appendix

The information below was verified by the British Standards Institution (BSI), please check the independent assurance statement for related results.

✦ : Full disclosure ▲ : Partial disclosure ⚡ : Sustainability Issue

Item No.	Title	Disclosure status	Corresponding chapter	Note:
GRI 102: General Disclosures 2016				
Organization Profile				
102-1	Name of organization	✦	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
102-2	Activity, Brand, Products, and Services	✦	2.2 Business Model and Operational Performance	
102-3	Location of Head Office	✦	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
102-4	Business office	✦	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
102-5	Ownership and legal form	✦	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
102-6	Markets for services	✦	2.2 Business Model and Operational Performance	
102-7	Organizational scale	✦	2.1 Business Philosophy, Organizational Structure, and Corporate Governance 2.2 Business Model and Operational Performance	
102-8	Information on employees and other workers	✦	5.1 Employee Structure	
102-9	Supply chain	✦	2.2 Business Model and Operational Performance	
102-10	Material Changes to the Organization and Supply Chain	✦	2.2 Business Model and Operational Performance	No material changes
102-11	Warning Principles or Guidelines	✦	1.2 Sustainability Issue Management	
102-12	External Initiatives	✦	3.2 Climate change mitigation and adaptation 5.1 Employee Structure	
102-13	Membership of Associations	✦	2.3 Partnership maintenance	
Strategy				
102-14	Statement from Senior Decision-maker	✦	Message from the Chairperson	
102-15	Key impacts, risks, and opportunities	✦	Message from the Chairperson 1.2 Sustainability Issue Management 3.2 Climate change mitigation and adaptation	

Item No.	Title	Disclosure status	Corresponding chapter	Note:
		Ethics and Integrity		
102-16	Values, principles, standards, and norms of behavior	✦	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
		Governance		
102-18	Governance structure	✦	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
		Communication with stakeholders		
102-40	Stakeholder Groups	✦	Stakeholder Engagement	
102-41	Collective Bargaining Agreement	✦	5.3 Employee Benefits and Care	
102-42	Identification and selection of stakeholders	✦	Stakeholder Engagement	
102-43	Guidelines for communication with stakeholders	✦	Stakeholder Engagement	
102-44	Key topics and concerns raised	✦	Stakeholder Engagement	
		Reporting Practice		
102-45	Entities included in the consolidated financial statements	✦	Report Overview	
102-46	Defining report content and topic boundaries	✦	Stakeholder Engagement	
102-47	List of material topics	✦	Stakeholder Engagement	
102-48	Restatements of information	✦	Report Overview	
102-49	Changes in reporting	✦	Report Overview	
102-50	Reporting period	✦	Report Overview	
102-51	Date of most recent report	✦	Report Overview	
102-52	Reporting cycle	✦	Report Overview	
102-53	Contact point for questions regarding the report	✦	Report Overview	
102-54~102-56	Claims of reporting in accordance with the GRI Standards, GRI contents index, External assurance	✦	Report Overview Appendices	
		GRI 103: Management Approach 2016		
		General requirements on reporting the management approach		
103-1	Explain material topics and their boundaries	✦	Report Overview	

Item No.	Title	Disclosure status	Corresponding chapter	Note:
GRI 200: Topic-specific disclosures – Economic 2016				
Economic performance				
103-2~103-3	Management approach	✦	2.2 Business Model and Operational Performance	
201-1	Direct economic generated and distributed	✦	2.2 Business Model and Operational Performance	
201-2	Financial implications and other risks and opportunities due to climate change	▲	3.2 Climate change mitigation and adaptation	
201-3	Defined benefit plan obligations and other retirement plans	✦	5.2 Employee Benefits and Care	
Market Presence				
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	✦	5.2 Employee Benefits and Care	
202-2	Proportion of senior management hired from the local community	✦	5.1 Employee Structure	
Anti-corruption				
205-1	Operations assessed for risks related to corruption	✦	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
205-2	Communication and training on anti-corruption policies and procedures	✦		
205-3	Confirmed incidents of corruption and actions taken	✦		There were no incidents of corruption in 2019
Anti-competitive behavior				
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	✦		No related situations
GRI 300: Topic-specific disclosures – Environment 2016				
Energy				
103-2~103-3	Management approach	✦	3.2 Climate change mitigation and adaptation	
302-1	Energy consumption within the organization	▲		
302-3	Energy Intensity	✦		
302-4	Reduction of energy consumption	▲		

Item No.	Title	Disclosure status	Corresponding chapter	Note:
		Water and Effluents 2018		
103-2~103-3	Management approach	✦	3.4 Water Resources, Wastewater, and Waste Management	
303-1	Effects of Water Resource Sharing	✦		
303-2	Management of Drainage Related Impacts	✦		
303-3	Water withdrawal	✦	3.4 Water Resources, Wastewater, and Waste Management	
303-4	Water discharge	✦		
303-5	Water consumption	✦		
		Emissions		
103-2~103-3	Management approach	✦		
305-1	Direct (Scope 1) GHG emissions	✦		
305-2	Energy indirect (Scope 2) GHG emissions	✦	3.2 Climate change mitigation and adaptation	
305-4	GHG emissions intensity	✦		
305-5	Reduction in greenhouse gas emissions	✦		
305-7	NOx, SOx, and other significant air emissions	✦	3.3 Air pollution management and prevention	
		Effluents and waste		
103-2~103-3	Management approach	✦		
306-1	Water discharge by quality and destination	✦	3.4 Water Resources, Wastewater, and Waste Management	
306-2	Waste by type and disposal method	✦		
306-3	Significant spills	✦	3.1 Environmental Protection Strategies and Policies	
306-5	Water bodies affected by water discharges and/or runoff	✦	3.4 Water Resources, Wastewater, and Waste Management 6.2 Local ecological conservation	
		Environmental Compliance		
307-1	Non-compliance with environmental laws and regulations	✦	3.1 Environmental Protection Strategies and Policies	

Item No.	Title	Disclosure status	Corresponding chapter	Note:
		Supplier environmental assessment		
308-1	New suppliers that were screened using environmental criteria	✦	4.3 Supply chain, supplier, and contractor management	Suppliers must 100% comply with the Company's suppliers and contractors management policy
308-2	Negative environmental impacts in the supply chain and actions taken	▲	4.3 Supply chain, supplier, and contractor management	
		GRI 400: Topic-specific disclosures – Social 2016		
		⚡ Labor relations		
103-2~103-3	Management approach	✦	5.1 Employee Structure	
401-1	New employee hires and employee turnover	✦	5.1 Employee Structure	
401-2	Minimum notice periods regarding operational changes	✦	5.3 Employee Benefits and Care	
401-3	Parental leave	▲	5.1 Employee Structure	
		Labor/Management Relations		
402-1	Minimum notice periods regarding operational changes	✦	5.3 Employee Benefits and Care	
		⚡ Occupational health and safety 2018		
103-2~103-3	Management approach	✦	4.2 Labor safety risk management 5.3 Employee Benefits and Care 5.4 Employee occupational health management	
403-1	Occupational Safety and Health Management System	✦	5.3 Employee Benefits and Care	
403-2	Hazard Identification, Risk Assessment, and Incident Investigation	✦	4.1 Creating a Labor Safety Culture	
403-3	Occupational Health Services	✦	5.3 Employee Benefits and Care 5.4 Employee occupational health management	
403-4	Worker participation, consultation, and communication related to occupational health and safety	✦	5.3 Employee Benefits and Care	
403-5	Worker training related to occupational health and safety	✦	4.2 Labor safety risk management 5.2 Employee career development	
403-6	Worker Health Promotion	✦	5.4 Employee occupational health management	

Item No.	Title	Disclosure status	Corresponding chapter	Note:
403-7	Prevention and mitigation of impact on occupational health and safety from direct business relationships	✦	4.1 Creating a Labor Safety Culture 4.4 Public Safety Emergency Response	
403-8	Workers included in the occupational safety and health management system	✦	4.2 Labor safety risk management	
403-9	Occupational injury	✦	4.1 Creating a Labor Safety Culture	
403-10	Occupational disease	✦	5.4 Employee occupational health management	
	Training and education			
404-1	Average hours of training per year per employee	✦	5.2 Employee career development	
404-2	Employee competency enhancement and assistance programs	▲	5.2 Employee career development	
404-3	Percentage of employees receiving regular performance and professional development reviews	▲	5.2 Employee career development	
	Diversity and Equal Opportunity			
405-1	Diversity of governance units and employees	✦	5.2 Employee career development	
405-2	Ratio of basic salary and remuneration of women to men	▲	5.1 Employee Structure 5.3 Employee Benefits and Care	
	Non-discrimination			
406-1	Incidents of discrimination and corrective actions taken	✦	5.1 Employee Structure	
	Freedom of association and collective bargaining			
407-1	Operations and suppliers in which the right to freedom of association and	✦	5.3 Employee Benefits and Care	
	Child labor			
408-1	Operations and suppliers at significant risk for incidents of child labor	✦	4.3 Supply chain, supplier, and contractor management	
	Forced or Compulsory Labor			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	✦	4.3 Supply chain, supplier, and contractor management	

Item No.	Title	Disclosure status	Corresponding chapter	Note:
		Security Practices		
410-1	Security personnel trained in human rights policies or procedures	✦	5.1 Employee Structure	
		Rights of indigenous people		
411-1	Incidents of violations involving rights of indigenous peoples	✦	5.1 Employee Structure	There were no disputes in 2019
		Human rights assessment		
412-1	Operations that have been subject to human rights reviews or impact assessments	✦	5.1 Employee Structure	
412-2	Employee training on human rights policies or procedures	▲	5.1 Employee Structure	
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	✦		FPCC did not sign any major investment agreements or contracts in 2019
		Local communities		
103-2~103-3	Management approach	✦	3.3 Air pollution management and prevention 6.1 Local community development and communication	
413-1	Operations with local community engagement, impact assessments, and development programs	✦		
413-2	Operations with significant actual and potential negative impacts on local communities	✦		
		Supplier Social Assessment		
414-1	New suppliers that were screened using social criteria	✦	4.3 Supply chain, supplier, and contractor management	Suppliers must 100% comply with the Company's suppliers and contractors management policy
414-2	Negative social impacts in the supply chain and actions taken	▲	4.3 Supply chain, supplier, and contractor management	
		Public Policy		
415-1	Political contributions	✦	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	

Item No.	Title	Disclosure status	Corresponding chapter	Note:
		Customer Health and Safety		
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	✦	2.2 Business Model and Operational Performance	None
		Marketing and Labeling		
417-1	Requirements for product and service information and labeling	✦	2.3 Partnership maintenance	
417-2	Incidents of non-compliance concerning product and service information and labeling	✦		No incidents
417-3	Incidents of non-compliance concerning marketing communications	✦		There were no violations in 2019
		Customer Privacy		
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	✦	1.4 Customer and Supply Chain Relationship Management	
		Socioeconomic Compliance		
419-1	Non-compliance with laws and regulations in the social and economic area	✦		There were no violations in 2019
Self-defined material topics		⚡ Corporate Governance		
103-2~103-3	Management approach	✦	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
Self-defined material topics		⚡ Risk and Crisis Management		
103-2~103-3	Management approach	✦	1-2 Sustainability Issue Management	
Self-defined material topics		⚡ Stability of imported materials		
103-2~103-3	Management approach	✦	4.2 Labor safety risk management	
Self-defined material topics		⚡ Oil products transportation and storage safety		
103-2~103-3	Management approach	✦	4.3 Supply chain, supplier, and contractor management	
Self-defined material topics		⚡ Emergency response measures		
103-2~103-3	Management approach	✦	4.4 Public Safety Emergency Response	

Item No.	Title	Disclosure status	Corresponding chapter	Note:
Category: Supplementary indicators for the oil-gas industry				
Energy				
GRI-OG2	Renewable energy investment amount	✦	2.1 Environmental Protection Strategies and Policies	
GRI-OG3	Total amount of renewable energy generated by green energy materials	✦	2.1 Environmental Protection Strategies and Policies	
Effluents and waste				
GRI-OG5	The volume of oil contaminated water and oil produced water and its management	▲	3.4 Water Resources, Wastewater, and Waste Management	
GRI-OG6	Burning and fugitive hydrocarbon discharged	✦	3.3 Air pollution management and prevention	
Products and services				
GRI-OG8	Benzene, lead, sulfur in fuels	✦	3.3 Air pollution management and prevention	
Local communities				
GRI-OG10	Quantity and description of valid disputes with local communities and residents	✦	3.3 Air pollution management and prevention 6.1 Community development and communication	FPCC mainly operates its business in Taiwan and is not involved in oil drilling, but discloses incidents related to operations in Taiwan
Process Safety				
GRI-OG13	Number and type of process safety events having occurred in operational activities	✦	4.2 Labor safety risk management	FPCC mainly operates its business in Taiwan and is not involved in oil drilling, but discloses incidents related to operations in Taiwan
Fossil Fuel Alternatives				
GRI-OG14	Biomass energy that complies with sustainable development standards and amount purchased	✦	3.1 Environmental Protection Strategies and Policies	

INDEPENDENT ASSURANCE OPINION STATEMENT

Formosa Petrochemical Corporation 2019 Corporate Social Responsibility Report

The British Standards Institution is independent to Formosa Petrochemical Corporation (hereafter referred to as FPCC in this statement) and has no financial interest in the operation of FPCC 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 FPCC 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 FPCC. 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 FPCC only.

Scope

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

1. The assurance scope is consistent with the description of Formosa Petrochemical Corporation 2019 Corporate Social Responsibility Report.
2. The evaluation of the nature and extent of the FPCC'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 FPCC 2019 Corporate Social Responsibility Report provides a fair view of the FPCC 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 FPCC 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 FPCC's efforts recognized by its stakeholders.

Our work was carried out by a team of CSR report assurors 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 FPCC'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 FPCC'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.
- 6 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 FPCC 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 FPCC's inclusivity issues.

Materiality

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

Responsiveness

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

Impact

FPCC has Identified and fairly represented impacts that were measured and disclosed in probably balanced and effective way. FPCC 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 FPCC's impact issues.

GRI Sustainability Reporting Standards (GRI Standards)

FPCC 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 FPCC'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 FPCC'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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