



# 20 CSR Report 20

Formosa  
Petrochemical  
Corporation



台塑企業  
FORMOSA PLASTICS GROUP

# 2020 CSR Contents

<b>1 Sustainability Plan</b>	<b>6</b>	<b>Report Overview</b>	<b>2</b>
1.1 Sustainable development strategy	7	<b>Message from the Chairperson</b>	<b>4</b>
1.2 Sustainability Issue Management	8		
1.3 Sustainable Development Goals (SDGs)	15		
<b>2 Driving New Industrial Developments</b>	<b>20</b>	<b>4 Deepening the New Culture of Labor Safety</b>	<b>62</b>
2.1 Business Philosophy, Organizational Structure, and Corporate Governance	23	4.1 Creating a Labor Safety Culture	64
2.2 Business Model and Operational Performance	29	4.2 Labor safety risk management	67
2.3 Partnership maintenance	33	4.3 Public Safety Emergency Response	72
2.4 Response to Material Economic Issues	37	Issues of concern	75
<b>3 Creating a New Green Appearance</b>	<b>38</b>	<b>5 New Concepts for Talent Cultivation</b>	<b>76</b>
3.1 Environmental Protection Strategies and Policies	41	5.1 Employee Structure	78
3.2 Climate change mitigation and adaptation	43	5.2 Employee career development	82
3.3 Air pollution prevention and management	53	5.3 Employee Benefits and Care	84
3.4 Water Resources, Wastewater, and Waste Management	57	5.4 Employee occupational health management	87
		<b>6 New Value of Connecting with Communities</b>	<b>94</b>
		6.1 Local community development and communication	95
		6.2 Local ecological conservation	98
		<b>Appendix</b>	<b>100</b>
		Appendix 1: GRI Standards	101
		Appendix 2: Sustainability Accounting Standards Board (SASB)	109
		Appendix 3: Independent Third Party Assurance Statement	111



This is the seventh Corporate Social Responsibility (CSR) Report published by Formosa Petrochemical Corporation (FPCC). The period involved in information disclosure herein is from January 1, 2020 to December 31, 2020. 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 the CSR Website.



## Overview of issuance

Issue Date of First Version: December 2015

Issue Date of Previous Version: May 2020

Issue Date of Current Version: June 2021

Issue Date of Next Version: May 2022



## 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., and FPCC USA. 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 Account Ability Principle Standard, namely materiality, inclusiveness, responsiveness, and impact, to demonstrate FPCC's commitment to sustainability in its business operations.

This report discloses information 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, and uses Integrated Reporting (IR) as the framework for reporting information and the basis for considering material issues. Frameworks used for the first time:

- Task Force on Climate-related Financial Disclosures (TCFD)
- SABS Standards (Sustainability Accounting Standards Board, SASB; SABS Standards were established by the SABS)



### 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, according to AA1000AS v3 Type 1, and the verification statement is included in this report. See the appendix for the BSI independent assurance statement. Projections will be specified in each section.



### Contact information

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### New Energy in Industry, New Value in Society

The outbreak of COVID-19 created disorder in global political, economic, and industrial development in 2020, threatening the health of human beings and devastating the economy. In particular, the collapse of oil prices was a great challenge in the first half of the year as it caused us to face massive inventory loss. The pandemic is like a magnifying glass that let us see the chronic illness of human development and way of life. Facing the pandemic and growing tensions between the US and China, how companies assess risk and flexibly respond are becoming growingly important issues in business administration. This has catalyzed changes to old systems and models, and hit us particularly hard after we led the industry in making new changes for sustainable development over the past few years.

Oil refining and the petrochemical industry is a business that takes from the Earth and uses it for human civilization, but it has not be able to remove the label of being destructive and highly pollutive. This is the fate of the petrochemical industry and a misunderstanding of the public, but it also taught us how to take a step back and listen and communicate every time we encounter a challenge or are questioned. We have directed our attention to five aspects in recent years, focusing on industry development, circular economy, labor safety, talent cultivation, and connecting with communities. We will continue to expand markets in this sustainable value model.

#### Driving New Industrial Developments

As an industry pioneer, we implemented automation and big data technologies in response to the rapid market changes, and used forward thinking to continue our transformation into smart factories. We formulated strategies for three major aspects: production, sales, and R&D. We continue to invest our resources in to the development of new technologies to achieve carbon neutral, and we have increased our use of renewable energy in hopes of becoming an industry leader in terms of new energy and new materials.

#### Creating a New Green Appearance

FPCC responded to Climate Action 100+ by taking action to achieve the three goals that were proposed in response to climate change, including strengthening climate change governance, GHG emissions of value chain, and adopting the TCFD. We maintained an A- in the 2020 CDP questionnaire. Furthermore, we have directed our efforts to conserving and improving the efficiency of energy use, exploring new low carbon business models, and picking up the pace of transformation and upgrade. We cooperate with the group's renewable energy business strategy, and combine wind and solar power with energy storage at the center in developing an energy storage industrial chain, so that we can play a key role in the supply chain of Taiwan's renewable energy industry.

### Deepening the New Culture of Labor Safety

Maintaining a safe and healthy workplace is the responsibility and obligation of FPCC, and the culture of labor safety will always remain our core value. We strengthened the accountability of employees in operational safety, and properly implemented management, building employees safety responsibility through education, training, and emergency response activities. Furthermore, we require suppliers to also take labor safety seriously, and work together to create safer work environments.

### New Concepts for Talent Cultivation

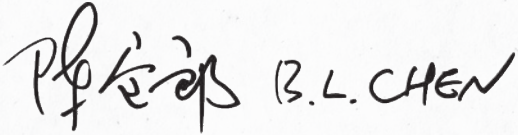
Employees are our partners in achieving sustainable growth, and we provide an inclusive environment with diversity and complete career development opportunities to attract outstanding talent. In recent years, we began providing managers with cross-level, cross-function training, so that they can fully tap into their potential achieve sustainable growth together with the Company.

### New Value of Connecting with Communities

FPCC used the same passion it has for its main business and applied it to community care and supporting local development, taking action to change society and facilitate dialogue between industry and society. Arts and cultural events organized by its foundation help create a society that has warmth, creativity, happiness, and health.

As a member of global society, the pandemic gave us an opportunity to review our flaws and defects. In the post-pandemic era, our goal will be to show our resilience. Besides investing resources to face even more stakeholders and become aligned with international trends, we will continue to combine our core business with our industrial value chain for solid and sustainable goals, bringing FPCC to a new brilliant phase.

Chairperson, Formosa Petrochemical Corporation

Handwritten signature in black ink, consisting of stylized Chinese characters followed by the name "B.L. CHEN".

Sincerely, 2021



**1**

# Sustainability Plan

- 1.1 Sustainable development strategy
- 1.2 Sustainability Issue Management
- 1.3 Sustainable Development Goals (SDGs)

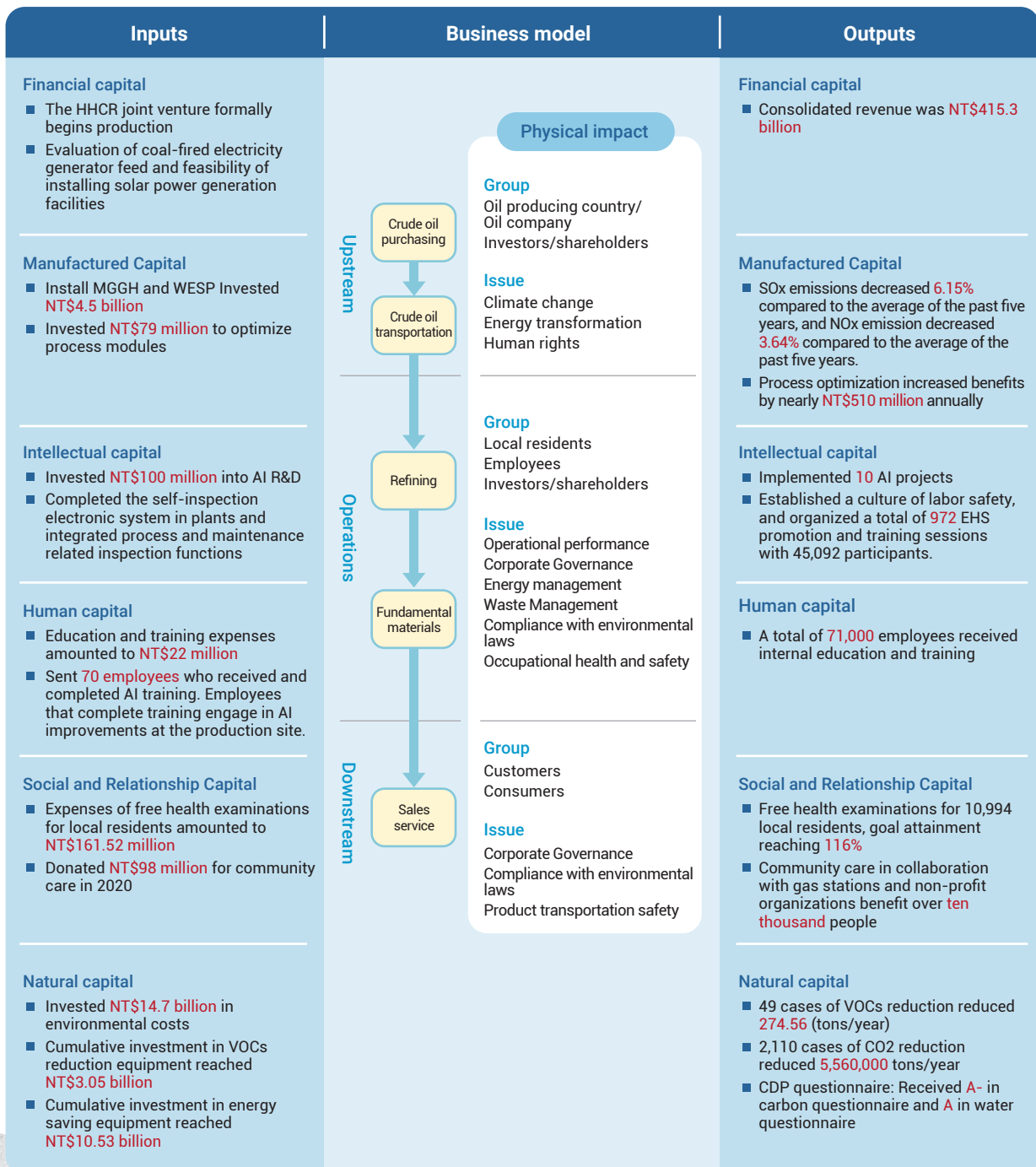


# 1-1 Sustainable development strategy

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 analyzed the industry from a macro perspective through upstream and downstream engagement, evaluated the future direction of our operations, and formulate related action plans.







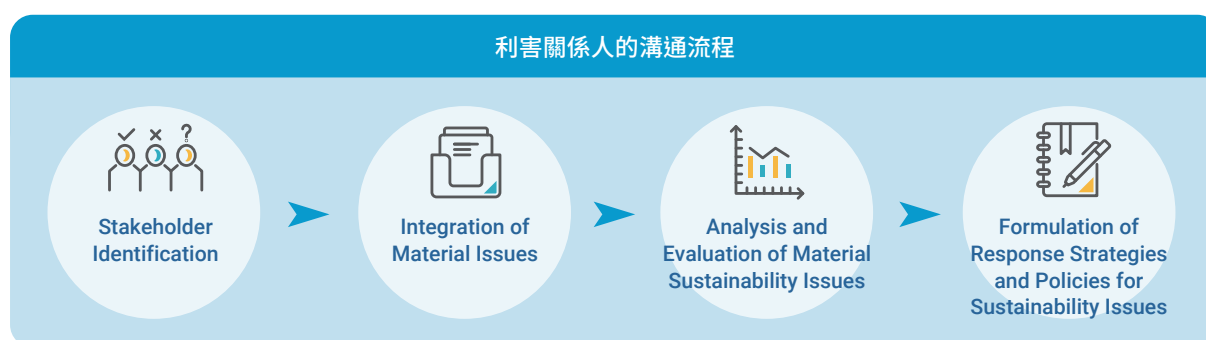
## 1-2 Sustainability Issue Management

### 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. We have designated departments responsible for communicating with, listening to the opinions of, and responding to the needs of different stakeholders.

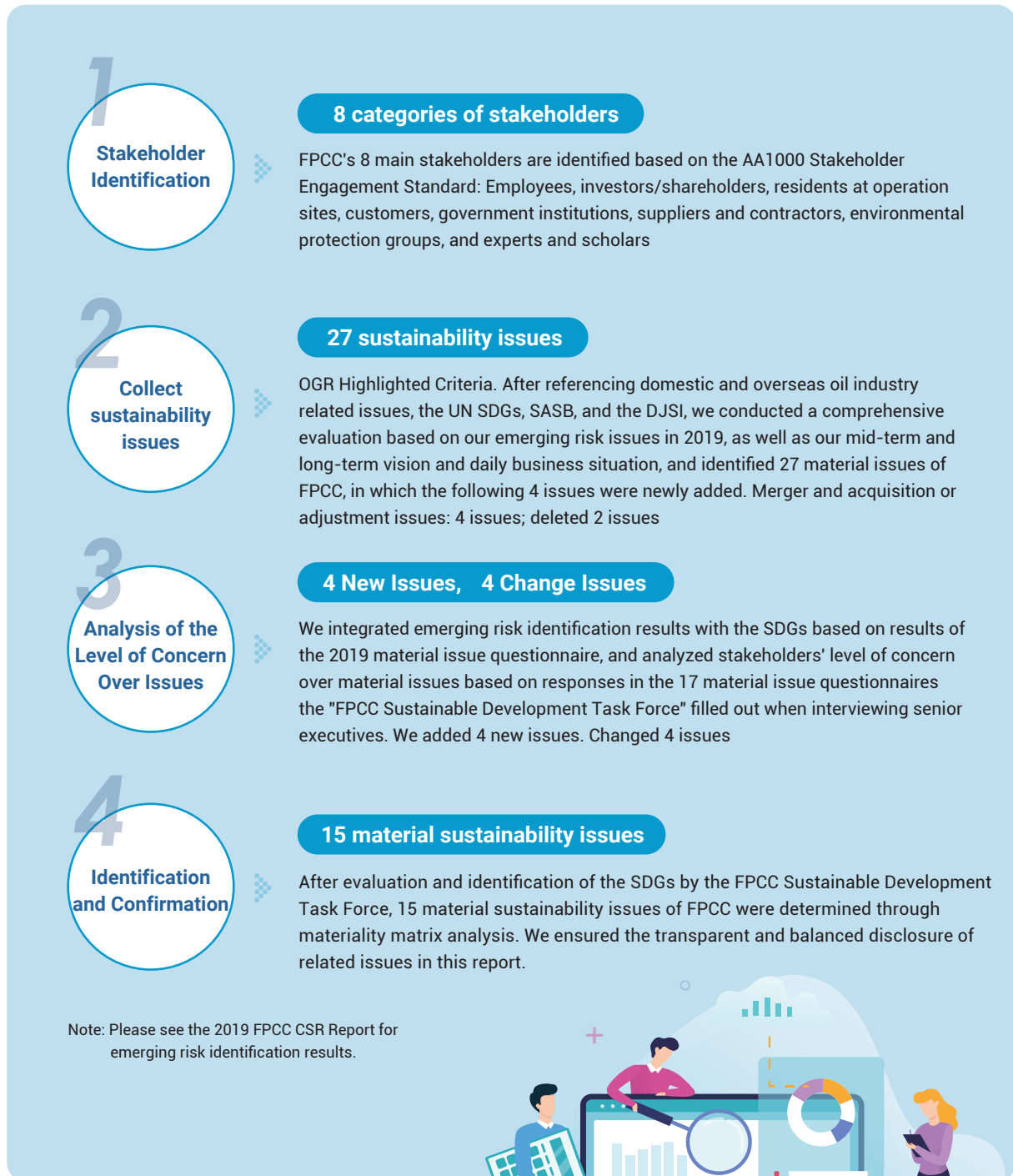
Stakeholders	項目	
 Employees	<b>Meaning to FPCC</b> Employees are the key to maintaining our core competitiveness, and also our partner in sustainable growth. Employee engagement is enhanced through sound educational training and a friendly working environment.	<b>Responsible Department</b> President's Office
	<b>Communication channel and frequency</b> <ul style="list-style-type: none"> <li>■ Employee-employer coordination meetings (Once/2 months)</li> <li>■ Welfare Committee (Once/2 months)</li> <li>■ Opinion box/email (Whenever they occur)</li> <li>■ Release letter (As needed)</li> </ul>	<b>Main Points of Communication</b> <ul style="list-style-type: none"> <li>■ Employee profile and benefits</li> <li>■ Education, training, and talent cultivation</li> <li>■ Occupational health and safety</li> </ul>
	<b>Response and Engagement</b> <ul style="list-style-type: none"> <li>■ 97% completion of proposals at employer-employee meetings</li> <li>■ 100% completion of Welfare Committee proposals</li> </ul>	

Stakeholders	項目	
 Investors/ shareholders	<p><b>Meaning to FPCC</b> 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 as our core philosophy.</p>	<p><b>Responsible Department</b> President's Office</p>
	<p><b>Communication channel and frequency</b></p> <ul style="list-style-type: none"> <li>■ Shareholders' meeting (Once)</li> <li>■ Investor conference (4 times/year)</li> <li>■ Email/phone number (Whenever they occur)</li> </ul>	<p><b>Main Points of Communication</b></p> <ul style="list-style-type: none"> <li>■ Corporate Governance</li> <li>■ Risk and Crisis Management</li> <li>■ Economic performance</li> </ul>
	<p><b>Response and Engagement</b></p> <ul style="list-style-type: none"> <li>■ Maintain top 20% in the Corporate Governance Review</li> <li>■ Added the TCFD framework</li> <li>■ CDP questionnaire A-</li> </ul>	
 Residents at the operation site	<p><b>Meaning to FPCC</b> 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.</p>	<p><b>Responsible Department</b> Regional Management Department</p>
	<p><b>Communication channel and frequency</b></p> <ul style="list-style-type: none"> <li>■ Email/phone number (Whenever they occur)</li> </ul>	<p><b>Main Points of Communication</b></p> <ul style="list-style-type: none"> <li>■ Local community development and communication</li> </ul>
	<p><b>Response and Engagement</b></p> <ul style="list-style-type: none"> <li>■ Improve the living environment for local residents</li> </ul>	
 Customers	<p><b>Meaning to FPCC</b> To provide customers with high value products, we are devoted to becoming a trustworthy business partner of our customers that grows together with them</p>	<p><b>Responsible Department</b> Operation units under each business department</p>
	<p><b>Communication channel and frequency</b></p> <ul style="list-style-type: none"> <li>■ Satisfaction survey (1 times/year)</li> <li>■ Email/phone number (Whenever they occur)</li> <li>■ Meeting (Once a month)</li> </ul>	<p><b>Main Points of Communication</b></p> <ul style="list-style-type: none"> <li>■ Customer service satisfaction</li> </ul>
	<p><b>Response and Engagement</b></p> <ul style="list-style-type: none"> <li>■ Our satisfaction survey performance was all higher than "Satisfied"</li> </ul>	
 Government agencies	<p><b>Meaning to FPCC</b> 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.</p>	<p><b>Responsible Department</b> President's Office</p>
	<p><b>Communication channel and frequency</b></p> <ul style="list-style-type: none"> <li>■ Meeting (at least 4 times/year)</li> <li>■ Email/official letter (As needed)</li> </ul>	<p><b>Main Points of Communication</b></p> <ul style="list-style-type: none"> <li>■ Industrial and public safety</li> <li>■ Emergency response measures</li> </ul>
	<p><b>Response and Engagement</b></p> <ul style="list-style-type: none"> <li>■ 0 deaths from major occupational disasters</li> <li>■ 223 emergency response operations were executed</li> </ul>	

Stakeholders	項目	
 <p>Suppliers and Contractors</p>	<p><b>Meaning to FPCC</b> Suppliers and contractors provide high quality products and services, and mutual trust strengthens FPCC's relationship with its supply chain</p>	<p><b>Responsible Department</b> Safety and Health Management Office of each business department</p>
	<p><b>Communication channel and frequency</b></p> <ul style="list-style-type: none"> <li>■ Meeting (As needed)</li> <li>■ Contractor audit (As needed)</li> <li>■ Email/phone number (Whenever they occur)</li> </ul>	<p><b>Main Points of Communication</b></p> <ul style="list-style-type: none"> <li>■ Industrial and public safety</li> </ul>
	<p><b>Response and Engagement</b></p> <ul style="list-style-type: none"> <li>■ 625 Supplier educational training sessions</li> <li>■ Formally obtained the ISO 45001 system certification.</li> </ul>	
 <p>Environmental Protection Organizations</p>	<p><b>Meaning to FPCC</b> Due to industry characteristics, FPCC takes environmental protection issues very seriously. We exchange opinions with environmental protection groups and jointly work towards environmental sustainability</p>	<p><b>Responsible Department</b> President's Office</p>
	<p><b>Communication channel and frequency</b></p> <ul style="list-style-type: none"> <li>■ Email/phone number (Whenever they occur)</li> <li>■ Meeting (once/quarter)</li> </ul>	<p><b>Main Points of Communication</b></p> <ul style="list-style-type: none"> <li>■ Climate change strategy</li> <li>■ GHG management</li> </ul>
	<p><b>Response and Engagement</b></p> <ul style="list-style-type: none"> <li>■ Energy conservation reduced carbon emission by 210,000 tons CO<sub>2</sub>e</li> </ul>	
 <p>Experts and scholars</p>	<p><b>Meaning to FPCC</b> 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.</p>	<p><b>Responsible Department</b> President's Office</p>
	<p><b>Communication channel and frequency</b></p> <ul style="list-style-type: none"> <li>■ Email (Whenever they occur)</li> <li>■ Meeting (once/quarter)</li> </ul>	<p><b>Main Points of Communication</b></p> <ul style="list-style-type: none"> <li>■ Climate change strategy</li> <li>■ GHG management</li> </ul>
	<p><b>Response and Engagement</b></p> <ul style="list-style-type: none"> <li>■ Industry-academia collaboration projects with Academia Sinica Phase 2 of the Research Project on Wastewater Microbiology was completed</li> </ul>	

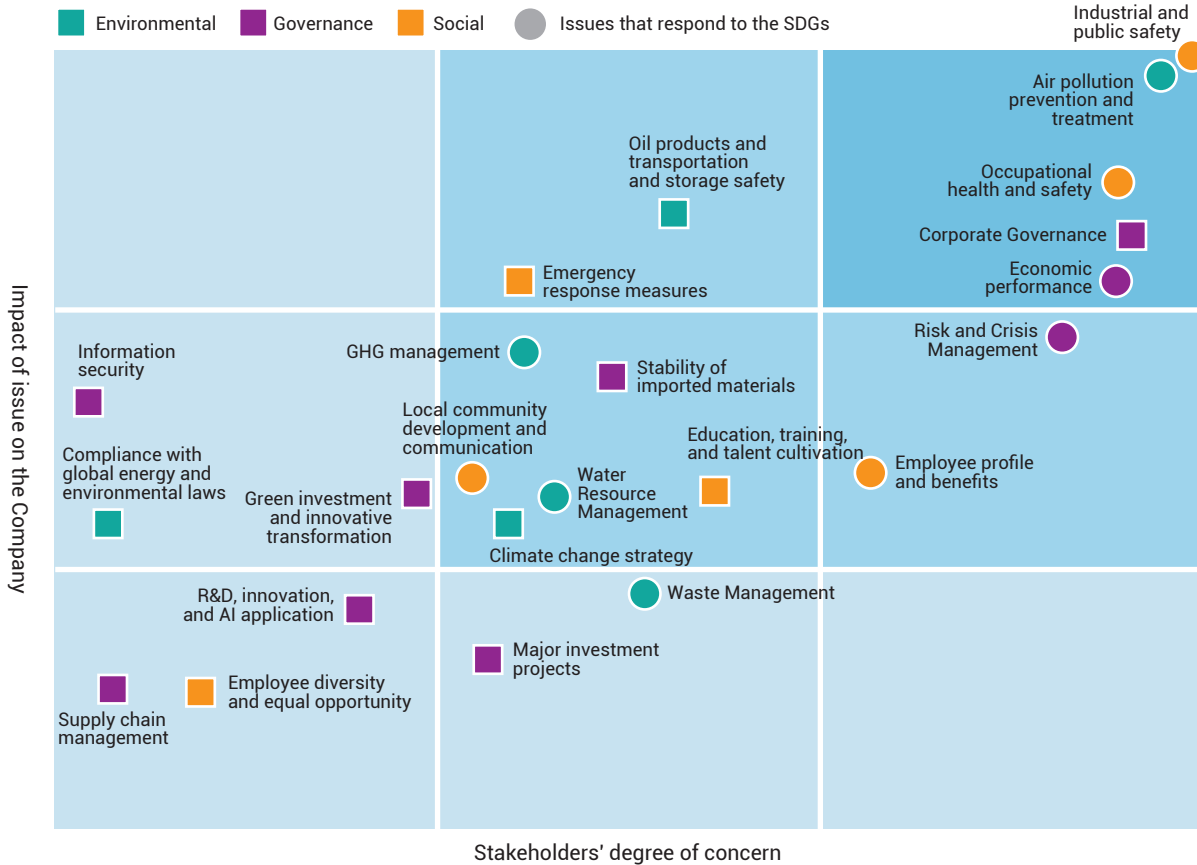
## Material Issue Analysis Process

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 27 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 dark blue area contains high impact sustainability issues.






## Explanation of the list of changes to sustainability issues

Sustainability Issue	Impact on FPCC	Issue changes compared to 2019
Green investment and innovative transformation	Facing Taiwan's energy transition policy, FPCC seeks to ensure the stable supply of energy and respond to stakeholders' concern over low carbon energy. FPCC engages in green investments and innovative transformation to reduce its impact on the environment.	
Information security	The WEF's Global Risk Report 2020 lists "data fraud and theft" and "cyberattacks" among the top ten most important issues. Hence, we continued to strengthen our information security management and system maintenance to reduce the impact of information security.	
R&D, innovation, and AI application	FPCC continues to develop new technologies, automated production management systems, cloud, and big data in response to the group's AI development. We hope to thus optimize our production process, improve our energy efficiency, and reduce the harm caused to the environment.	
Compliance with global energy and environmental laws	Facing the rising awareness of environmental issues, governments around the world continue to adopt stricter energy policies. Our goal is to reduce the impact of supply chains or government environmental regulations on our operations. In the future, we will continue to follow up on regulations in different countries.	
Climate change strategy	FPCC understands the importance of a company's resilience to climate change, and mitigates the impact of risks through risk assessment and planning mitigation and adaptation management guidelines.	<b>Low impact issue - Moderate impact issue</b> The extreme natural disasters that have occurred around the world in recent years have caused stakeholders to begin to take the impact of climate change seriously. Hence, the importance of this issue increased compared with last year.
Employee diversity and equal opportunity	FPCC spares no effort in caring for employees. Besides providing employees with good benefits, we strengthened the employee care and protection net and created a healthy and happy culture of care.	<b>Integration of issues</b> This issue was merged with "Human Rights Protection" in hopes of describing our care for employees in an integrated approach through employee diversity and equal opportunity.
Risk and Crisis Management	FPCC formulated risk assessment methods and management processes in response to international trends, in order to lower the impact of social and environmental changes on FPCC's operations	<b>High impact issue - Moderate impact issue</b> The level of concern among stakeholders declined. Hence, this issue was downgraded from high impact to moderate impact. FPCC will continue to observe the impact of this issue.
Waste Management	When facing waste management, FPCC continues to implement reuse projects for waste that is buried to reduce the amount of waste generated.	<b>Moderate impact issue - Low impact issue</b> The level of concern among stakeholders declined. Hence, this issue was downgraded from moderate impact to low impact. FPCC will continue to observe the impact of this issue.

### Boundaries of material sustainability issues

Impacts: ● Direct/ ▲ 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	GRI 102-18;GRI 405 Self-defined Material Sustainability Issue	2.1		●	▲
	Risk and Crisis Management	Self-defined Material Sustainability Issue	1.2	●	●	●
	Stability of imported materials	Self-defined Material Sustainability Issue	2.3	●	●	▲
 Environmental	Climate change strategy	GRI 302 ; GRI 305	3.2		●	▲
	GHG management		3.2		●	▲
	Air pollution prevention	GRI 305 ; GRI OG6	3.3		●	▲
	Water Resource Management	GRI 303;GRI 306 GRI OG5;GRI OG8	3.4		●	▲
	Oil products transportation and storage safety	Self-defined Material Sustainability Issue	4.2	●	●	▲
 Social	Employee profile and benefits	GRI 401;GRI 405	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	4.3		●	
	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. The Board of Directors passed the Risk Management Regulations on December 10, 2020, in which FPCC's risk management is mainly carried out by the FPCC Sustainable Development Task Force. The task force 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.

Pursuant to the Risk Management Regulations, our risk management system shall include risk identification, risk analysis and assessment, risk management and response, risk management and response, and risk information communication and reporting.

## Risk identification

The Company's risk management items include strategy risk, operational risk, financial risk, hazard risk, and other risks. Our issue collection includes 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 we also use the COSO Enterprise Risk Management (ERM) framework to collect emerging risks that we may face in the next five years, which is then analyzed and assessed by the Sustainable Development Task Force and professional consultants.

## Risk analysis and assessment

For risk factors that have already been identified, we analyze its attributes and impact, and established suitable quantitative or qualitative assessment indicators to assess the risk level, impact on the Company, and the Company's risk appetite and tolerance.

Risk analysis matrix

		<ul style="list-style-type: none"> <li>Technology change</li> </ul>	<ul style="list-style-type: none"> <li>Changes in important domestic and international policies and laws</li> <li>Geopolitical risk</li> <li>Market risk</li> </ul>	High risk issues
Impact	High			
	Medium	<ul style="list-style-type: none"> <li>Management of operational risks</li> </ul>	<ul style="list-style-type: none"> <li>Fluctuating interest rates, exchange rates and inflation</li> <li>Energy management</li> <li>Climate change</li> </ul>	Medium risk issues
	Low	<ul style="list-style-type: none"> <li>Technology risks of talent</li> <li>R&amp;D projects</li> <li>Change in corporate image</li> <li>Change in management</li> <li>Information security</li> <li>Code of ethics</li> </ul>	<ul style="list-style-type: none"> <li>New technologies</li> <li>Water crisis</li> <li>Air pollution</li> <li>Waste Management</li> </ul>	Low risk issues
		Low	Medium	High
		Likelihood		



## Risk management and response

Response measures for issued that were assessed to have high risk are disclosed below. Please refer to FPCC's official website and annual report for shareholders' meeting for response methods to other risks.

Risk assessment item	Risk management unit	Risk review	Response measure
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.
Geopolitical risk	Sustainable Development Task Force	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.	<ul style="list-style-type: none"> <li>■ 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.</li> <li>■ With regard to sales risks, 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.</li> </ul>
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.	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.

## Risk supervision and review

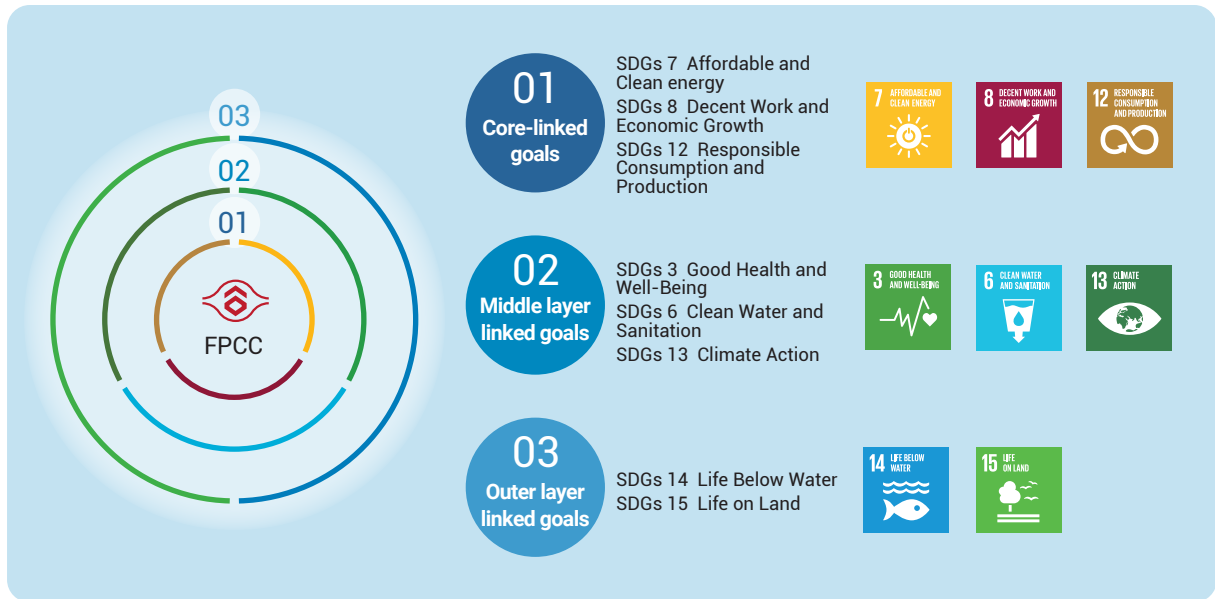
We established risk monitoring mechanisms and performance assessment indicators for risk assessment results. This is to ensure the efficiency and benefits from implementing risk management, and suitable adjustments are made in a timely manner to continue making improvements.

## Risk information communication and reporting

With regard to the Company's risk management policy and implementation status, besides submitting risk information management reports to the authorized supervisor, we convene risk management meetings for reporting, review, and supervision of risk management. When necessary, we report major risks to the Board of Directors based on the attributes and impact of the risk. Our risk management information is disclosed on the Market Observation Post System, FPCC's official website, and the annual report in shareholders' meetings for stakeholder communication in accordance with related laws and regulations.

# 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	Sustainable Development Goals (SDGs)		Material Sustainability Issue
	Goal	Targets	
Tier 1 Core-linked goals		 <p>7.3 Double global energy efficiency</p>	<ul style="list-style-type: none"> <li>Climate change strategy</li> </ul>
		 <p>8.2 Increase production capacity through diversification, technology upgrade, and innovation</p>	<ul style="list-style-type: none"> <li>Business Performance</li> <li>Risk and Crisis Management</li> <li>Corporate Governance</li> </ul>
		 <p>12.2 Achieve the sustainable management and efficient use of natural resources</p>	<ul style="list-style-type: none"> <li>Climate change strategy</li> <li>Oil products transportation and storage safety</li> </ul>
Tier 2 Middle layer linked goals		 <p>3.4 Reduce non-communicable diseases through prevention and treatment and promote mental health and wellbeing</p>	<ul style="list-style-type: none"> <li>Employee profile and benefits</li> <li>Occupational health and safety</li> </ul>
		 <p>6.3 Improve water quality, reduce pollution, and reduce the release of toxic chemical substances and hazardous materials</p>	<ul style="list-style-type: none"> <li>Climate change strategy</li> <li>Water Resource Management</li> </ul>
		 <p>13.3 Mitigation and adaptation of climate change, and improve human and institutional capabilities through education</p>	<ul style="list-style-type: none"> <li>Climate change strategy</li> <li>GHG management</li> <li>Air pollution prevention</li> </ul>
Tier 3 Outer layer linked goals		 <p>14.2 Implement sustainable management and protection of marine and coastal ecology</p>	<ul style="list-style-type: none"> <li>Local community development and communication</li> </ul>
		 <p>15.4 Implement protection of mountain ecosystems</p>	<ul style="list-style-type: none"> <li>Local community development and communication</li> </ul>

Sustainability Measures of FPCC in 2020	FPCC	Long-term vision
<ul style="list-style-type: none"> <li>■ 1,612 improvement cases in total</li> <li>■ Cumulative investment amount of NT\$7.8 billion</li> </ul>		<ul style="list-style-type: none"> <li>■ Expand the provision of sustainable energy worldwide through the improvement of energy efficiency</li> </ul>
<ul style="list-style-type: none"> <li>■ FPCC continues to develop new technologies for automated production management systems, cloud, and big data</li> <li>■ Invested NT\$100 million into AI R&amp;D</li> </ul>		<ul style="list-style-type: none"> <li>■ Optimize the production and sales process, improve the efficiency of energy, use, and reduce harm to the environment</li> <li>■ Promote local employment development, improve work environment safety, and lead the industry towards higher added value</li> </ul>
<ul style="list-style-type: none"> <li>■ Identify and assess natural resource risks brought by climate change</li> <li>■ Use long-distance pipelines to replace oil tankers for domestic oil product transportation</li> </ul>		<ul style="list-style-type: none"> <li>■ Engage in low carbon transformation and evaluate investments in renewable energy generation facilities.</li> <li>■ Ensure zero accidents when transporting oil products and reduce the risk of hazards to drivers and pedestrians</li> </ul>
<ul style="list-style-type: none"> <li>■ Employee care survey results improved compared to 2019</li> <li>■ Abnormal results in grade 4 special health examinations decreased to 0.01%</li> </ul>		<ul style="list-style-type: none"> <li>■ Implement local healthcare and occupational health management, collect big data, and actively provide employees with individual health education and tracking</li> </ul>
<ul style="list-style-type: none"> <li>■ Obtain the letter of approval to establish the desalination plant</li> <li>■ Rain water storage rate reached 94.3%</li> </ul>		<ul style="list-style-type: none"> <li>■ Increase water usage and properly carry out wastewater treatment to protect water ecological systems</li> </ul>
<ul style="list-style-type: none"> <li>■ Reduced GHG emissions by 39,288 tons CO<sub>2</sub>e</li> </ul>		<ul style="list-style-type: none"> <li>■ 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</li> </ul>
<ul style="list-style-type: none"> <li>■ Obtain the EcoPorts certification every two years</li> </ul>		<ul style="list-style-type: none"> <li>■ Reduce the impact of land waste on the ocean to protect marine ecology</li> </ul>
<ul style="list-style-type: none"> <li>■ Conduct local species surveys for at least 10 consecutive years to fulfill our responsibility to species conservation at operation sites</li> </ul>		<ul style="list-style-type: none"> <li>■ Reduce actions that damage natural habitats to protect ecological resources and species on land</li> </ul>

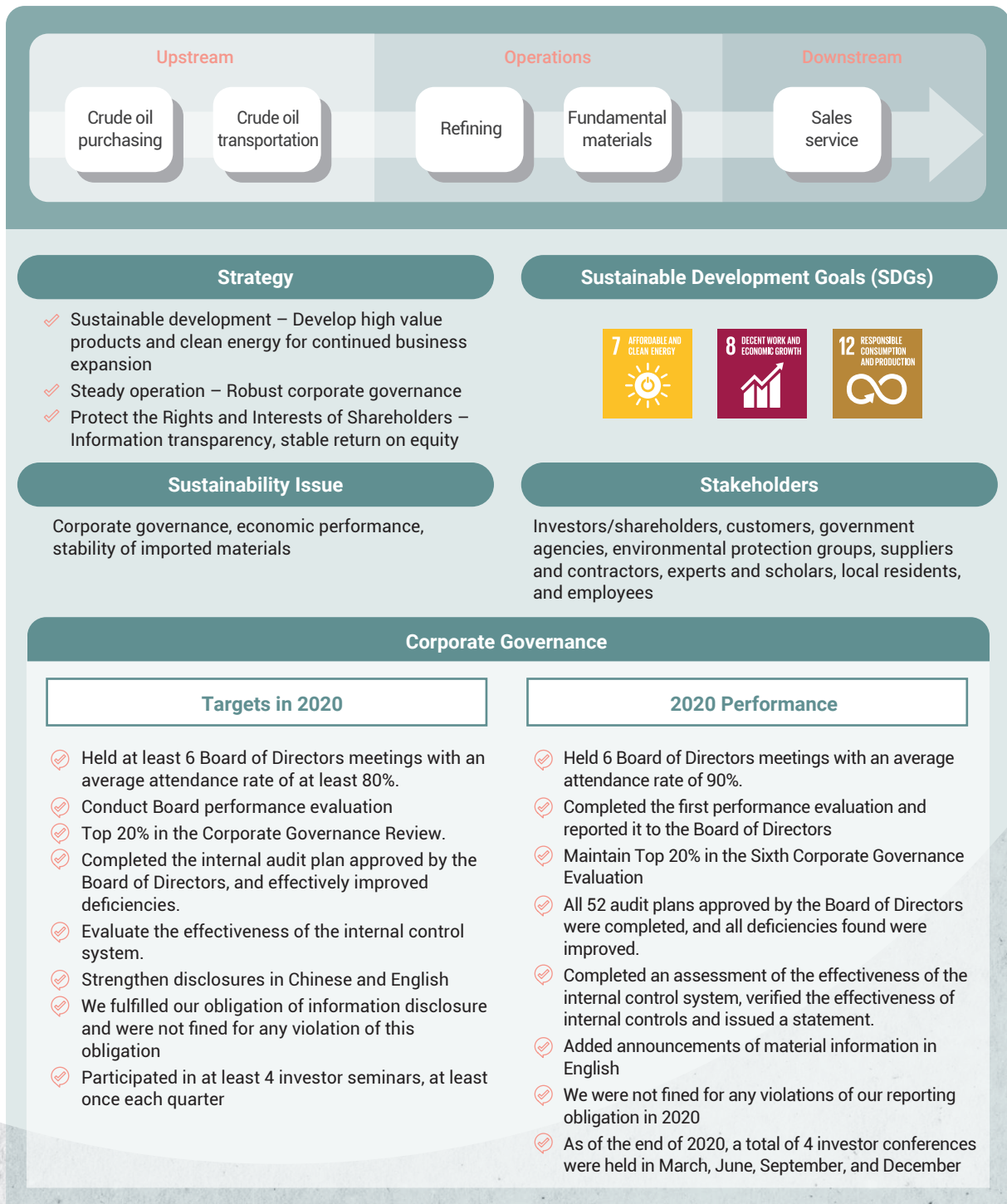
# 2 Driving New Industrial Developments



- 2.1 Business Philosophy, Organizational Structure, and Corporate Governance
- 2.2 Business Model and Operational Performance
- 2.3 Partnership maintenance

## Chapter Summary

COVID-19 caused chaos in the global political and economic situation in 2020. Quarantine and lockdown measures implemented by countries halted economic activity, and led to a drastic drop in oil prices. Besides causing a decline in the profit margin of our products, this also led to massive inventory loss. FPCC implemented split operation and control measures, increased the frequency of regular emergency response measures to track the pandemic, resuming work, and product profit margins, and flexibly adjusted its production and sales model to ensure steady production. This allowed us to turn things around and still make a slight profit for the entire year. With regard to corporate governance, we continued to uphold steadiness and made steady progress.



## Targets in 2021

- ✔ Held at least 6 Board of Directors meetings with an average attendance rate of at least 80%.
- ✔ Conduct Board performance evaluation
- ✔ 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.
- ✔ Continue to 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

## Mid-term and Long-term Goals

Ensure corporate governance operations strictly comply with regulatory requirements, and the Company's material information is immediately and transparently disclosed according to regulatory requirements, in order to achieve the goal of steady operation

## Economic performance

## Targets in 2020

- ✔ Carry out the HHCR joint venture.
- ✔ Carry out the Louisiana State investment project.
- ✔ Carry out the UV LED investment project.
- ✔ Develop clean energy

## 2020 Performance

- ✔ Formally begin production after completing trial production
- ✔ The investment project was approved after passing the environmental impact assessment, but progress has been delayed due to the pandemic
- ✔ NKFG Corporation completed the joint venture plan and released sterilization products
- ✔ Evaluation of coal-fired electricity generator feed and feasibility of installing solar power generation facilities

## Targets in 2021

- ✔ Track and evaluate overall investment benefits after operations stabilize
- ✔ Make adjustments based on changes in the epidemic situation and continue to carry out the project
- ✔ Continue to implement the UV LED investment and R&D project
- ✔ Develop clean energy

## Mid-term and Long-term Goals

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





## 2.1 Business Philosophy, Organizational Structure, and Corporate Governance

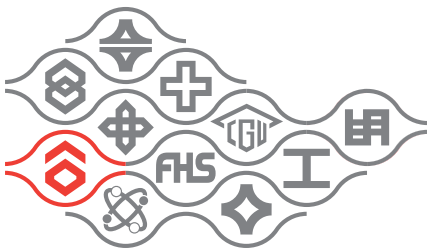
### GRI Standards corresponding to management approach (MA): Governance

- **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.

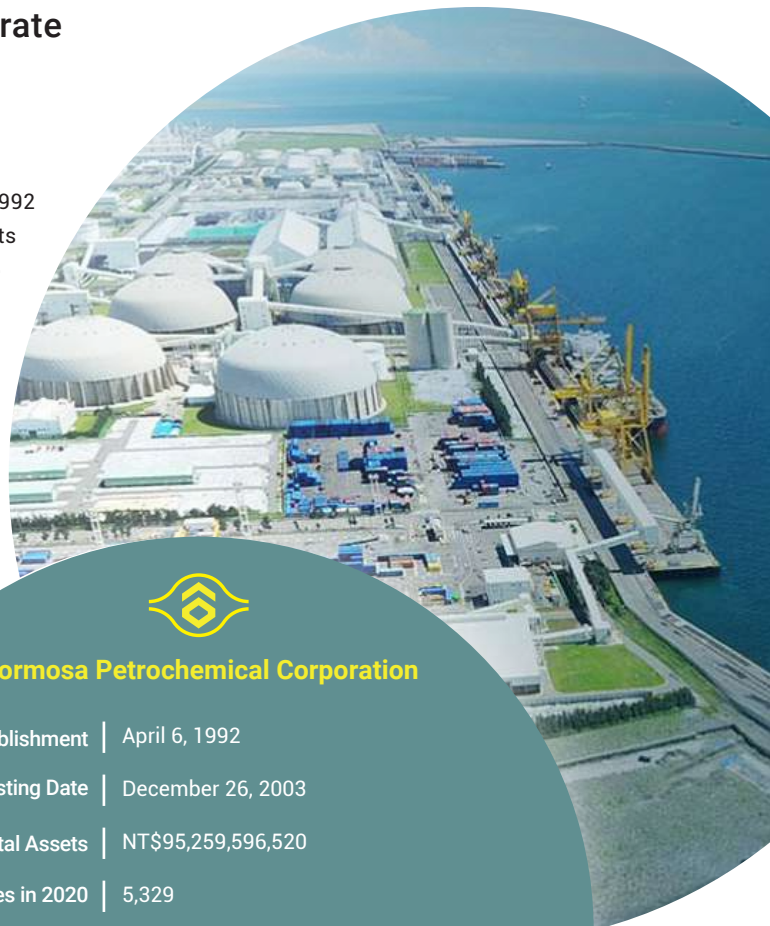
## Organizational Structure, Ethical Corporate Management

### 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.



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.



### 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 2020	5,329
2020 Consolidated Revenue	NT\$415,281,764 in thousands
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 BBB+; Moody's Investors service A3

Note: (As of December 31, 2020)



## 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.

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.



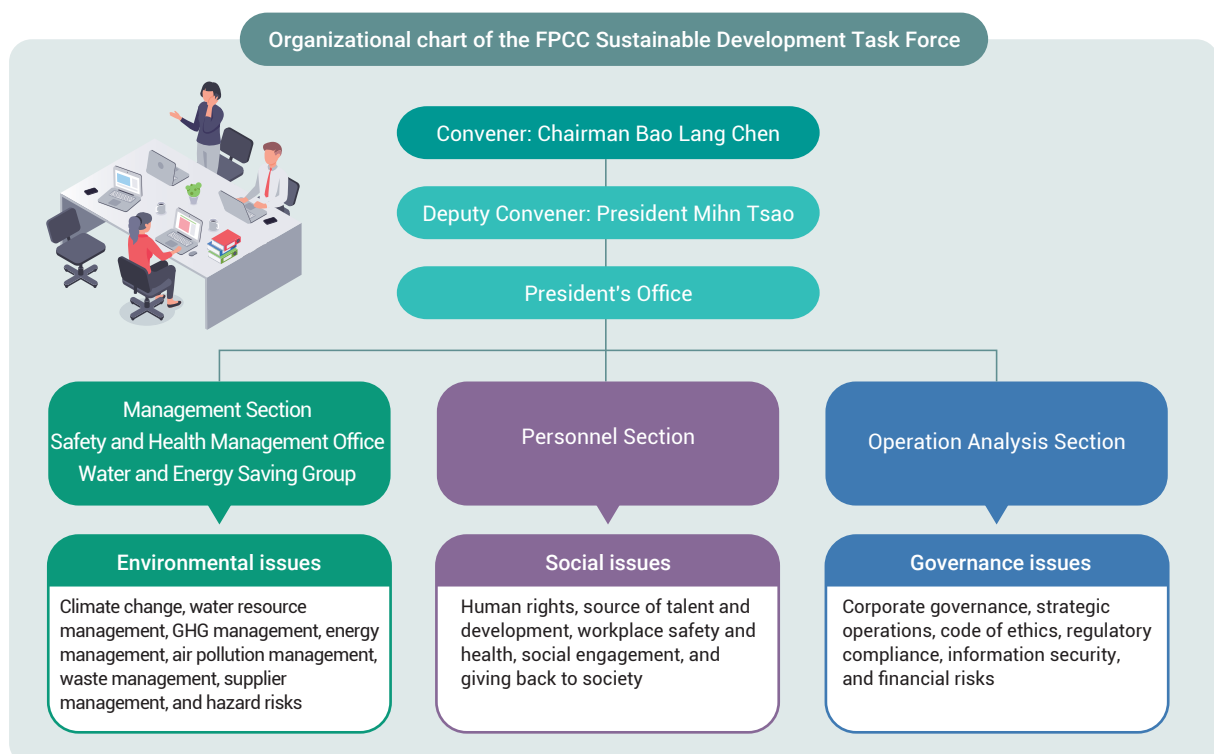
In a rapidly changing external environment, enterprises have to get better and better in rationalizing their operation and management and realize innovation and development by making breakthroughs in the midst of continuous improvements.

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 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.



## Board of Directors, Audit Committee, Compensation Committee

### Overview of the Board of Directors



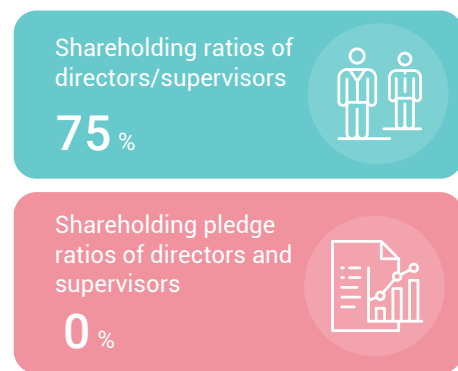
FPCC directors are elected to three-year terms via the candidate nomination system. The Corporate Governance Best Practice Principles was established to ensure the Board of Directors diversity policy is implemented and that directors have the knowledge, skills and the competencies required to perform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

The Board of Directors currently has 15 members with an average age of 68 years old, and the average period that directors serve at FPCC is about 11 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/>) 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 2020 with an attendance rate of 90%. The first Board performance evaluation and individual Board member performance evaluation was conducted in 2020. Performance results were excellent and submitted to the Board of Directors on December 10, 2020.

FPCC	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		
	15	3	20 %	1	6.7 %	68	11

The shareholding ratios of directors and supervisors at FPCC has been around 75% 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 2020 with an actual attendance rate of 100%. Details are disclosed on the Company website.

Title	Name	2017		2018		2019		2020	
		Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate
Convener	C.P. Chang	5	100%	6	100%	5	100%	5	100%
Committee Members	Sush-der Lee	-	-	4	100%	5	100%	5	100%
Committee Members	Yu Cheng	5	100%	6	100%	5	100%	5	100%
Committee Members	Chi-Tang Lo	5	100%	2	100%	-	-	-	-
Total		15	100%	18	100%	15	100%	15	100%

## Overview of Operation of the Compensation Committee

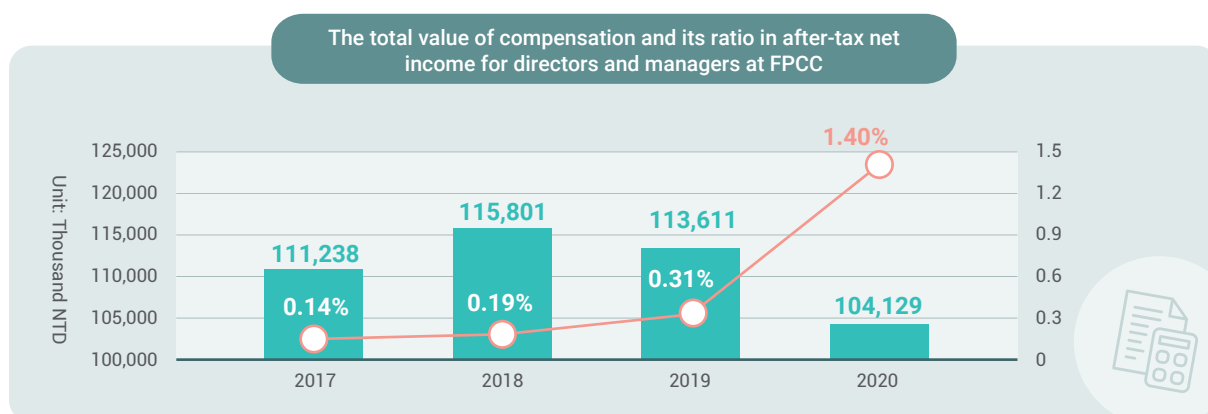
FPCC set up the Compensation Committee in August 2011 to review compensation policies and systems for the corporate directors and managers and provide the Board of Directors with suggestions; this helped prevent compensation policies guiding directors and managers to be engaged in corporate risky appetite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

At present, all the three members serving on the Compensation Committee are independent directors. The committee met two times in 2020 with an actual attendance rate of 100%. Details are disclosed in the corporate governance section of the Company website.

Title	Name	2017		2018		2019		2020	
		Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate
Convener	C.P. Chang	2	100%	3	100%	3	100%	2	100%
Committee Members	Sush-der Lee	-	-	2	100%	3	100%	2	100%
Committee Members	Yu Cheng	2	100%	3	100%	3	100%	2	100%
Committee Members	Chi-Tang Lo	2	100%	1	100%	-	-	-	-
Total		6	100%	9	100%	9	100%	6	100%

## Compensation for directors and managers

With regard to directors' remuneration, the chairperson's remuneration includes a fixed salary and a bonus assessed based on the Company's overall business performance. Independent directors received fixed monthly salaries. Other directors only receive transportation subsidies for the Board of Directors, and do not receive any other fixed or variable compensation. 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.



## 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 2020, 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 six consecutive years among listed companies that took part in the rating. Improvement measures taken in response to evaluation results are disclosed in the annual report for the shareholders' meeting.

## 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.

### Anti-corruption policy



**Anti-corruption**

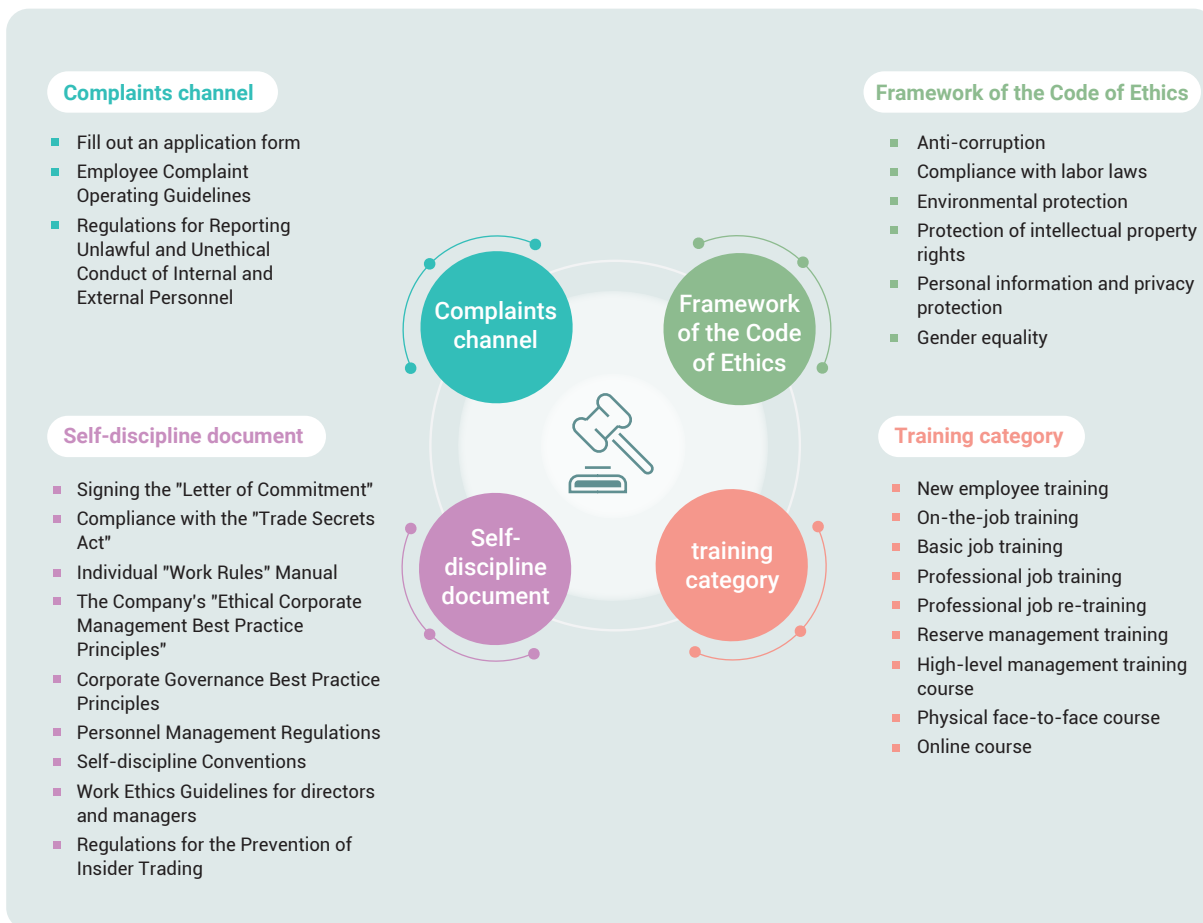
Accepting invitations to social events and financial offers by manufacturers is explicitly prohibited in the internal system, and anyone found with fraudulent personal gains, embezzlement of public funds, receipt of bribes, or commissions will be dismissed.

**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 2020, and found there was no severe corruption risk.

In addition to physical courses, we further promoted online training courses and sent information on online courses to all employees, in hopes further promoting online courses.

## 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 2020 effectiveness evaluation was approved by the Board of Directors on March 11, 2021.

According to the 2020 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 13 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%.

### Audit Plan

52 items



### Improvement Completed

100 %



	2017	2018	2019	2020
audit projects	53 items	52 items	52 items	52 items
Number of deficiencies found	13 cases	15 cases	11 cases	13 cases
Number of improvements completed	13 cases	15 cases	11 cases	13 cases
Improvement rate	100%	100%	100%	100%



## 2.2 Business Model and Operational Performance



### GRI Standards corresponding to management approach (MA): Economic performance

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.

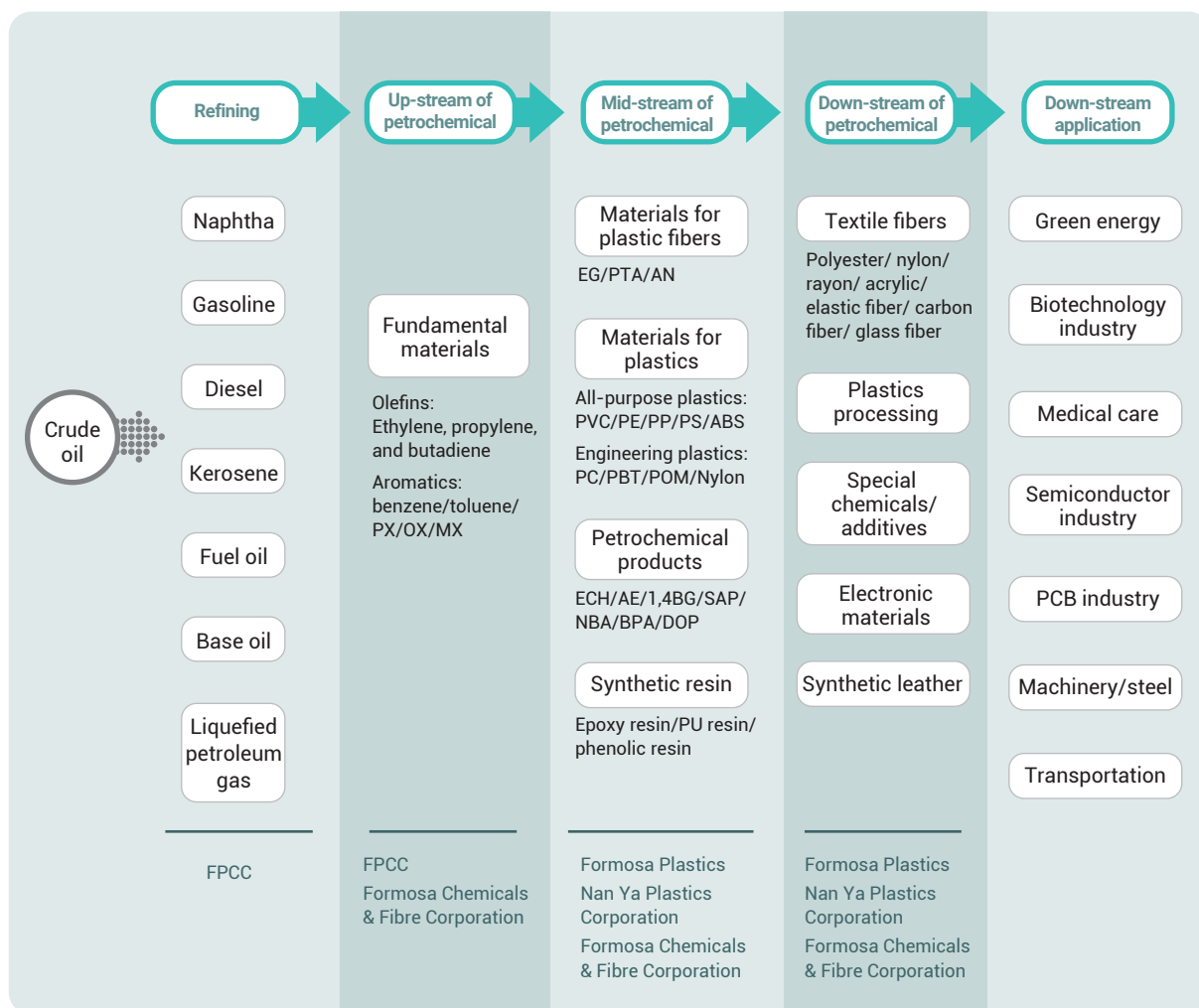
## Industry overview

The domestic petrochemical industry is affected by the direction of policies. There have been no major expansions in recent years. We are gaining new production capacity in Asia, including China and South Korea, but product demand is still affected by COVID-19. In addition, due to the high level of concern about global warming, carbon reduction and the development of renewable energy are issues attracting growing attention in the industry. Facing the pressure of competition, FPCC continues to apply AI to increase its productivity, and develops clean energy and circular economy to maximize benefits.

## Company Business Model, Products, and Production Capacity

### 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 (<http://www.fpcc.com.tw/tw/ir/shareholders-meeting>) for information on the supply of main raw materials and main suppliers and customers.



FPC's production capacity and organizational scale in 2020



2020 Production Volume

Our production remained stable throughout 2020 and was not significantly different from the previous year. However, market demand was weak due to COVID-19 and oil product profit margins declined in the second half of the year. Refining volume decreased compared to 2019 due to the RDS#2 accident. For details, please refer to our website and the annual report disclosed at shareholders' meetings.

## 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 fluids. For details on products and services, please refer to our website and the annual report disclosed at shareholders' meetings.

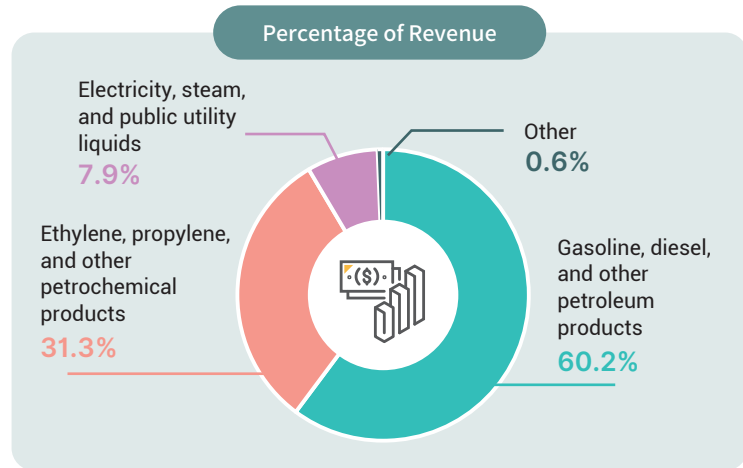
## Quality certified products and services

We strive to provide high quality products and services. In oil products, we developed the new formula "95 Plus Lead-free Gasoline" through process improvement, as well as experiments and actual road tests conducted by an international engine laboratory.

The new formula super diesel meets the standards for the highest level diesel used in Japan and Euro 5 vehicles; food-grade white oil products 380N and 550N were certified by the JHOSPA; petrochemical products ethylene propylene, butadiene, IPM, PIPS, and DCPD obtained REACH Registration of Chemicals, which will aid product sales to the EU.

With regard to services, the Flow Calibration Laboratory at FPCC's Maintenance Center and the Gasoline and Diesel Engine Laboratory under the Refining Department both obtained the Chinese National Laboratory Accreditation (CNLA) certification, which certifies that the laboratories have technical capabilities and quality standards mutually recognized by international institutions. Once certified, test reports and calibration certificates issued by the laboratories can bear the certification symbol to prove applicable capabilities.

For details on products and services, please refer to our website.



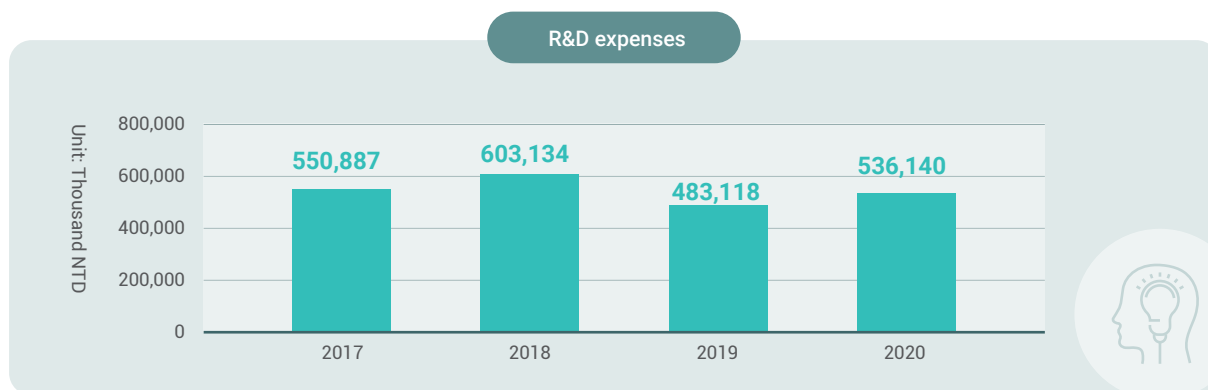
## Pursing higher value products for continued business expansion

- ✔ Factory construction for the joint venture with Idemitsu Kosan Co., Ltd. to produce 43,800 tons of HHCR was completed in 2020. A test run was completed and formal production has begun.
- ✔ We are planning the construction of a desalination plant to replace a portion of industrial water use, making our water use more flexible.
- ✔ We are actively looking into the feasibility of using the Company's current land assets to install solar power facilities, in order to develop renewable energy.
- ✔ We are actively searching for clean energy to replace current coal-fired power solutions in response to the carbon reduction policy in Taiwan.
- ✔ We will continue to apply AI and big data technologies in production and labor safety management, and will optimize the production and sales structure and improve the reliability of equipment to reduce labor safety incidents. We completed a total of 10 AI and big data application projects in 2020.
- ✔ As the number of domestic investment opportunities has significantly decreased, we implemented the 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.

## 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.





## Operational performance

FPCC's consolidated revenue was NT\$415,281,760,000 in 2020, down 35.7% compared to the NT\$646,022,810,000 in 2019. FPCC's consolidated pre-tax profit was NT\$8,665,050,000, down 80.7% compared to the NT\$44,898,350,000 in the previous year, and was mainly due to the impact of COVID-19, which led to a drastic drop in oil prices and imbalance in market supply and demand. Our profits significantly decreased and return on equity and dividend yield were both lower than the past.

### Operational performance

Unit: Thousand NTD

Item \ Year	2017	2018	2019	2020
Operating income	624,107,892	767,550,218	646,022,809	415,281,764
Operating cost	521,485,633	689,934,663	598,303,798	402,313,818
Net operating margin (loss)	102,622,259	77,615,555	47,719,011	12,967,946
Total operating expenses	10,964,886	11,146,231	10,933,355	10,199,178
Operating profit (loss)	91,657,373	66,469,324	36,785,656	2,768,768
Total non-operating income and expenses	4,437,172	8,077,789	8,112,695	5,896,281
Pre-tax profit	96,094,545	74,547,113	44,898,351	8,665,049
Income tax costs (profit)	15,919,124	14,476,282	8,150,178	1,292,594
Current after-tax net profit	80,175,421	60,070,831	36,748,173	7,372,455

### Financial ratios

Item \ Year	2017	2018	2019	2020
Return on assets (%)	18.37	14.48	9.26	1.98
Return on equity (%)	24.55	17.54	10.89	2.28
Profit margin (%)	12.85	7.83	5.69	1.78
After-tax earnings per share (NTD)	8.42	6.31	3.86	0.78

## Dividend distribution

Item \ Year	2017	2018	2019	2020
Dividend per share	6.30	4.80	2.90	0.59
Average closing price	106.66	120.4	105.92	86.5
Dividend yield	5.91%	3.99%	2.74%	0.68%
Interest rate of one-year term deposit	1.04%	1.04%	1.04%	0.89%

## 2.3 Partnership maintenance

### 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

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.).

#### suppliers and contractors

- ☆ manufacturers
- ☆ distributors/dealers
- ☆ engineering contractors

#### 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.

### Raw Materials Procurement 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:

#### Import of raw materials

FPCC, with our optimal refining techniques and sufficiently flexible processes, can purchase different types of crude oil from different oil producing countries. We have entered into long-term purchase agreements with overseas oil and coal suppliers to diverge risks.

#### 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.

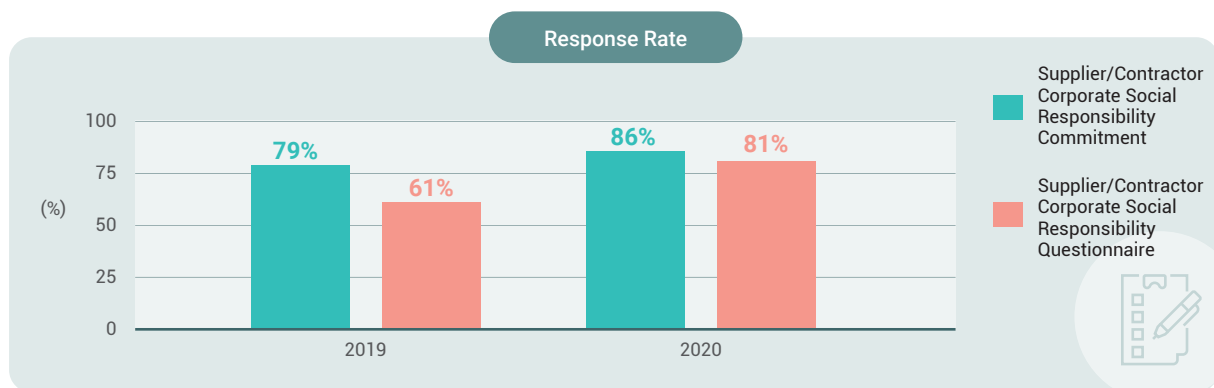
#### Adjustment of own capabilities

Ensures stable supply for processes.



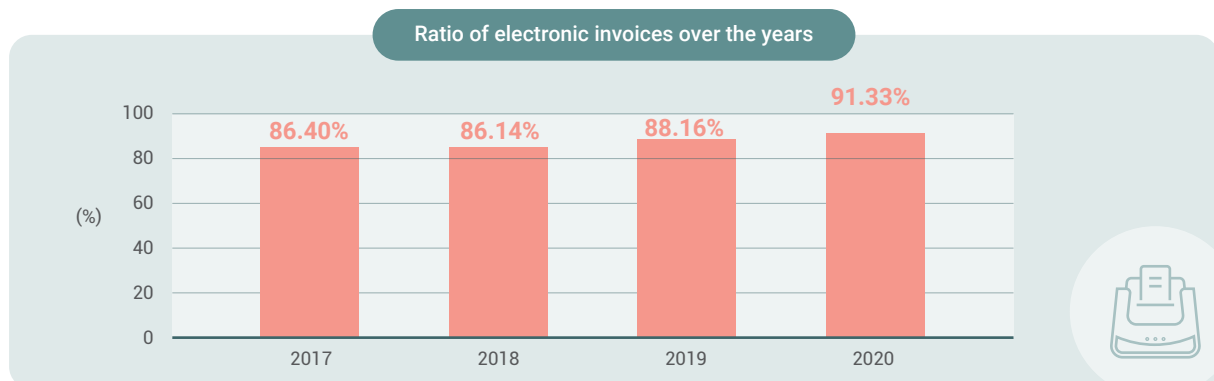
## Implementation of management and evaluation

We require 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 to 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. The response rate significantly increased in 2020. Vendor evaluations are arranged in the following year as needed based on the response to the "supplier/contractor social responsibility commitment" and "supplier/contractor social responsibility questionnaire" in the previous year, ensuring that our vendors fulfill their CSR according to requirements. Supplier evaluation results in 2020 showed 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 2020, electronic operations for concentrated delivery by suppliers reached 97.2%. Furthermore, we have replaced paper invoices with electronic invoices, and 91.33% of the vendors we do business with are also using electronic invoices as of the end of 2020.



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 595 green products, including computers, toner cartridges, and fluorescent lamps, and the procurement amount of green products recognized by the government was NT\$36.25 million in 2020.

## 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.

## 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.

## Disclosure of Product Information

On the FPCC's official website, 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 2020.

## 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.



Year	Product characteristics	Product quality	Product lead time	Product price	Service attitude	Technical service	Brand image	Overall satisfaction	Average
2017	4.6	4.5	4.6	4.3	4.6	4.5	4.5	4.6	4.5
2018	4.6	4.6	4.6	4.4	4.7	4.6	4.6	4.6	4.6
2019	4.6	4.6	4.6	4.4	4.7	4.6	4.6	4.6	4.6
2020	4.6	4.7	4.6	4.6	4.6	4.6	4.3	4.6	4.6

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

The results of the 2020 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 2020 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.



### 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 2020 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.

Important positions of the Company's associations are described below. For details on participation in remaining associations, please visit our website.

Name	Role	The Company's representative
Chinese Petroleum Institute	Standing director	Chairman Bao Lang Chen
	Supervisor	President Mihn Tsao
Petrochemical Industry Association of Taiwan	Director	President Mihn Tsao
Sino-Arabian Cultural & Economic Association	Standing director	Chairman Bao Lang Chen
Taiwan Institute of Chemical Engineers	Vice Chairperson	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

## Achievements



### Awards in 2020

-  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

## 2.4 Response to Material Economic Issues

### Email system unable to be used due to cyberattack

We discovered an attack by malware in the morning of May 5, 2020 and immediately disconnected from the Internet. After conducting a thorough inspection, we verified that only our e-mail system was unusable and all other systems were operating normally. The system returned to normal in the afternoon on the same day after we found and eliminated the source of the malware.

Besides reiterating the Regulations for E-mail Use, we completed the implementation of an Advanced Persistent Threat Defense System in September in response to the incident. The system is used along with our current e-mail anti-virus system to strengthen mechanisms for preventing attacks using malicious e-mail.

# 3

## Creating a New Green Appearance

3.1 Environmental Protection  
Strategies and Policies

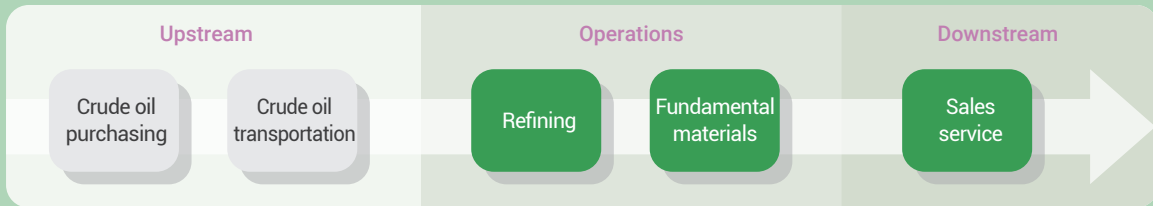
3.2 Climate change mitigation and  
adaptation

3.3 Air pollution prevention and  
management

3.4 Water Resources, Wastewater,  
and Waste Management

## Chapter Summary

The Sustainable Development Task Force of FPCC carries out risk management, corporate social responsibility, and climate change adaptation work, and understands what stakeholders are concerned about and their needs through multiple smooth communication channels, in order to achieve sustainable development. This serves as an important basis for establishing the corporate sustainability policy. We are exerting every effort to achieve a cross-plant, cross-company circular economy, including raw materials, water resources, energy, and waste, and are working towards energy conservation and carbon reduction, resource integration, and zero waste.



### Strategy

- Effective management is carried out in four aspects, namely GHG reduction, air pollution prevention, water resource treatment, and waste reduction, to achieve water conservation, energy conservation emission reduction, resource integration, and zero waste.

### Sustainable Development Goals (SDGs)



### Sustainability Issue

Climate change strategy, GHG management, air pollution prevention, and water resource management

### Stakeholders

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

## Climate change strategy

### Targets in 2020

- Gradually implement energy conservation and emission reduction measures in coordination with the national GHG reduction policy
- Low carbon transformation
- Cooperate with the government's "industry GHG reduction audit"

### 2020 Performance

- Collect, analyze, and summarize information on climate change and energy risks and opportunities
- Identify and assess climate change related risks and opportunities, and use climate-related scenario analysis to formulate company strategies
- Used 3,102 tons of solid recycled fuel (RDF or SRF) to replace coal in 2020. This is expected to reduce GHG emissions by approximately 4,383 tons CO<sub>2</sub>e
- Reduced GHG emissions by 39,288 tons CO<sub>2</sub>e in response to the industry GHG reduction audit by the Industrial Development Bureau, Ministry of Economic Affairs

### Targets in 2021

- Continue to disclose risks and opportunities brought by climate change for the Company to make policy decisions
- Continue to engage in low carbon transformation
- Continue to cooperate with the government's "industry GHG reduction audit"

### Mid-term and Long-term Goals

- Evaluate investments in renewable energy generation facilities (wind power, solar power)
- Further develop high value petrochemical products and search for new investment and development opportunities



## GHG management

## Targets in 2020

- Cooperate with the government's "industry GHG reduction audit"



## 2020 Performance

- Energy conservation measures reduced 210,000 tons CO<sub>2</sub>e in 2020
- GHG emissions in 2020 was reduced by 2.8% compared to 2015
- Received an A- rating in the CDP questionnaire in 2020 and an A rating in the water questionnaire

## Targets in 2021

- Implement energy conservation measures
- Continue to participate in the Carbon Disclosure Project (CDP)
- Respond to the SBTi

## Mid-term and Long-term Goals

- Take energy conservation and carbon reduction measures in coordination with the national goal to reduce emissions in 2050 by 50% compared to 2005

## Air pollution prevention

## Targets in 2020

- Install MGGH and WESP
- Modify perforated plate in FGD prevention equipment to improve the efficiency of SO<sub>x</sub> removal
- Plan a new high voltage shore power system for cargo ships
- Continue to implement the oil product quality improvement plan (apply for environmental impact assessment)

## 2020 Performance

- Completed the installation of 13 MGGH and 2 WESP in 2020
- SO<sub>x</sub> emissions in 2020 decreased 6.15% compared to the average of the past five years, and NO<sub>x</sub> emission decreased 3.64% compared to the average of the past five years.
- Completed the installation of the high voltage shore power system in December 2020
- Submitted an application for an environmental impact assessment for the oil product quality improvement plan

## Targets in 2021

- Install MGGH and WESP
- Modify perforated plate in FGD prevention equipment to improve the efficiency of SO<sub>x</sub> removal
- Plan a new high voltage shore power system for cargo ships, in which professional technicians will conduct tests for connecting shore power to ships

## Mid-term and Long-term Goals

- Continue to implement the oil product quality improvement plan
- Plan a new waste heat boiler to recycle process gas



## Water Resource Management

## Targets in 2020

- Implement water use reduction and water conservation measures
- Continue to implement wastewater reduction measures
- Increase the rain water storage rate
- Complete phase 2 of the Wastewater Microorganism Research Project with Academia Sinica

## 2020 Performance

- Water conservation measures reduced water use by 3,097 tons/day in 2020
- Obtain the letter of approval to establish the desalination plant
- Rain water storage rate reached 94.3%
- Completed phase 2 of the Wastewater Microorganism Research Project with Academia Sinica

## Targets in 2021

- Implement water use reduction and water conservation measures
- Continue to implement wastewater reduction measures
- Increase the rain water storage rate

## Mid-term and Long-term Goals


- Complete the establishment of the desalination plant



## 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, pollution prevention, environmental protection, hazard identification, workplace improvement, 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:

<div style="background-color: #4CAF50; color: white; padding: 5px; border-radius: 10px; margin-bottom: 10px;">Air pollution and GHG management</div> <p>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.</p> 	<div style="background-color: #4CAF50; color: white; padding: 5px; border-radius: 10px; margin-bottom: 10px;">Water Resources and Wastewater Management</div> <p>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.</p>	<div style="background-color: #4CAF50; color: white; padding: 5px; border-radius: 10px; margin-bottom: 10px;">Waste Management</div> <p>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.</p>
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### Environmental Expenditures and Benefits

The environmental accounting system ensures specific documentation of financial information concerning environmental activities such as the investment, maintenance of environmental.

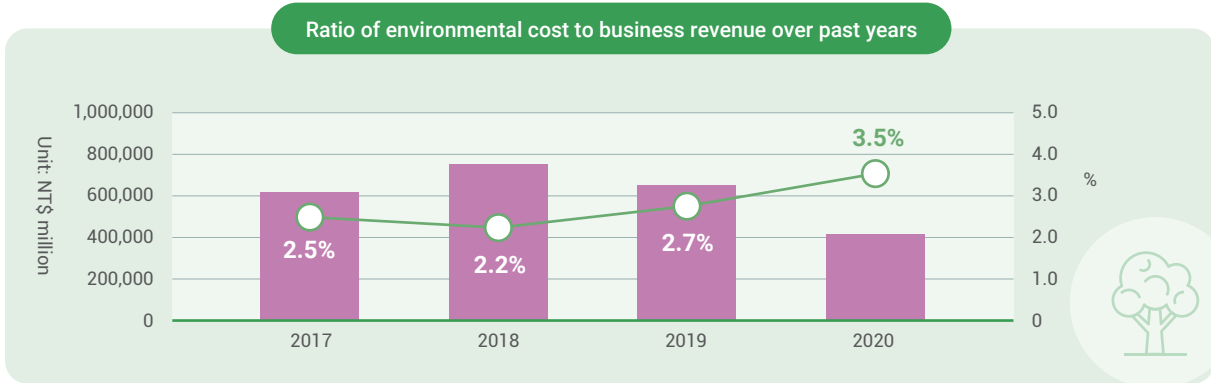
Total expenditures in 2020  <b>14,673</b> million		As a percentage of revenue  <b>3.5</b> %	
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#### Breakdown of environmental cost in past years

Unit: NT\$ million

Item	2017	2018	2019	2020
Business overhead	14,131	15,072	15,411	12,703
Related costs from the downstream and upstream of suppliers and customers	26	26	23	23
Activity management cost	456	392	465	398
R&D cost	10	6	2	3
Social events cost	148	133	128	136
Losses and compensation	17	13	6	9
Other expenses such as processing fees, taxes, and energy tax	1,046	1,258	1,358	1,401
<b>Total</b>	<b>15,834</b>	<b>16,900</b>	<b>17,393</b>	<b>14,673</b>

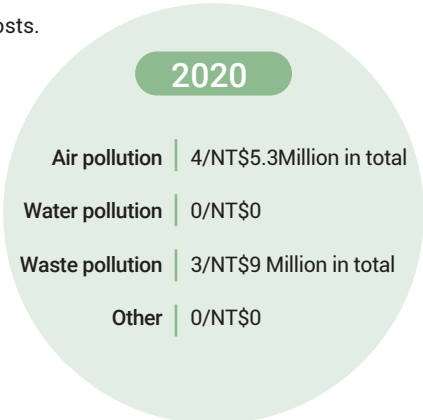
Note: Business overhead in the table includes costs derived from green purchases, recycling and reproduction of manufactured or sold products, and product services as part of the environmental protection effort.



Oil prices declined in 2020 due to the pandemic and resulted in lower operating costs. Hence, our environmental costs decreased.

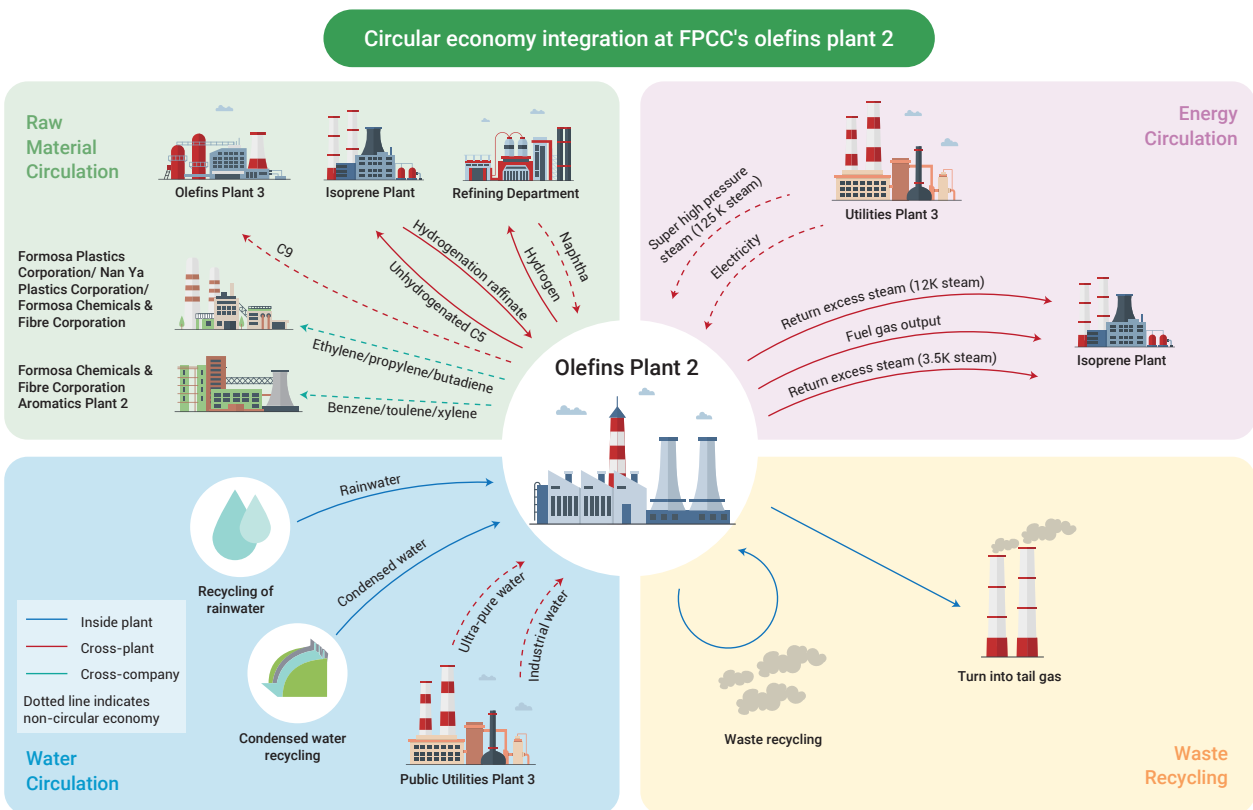
**Environmental protection violations**

We received 7 environmental protection fines in 2020, in which 4 were major environmental protection violations (major events involving NT\$1 million or more disclosed on the Market Observation Post System). Among the fines, we have filed an administrative appeal (lawsuit) for the use of waste gas burning towers and the determination of products and waste due to different legal opinions. As for abnormal emissions from equipment components, and we have strengthened management mechanisms for equipment components.



**Circular economy**

We hope that practices of circular economy will take into consideration raw materials, water resources, energy, and waste, unlike the linear economy model of "manufacturing, production, and disposal." We are combining the resources of different units for cross-plant, cross-company energy and resource integration, such as waste heat, wastewater, and by-products, in order to develop an ecological and circular park with zero waste. FPCC's energy conservation measures reduced 210 thousand tons CO<sub>2</sub>e and water conservation measures reduced water consumption by 3,097 tons/day in 2020.





## 3.2 Climate change mitigation and adaptation



### Management approach (MA): GRI Standards: Energy GRI 302; Emission GRI 305

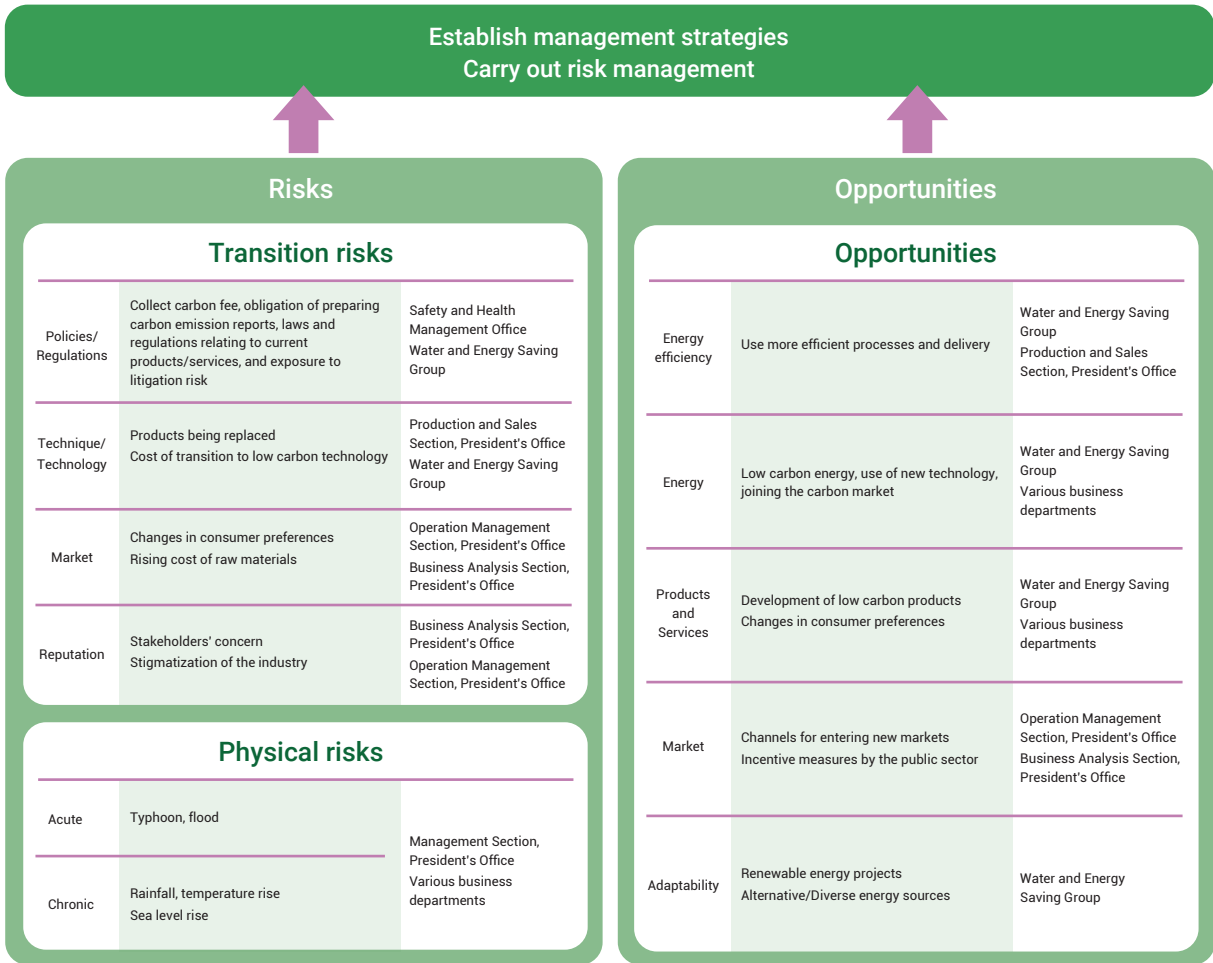
- **Sustainability Issue:** Climate change strategy
- **Our commitment and responsibilities:** Disclose the risks and opportunities brought by climate change, formulate and plan the Company's sustainability policy, and work towards energy conservation, carbon reduction, resource integration, and zero waste.
- **Our goals:** Mitigate and adapt to the impact of climate change

FPCC's Sustainable Development Task Force discloses information on climate change and the risks and opportunities they bring according to the four core frameworks, namely governance, strategy, risk management, and indicators and goals, of the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), and formulates adaptation and mitigation strategies on this basis to reduce the impact of climate change on operations. Disclosures are as follows:

	Governance	Strategy	Risk Management	Indicators and Goals
Management Strategies and Action Plans	<ul style="list-style-type: none"> <li>■ The Sustainable Development Task Force was established with the chairperson as the convener and the president as the vice convener.</li> </ul>	<ul style="list-style-type: none"> <li>■ Understand the impact of climate change on FPCC through scenario analysis</li> <li>■ Adjust FPCC's business direction in response to the government's carbon reduction policy</li> <li>■ Incorporate the SDGs into the decision-making process</li> </ul>	<ul style="list-style-type: none"> <li>■ Use the risk make and reference recommendations in the TCFD report to identify and assess risk issues</li> </ul>	<ul style="list-style-type: none"> <li>■ Use ISO 14064-1 to compile a GHG inventory</li> <li>■ Use SBTi to set short-, mid-, and long-term goals</li> </ul>
Execution Situation	<ul style="list-style-type: none"> <li>■ The president convened monthly work meetings in 2020 to supervise energy conservation, carbon reduction, and water conservation plans</li> <li>■ Energy conservation and carbon reduction results are reported to the chairperson every quarter</li> </ul>	<ul style="list-style-type: none"> <li>■ If there is a water shortage, we will establish a management approach for water resources</li> <li>■ Invest in oil by-products with high added value</li> <li>■ Evaluate the supply chain's upstream and downstream</li> </ul>	<ul style="list-style-type: none"> <li>■ Set short-, mid-, and long-term goals Formulate plans for goals, conduct monthly work meetings to review implementation progress, attend monthly company-wide energy conservation and carbon reduction review meetings, report implementation results to the chairperson and president on a quarterly basis, and provide the results as an attachment of the agenda for Board meetings for future reference.</li> </ul>	<ul style="list-style-type: none"> <li>■ Set the goal for wastewater recycling to reach 80% and above and rainwater recycling to reach 90% and above in 2020</li> <li>■ Invest NT\$500-600 million in low carbon product R&amp;D</li> <li>■ Included in information on Scope 3 emissions</li> <li>■ Reduce electricity consumption by 1% a year</li> <li>■ Reduce electricity consumption of departments by 3%</li> </ul>

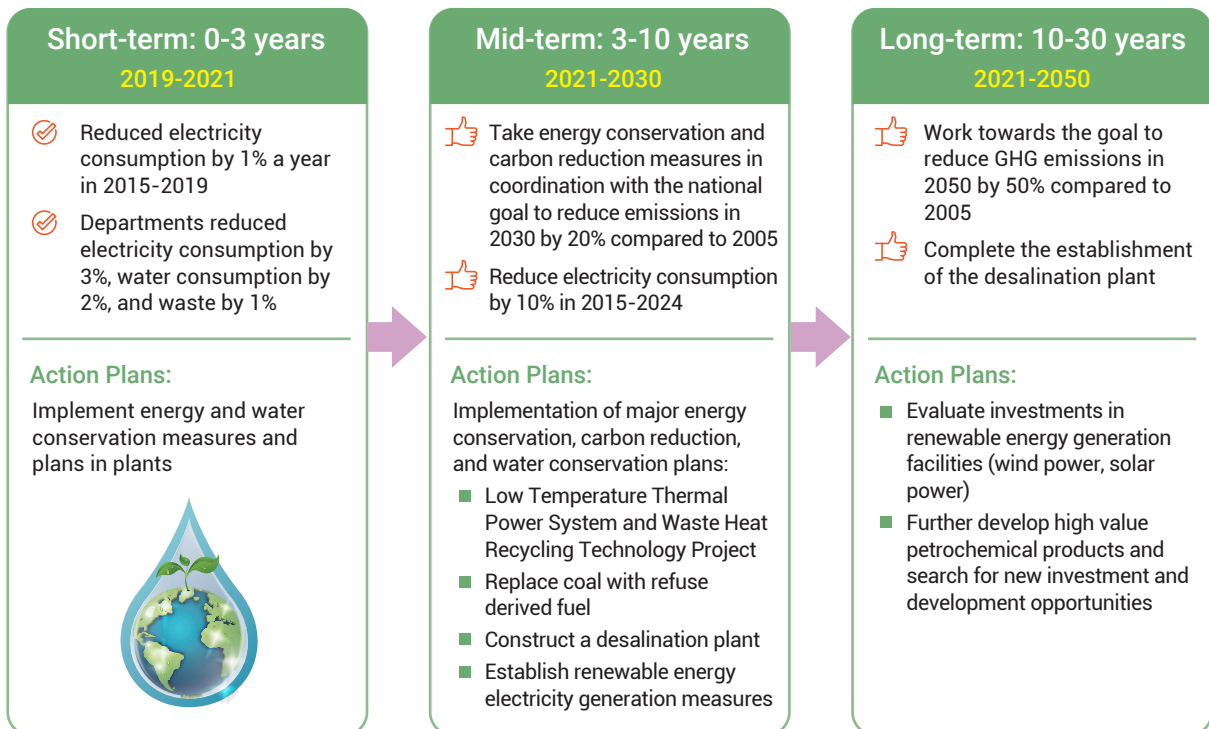
### Departments responsible for identifying and assessing climate change risks/opportunities

The Sustainable Development Task Force was established with the chairperson as the convener and the president as the vice convener (as shown in Section 2.1 Business Philosophy, Organizational Structure, and Corporate Governance), and is a cross-departmental task force under the Board of Directors that brings together supervisors of business units for cross-departmental communication. We referenced the TCFD framework when identifying climate change related risks, and formulated management strategies for strategic risk management.



**Climate change mitigation and adaptation goals**

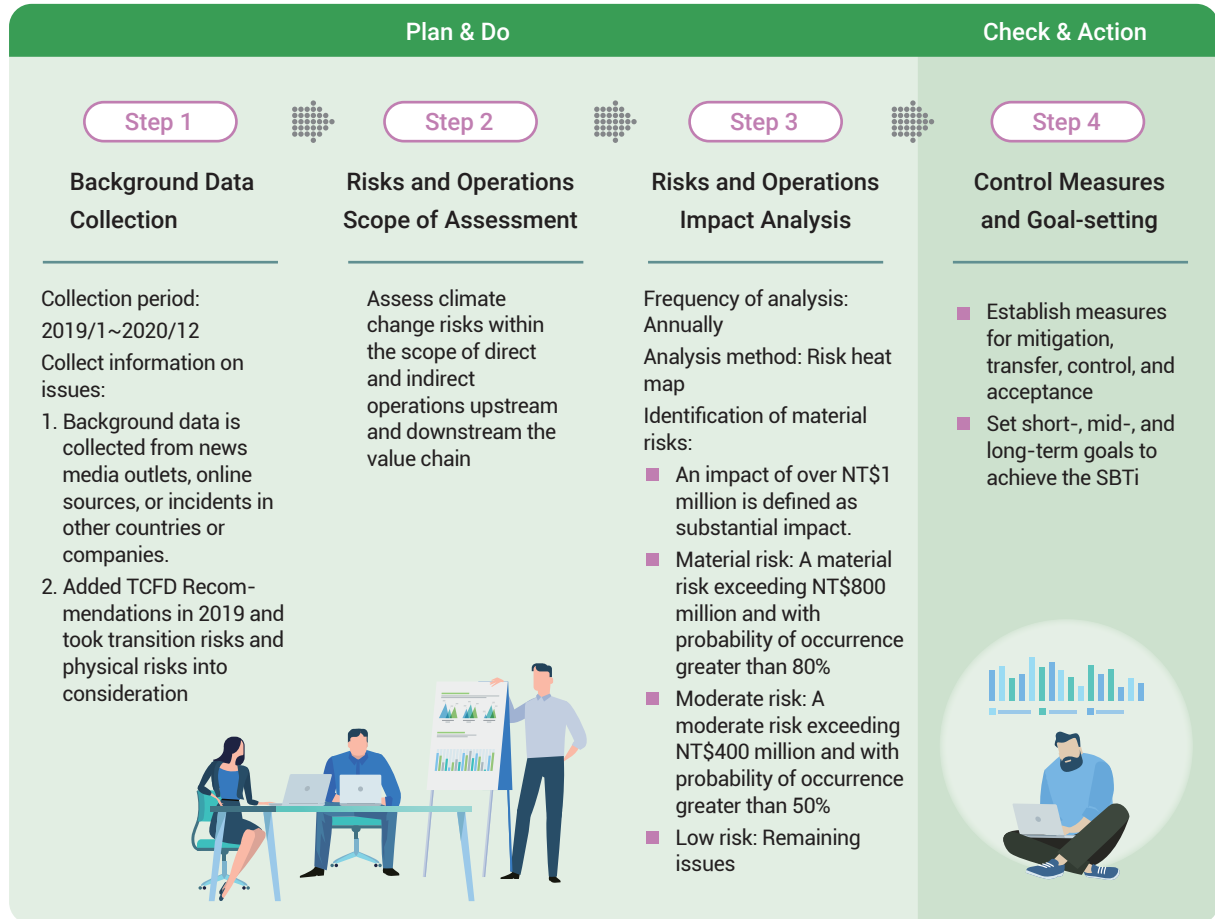
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### 3.2.1 Management of climate risks and opportunities

After identifying climate risks and opportunities, risk indicators are evaluated based on the degree of impact and probability. After determining the level of risk and opportunity, short-, mid-, and long-term goals are set for mitigation, transfer, control, and acceptance.

#### Analysis process for climate change risk issues

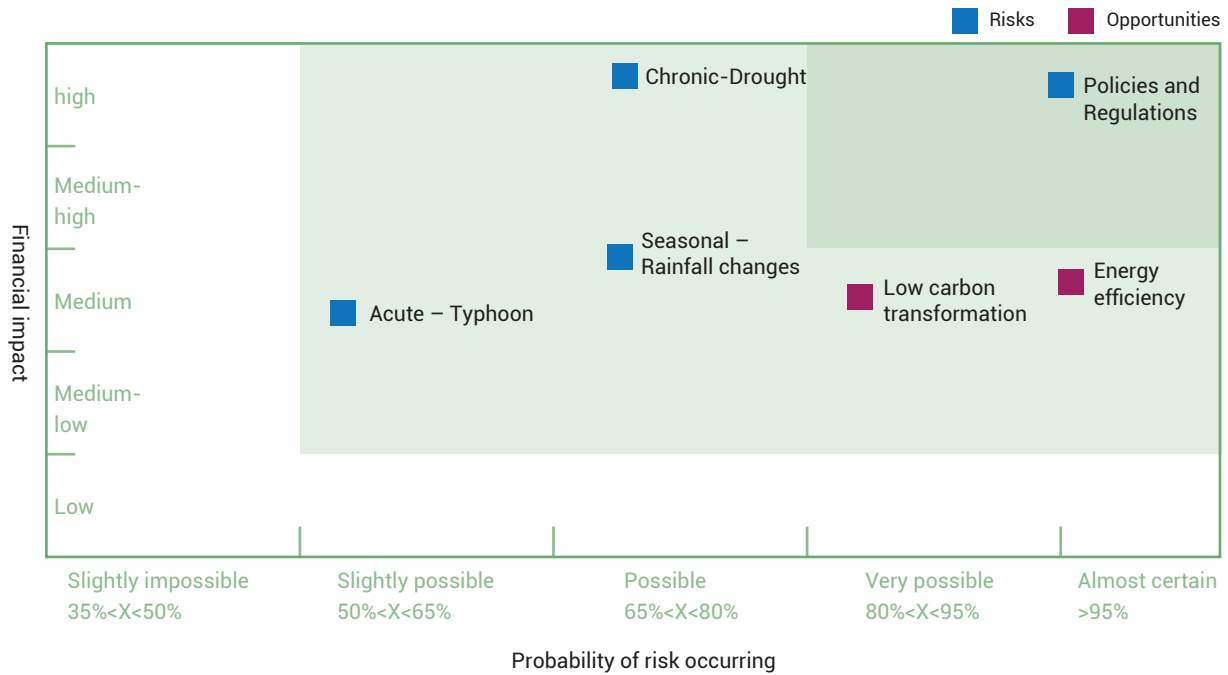


#### Analysis results of climate risk issues

■ Issue management approach

Risk type	Risk identification bracket	Describe the risk management approach
Material risk	Financial impact exceeds NT\$800 million and probability of occurrence is greater than 80%	A corresponding management plan must be prepared to reduce the losses caused by risks, such as reducing the frequency, reducing the financial impact, transferring risks, and avoiding risks.
Moderate risk	Financial impact exceeds NT\$400 million and probability of occurrence is greater than 50%	No actions currently need to be taken, but changes still need to be monitored
Low risk	Financial impact is lower than NT\$400 million and probability of occurrence is less than 50%	Acceptable risk

Cathay climate risk and opportunity materiality matrix



Financial impact of risk issue

Risk type Transformation/ Physical	Risk issues	Primary climate Related risk factors	Finance Degree of impact	Risk management plan
Transition risks	Policies and Regulations	The main policy and regulation related risks are currently emission controls set forth in the Greenhouse Gas Reduction and Management Act. FPCC is one of Taiwan's top 10 GHG emission sources, and accounts for approximately 10% of GHG emissions nationwide. If Taiwan starts to control total GHG emissions, we will need to purchase carbon rights for emissions exceeding our quota, and it will result in an increase in our operating costs. Control of total carbon emissions will also caused our international competitiveness to decline.	Material	<ul style="list-style-type: none"> <li>Implementation of energy conservation and carbon reduction plan: We began implementing energy conservation in our processes in 1999, including waste heat recycling, equipment efficiency improvement, and cross-plant resource integration. As of the end of 2020, our cumulative investment amount was approximately NT\$7.81 billion and reduced GHG emissions by a total of 5.095 million tons CO<sub>2</sub>e.</li> <li>Application for carbon right quota</li> </ul>
Physical risks	Seasonal - Rainfall changes	Our climate change scenarios analyzed 4 Representative Concentration Pathways (RCPs) (RCP 2.6, RCP 4.5, RCP 6.0, and RCP 8.5) for 2030-2050 (the range of mid-term and long-term defined by the Company), and results showed that the greatest change was in Yunlin in RCP 8.5, reducing rainfall by 56.6 mm. Our main production base is in Mailiao and our production processes require a steady and large supply of high quality water. We formulated a water resource management strategy (see 3.4 for details) when the plant was first established to lower our operational risks and enhance our competitiveness.	Medium-low	<p>We plan a budget of NT\$40 million or more every year to implement water conservation plans, which can be divided into the following 3 categories:</p> <ol style="list-style-type: none"> <li>Rainwater-sewage separation increased rainwater collection to approximately 3.58 million tons in 2020</li> <li>Processed discharged water is used for cleaning and shaft seal</li> <li>Process water recycling reduces refill and discharge with water recycling rate at 98.7%</li> </ol>

Risk type Transformation/ Physical	Risk issues	Primary climate Related risk factors	Finance Degree of impact	Risk management plan
Physical risks	Chronic – Drought	<p>According to our statistics, Mailiao Industrial Park draws approximately 45 million tons of water from Jiji Weir a year. The stable supply of high quality water resources is extremely important to our processes.</p> <p>Droughts caused by weather anomalies and water shortages will inevitably result in suspension, lowering the load of production lines, or purchasing water from other counties and cities, which will result in a decrease in revenue or increase in operating costs (see 3.4 for details).</p>	Material	<p>We reduce our unit water consumption through process optimization, and implemented water conservation management and evaporation loss reduction measures. Water resource management strategies formulated in 2018-2022 include:</p> <p>Water conservation plans, wastewater recycling and reuse plans, rainwater recycling and reuse plans, and the 100,000 ton/day desalination plant establishment project, which gradually reduces the dependency of Mailiao Industrial Park on water resources.</p> <ul style="list-style-type: none"> <li>■ We invested a total of NT\$104 million in water conservation measures in 2020, and implemented 39 water improvement plans, reducing daily water consumption by 3,097 tons.</li> <li>■ We planned the establishment of a desalination plan in 2018 and construction is scheduled to be completed in 2022.</li> </ul>
Physical risks	Acute – Typhoon	<p>Typhoon is a representative of extreme weather events in Taiwan. Taiwan is facing growingly severe typhoons due to the impact of global climate change. For example, Taiwan issued 5 typhoon warnings in 2020, and we could not continue operations due to the impact of heavy rainfall or strong winds caused by climate change on our equipment.</p> <p>The strong winds and rainfall brought by typhoons may cause damages to equipment because our plant is located on the coast of Mailiao. Equipment losses will affect production.</p> <ol style="list-style-type: none"> <li>1. Strong rainfall caused a substation to be struck by lightning and simultaneously tripped the circuit breakers of all generators.</li> <li>2. Strong winds during the northeast monsoon often cause congestion at Mailiao Harbor, and rising charges of oil tankers increase our operating costs.</li> <li>3. Scaffold damage indirectly causes damage to the equipment in waste gas burning towers.</li> </ol>	Moderate	<ol style="list-style-type: none"> <li>1. Increase in crude oil stock</li> <li>2. Two dispatchers are required to work overtime about 30 days a year to dispatch naphtha tankers and allow oil tankers to berth first, in order to minimize the Company's overall expenses.</li> <li>3. The Company's Safety and Health Management Office will take two management and dispatch measures before the Central Weather Bureau announces a typhoon during the typhoon season each year between July and September, in order to lower the probability of risks occurring.</li> </ol>



## Financial impact of opportunity issue

Opportunity issues	Finance Degree of impact	Primary climate Related risk factors	Risk management plan
Low carbon transformation	Moderate	<p>In the future, the total amount of carbon emissions will be controlled, and the Company's plants cannot transition to natural gas power generation within a short amount of time due to restrictions of Taiwan's laws and regulations. In order to further reduce GHG emissions, we will:</p> <ul style="list-style-type: none"> <li>Uphold the concept of circular economy and search for a low carbon transformation policy to improve the energy efficiency of our plants</li> <li>Use multiple energy sources and search for the possibility of converting waste gas or waste generated within the Company into electricity or thermal power</li> </ul>	<p>Reduce GHG emissions and SO<sub>x</sub> emissions, develop low carbon fuel, and develop Circulating Fluidized-Bed (CFB) to generate Refuse Derived Fuel (RDF)</p> <p>Assist the government in reducing domestic waste and help the Company replace a portion of coal to reduce GHG emissions</p> <p>We are currently implementing two projects:</p> <ul style="list-style-type: none"> <li>Low Temperature Thermal Power System and Waste Heat Recycling Technology Project</li> <li>Refuse Derived Fuel Project</li> </ul>
Increased energy efficiency	Moderate	<p>FPMC has three business units that use extensively boilers, namely the Refining Department, Olefins Department, and Utilities Department, and generate a large amount of waste gas from processes. In order to reduce air pollution, waste gas from processes is channeled to the waste gas burning tower, where it is burned before emission. Our waste gas emission is approximately 100,000 tons a year. Waste gas from processes will cause pollution if not recycled, and can be converted into fuel if it is recycled, reducing our fuel consumption.</p>	<p>We will continue to develop waste gas recycling and reuse methods. After cross-plant resource integration, excess process gas is collected to the boilers of Public Utilities Plant 3 and 4 to replace a portion of coal use. We recycled 860,000 tons of excess process gas between 2013 and 2020, reducing GHG emissions by an average of approximately 285,000 tons CO<sub>2</sub>e a year, and further reducing coal use by approximately 205,000 tons. If each ton of coal is calculated at US\$48, it will reduce coal expenses by approximately NT\$295 million.</p>



### 3.2.2 Climate risk scenario analysis

FPCC mainly uses the 4 RCPs defined in the Intergovernmental Panel on Climate Change (IPCC) AR5, in which RCP2.6 is the warming mitigation scenario. RCP4.5 and RCP6.0 are stable scenarios. RCP8.5 is a climate change model for a scenario with high GHG emissions to make predictions of the future.

The time period referenced by FPCC is 2030-2050, and all plants and upstream and downstream the supply chain are included in analysis. The scenario analyzes energy use, water shortage, and flooding of plants under different physical risks, such as different temperatures, climate change, and rainfall.

BAU Scenario	NDC scenario (NDC 2015)	Proactive Mitigation scenario
<b>Scenario</b>		
RCP8.5	RCP4.5 RCP6.0 Emissions in 2030 are expected to be reduced to 20% of emissions in 2005 Emissions in 2050 are expected to be reduced to 50% of emissions in 2005	RCP2.6
<b>Analysis Results</b>		
Annual rainfall in Yunlin County in 2050 may be 56.6mm lower than 1985-2005	Annual rainfall in Yunlin County in 2050 may be 49.8mm lower than 1985-2005	Annual rainfall in Yunlin County in 2050 may be 47.6 mm lower than 1985-2005
<b>Risks</b>		
We formulated a water resource management strategy the plant was first established, including: water conservation plans, wastewater recycling and reuse plans, rainwater recycling and reuse plans, and the 100,000 ton/day desalination plant establishment project in recent years, which gradually reduces the dependency of Mailiao Industrial Park on water resources, reduces operating costs and risks, and enhances competitiveness.		
<b>Action Plans</b>		
<ol style="list-style-type: none"> <li>1. FPCC's Sustainable Development Task Force planned the establishment of a desalination plant, in which environmental impact assessment was carried out in 2018, construction was approved in August 2019, and the plant is scheduled to be completed in 2022, preparing for water shortages in advance.</li> <li>2. We plan a budget of NT\$40 million or more every year to implement water conservation plans, which can be divided into the following 3 categories:               <ol style="list-style-type: none"> <li>(1) Rainwater-sewage separation increased rainwater collection to approximately 3.58 million tons in 2020</li> <li>(2) Processed discharged water is used for cleaning and shaft seal</li> <li>(3) Process water recycling reduces refill and discharge with water recycling rate at 98.7%</li> </ol> </li> </ol>		



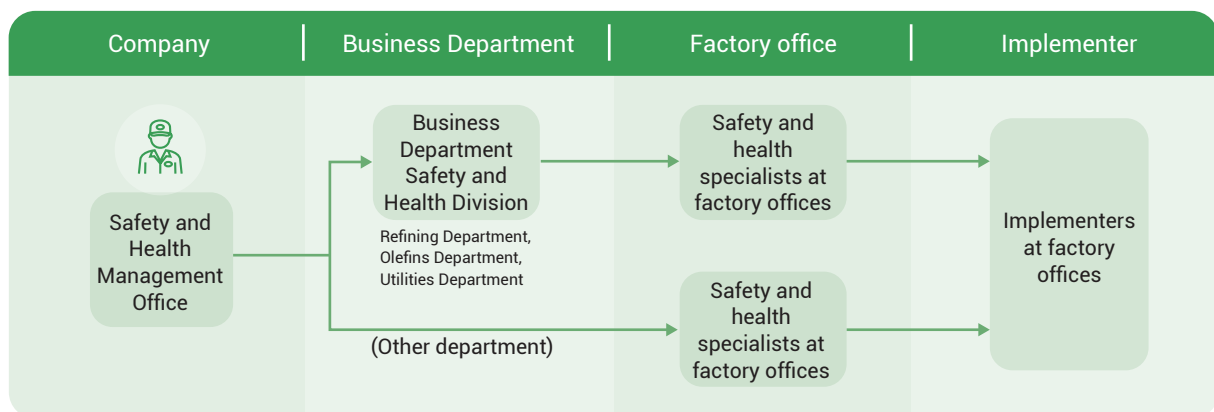
### 3.2.3 GHG management

Management approach (MA): GRI Standards: Energy GRI 302; Emission GRI 305

- **Sustainability Issue:** GHG management
- **Our commitment and responsibilities:** We will continue to implement low carbon measures, lower electricity consumption per unit product, and establish (invest in) renewable energy generation facilities in coordination with the government's goal to reduce GHG emissions in 2050 by 50% compared to 2005.
- **Our goals:** Achieve the vision of low carbon economy transformation

#### 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<sub>2</sub>e

	2016	2017	2018 (Baseline year)	2019
Scope 1	27,910,823	26,952,581	28,070,653	27,256,866
Scope 2	111,809	162,266	108,520	136,173
Scope 3	Began compiling the inventory in 2019			29,333,461
Gross emissions (Scope 1 + Scope 2)	28,022,632	27,114,847	28,179,173	27,393,038

Note 1: Scope 1 means direct emissions of greenhouse gases.

Note 2: Scope 2 means indirect GHG emissions from energy

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 2020 had not been verified by the verification institution when this year's report was published, so the data will be disclosed next year.

Note 5: Scope 1 and 2 GHG inventory are based on right of control. GHG included in the inventory includes carbon dioxide, methane, nitrous oxide, HFCs, PFCs, sulfur hexafluoride, and nitrogen trifluoride.

Note 6: Scope 3 refers to products and services purchased, fuel and energy related activities, upstream transportation and delivery, and downstream transportation and delivery.

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

	2016	2017	2018 (A)	2019 (B)	Carbon reduction performance compared to 2018 (B-A)/A
Greenhouse gas emissions (CO <sub>2</sub> e thousand tons)	28,023	27,115	28,179	27,393	-2.8%
Business revenue (NT\$1 million)	546,161	624,108	767,550	646,023	-15.8%
GHG emission per unit revenue (CO <sub>2</sub> e thousand tons/NT\$1 million)	0.051	0.043	0.037	0.042	13.5%

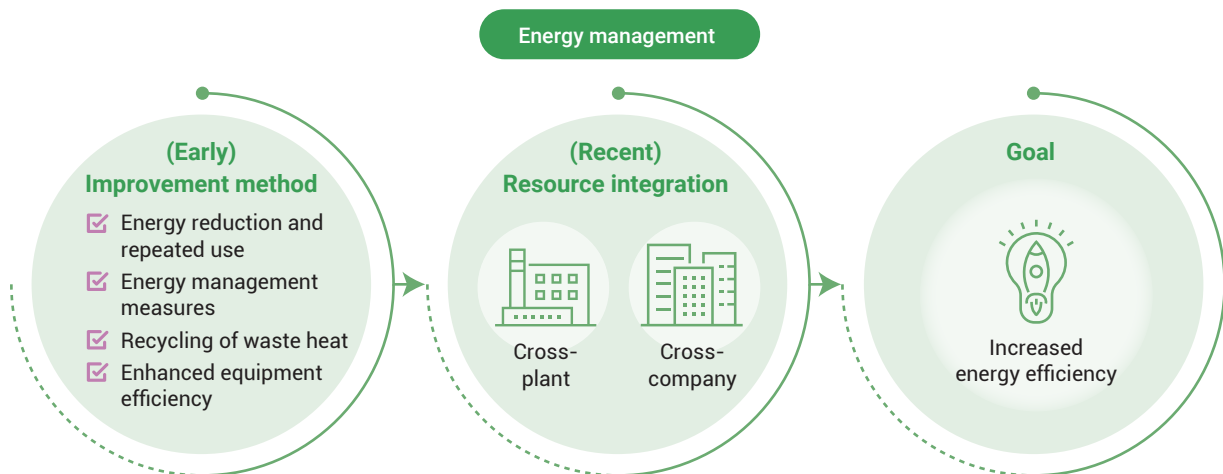
Further analysis of GHG emission per unit revenue shows that GHG emissions in 2019 decreased 2.8% compared to the previous year. Global oil prices declined due to the US-China trade war and increase in shale oil production, and revenue decreased 15.8% as a result. Hence, GHG emission per unit revenue increased to 0.042 thousand tons/NT\$1 million.

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

	2016	2017	2018 (A)	2019 (B)	(B-A)/A
Greenhouse gas emissions (CO <sub>2</sub> e thousand tons)	12,287	12,180	11,999	12,116	1.0%
Business revenue (NT\$1 million)	509,093	583,769	722,848	604,348	-16.4%
GHG emission per unit revenue (CO <sub>2</sub> e thousand tons/NT\$1 million)	0.024	0.021	0.017	0.020	17.6%

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 2019 increased 1.0% compared to the previous year. Global oil prices declined due to the US-China trade war and increase in shale oil production, and revenue decreased as a result. Hence, GHG emission per unit revenue increased to 0.020 thousand tons/NT\$1 million.



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.

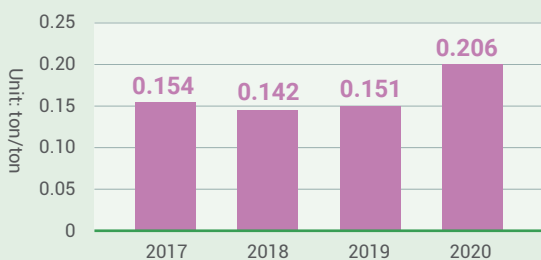
## Summary of historical energy-saving performance

	Accumulated volume (1999~2019)	2020	Accumulated volume (1999~2020)	Ongoing	Total
Number of cases improved	1,437	175	1,612	498	2,110
Steam saved (ton/hour)	897.3	45.8	943.1	88.8	1,031.9
Electricity saved (Thousand kWh/hour)	141.0	5.4	146.4	21.0	167.4
Fuels saved (ton/hour)	88.6	3.7	92.4	7.7	100.1
CO <sub>2</sub> e reduction (10 thousand tons)	488.4	21.0	509.5	46.6	556.0
Investment amount (NTD 100 million)	61.2	16.9	78.1	27.2	105.3

Note 1: Source: The Formosa Plastics Group computer-based database for environmental protection improvements

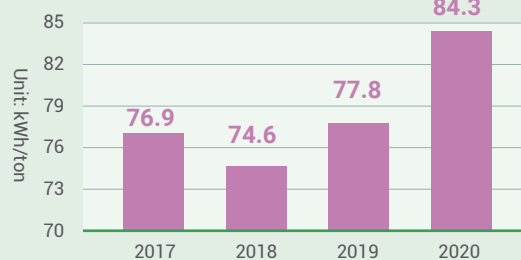
Note 2: Type of fuel: Coal, fuel gas, etc. are all converted to standard coal.

## Summary of historical consumption of steam per unit of product



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

FPCG used 5,911.6 thousand tons of gases in 2020, on average the volume of gases used per hour was 673.0 tons, which is equivalent to 0.21 ton/ton per unit. FPCG used 24.15 million kWh of electricity throughout the year or an average of 274,921 kWh per hour, which is converted to unit electricity consumption of 84.3 kWh/ton. Steam and electricity consumption per unit product in 2020 significantly increased compared with the previous year, mainly due to the impact of COVID-19 and the decline in oil prices. Our overall production capacity decreased 16.94%, but electricity and consumption only slightly decreased 0-9.67% to keep process equipment operating at basic load. This resulted in an increase in electricity and steam consumption per unit product, but both are 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. We received A- in the climate change questionnaire and A in the water questionnaire in 2020, and will continue to carry out GHG-related management, actions, and disclosures in the future.

For more detailed information, please visit the company website

company  
website



## 3.3 Air pollution management and prevention



### Air pollution 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, daily 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.

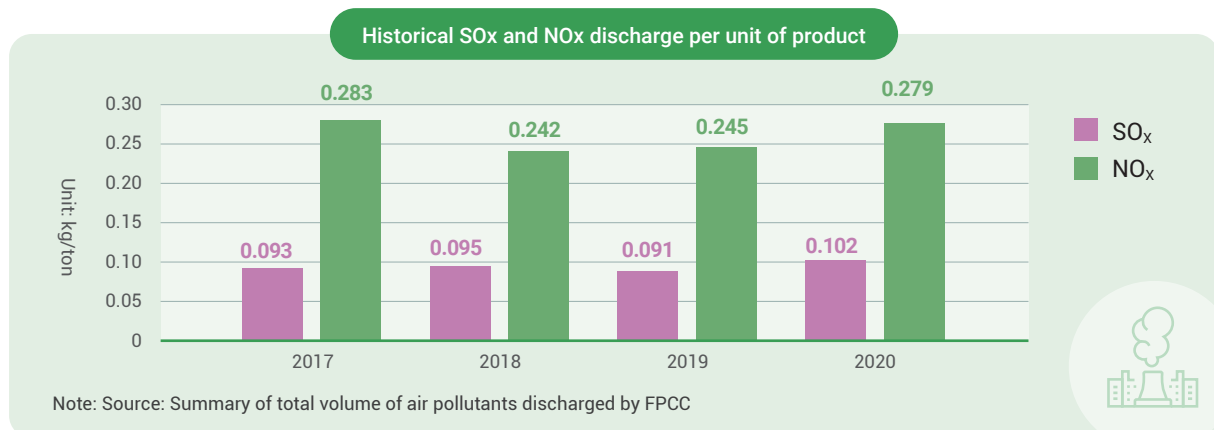
#### Pollution Emission Control

Air pollutant emissions cap, fixed air pollutant operation certificate control, environmental evaluation-based commitment to emission control.

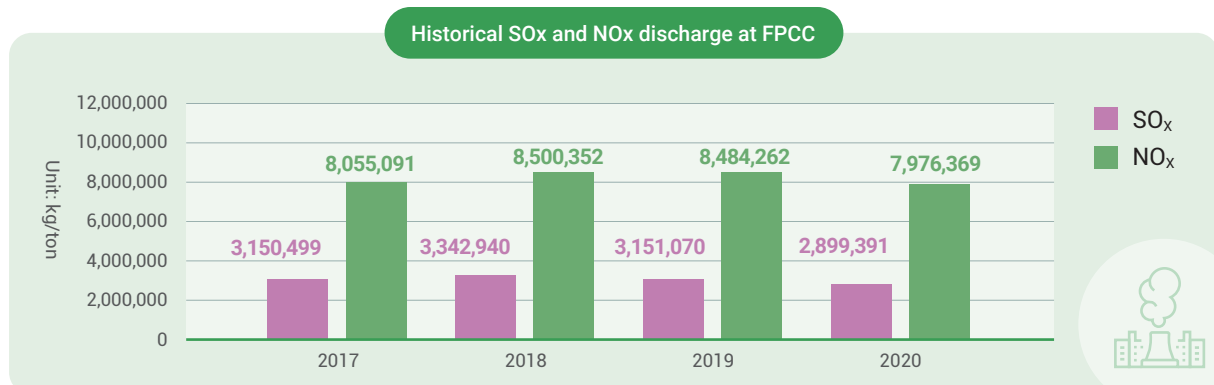
FPCC began complying with international standards and follows the government's policy to ban the use of halons, CFC-11, and CFC-12 since it was established in 1992. Now, R-134a, R-401a, and R-410a are the main coolants used, and sulfur and benzene contents in gasoline and diesel products strictly follow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

Category	Ingredient	Domestic market		International market	
		Guidelines	Actual value	Guidelines	Actual value
Gasoline	Benzene	0.9 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 2020, sulfur oxides (SO<sub>x</sub>) emission per unit of product was 0.102 kg/tons and nitrogen oxides (NO<sub>x</sub>) was 0.279 kg/tons. The increase compared to 2019 was mainly due to the decrease in production capacity caused by COVID-19 and the decline in oil prices, resulting in a 16.94% decrease in overall production capacity. However, SO<sub>x</sub> and NO<sub>x</sub> emissions only decreased 8% and 6% to keep process equipment operating at basic load. Hence, SO<sub>x</sub> and NO<sub>x</sub> emissions per unit product both increased.



SO<sub>x</sub> emissions was 2,899,391 kg and NO<sub>x</sub> emissions was 7,976,369 kg in 2020. Our NO<sub>x</sub> and SO<sub>x</sub> emissions in 2020 were lower than 2019. In the future, we will continue to reduce emissions of SO<sub>x</sub>, NO<sub>x</sub>, and particulate pollutants per unit product, continue to add MGGH, 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.



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



Locations of monitoring equipment inside the premises

### 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\$3.05 billion in 49 improvement projects as of 2020.

Total improvement cases  
**49**

Total investment value  
**NT\$ 3.05 billion**

#### VOCs discharge reduction and improvement over the years

Year	2017	2018	2019	2020	Accumulated volume 1999~2020
Item					
Number of cases improved	1	2	1	3	49
Discharge channels (tons)	10.06	0	0.14	145.42	174.46
Equipment elements (tons)	0	0	0	0	5.25
Storage tanks (tons)	0	71.90	0	0	94.54
Loading facilities (tons)	0	0	0	0	0.31
Total (tons)	10.06	71.90	0.14	145.42	274.56
Investment amount (NT\$ Thousands)	560,000	376,123	309,700	200,240	3,050,119

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 that are channeled to CFB#1 and 2 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)

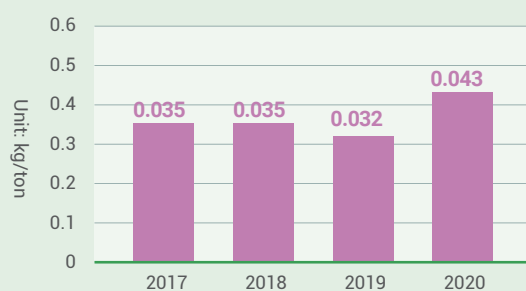


Wastewater treatment plant (After improvement)

### 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. Total VOCs emissions in 2020 increased 9.0% compared with the previous year, while overall production capacity decreased due to COVID-19 and the decline in oil prices. In order to keep process equipment operating at base load, while adding paint coating, cooling towers, and performing annual maintenance, VOCs per unit product increased as a result. In the future, we will increase air pollution reduction equipment (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

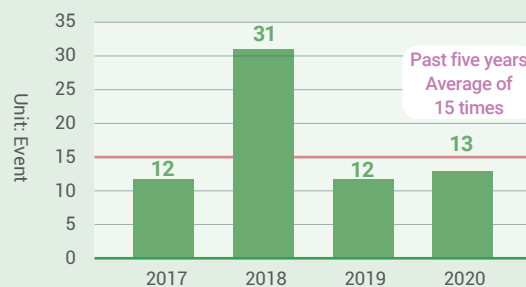


Note: Source: Summary of total volume of air pollutants discharged by FPCC

### 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. The number of foreign odor events found during self-inspections in 2020 was lower than the average of the past five years (15 times) 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



### 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 597 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 2020 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)
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%
2020	1,511	597	82	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 was completed in December 2020 and will begin operation after foreign technicians conduct tests for connection shore power to ships, so as to maintain air quality in the harbor.

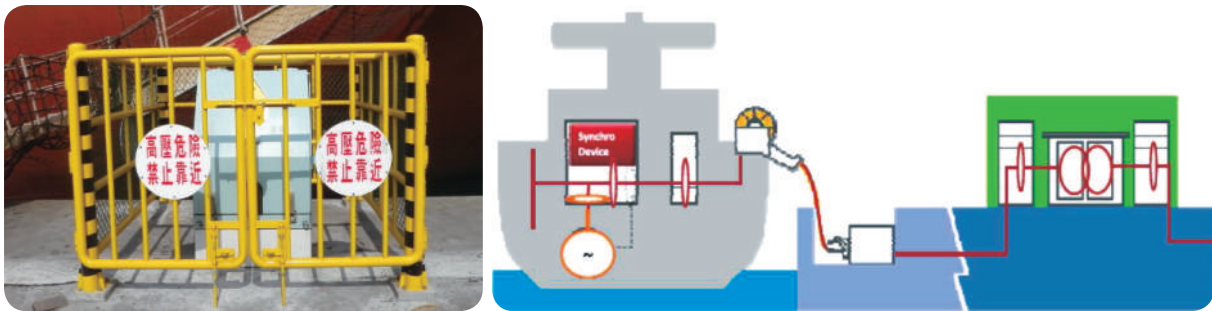


Figure Connecting facilities of the high voltage shore power system.



## 3.4 Water Resources, Wastewater, and Waste Management

Management approach (MA): GRI Standards: Water and Effluents GRI 303

- **Sustainability Issue:** Water Resource 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 Resource 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		

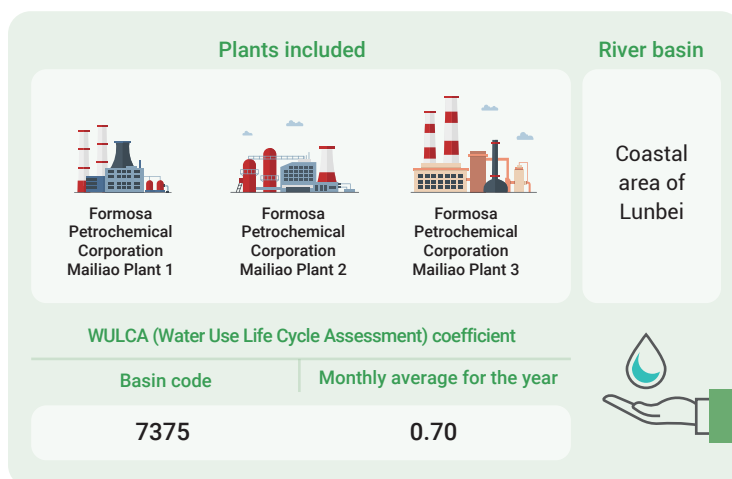
## Water withdrawal from source

Unit: Million L

Water source	2017	2018	2019	2020
Surface runoff (Industrial water)	47,594.068	48,638.531	46,361.055	43,436.481
Seawater	1,713,295.624	1,796,063.179	2,113,824.000	1,846,872.000
Rainwater	2,825.648	2,876.568	3,669.710	3,586.558
Tap water	145.718	125.395	110.869	95.229
Total water withdrawal	1,763,861.058	1,847,703.673	2,163,965.634	1,893,990.269



## Water resource risk and impact assessment




The Available Water Remaining (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:



## Water situation response measures

Unit: Days

Water situation light	FPCC's water situation response measures	Situations in 2020
 Normal water supply	Water rationing not necessary	Days occurred: 299 Frequency of occurrence: 82%
 Slight water shortage	1. Water conservation management measures 2. Reduction of process water usage 3. Reduce evaporation loss 4. Recycling and reuse of wastewater	Days occurred: 67 Frequency of occurrence: 18% (2020/10/26~2020/12/31)

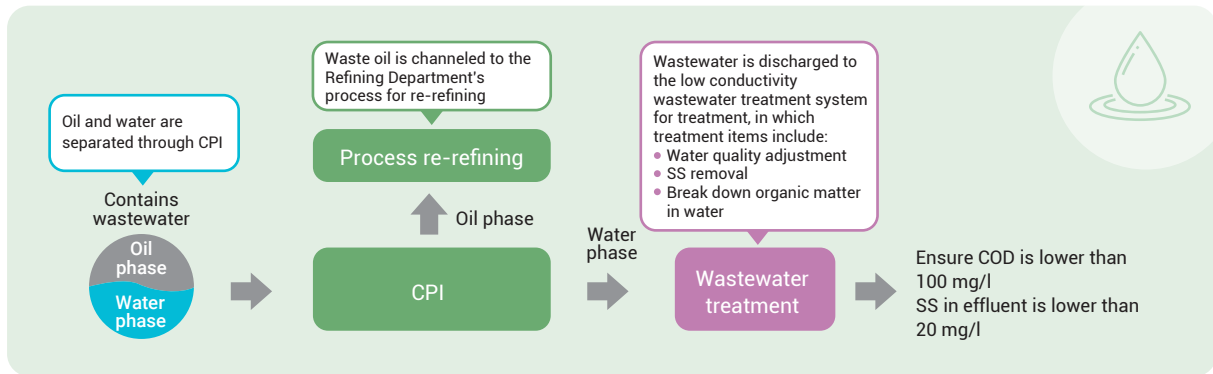
Water situation light	FPCC's water situation response measures	Situations in 2020
 Reduced pressure water supply	Suspend industrial water consumption unrelated to production	0
 Reduced water supply	1. Increase the concentration times of cooling water tower 2. Gradually suspend the operations of some processes	0
 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	0

Source: Website of the Water Resources Agency

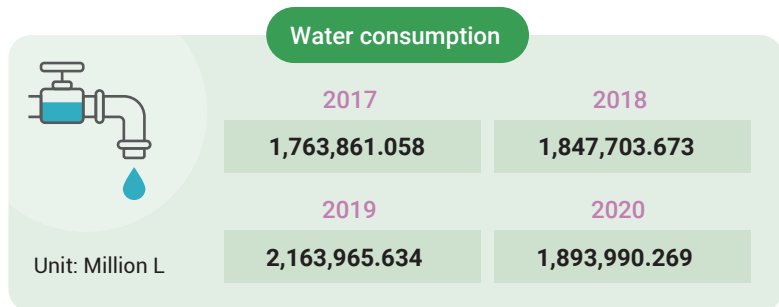
**Water Improvements Over the Years**

Item	Accumulated volume (1999~2019)	2020	Accumulated volume (1999~2020)	Ongoing	Total
Number of cases improved	497	39	536	108	644
Volume of water conserved (million L/day)	87.456	3.097	90.553	8.385	98.938
Investment amount (NT\$100 million)	13.17	1.04	14.21	6.36	20.57
Improvement results (NT\$100 million)	3.82	0.12	3.94	0.36	4.30

### 3.4.2 Water Pollution Prevention and Treatment Guidelines and Wastewater Management

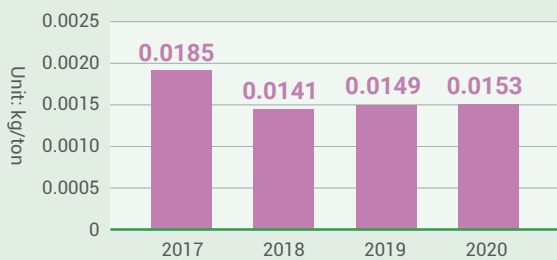


Water resources used in product manufacturing include industrial ultra pure water, steam, and seawater, which are mainly used for equipment heating, heat exchange, heat recovery, equipment cooling, and power generation facilities, allowing raw materials to be made into high quality products through the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



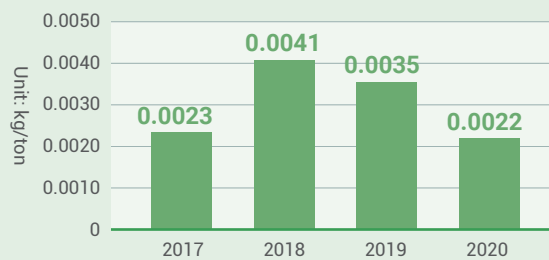
COD discharge per unit of product was 0.0153 kg/ton and SS discharge per unit of product was 0.0022 kg/ton in 2020, stably fluctuating compared with the past few years. This shows that biological treatment of wastewater has been mostly stable, but we will continue to improve the performance of wastewater treatment to ensure compliance with regulatory standards.

Historical COD discharge per unit of product



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

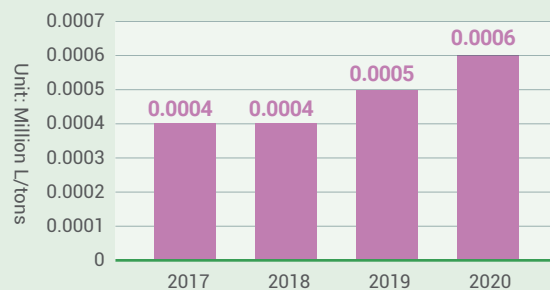
Historical SS discharge per unit of product



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 2020 was 46 thousand tons per day. The quality of water eventually discharged into the Taiwan Strait met effluent standards. The volume of wastewater discharged per unit of throughput in 2020 increased 0.52% compared to the previous year to 0.0006 million L/ton, and production capacity declined 16.94% due to the pandemic. However, wastewater discharge only decreased 12% for process equipment to continue operating at base load. Hence, this resulted in an increase in wastewater discharge per unit product. In the future, we will continue to evaluate and develop wastewater recycling and reuse (e.g. collecting process sour water to the FGD system) and wastewater treatment facility modification to increase the volume recycled, in order to continue reducing the wastewater discharge per unit product.

Historical wastewater discharge per unit of product



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
2017	119,395	45,196	6-9	6.5-8.5	100	80	34	20	16	7.93
2018	119,395	42,540	6-9	6.5-8.5	100	80	28.54	20	16	8.98
2019	119,395	45,767	6-9	6.5-8.5	100	80	21.82	20	16	5.99
2020	79,886	46,006	6-9	6.5-8.5	100	80	19.26	20	16	4.31

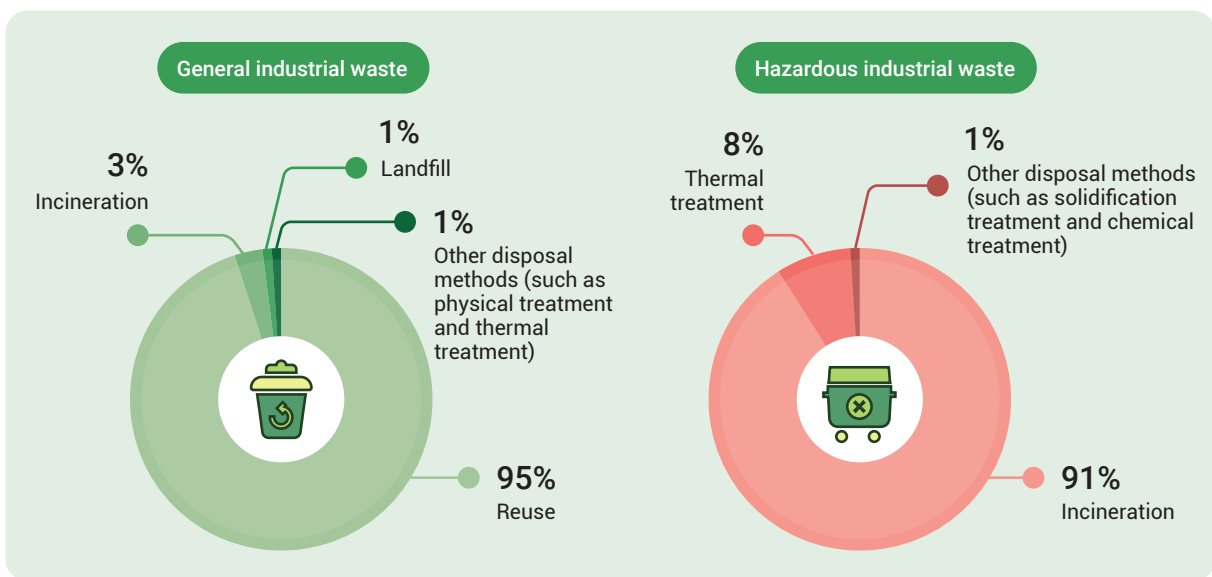
### 3.4.3 Waste Management

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 2020 totaled 1,129,663 tons, in which general industrial waste accounted for 1,129,260 tons and hazardous waste accounted for 403 tons. There were no severe leakages of waste in 2020.

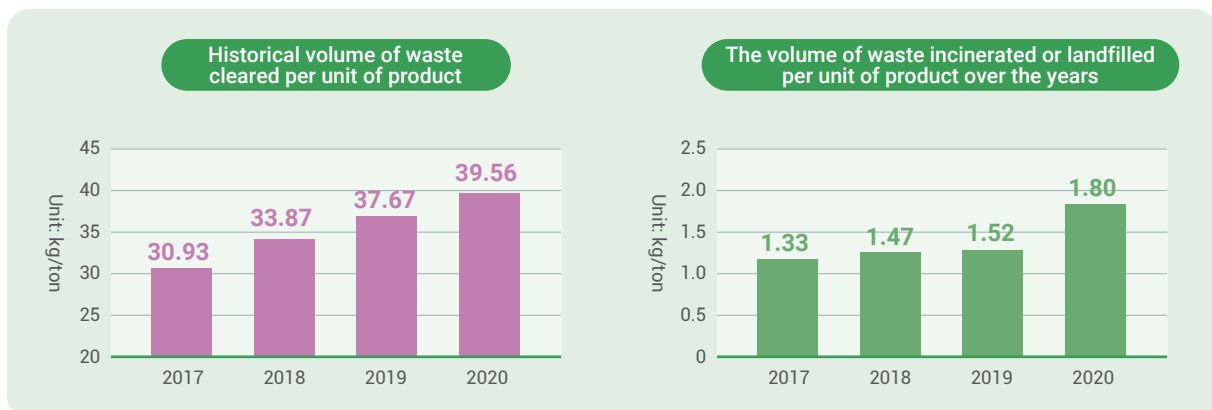
Overview of waste management over the years

	2017	2018	2019	2020
Waste clearance quantity (Tons)	1,045,509	1,190,156	1,295,260	1,129,663
Product (ton)	33,807,030	35,143,295	34,381,905	28,555,947
The volume of waste cleared per unit of product (kg/ton)	30.93	33.87	37.67	39.56
Incinerated or landfilled (kg)	44,945,390	51,754,636	52,115,577	51,427,602
The volume of waste incinerated or landfilled per unit of product (kg/ton)	1.33	1.47	1.52	1.80

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



Of the general industrial waste, 95% (1,067,993 tons) was recycled, 3% (35,946 tons) was incinerated, 1% (15,114 tons) was landfilled, and 1% (10,207 tons) was treated using other methods (e.g., physical treatment and thermal treatment). Of the hazardous waste, 91% (368 tons) was incinerated, 8% (32 tons) used thermal treatment, and 1% (3 tons) was treated using other methods (e.g., solidification and chemical treatment).



The volume of waste cleared per unit of product was 39.56 kg/ton in 2020, an increase of 1.89 kg/ton compared with last year. The volume of waste incinerated and landfilled per unit of product was 1.80 kg/ ton in 2020, an increase of 0.28 kg/ton compared with last year. Our overall production capacity decreased 16.94%, mainly due to the pandemic, but the amount of waste cleared and incinerated only decreased 12.78% and 1.32% for process equipment to continue operating at basic load. This resulted in higher waste cleared and incinerated per unit product.

# 4

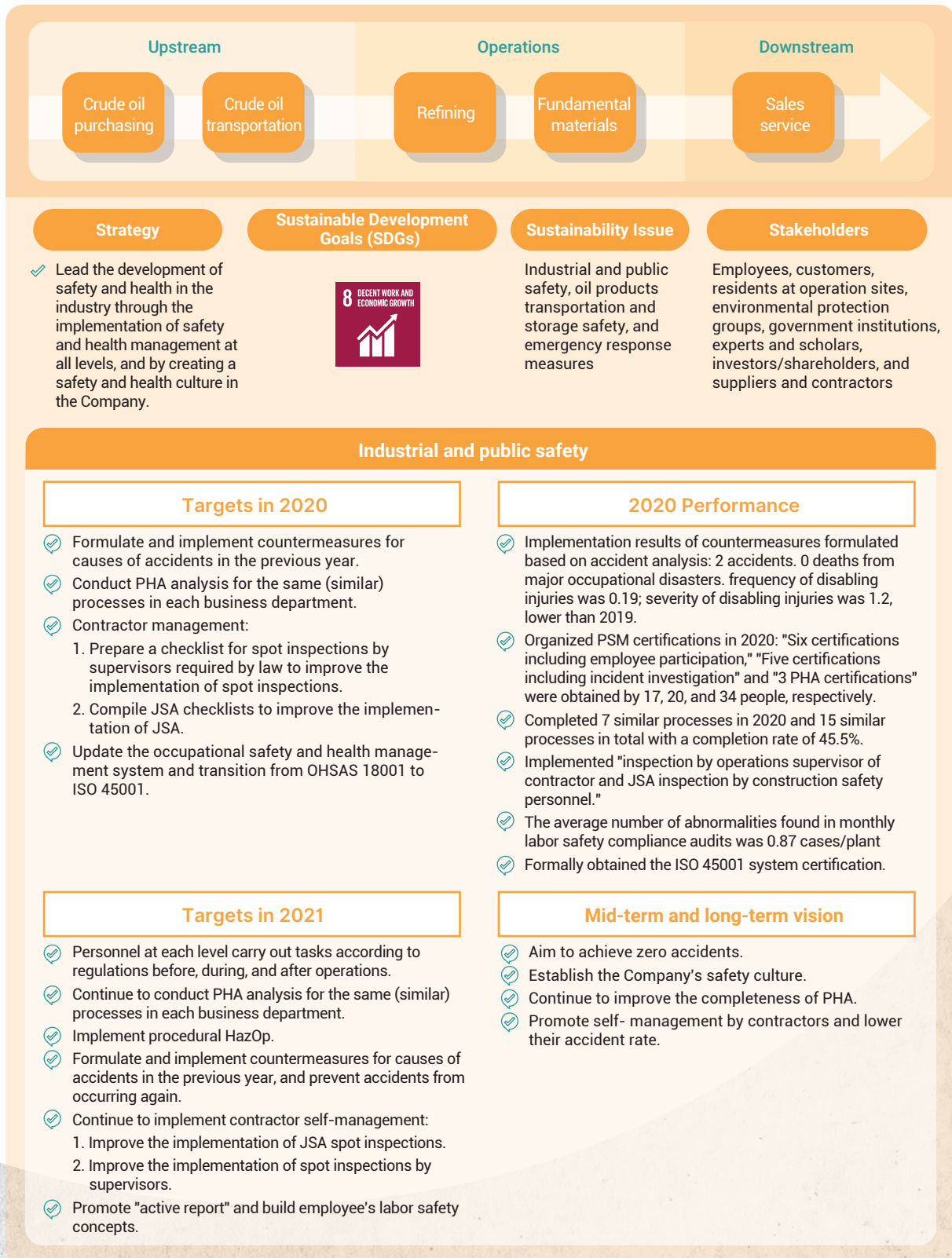
## Deepening the New Culture of Labor Safety



- 4.1 Creating a Labor Safety Culture
- 4.2 Labor safety risk management
- 4.3 Public Safety Emergency Response

## 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."







## 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 2020, our death rate due to occupational accidents was 0, frequency of disabling injuries was 0.19, severity of disabling injuries was 1.2, and comprehensive injury index was 0.02. The frequency of disabling injuries and injury severity rate decreased compared to last year, while comprehensive injury index was lower compared with similar industries.

There were 2 occupational accidents involving employees and 5 occupational accidents involving contractors in 2020, resulting in 4 disabling injuries, specifically:

- 2 occupational accidents involving employees: 1 collision accident (1 person) and 1 pinch accident (1 person).
- The 5 occupational accidents involving contractors included 1 traffic accident (1 person), 3 cut accidents (1 person), and 1 slip accident.

Continue to strengthen contractor self-management and lower risk through monthly EHS reports, designated training, and formulating countermeasures.

Table 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		No. of injuries	Total days lost	Frequency of disabling injuries	Severity of disabling injuries	Comprehensive injury index
	Male	Female	Total	Total work days	Total work hours elapsed					
2017	4,594	379	4,973	1,233,714	10,226,585	2	59	0.49	6.0	0.05
2018	4,665	401	5,066	1,266,763	10,532,797	2	0	0.19	0	0.00
2019	4,712	429	5,141	1,279,992	10,688,713	6	621	0.56	58	0.18
2020	4,696	425	5,121	1,280,317	10,597,427	2	13	0.19	1.2	0.02

Note 1: Severity of disabling injuries (SR) = (Total number of days lost × 10<sup>6</sup>)/Total work hours elapsed

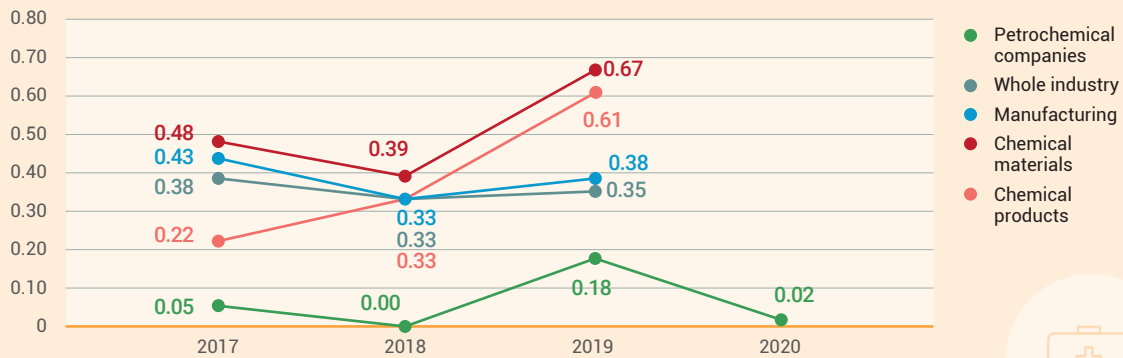
Note 2: Frequency of disabling injuries (FR) = (Number of disabling injuries × 10<sup>6</sup>)/Total work hours elapsed

Note 3: Comprehensive injury index = ((FR\*SR)/1,000)<sup>(1/2)</sup>

Note 4: 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 2020 was 2.

Note 5: Statistics are only for formal employees of FPCC.

Comparison of FPCC and the Industry's Comprehensive Injury Index in 2017-2020



Note: Industry data for 2020 was not provided because it has not been announced by the Ministry of Labor yet.

Table. Ratio of occupational injuries of contractors in the most recent four years

Year	Total work hours and days elapsed		No. of injuries	Total days lost	Frequency of disabling injuries	Disabling injury Severity	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
2020	1,222,083	9,776,660	5	3	0.51	0.31	0.01

Note 1: Severity of disabling injuries (SR) = (Total number of days lost × 10<sup>6</sup>)/Total work hours elapsed

Note 2: Frequency of disabling injuries (FR) = (Number of disabling injuries × 10<sup>6</sup>)/Total work hours elapsed

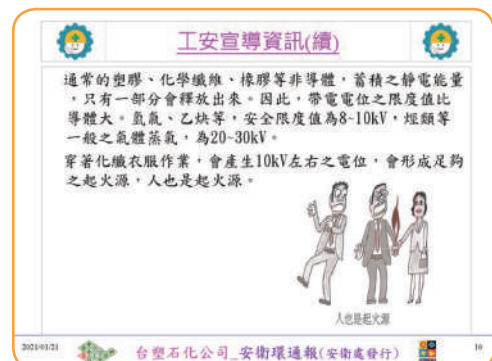
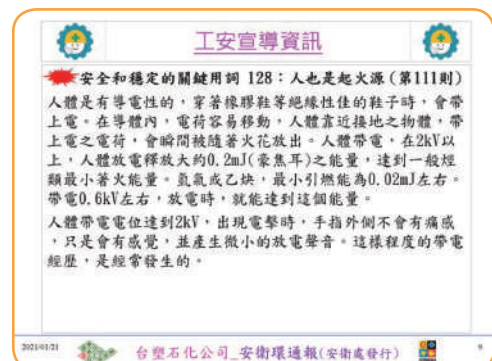
Note 3: Comprehensive injury index = ((FR\*SR)/1,000)<sup>(1/2)</sup>

### 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.

Findings from analyzing accidents involving employees are as follows: The main causes of employee accidents were "insufficient safety awareness" and "lack of discipline." We will strengthen inspection and supervision by supervisors at each level and encourage active reporting by all employees in 2021 based on the analysis results.

As for the prevention of occupational accidents involving contractors, our primary goal is for "related management personnel (supervisor, construction safety personnel, safety supervisors, and construction supervisors) to maintain safety standards before, during, and after operations."

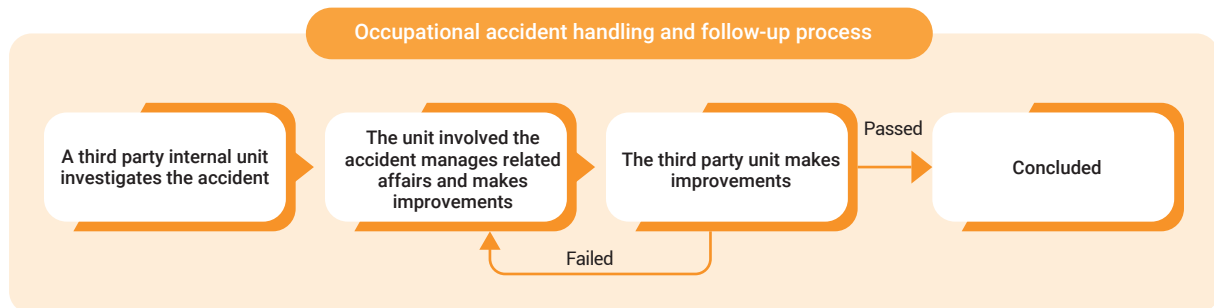


Promotion of occupational accident prevention and EHS reporting

## 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.



## Traffic Accident Prevention

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

Year	Number of cases		Days lost
	Going to work	Leaving work	
2017	14 (67%)	7 (33%)	157
2018	7 (63%)	4 (37%)	532
2019	10 (44%)	13 (56%)	946
2020	6(50%)	6(50%)	6,787

Note: There was 1 death from a traffic accident in 2020.

The majority of employee work hours lost was due to "traffic accidents during commute." Employees were involved in a total of 12 traffic accidents in 2020, and the number of days lost was 6,787 days. We compile cases each quarter and use the defensive driving training 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.

**4. 塑化參家公用四廠優良案例**

**(1) 廠商交貨車輛指派專人全程引導指揮**

本廠設立廠商交貨車輛引導專人，於資材車輛或廠商卸貨期間，**全程引導指揮及警戒**，確保交貨車輛及其他員工通行安全。

Case Studies: Implement new approaches to traffic safety management

**七、交通法規與防禦性駕駛宣導**

每月由本廠廠長及安衛組定期於**工具箱會議**、**工環保日會議**及**工程協議組織會議**，實施交通法規與事故案例宣導，強化員工及施工人員交通安全觀念。

Promotion on labor safety and environmental protection day. Provide traffic information

## 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; 2 occurred in 2019 and 1 occurred in 2020. 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.

With regard to PSM training, the Technical Training Center has completed personnel training, in hopes that the training mission will establish more accurate knowledge and management of process safety.

**Date of abnormality**  
2020.07.15

**Number of days affected**  
170 days (as of 2020.12.31)

**Reason for abnormality**  
Amine pump (P-3540A) caught fire as a result of reverse flow of high pressure hydrogen causing the shaft seal to leak.



**Improvement measure**

- Enhance emergency response training for abnormalities encountered in the process of switching pumps.
- Reevaluate the protective layer of high risk equipment and create a fool-proof safety design.

Year	Item	MOC	PHA	PSM			
				5 certifications	6 certifications	MI certification	3 certifications
2017	-	-	-	48	7	11	-
2018	3	3	8	21	33	-	-
2019	2	2	3	17	22	1	21
2020	-	-	-	21	19	-	36
Total	5	5	11	107	81	12	57

Note: 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.

### 4.2.2 Contractor Operational Safety Management

#### Rotating Equipment Operational Safety Management

After analyzing the cause of accidents involving contractors in the previous year, we found that the main issue was "personnel did not have sufficient safety awareness when using rotating equipment." Hence, we had "labor safety personnel of contractors ensure that their subordinates wear the correct protective equipment according to JSA" and "verify risks of construction procedures," requiring that records be kept in the daily safety and health inspection checklist to strengthen contractors' self-management.

## Implement contractor self-management and inspections

### ■ Inspection by operations supervisor of contractor

The supervisor of operations by contractors prepares a checklist according to required inspection items specified in the Occupational Health and Safety Act. Supervisors perform inspections using the checklist before construction commences each day and supervises operations on site.

### ■ 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 verify the code or item number for the corresponding procedure during construction, and verify if personnel are properly using protective equipment.

粉塵作業檢點表(範例)				
日期： 年 月 日				
工程編號	工程名稱			
工程單位	施工廠商			
檢查項目		是	否	不適用
1. 確認粉塵作業已實施通風換氣。				
2. 確認所設置通風設備維持其有效性能。				
3. 確認風量充足可維持工作場所空氣品質。				
4. 確認工作過程中通風換氣可維持正常。				
5. 確認作業人員無不適當之工作方法致使粉塵飛揚。				
6. 確認每一作業機器均運作正常無異狀。				
7. 確認每一作業人員均使用適當個人防護具。				
8. 確認室內粉塵作業場所至少每日清掃一次以上。				
9. 確認作業現場不可吸菸及飲食並公告。				
異常時採取之措施				

粉塵作業主管： \_\_\_\_\_

- 從事粉塵作業時實施檢點，發現異常應立即改善及採取必要措施。
- 於作業前應自行根據實際狀況評估各種危害之可能性制訂檢點表。
- 檢點項目須符合職業安全法令規定，作業主管須到場督導確認。

Example of checklist for supervisors

工地每日安全衛生巡查表				
工程編號：		承攬商： 日期： 年 月 日		
工程名稱：				
檢查項目代號 (檢查基準表代號)	施工時機	檢查人員 及時間	異常項目說明及處理對策	備註
	施工前		已確認本日施工 JSA 項目，並告知施工人員，今日作業使用之防護具：	確認今日 JSA 作業步驟必備之防護器具
	施工中 (上午)		本日施工人數： 人， 施工對應 JSA 作業步驟：	
	施工中 (下午)		已確認目前施工作業與 JSA 項目相符， 施工對應 JSA 作業步驟：	確認當下對應之 JSA 作業步驟
	施工後		已確認目前施工作業與 JSA 項目相符。	

說明：1. 廠用安全衛生管理人員於所承包工程施工中各工項，每日須檢點表各項書表於施工前、施工中、上下午各一次及施工後，均應進行核對並將結果記錄於巡查表，並由工程部門每日覆核；工程部門於現場巡查發現異常時，須填寫於備註欄位。  
2. 流程：承攬商安全衛生管理人員→承攬商工地負責人→工程部門覆核留存正本。(承攬商本留存備查)

承攬商工地負責人： \_\_\_\_\_

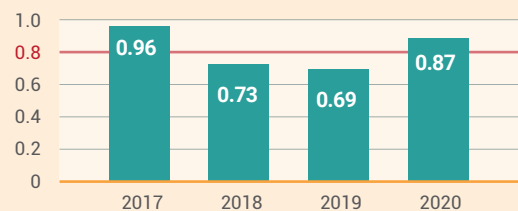
工程部門主管： \_\_\_\_\_ 經辦： \_\_\_\_\_

Example of JSA inspection

## Compliance audit

We verify the implementation results of all EHS systems and compliance of all units through monthly compliance audits. There was an average of 0.87 abnormalities/plant in 2020, which was higher than the average of 0.80 abnormalities/plant in the past four years. The increase in number of abnormalities was mainly due to "contractor self-management and inspection implementation" in 2019 being listed as a key audit item in 2020 (accounted for 28% of abnormalities).



Average number of abnormalities in the most recent 4 years



Year	2017	2018	2019	2020	Total
Number of abnormalities	43	44	58	81	226
Number of times at the plant	45	60	84	93	282
Number of abnormalities/plant	0.96	0.73	0.69	0.87	0.80

## 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.

Employee and Contractor Professional Training and Certification				
Trainees	Training and Certification Category	Training item	Training direction and purpose	2020 training results
 <b>Employees</b>	Safety and Health Training Required by Law	Employee Safety and Health Training Required by Law	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.	A total of 29 batches of training were held; 10 types of training were organized with 640 participants.
	EHS Promotion and Training	EHS Promotion and Training	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	A total of 972 training sessions were held with 45,092 participants.
	Position-specific certification	Employee position-specific certification	To improve employees' work ability and quality and ensure their professional competency	46 types of operational certifications. Number of employees that obtained certifications in 2020 reached 2,374 persons.
 <b>Contractors</b>	At the plant Education and training	On-site Education and Training	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.	Access control safety and health training: 625 sessions with 33,389 participants from 2,263 contractors
		Safety and health management personnel certification	Strengthen the basic management skills of contractors' safety and health management personnel	A total of 953 people obtained the certification
	Contractor Certification	Professional technology certification	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	358 people obtained professional technology certifications



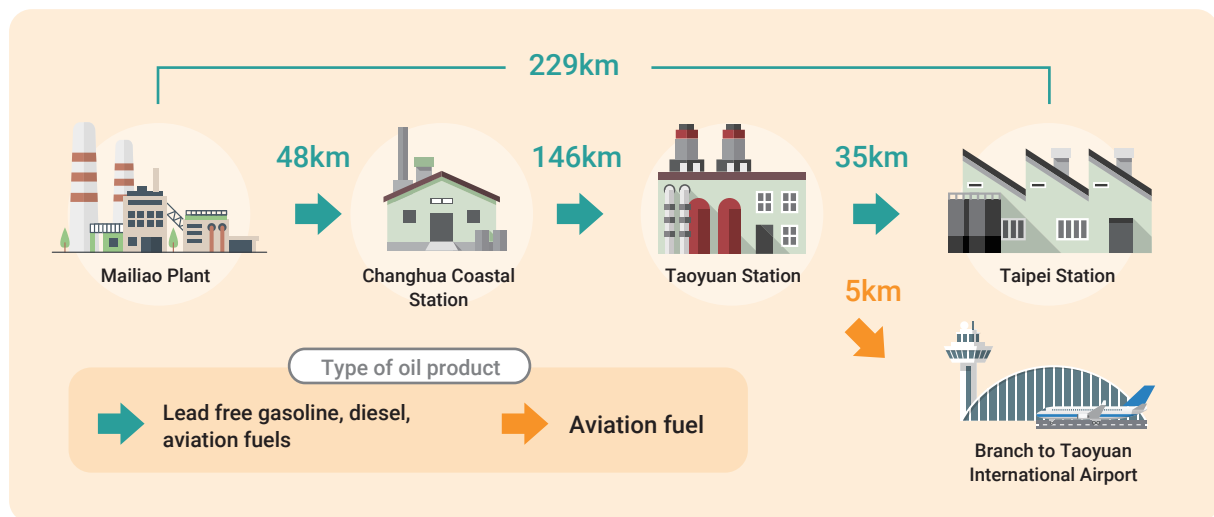
### 4.2.3 Finished Goods Transportation and Traffic Safety

#### 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

FPC 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 (2017-2020) was 0, 1, 3, and 0; the number of traffic accidents per million kilometers was 0, 0.13, 0.37, and 0. 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.

Year	Number of traffic accidents	Number of traffic accidents per million kilometers <sup>Note</sup>	
		Transportation Company	Taiwan
2017	0	0	3.47
2018	1	0.13	3.24
2019	3	0.37	3.25
2020	0	0	3.17

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 Public Safety Emergency Response

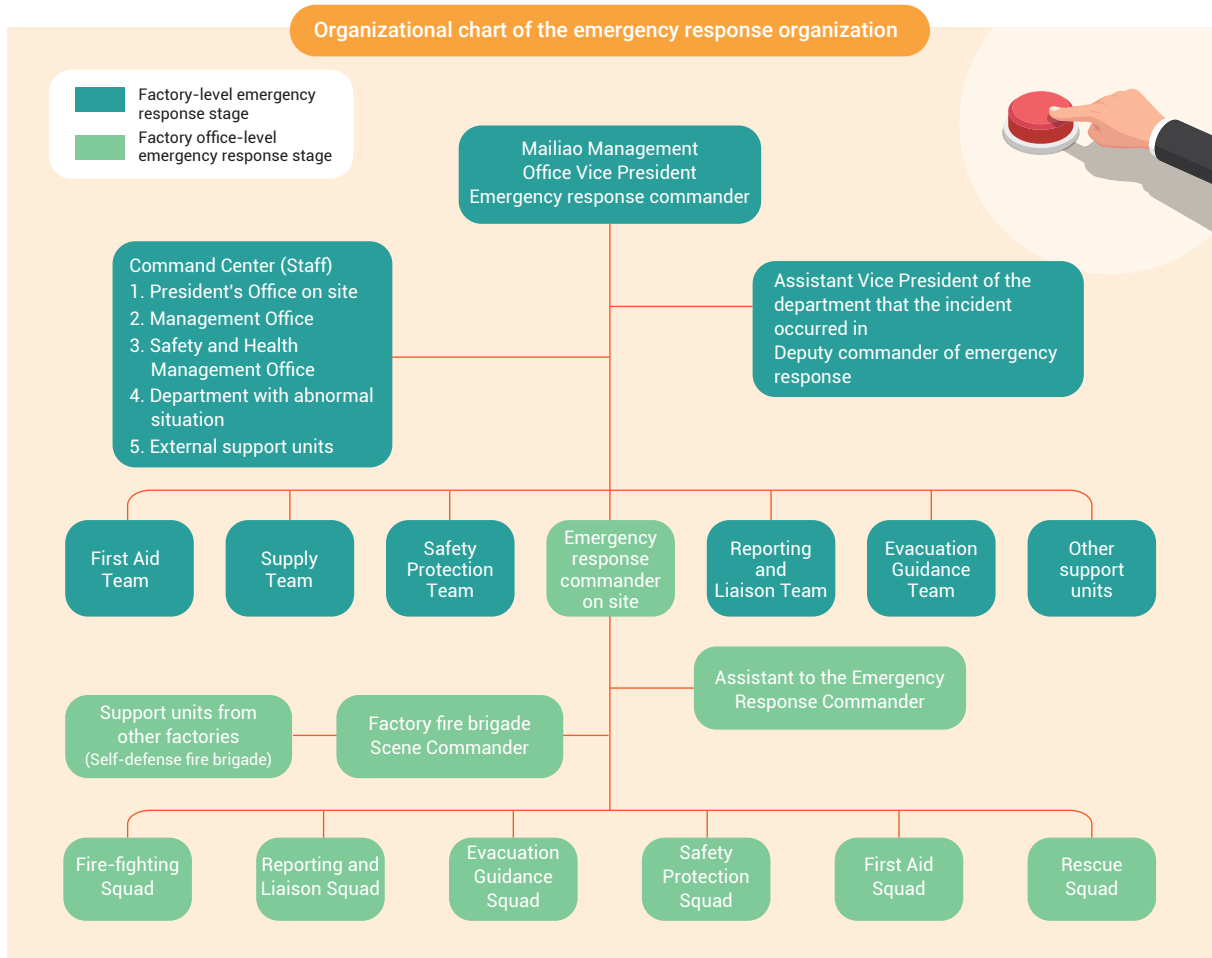
### Management approach (MA): Self-defined Material Sustainability Issue

- **Sustainability Issue:** Emergency response measures
- **Our commitment and responsibilities:** To implement emergency response education and training, and improve emergency response time for accidents, in order to mitigate disasters and reduce damages
- **Our goals:** 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

We established a complete emergency response organizational structure (invert color part in Figure 1), and implement emergency response management operations in two parts, "readiness" and "drills."

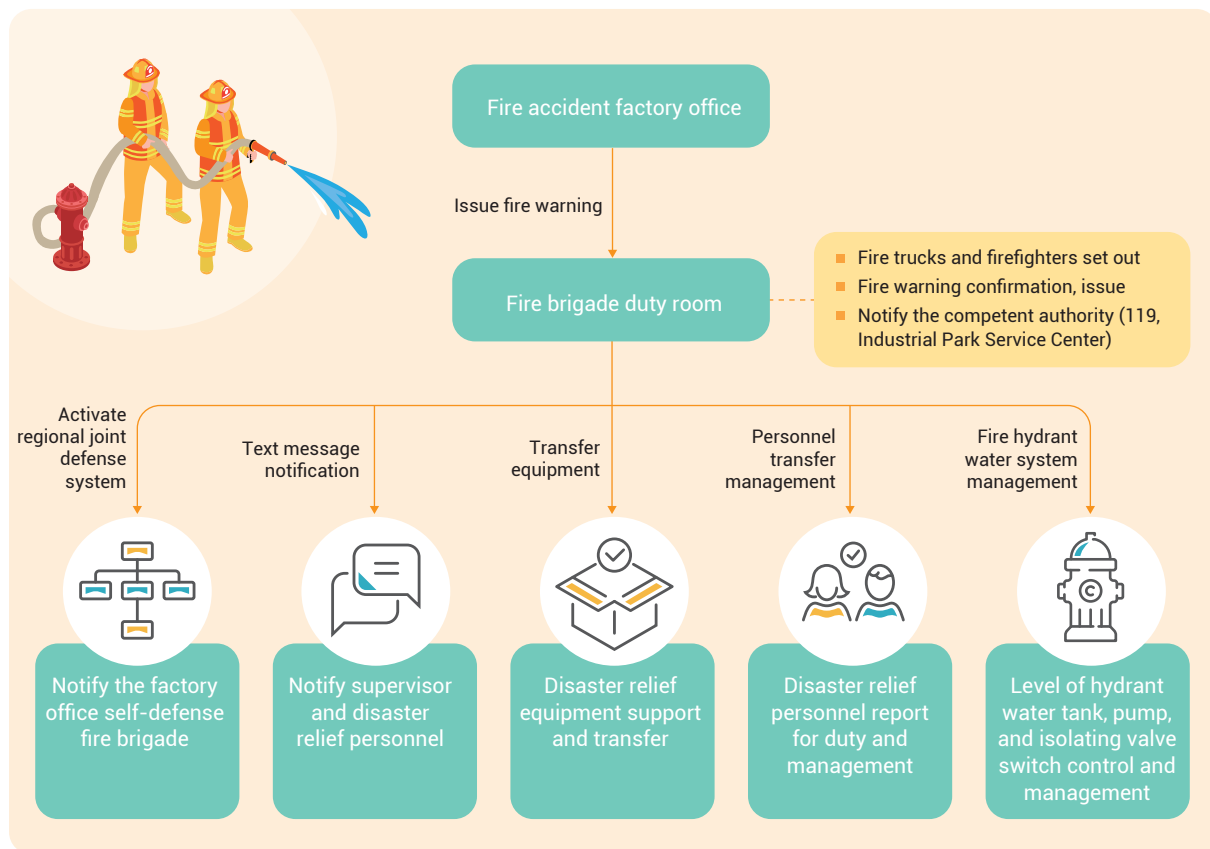
- **Readiness:** All of our plants have prepared an emergency response plan, organized emergency response personnel, and prepared disaster relief equipment, instruments, and maps required to immediately handle abnormal events when they occur.
- **Drills:** Drills are conducted according to emergency response plan, in order to improve disaster relief when an emergency occurs. Personnel are educated through live drills, and the President's Office, Business Department and other plants form a team to jointly conduct evaluations, learning from each other's strengths and internalizing them to gain better disaster relief capabilities for emergency events.



## 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 427 personnel. If a 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

Front line personnel can effectively prevent a disaster from spreading and reduce losses if they properly control an accident when it first occurs, and the key is personnel training. FPCC has a complete classified training system with different training items for new employees to senior supervisors. Contents range from basic concepts to commander training, and effectively improve emergency response and disaster relief abilities.

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, and other firefighting equipment)	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 every 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 commander training	Cadre members of the full-time fire brigade and all level supervisors on site	As needed

### Execution of Emergency Response Drills

Besides organizing emergency response drills every six months, the Mailiao Industrial 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 2020 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. We also conduct nighttime drills to strengthen the emergency response and disaster relief abilities of personnel who are on duty.

Type of drill	Number of drills required by the law (Annually)	Number of drills executed (Annually)	Remarks
Marine pollution prevention drills	3	3	Led by the Environmental Protection Bureau of the county government, and jointly carried out by the Coast Guard Administration, Fire Bureau, and FPCC
Joint emergency response drills with the county government	0	4	Drills are jointly conducted with the county government's Fire Bureau and Environmental Protection Bureau to build chemistry during disaster relief operations.
Expanded joint drills with Mailiao Association for Safety & Health	0	2	Co-organized with the Industrial Development Bureau Service Center and joint defense plants (divisions) to enhance regional joint defense and disaster relief capabilities
Public area pipe carrier drills	0	5	Drills are jointly conducted with the Main Management Office and nearby pipe carrier plants (divisions) for faster disaster relief when an incident first occurs
Toxic chemical incident response drills	15	15	Includes 1 formal and 2 unscheduled drills.
Factory office emergency response drills	46	194	Except for personnel on duty, shifts that are not included in drills also conduct drills on their own.
Total	-	223	-



2020 Sixth Naphtha Cracker Second Half Drill with Mailiao Association for Safety & Health and Fourth Quarter Disaster Prevention and Relief Joint Drill with the County Government



2020 comprehensive exercise at Mailiao Industrial Park's exclusive port



Nighttime toxic chemical leakage response drill



Nighttime fire accident emergency response drill

### Issues of concern

Employees switching pumps at 08:38 on July 15, 2020 caused a fire accident due to leakage of the shaft seal. The competent authority of environmental protection immediately began monitoring the site, and all monitoring data complied with air quality and effluent standards. When the incident occurred, we immediately evacuated personnel, suspended vehicles, and set up an emergency response center that formed a water line to lower the temperature. The fire was extinguished on 14:37 and we submitted a review report to Yunlin County Government within three days.

Besides being investigated by Yunlin County Government and the major incident investigation committee, we also formulated improvement measures for the cause of incidents, and completed the reexamination of operation authorization management, emergency shut-off logic design, and pump switching operating procedures. We formally submitted an application for testing and resuming work to the competent authority on February 22, 2021.



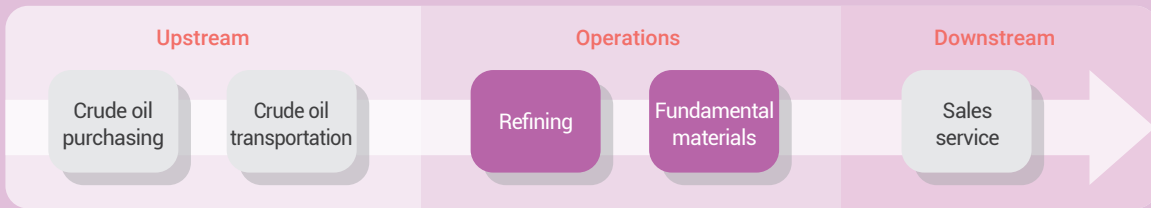


# 5 New Concepts for Talent Cultivation

- 5.1 Employee Structure
- 5.2 Employee career development
- 5.3 Employee Benefits and Care
- 5.4 Employee occupational health management

## 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. Due to the outbreak of COVID-19 in 2020, we established the "COVID-19 Prevention Employee Manual" after referencing the OSHA, helping employees take effective health protection measures during the pandemic to protect the health and safety of employees and their family members. We rapidly formulated epidemic prevention related policies after taking into consideration government regulations and response management measures worldwide.



### 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

## Employee profile and benefits

### Targets in 2020

- ✓ Construction of employee dormitories and the indoor activity center expected to be completed in March 2021.
- ✓ Employee turnover rate of 3% and under
- ✓ Employee Care Program
- ✓ Newly promoted supervisor (2018) sensitivity and empathy training

### 2020 Performance

- ✓ Construction of the dormitory in Haifeng District is 96% complete (including activity center), and the dormitory in Mailiao District is 70% complete.
- ✓ Employee turnover rate of 1.97% (achieved)
- ✓ Newly promoted supervisors (2018) all completed sensitivity and empathy training
- ✓ The result of the 2020 employee care survey was 7.84 points, an improvement of 0.11 points (+1.4%) compared with the 7.73 points in 2019.

### Targets in 2021

- ✓ Construction of employee dormitories and the indoor activity center is expected to be completed in May 2022.
- ✓ Employee turnover rate of 3% and under
- ✓ Implement an assistance program for employees that require high level of care or are under high stress
- ✓ Supervisor counseling measures  
We offered "supervisor counseling courses" to strengthen the stress resistance and emotion management ability of supervisors, and held supervisor commendation meetings

### Mid-term and Long-term Goals

- ✓ Continued improvement of employee dormitories and the indoor activity center
- ✓ Maintain employee turnover rate at 3% and under
- ✓ Create an excellent work environment to attract and retain outstanding talent
- ✓ Recruit dedicated personnel with a psychologist license to provide employee guidance

## Occupational health and safety

## Targets in 2020

- ✔ 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

## 2020 Performance

- ✔ Reduce body fat of obese employees who participate in the employee healthy lifestyle challenge by 1.0% (not achieved)
- ✔ Ratio of employees who received general and special physical examinations reached 100% (achieved)
- ✔ Abnormal results in grade 4 special health examinations decreased to 0.01% (achieved)
- ✔ Average utilization of the i-health physical fitness instrument reaches 100% (achieved)
- ✔ Continued to track 13 special health management cases in 2020; 14 cases were already closed
- ✔ The electronic health management platform that was originally being developed together with Formosa Biomedical Technology Corporation is now being developed by the Company (not achieved)
- ✔ The office stretching exercise video was announced on July 7 to reduce the ergonomic hazard of sitting for long periods of time (achieved)
- ✔ The middle age and elderly health seminar and bone mineral density testing event was put on hold due to COVID-19.

## Targets in 2021

- ✔ In the sixth employee healthy lifestyle challenge, 95% of obese employees participated and lowered their body fat by an average of 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%
- ✔ Results of the third Nordic Musculoskeletal Questionnaire administered to all employees was analyzed, and improvement measures were formulated to reduce hazards.
- ✔ Continue to organize the middle age and elderly healthcare seminar and bone mineral density testing event

## Mid-term and Long-term Goals

- ✔ Occupational diseases caused by chemical exposures remains zero.
- ✔ 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). All FPCC employees are protected by the Human Rights Policy and Human Rights Concerns and Methods.

### Human Resource Structure

In 2020, the total number of full-time employees at FPCC was 5,329 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, 81% are working in Central Taiwan, and the mean number of years employees have worked for FPCC was 14.2 years.

Formal employees accounted for 96.6% of all employees in 2020 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.

Unit: persons

Type of staff	2017			2018			2019			2020		
Gender	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Formal employees (A)	4,616	386	5,002	4,690	421	5,111	4,726	430	5,156	4,718	428	5,146
Consultant	8	0	8	5	1	6	4	1	5	6	0	6
Fixed-term contract-based employees	110	22	132	113	22	135	114	36	150	99	37	136
Work-study students	26	4	30	19	8	27	16	4	20	30	4	34
Director	6	1	7	5	1	6	6	1	7	6	1	7
Non-official staff subtotal (B)	150	27	177	142	32	174	140	42	182	141	42	183
Total (C=A+B)	4,766	413	5,179	4,832	453	5,285	4,866	472	5,338	4,859	470	5,329
Ratio of formal employees (A/C)	96.7%			96.6%			96.7%			96.6%		

We continue to implement innovative organization management and streamline the organizational structure. In 2020, a total of 105 formal FPCC employees were separated (including 39 retirees), which is an employee turnover rate of 1.97%. 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		Petroleum and coal product manufacturing sector
		Head count	As a percentage of total	Head count	As a percentage of total	
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%	



Year	Age group	Male		Female		Petroleum and coal product manufacturing sector
		Head count	As a percentage of total	Head count	As a percentage of total	
2020	Age 30 and below	32	0.6%	3	0.06%	10.31%
	Ages 31-50	27	0.5%	7	0.13%	
	Age 51 and above	36	0.68%	0	0%	
	Subtotal	95	1.78%	10	0.19%	

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 104 in 2020, accounting for 1.95% of all employees. Most new employees were under the age of 30, and accounted for 1.82% of all employees. We will continue to recruit new employees as the source of organizational innovation.

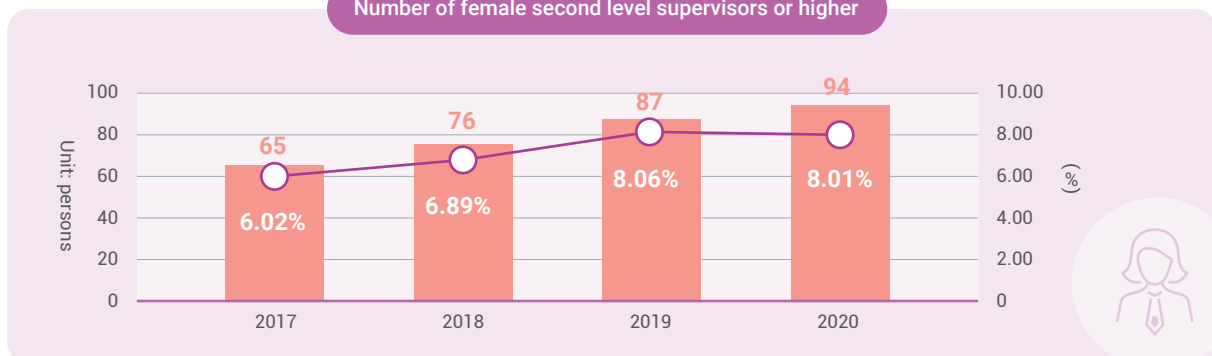
#### New formal employees of FPCC in 2020

Category	Sub-committee	Male		Female	
		Head count	As a percentage of total	Head count	As a percentage of total
Age	Age 30 and below	86	1.61%	11	0.21%
	Ages 31-50	6	0.11%	1	0.02%
	Age 51 and above	0	0%	0	0%
	Subtotal	92	1.72%	12	0.23%

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 2020. 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 number of second level female 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



## Number of involuntary absent hours in the most recent four years

Year	Absent hours		Total work hours elapsed	Absentee rate	
	Male	Female		Male	Female
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%
2020	31,405	4,839	10,597,427	0.30%	0.05%

Note 1: Number of involuntary absent hours includes: Total hours of occupational sick leave, hospitalized sick leave, non-hospitalized sick leave, and menstrual leave.

Note 2: Absent hours include menstrual leave starting in 2018

Note 3: 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	2017			2018			2019			2020		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Number of employees eligible for parental leave	341	28	369	282	26	308	266	24	290	192	6	198
The actual number of employees who applied for parental leave	3	0	3	3	0	3	4	1	5	2	2	4
Number of employees expected to reinstate their employment status for the year (A)	3	2	5	1	0	1	4	1	5	2	4	6
Number of employees who applied for reinstatement of their employment status for the year (B)	3	2	5	1	0	1	4	1	5	2	4	6
Reinstatement rate % (B/A)	100%	100%	100%	100%	-	100%	100%	100%	100%	100%	100%	100%
Retention rate	100%	100%	100%	100%	-	100%	100%	100%	100%	100%	100%	100%

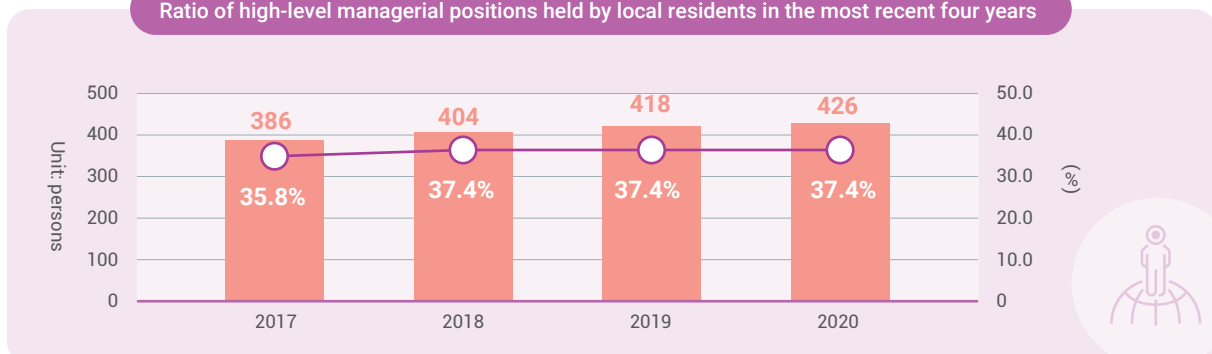
Note 1: Retention rate refers to the ratio of employees who were reinstated after parental leave and stayed for at least one year.

Note 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

## 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

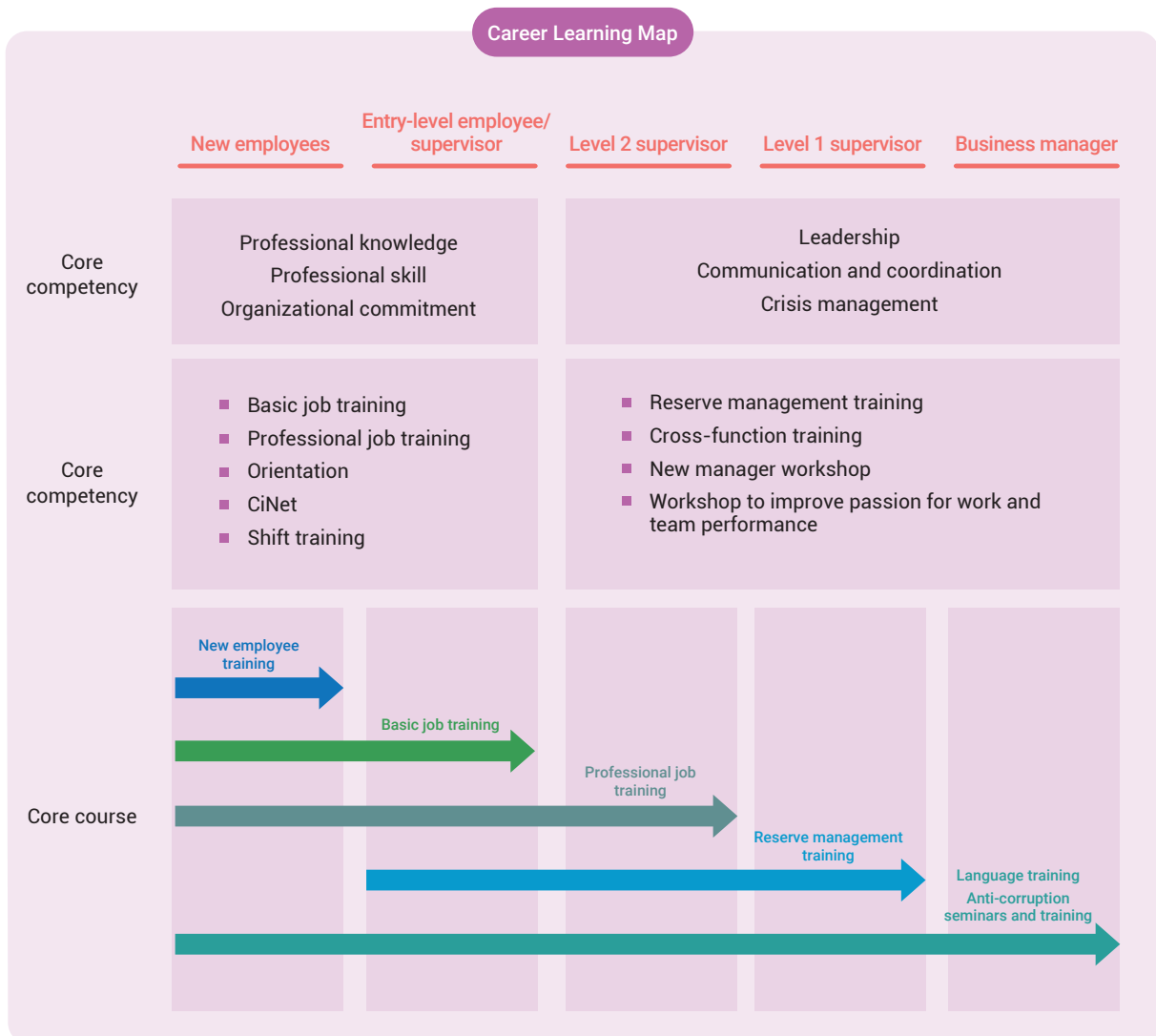




## 5.2 Employee career development

### Management approach (MA):GRI Standards: GRI 404 Training and Education

- Sustainability Issue:** Education, training, and talent cultivation  
 As of the end of 2020, FPCC had sent 70 employees to receive AI 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.



## Employee Learning Framework

### Level 2 supervisors and above (inclusive)

Required core competency	Type of education and training	Training hours
1. Leadership	1. Reserve management training	18,793 hours in total, on average 16.7 hours per person
2. Communication and coordination	2. Cross-function training	
3. Crisis management	3. New manager workshop	
	4. Workshop to improve passion for work and team performance	

### Entry-level supervisors and under (inclusive)

Required core competency	Type of education and training	Training hours
1. Professional knowledge	1. Basic job training	219,939 hours in total, on average 55.3 hours per person
2. Professional skill	2. Professional job training	
3. Organizational commitment	3. Orientation	
	4. CiNet	
	5. Shift training	

### Overall Performance

Total amount invested in education and training:  
**NT\$ 22,608,068**

Average hours of training received by each employee:  
**46.7 hours**

Total training participation:  
**71,619 participants**



## Major education and training results in 2020

### Position-specific certification programs

#### 2020 Results

**2,374** 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 46 position-specific certifications in 2020.

### VT training

#### 2020 Results

**1,383** participants were certified  
**100%** 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

#### 2020 Results

**20** participants in total  
**26** 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.

## Average education and training at each level

Year	High-level management			Entry-level supervisors and under			Company-wide mean number of hours		
	Male	Female	Subtotal	Male	Female	Subtotal	Male	Female	Subtotal
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
2020	17.3	9.4	16.7	59.1	13.1	55.3	49.9	12.3	46.7

Note: The number of training hours received by each male employee in 2020 was around 49.9 and it was around 12.3 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 148% the minimum wage, and starting salary as a specialist is about 109% 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.

#### Level 2 supervisors and above (inclusive)

Female 1      Male 1.29

#### Entry-level supervisors and under (inclusive)

Female 1      Male 1.28

Note: Male employees had higher salaries than female employees in 2020 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.

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\$1,393,001	NT\$1,291,104
2020	5,279	NT\$1,307,167	NT\$1,204,604

Note 1: The number of full-time employees in 2020 decreased by 48 compared to 2019, and average salary decreased NT\$85,834 compared to 2019

Note 2: The median annual salary in 2018 was not audited by an accountant and therefore was not disclosed.

Note 3: We began disclosing relevant information in 2018 in response to the "New Corporate Governance Blueprint (2018-2020)" announced in April 2018.

### 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 in accordance with the law and handles employee welfare related affairs. For details on the benefits system, please visit our website.

The infographic illustrates the Welfare System with ten categories, each represented by a lettered icon and a descriptive label:

- A. Leave**: Represented by an icon of a person sitting at a desk.
- B. Wedding and child birth**: Represented by an icon of a family.
- C. Retirement**: Represented by an icon of a person wearing glasses.
- D. Healthcare**: Represented by an icon of a medical cross and a shield.
- E. Insurance**: Represented by an icon of a person and a shield.
- F. Personal safety and family care**: Represented by an icon of two hands holding a heart.
- G. Employee cafeteria**: Represented by an icon of a fork, knife, and spoon.
- H. Life**: Represented by an icon of a person and a clock.
- I. Employee relationship advancement**: Represented by an icon of two hands shaking.
- J. Assignment**: Represented by an icon of a person and an arrow.

Illustrations of people are included: a woman and a man celebrating, and a woman looking through a telescope while another woman works on a laptop.

### 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 2020. 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	Welfare Committee		Labor-Management Meeting		Labor Union	Occupational Safety and Health Committee	
	Management	Employee	Management	Employee	Member	Management	Employee
Tenets	To promote employee benefits		To 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	3,507	26	13
Ratio	29%	71%	50%	50%	80%	66.7%	33.3%
Target of communication	All employees		All employees		All union members	All employees	

Communication Channels	Purpose of employee engagement	Frequency of communication	Target of communication	2020 Communication results
Welfare Committee	Statutory use of the employee welfare fund	Once every two months	All employees	<ul style="list-style-type: none"> <li>A total of 37 benefits proposals were made and 100% were passed and implemented.</li> </ul>
Labor-Management Meeting	Coordination of labor relations	Once every two months	All employees	<ul style="list-style-type: none"> <li>A total of 30 proposals were made and 97% was completed.</li> <li>The proposal that were not completed are extempore motions in the last meeting of 2020, and we plan on conducting an evaluation in the following year.</li> </ul>
Occupational Safety and Health Committee	As per the Occupational Health and Safety Management guideline requirements	Once every three months	All employees	<ul style="list-style-type: none"> <li>A total of 4 meetings were convened and a total of 144 people participated in discussions.</li> <li>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.</li> </ul>
Dedicated Personnel for Providing Employee Guidance	Providing employee consultation channels	Any time	All employees	<ul style="list-style-type: none"> <li>The 2020 EAP showed care for 322 new employees</li> </ul>
Teacher Chang Foundation Taichung Branch	Providing employee consultation channels	Any time	All employees	<ul style="list-style-type: none"> <li>Consultation services provided 68 times</li> <li>Services of the Employee Consultation Hotline: 100 cases</li> <li>Consultation services provided 68 times</li> </ul>
Labor Union	Communication of labor conditions, labor benefits	Once every three months	All union members	<ul style="list-style-type: none"> <li>A total of 12 proposals were made and 83% was completed.</li> <li>The proposal that were not completed are extempore motions in the last meeting of 2020, and we plan on conducting an evaluation in the following year.</li> </ul>



## 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, workplace maternal health protection measures, 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 182 employees, general injury and illness consultation and educational training were provided to 551 employees. Furthermore, Nurses carry out graded management and follow-up on 746 people based on examination results. Employees have gained a higher level of trust due to their familiarity with doctors at Chang Gung Memorial Hospital we have worked with over the years, and it has raised their health awareness. As a result, the abnormality rate in the special health examination this year decreased 0.01% compared to 2019. We will continue to prevent occupational illnesses through health examinations and follow-up, care for individual health of employees, and monitoring the operating environment and individual exposure.
- Personnel under level 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 2020, special health examinations were completed for 100% of employees, and there were no cases of occupational illness.

Item		2017	2018	2019	2020
Physician provides on-site services	Number of people subjected to job adjustment for preventive management or competency evaluations	64	206	210	182
	Number of people who received general injury and illness consultation and educational training	163	435	392	551
Nurses carry out graded management based on examination results and number of people tracked (employees with abnormal results in special health examinations)		593	535	564	746
Number of employees that received annual special health examinations		1,413	1,414	1,435	1,458
Number of employees under level 1 management		814	872	856	787
Number of employees under level 2 management		593	535	574	666
Number of employees under level 4 management		6	7	5	5
Abnormality rate in special health examinations (number of employees under level 4 management/total number of employees)		0.42%	0.49%	0.35%	0.34%



## Preventive management of cerebral and cardio vascular diseases caused by work

## Assessment results of diseases caused by abnormal workload

Unit: Number of people (abnormality rate)

Cerebral and cardio vascular diseases caused by work Risk class		Workload		
		Low workload	Medium workload	High workload
Occurrence cerebral and cardio vascular diseases in the past 10 years	<10%	963(58%)	271(16%)	54(3%)
	10~20%	241(14%)	64(4%)	13(0.8%)
	≥20%	43(2.6%)	13(0.8%)	1(0.1%)

■ Low risk ■ Medium risk ■ High risk

- We used the electronic evaluation system to continue tracking high risk personnel in 2020, occupational medicine specialists provided one-to-one consultation and health education, and adjustments to work patterns were made based on the situation. We will continue reduce the risk of cerebral and cardiovascular disease among employees through case management and health promotion events (the medical checkup in 2020 was postponed until November and high risk personnel have not been tracked yet).
- The lecture "Introduction to Cardiovascular Disease" given by the health service physician aims to let employees better understand the prevention and hazards of cardiovascular disease, and further improve their health management to avoid the threat of cardiovascular disease.



## 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 2019-2020. We also replaced the chairs of control personnel with ergonomic chairs. We jointly designed a 5-minute stretching exercise with the team at Formosa Biomedical Technology Corporation in 2020, and have employees who sit in the office for long periods of time to stretch twice a day, in hopes of alleviating the soreness caused by sitting for long periods of time.

Physical activity – Stretching exercise

**台塑石化公司 五分鐘伸展操**

**01. 眼球運動**  
 將視線看向：(1)上 (2)右 (3)下 (4)左  
 每個方向停留10秒鐘

**02. 斜方肌伸展**  
 頭向右轉45度  
 右手於後腦杓向下加壓，停留10秒鐘  
 右邊結束換左邊

**03. 體側伸展**  
 右手插腰，左手伸直  
 身體向右邊側彎，停留10秒鐘  
 右邊做完換左邊

**04. 肱三頭肌伸展**  
 右手置於上背  
 左手放置於右手肘向下加壓，停留10秒鐘  
 右邊做完換左邊

**05. 伸腕肌與屈腕肌伸展 1/2**  
**伸腕肌伸展**  
 右手向前伸五指向下，  
 左手於右手背加壓，停留10秒鐘  
 右邊做完換左邊

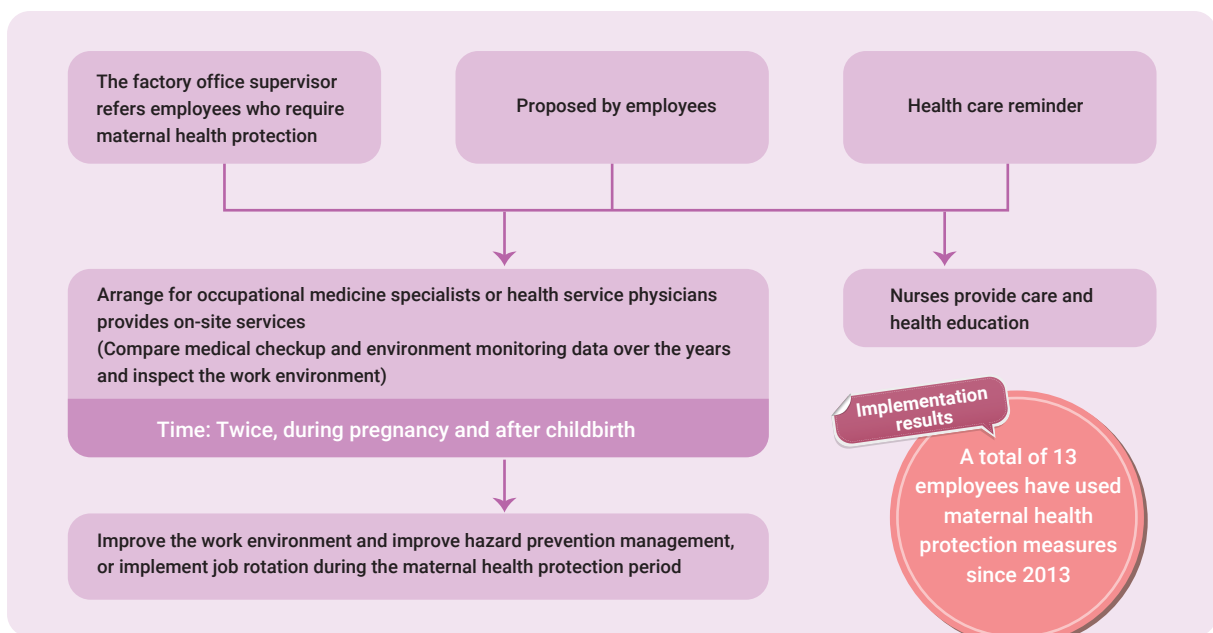
**05. 伸腕肌與屈腕肌伸展 2/2**  
**屈腕肌伸展**  
 右手向前伸五指向上  
 左手於右手心加壓，停留10秒鐘  
 右邊做完換左邊

**06. 臀大肌伸展**  
 坐在椅子前端，將右腳腳踝放在左腿上  
 背打直身體前傾，停留10秒鐘  
 換左邊動作

**07. 腿後肌伸展**  
 坐在椅子前端，右腳伸直，腳跟著地腳尖上勾  
 背打直身體前傾，將雙手放置於左大腿  
 換左邊動作

The lecture "ergonomic hazard and prevention" by an occupational medicine specialist lets elderly employees understand how to reduce musculoskeletal injury in the workplace, and prevent their work and mood from being affected by soreness.

Workplace Maternal Health Protection Measures



## Emerging Infectious Disease Prevention and Health Education

- Dengue fever prevention

We continue to prevent 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.

- COVID-19 prevention

The Taiwan Centers for Disease Control listed COVID-19 as a Category 5 Notifiable Disease on January 15, 2020. We established the COVID-19 Prevention Employee Manual after referencing the OSHA to prevent the pandemic from affecting our operations and to provide epidemic prevention measures for employees as follows:

## Raising awareness of COVID-19



COVID-19 prevention measures

We referenced the OSHA Guidance on Preparing Workplaces for COVID-19 during the initial outbreak of COVID-19, and formulated management measures to reduce the potential impact on our normal operation:

**1**

**General matters when entering and exiting plants**

Management measures

- Personnel maintain a suitable distance when changing shifts.
- Wear masks in closed spaces, regularly disinfect sites, and retain records.
- Closed the cafeteria and gave employees lunch boxes instead.
- Put up notices on epidemic prevention measures.
- Provide disinfection products (alcohol, hand sanitizer, and hypochlorous acid solutions).
- Provide masks and require employees to wear them.

**2**

**Matters concerning designated smoking areas/contractor rest areas**

Management measures

- The time that the areas can be used is not limited, so that people will not go there to smoke at the same time.
- Set up a large number of smaller rest areas to reduce the number of people gathered together.
- Maintain three empty sides and place fans to maintain good ventilation.
- Provide alcohol for disinfection before entry.
- Regularly disinfect the areas and retain records.
- Assign standing spots for personnel to maintain a safe distance according to regulations of the Taiwan Centers for Disease Control.

**3**

**Other policies**

Management measures

- Reduce business trips and meetings.
- Hold telephone or video conferences instead of conferences attended in person.
- Arrange for department personnel to work from different locations to prevent an entire department being subject to home quarantine at the same time.
- Establish a leave policy (compulsory isolation leave, epidemic prevention childcare leave).
- Implement access control, designate a single entrance and exit, and take employees' temperature at the entrance.
- Suspension of employee recruitment.
- Fill out a health declaration card (contractors are to carry it on them at all times).



Set up control stations and partitions in the office



Take the temperature of personnel, fill out the record form, and use alcohol



### 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. Furthermore, Mailiao Industrial Park has 539 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 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 22 CPR+AED re-training courses in 2020, and also prepared 300 inhalers and 25 injections of antidotes for hydrogen sulfide poisoning on site and at a chemical incident responsibility hospital nearby.

## 5.4.2 Employee Health Management and Promotion

We will continue to integrate enterprise resources and promote preventive medicine concepts by combining the medical center-level treatment provided by Chang Gung Memorial Hospital with the professional healthcare services provided by Formosa Biomedical Technology Corporation. We will dedicate our efforts towards creating a healthy workplace and atmosphere, in hopes of raising the awareness of employees so that they will manage their own health, which will indirectly improve their work performance.

Year	Abnormal blood pressure (>140/90 mmHg)	Abnormal cholesterol (>200 mg/dL)	Abnormal triglyceride (>150mg/dL)	Abnormal blood sugar (>100mg/dL)
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%
2020	27.0%	42.7%	29.9%	24.7%

### Health Promotion Activities that Encourage Healthy Lifestyles

- We continued to organize the "5th Healthy Lifestyle Challenge – Collect Reward Points by Walking, Making Exercise Fun" in 2020. Due to COVID-19, we canceled group exercise activities in the past to prevent employees from gathering together, and encouraged them to walk instead of drive. The i-health physical fitness instrument of Formosa Biomedical Technology Corporation is used regularly for measurement, and records of number of steps walked on mobile phones are used for verification. Employees received a reward if they walked the target number of steps and lost 2 kg of weight.
- A total of 1,155 employees participated in the event. Participants lost a total of 1,846 kg, on average each person lost 1.6 kg, and body fat decreased 1.0%; 201 participants received rewards for reaching the goal.





Held workplace health seminars on a variety of topics such as choosing a healthy diet, essential oil relaxation, and workplace stress relief, encouraging employees to maintain a healthy diet and lifestyle. This will improve employees' overall productivity in the workplace while improving individual health.



Topic: How to face job burnout  
Lecturer: Psychologist Cho Tsui-Ling



Topic: Workplace aroma therapy and relaxation  
Lecturer: Aroma therapist Hsieh Chuan-Yen



Topic: Eat healthy and smart  
Lecturer: Dietician Yu Shu-Ju

A pair of hands is shown from the left, cupping a heart-shaped graphic. The graphic is composed of several interlocking puzzle pieces in shades of blue, red, orange, and light green. The background is a light grey with a large, semi-transparent pink circle on the right side.

# 6

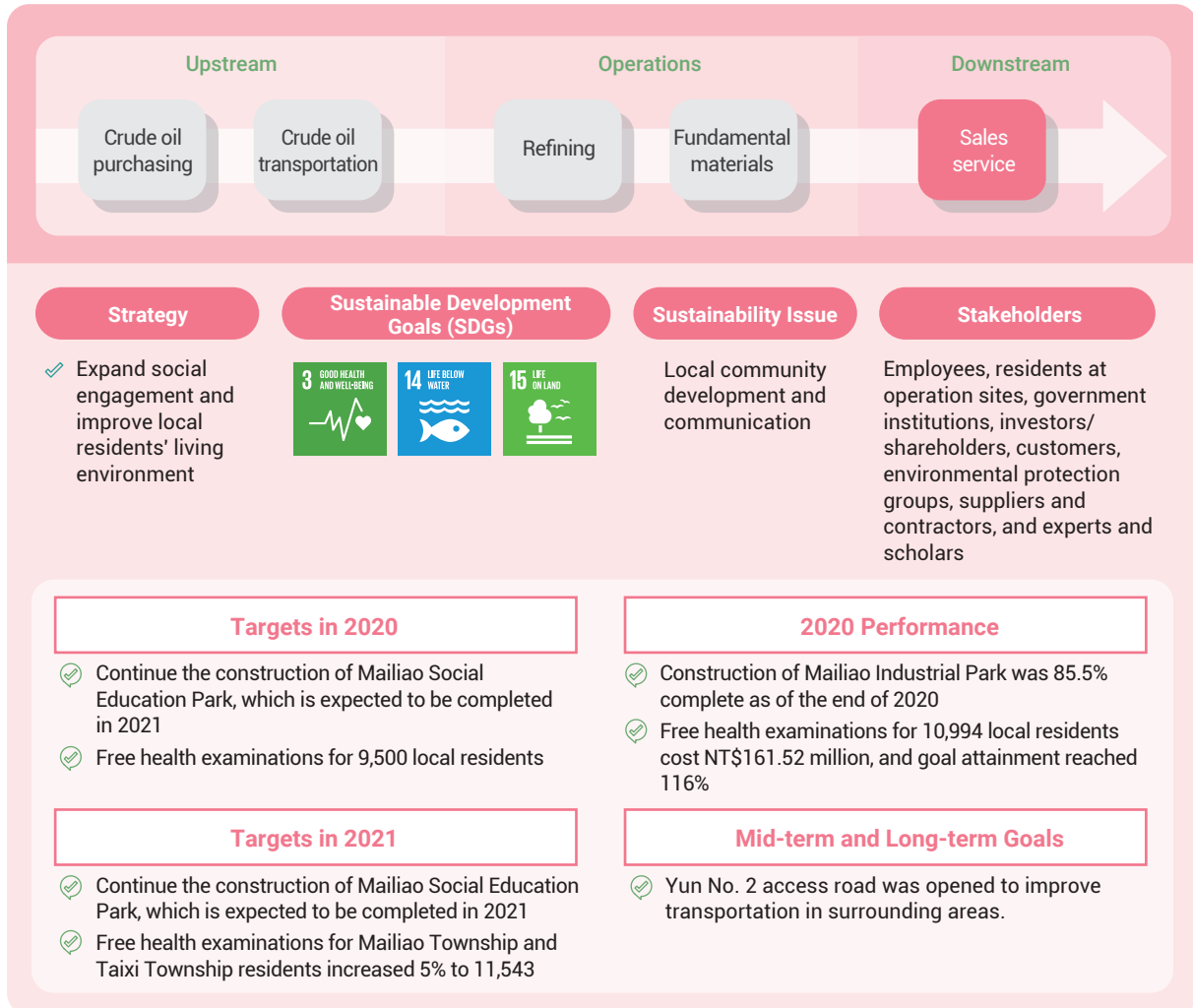
## New Value of Connecting with Communities

6.1 Local community development  
and communication

6.2 Local ecological conservation

## 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.



## 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 environment for the underprivileged			
Partnering/ Execution Unit	<ul style="list-style-type: none"> <li>Child Protection Good Neighbor</li> </ul>	<ul style="list-style-type: none"> <li>Project to End Poverty</li> </ul>	<ul style="list-style-type: none"> <li>Beyond Love concert</li> </ul>	<ul style="list-style-type: none"> <li>New station opening</li> <li>North Star Dashun Station</li> </ul>
Subjects	<ul style="list-style-type: none"> <li>Abused children</li> </ul>	<ul style="list-style-type: none"> <li>Underprivileged children</li> <li>Underprivileged families</li> </ul>	<ul style="list-style-type: none"> <li>Underprivileged children</li> </ul>	<ul style="list-style-type: none"> <li>Kaohsiung Branch, Taiwan Fund for Children and Families</li> <li>Banana farmers in Qishan, Kaohsiung</li> </ul>
Target of communication	General public and cardholders of Formosa Oil			
Content	<ul style="list-style-type: none"> <li>FPG Chinese New Year event: NT\$25 discount on single purchases of 25L or above using our co-branded card or cash, and we donate NT\$5 to the Taiwan Fund for Children and Families for each transaction</li> </ul>	<ul style="list-style-type: none"> <li>Responding to the Project to End Poverty: We invited over 30 children from the Taiwan Fund for Children and Families in Yunlin on a one-day trip to Chimei Museum and Beimen salt pans in Tainan.</li> <li>Formosa Plastics Group Baseball Enterprise Day: We invited underprivileged families receiving assistance from the Taiwan Fund for Children and Families in Taoyuan to participate in Formosa Plastics Group Baseball Enterprise Day.</li> </ul>	<ul style="list-style-type: none"> <li>Sponsoring the Beyond Love concert organized by the Taiwan Fund for Children and Families</li> </ul>	<ul style="list-style-type: none"> <li>Gave back to local communities when a new station was opened, released a puffcorn package co-branded by Kuai Kuai and Kaohsiung Bus and jointly produced with banana farmers in Qishan, Kaohsiung, and donated scholarships to children receiving assistance from the Taiwan Fund for Children and Families.</li> </ul>
Description of results	<ul style="list-style-type: none"> <li>Donated a total of NT\$2.4 million</li> <li>A total of 392 stations around Taiwan participated in the event</li> <li>82 Mech Smile stations also joined Child Protection Good Neighbor</li> </ul>	<ul style="list-style-type: none"> <li>Supported a wide range of summer events organized by the Taiwan Fund for Children and Families</li> <li>Invited underprivileged families receiving assistance from the Taiwan Fund for Children and Families to watch baseball in Taoyuan for the second consecutive year</li> </ul>	<ul style="list-style-type: none"> <li>Switched to TV broadcast due to the pandemic and completed recording</li> <li>Assisted with contacting FTV</li> </ul>	<ul style="list-style-type: none"> <li>Donated NT\$50,000 to the Kaohsiung Branch of the Taiwan Fund for Children and Families</li> <li>Assisted banana farmers in promoting the puffcorn package co-branded by Kuai Kuai and Kaohsiung Bus</li> </ul>



Event photos in 2020

## 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	<p>Provided a total of NT\$4.3 million in subsidies to 378 students in 30 elementary and junior high schools in 7 townships</p>	<p>Provided a total of NT\$6.34 million in subsidies to 2,252 individuals from medium and low income households in Taixi and Mailiao Townships; subsidy standards:</p> <ul style="list-style-type: none"> <li>NT\$5,000 for high school students and NT\$10,000 for college students from low income households</li> <li>NT\$3,000 for high school students and NT\$5,000 for college students from medium income households</li> <li>NT\$1,500 for high school students and NT\$2,500 for college students from regular income households</li> </ul>	<p>In 2020, provided a total of NT\$11.49 million to 3,830 individuals from low income households in seven townships for the three holidays; subsidy standards:</p> <ul style="list-style-type: none"> <li>Employees personally delivered NT\$3,000 and the Company's products every holiday</li> </ul>	<p>Provided a total of NT\$3.34 million in subsidies for 64 emergency aid applications from seven townships in 2020; subsidy regulations:</p> <ul style="list-style-type: none"> <li>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</li> </ul>
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	<ul style="list-style-type: none"> <li>Seven townships nearby</li> <li>Sponsored artistic and cultural performances in coordination with local temple fairs or folk events for local cultural development</li> <li>Suspended in 2020 due to the pandemic</li> </ul>	<ul style="list-style-type: none"> <li>Limited to Mailiao Township residents</li> <li>National Health Insurance and electricity subsidies of NT\$7,200 per Mailiao resident</li> <li>NT\$318.75 million in total benefited 45,046 residents in 2020.</li> </ul>	<ul style="list-style-type: none"> <li>Limited to residents of Mailiao and Taixi Township (including government agencies)</li> <li>Provided free health examinations for local residents, and actively notified them to return for follow-up when any abnormal results were found</li> <li>NT\$161.52 million in subsidies for 10,994 participants in 2020</li> </ul>	<ul style="list-style-type: none"> <li>All 20 townships in the county</li> <li>To increase the forestation area for air quality improvement, greening, and beautification, we matched government forestation subsidies</li> <li>NT\$120.37 million in 2020</li> </ul>

### 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

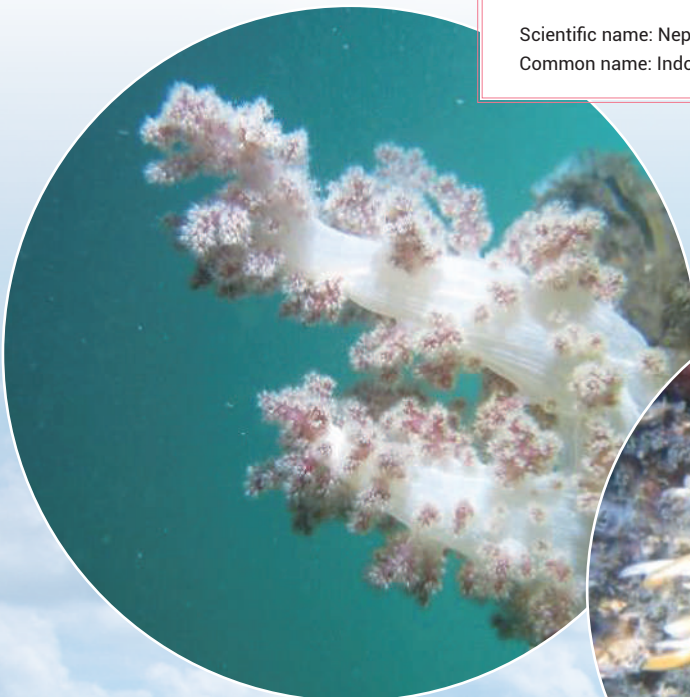
Our vision for Mailiao Port is to internalize sustainability concepts into the industry's operations, and create a paradigm for sustainable development. Mailiao Port will continue to work towards developing green operations, implement green port control measures, implement its environmental policy to 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. Obtained the certification the second time in 2020.



### 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 as of the end of 2020. The cumulative number of species has increased along with the higher frequency of surveys.



Scientific name: *Nephtheachabrolii*  
Common name: Indonesian soft coral



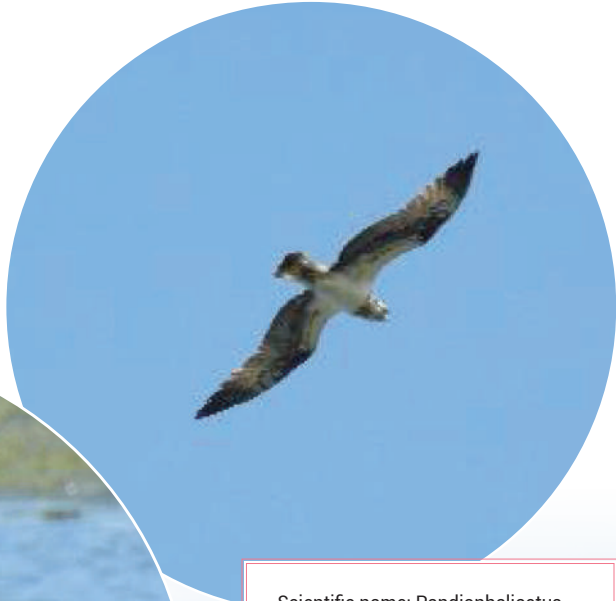
Scientific name: *Spondylus* sp.  
Common name: Spiny oysters

### 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 km<sup>2</sup>. 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: *Chlidoniashybrida*  
Common name: Whiskered tern



Scientific name: *Pandionhaliaetus*  
Common name: Western osprey



# Appendix

Appendix 1: GRI Standards

Appendix 2: Sustainability Accounting Standards Board (SASB)

Appendix 3: Independent Third Party Assurance Statement

## Appendix 1: GRI Standards

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
<b>GRI 102: General Disclosures 2016</b>				
<b>Organization Profile</b>				
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	
<b>Strategy</b>				
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	
<b>Ethics and Integrity</b>				
102-16	Values, principles, standards, and norms of behavior	■	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	

Item No.	Title	Disclosure status	Corresponding chapter	Note
Governance				
102-18	Governance structure	■	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
Communication with stakeholders				
102-40	Stakeholder Groups	■	1.2 Sustainability Issue Management	
102-41	Collective Bargaining Agreement	■	5.3 Employee Benefits and Care	
102-42	Identification and selection of stakeholders	■	1.2 Sustainability Issue Management	
102-43	Guidelines for communication with stakeholders	■	1.2 Sustainability Issue Management	
102-44	Key topics and concerns raised	■	1.2 Sustainability Issue Management	
Reporting Practice				
102-45	Entities included in the consolidated financial statements	■	Report Overview	
102-46	Defining report content and topic boundaries	■	1.2 Sustainability Issue Management	
102-47	List of material topics	■	1.2 Sustainability Issue Management	
102-48	Restatements of information	■	Report Overview	We did not restate any information in 2020
102-49	Changes in reporting	■	Report Overview 1-2 Sustainability Issue Management	
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 Appendix	
GRI 103: Management Approach 2016				
General requirements on reporting the management approach				
103-1	Explain material topics and their boundaries	■	1-2 Sustainability Issue Management	
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	

Item No.	Title	Disclosure status	Corresponding chapter	Note
201-2	Financial implications and other risks and opportunities due to climate change	■	3.2 Climate change mitigation and adaptation	
Market Presence				
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	■	5.3 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 2020
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 2018				
Energy ★				
302-1	Energy consumption within the organization	▲	3.2 Climate change mitigation and adaptation	
302-3	Energy Intensity	■		
302-4	Reduction of energy consumption	▲		
Water and Effluents ★				
103-2~103-3	Management approach	■	3.1 Environmental Protection Strategies and Policies 3.4 Water Resources, Wastewater, and Waste Management	
303-1 2018	Effects of Water Resource Sharing	■		
303-2 2018	Management of Drainage Related Impacts	■		
303-3 2018	Water withdrawal	■		
303-4 2018	Water discharge	■		
303-5 2018	Water consumption	■		



Item No.	Title	Disclosure status	Corresponding chapter	Note
Emissions ★				
103-2~103-3	Management approach	■	3.2 Climate change mitigation and adaptation	
305-1	Direct (Scope 1) GHG emissions	■		
305-2	Energy indirect (Scope 2) GHG emissions	■		
305-4	GHG emissions intensity	■		
305-5	Reduction in greenhouse gas emissions	■		
305-7	NOx, SOx, and other significant air emissions	▲	3. Air pollution management and prevention	
Effluents and waste ★				
103-2~103-3	Management approach	■	3.4 Water Resources, Wastewater, and Waste Management	
306-1	Water discharge by quality and destination	■		
306-2	Waste by type and disposal method	■		
306-3	Significant spills	■	3.4 Water Resources, Wastewater, and Waste Management	
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	
Supplier environmental assessment				
308-1	New suppliers that were screened using environmental criteria	■	2.3 Partnership maintenance	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	■	2.3 Partnership maintenance	
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	Benefits provided to full-time employees that are not provided to temporary or part-time employees	■	5.3 Employee Benefits and Care	

Item No.	Title	Disclosure status	Corresponding chapter	Note
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	
403-7	Prevention and mitigation of impact on occupational health and safety from direct business relationships	■	4.1 Creating a Labor Safety Culture 4.3 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	▲		
404-3	Percentage of employees receiving regular performance and professional development reviews	▲		
Diversity and Equal Opportunity ★				
405-1	Diversity of governance units and employees	■	2.1 Business Philosophy, Organizational Structure, and Corporate Governance 5.1 Employee Structure	

Item No.	Title	Disclosure status	Corresponding chapter	Note
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	■	2.3 Partnership maintenance	
Forced or Compulsory Labor				
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	■	2.3 Partnership maintenance	
Rights of indigenous people				
411-1	Incidents of violations involving rights of indigenous peoples	■	5.1 Employee Structure	There were no disputes in 2020
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 2020
Local communities ★				
103-2~ 103-3	Management approach	■		
413-1	Operations with local community engagement, impact assessments, and development programs	■	3.3 Air pollution management and prevention 6.1 Local community development and communication	
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	■	2.3 Partnership maintenance	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	▲		

Item No.	Title	Disclosure status	Corresponding chapter	Note
Public Policy				
415-1	Political contributions	■	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
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 2020
Customer Privacy				
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	■	2.4 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 2020
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	■	4.2.3 Finished Goods Transportation and Traffic Safety	
Self-defined material topics: Emergency response measures ★				
103-2~ 103-3	Management approach	■	4.3 Public Safety Emergency Response	

Item No.	Title	Disclosure status	Corresponding chapter	Note
Category: Emergency response measures				
Energy				
GRI-OG2	Renewable energy investment amount	■	3.1 Environmental Protection Strategies and Policies	
GRI-OG3	Total amount of renewable energy generated by green energy materials	■	3.1 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	

## Appendix 2: Sustainability Accounting Standards Board (SASB)

FPCC adopted the SASB for the first time and uses contents of the Refining & Marketing Industry under Oil & Gas, prioritizing contents that correspond to material issues in 2020.

■ Full disclosure ▲ Partial disclosure

Disclosure Topics	Disclosure indicator	2017	2018	2019	2020	Disclosure status	
Material issue: GHG management							
Greenhouse Gas Emissions	EM-RM-110a.1 Total Scope 1 emissions (Unit: Tons CO <sub>2</sub> e) as a percentage of regulatory restrictions/internal regulations	26,952,581	28,070,653	27,256,866	Disclosed in 2021	■	
	EM-RM-110a. 2 Short-, mid-, and long-term management strategies or plans for Scope 1 GHG emissions, carbon reduction goals, and performance with respect to the goals	3.2.2 GHG management					
Material issue: Air pollution prevention							
Air Quality	EM-RM-120a.1 Air pollutant emissions: (Unit product: kg/ton)	SOx	0.093	0.095	0.091	0.102	■
		NOx	0.238	0.242	0.245	0.279	
		VOCs	0.035	0.035	0.032	0.043	
	EM-RM-120a.2 Population in densely populated area or area near refinery	Total population of Mailiao Township in 2020 47,951					
Material issue: Water Resource Management							
Water Management	EM-RM-140a.1 1. Total freshwater extraction Unit: Million L	50,565	51,640	50,142	47,119	■	
	2. Percentage recycled R1=Recycling rate of plant (reuse rate) = (Total recycling water + Total reuse water) ÷ Gross water × 100%	98.68	98.69	98.66	98.74		
	3. Percentage recycled Percentage of area with high or very high baseline water stress	Results of using AWARE to assess water resource risk and impact show that the plant is not located in an area with high or very high baseline water stress. Corresponding chapter: 3.4.1 Water resource management					
	EM-RM-140a.2 Number of violations relating to water quality permit, standards, and regulations	No violations					

Disclosure Topics	Disclosure indicator	2017	2018	2019	2020	Disclosure status
Material issue: Occupational health and safety, industrial and public safety						
Workforce Health & Safety	1. Total Recordable Incident Rate (TRIR) * Remarks: Occupational injury statistics are used to calculate the disabling injury frequency rate, the formula is as follows: Frequency of disabling injuries (FR) = (Number of disabling injuries × 10 <sup>6</sup> )/Total work hours elapsed	0.49	0.19	0.56	0.19	▲
	2. Fatality rate	0	0	0	0	
	3. Near Miss Frequency Rate (NMFR) * ● Full-time employees ● Contract-based employees	This part is currently being planned				
	EM-RM-320a.2 Description of the safety culture management system	4.1 Creating a Labor Safety Culture				

## Appendix 3: Independent Third Party Assurance Statement



### INDEPENDENT ASSURANCE OPINION STATEMENT

#### 2020 Formosa Petrochemical Corporation 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 2020 Formosa Petrochemical Corporation 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 AA1000AS v3 sustainability 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 2020 Formosa Petrochemical Corporation Corporate Social Responsibility Report provides a fair view of the FPCC CSR programmes and performances during 2020. 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 2020 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 assurers in accordance with the AA1000AS v3. 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 v3 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.
- 8 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 v3 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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