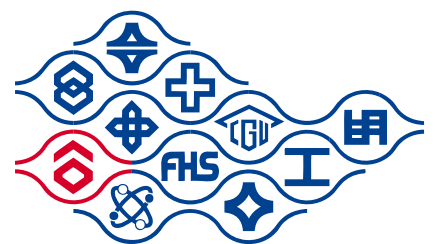




2021 Formosa Petrochemical Corporation Sustainability Report



台塑企業
FORMOSA PLASTICS GROUP

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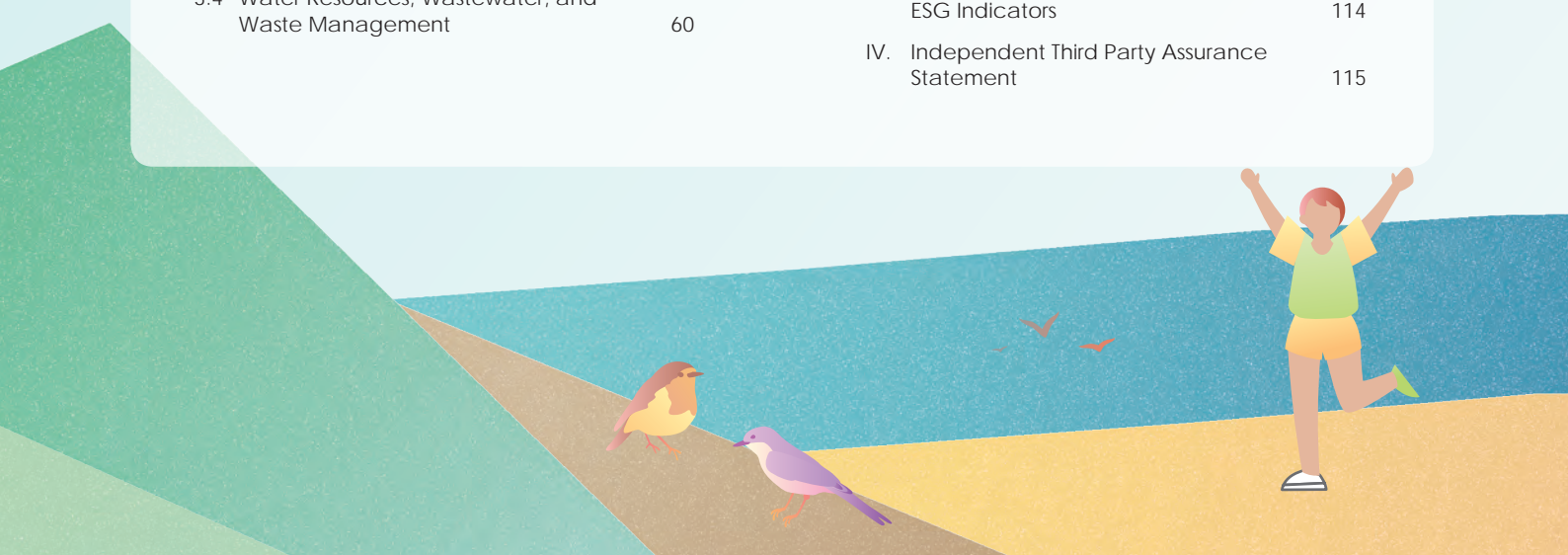
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Report Overview

This is the eighth Report published by Formosa Petrochemical Corporation (FPCC). The period involved in information disclosure herein is from January 1, 2021 to December 31, 2021. 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 ESG website.

► Overview of issuance

Issue Date of First Version: December 2015

Issue Date of Previous Version: June 2021

Issue Date of Current Version: May 2022

Issue Date of Next Version: May 2023

► 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 revenue of 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 economic, 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 Sustainable Development Task Force of FPCC to comply with the integrity and transparency disclosure principles for this report.

► Editing Principles

This report adopts the Universal Standards 2021 announced by the GRI in 2021 as the main disclosure framework, and referenced the Oil and Gas Sector Disclosures GRI G11 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 was prepared in accordance with the Corporate Social Responsibility Best Practice Principles for TWSE/GTSM Listed Companies of Taiwan, ESG Information Disclosure and Reporting, and Reporting of Applications to Correct ESG Information Disclosures, and the Integrated Reporting (IR) framework is used as the basis for report information disclosures and material issue considerations. This report adopts the Task Force on Climate-related Financial Disclosures (TCFD) and SASB (Sustainability Accounting Standards Board).



▶ 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 Appendix 4 for the BSI independent assurance statement. Projections will be specified in each section.

▶ Sustainability Report Management Method

The Sustainable Development Task Force of FPCC reviews and verifies if data complies with the integrity and transparency disclosure principles of this report, which is verified by a third party to ensure the contents are reasonable and true. The report is submitted to the Board of Directors every May for approval.

▶ Contact information

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

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Message from the Chairperson

Due to the impact of the pandemic and extreme weather events in recent years, all sectors have become highly concerned about sustainable development issues. ESG is not only a global trend, but also viewed as an opportunity for enhancing competitiveness and increasing profits. FPCC has dedicated its efforts to meeting international standards, and is actively integrating its sustainable development strategy with its core business. In recent years, we have focused on industry transformation, green investments, improving labor safety, talent cultivation, and building relationships with communities, and continue to expand the market through this sustainability value model.

■ Carbon neutrality starting a new era of green investments

Carbon neutrality has brought long-term structural changes to investments, and low carbon production capacity and circular economy recycling ability will inevitably become corporate values. As the United States and China have both made commitments in response to climate change, FPCC actively responded to Climate Action 100+ in recent years by taking action to achieve the goals proposed in response to climate change, including strengthening climate change governance, GHG emissions of value chain, and adopting the TCFD. FPCC will further publish its 2021 TCFD report this year. With the goal to achieve carbon neutrality by 2050, FPCC's first step in its blueprint is to "explore new low-carbon business models." As the industry's pioneer, we have implemented automation and big data technologies. Besides creating a green environment through AI technology and implementing air pollution improvement and carbon reduction measures, we formulated strategies to apply AI in three aspects, namely production, sales and R&D, to develop Mailliao Plant into a smart factory. We are also actively implementing energy transition by increasing gas consumption and reducing coal consumption, developing low-carbon processes, and searching for green energy investment opportunities, following the Ministry of Economic Affairs' approach of "first low carbon, then zero carbon." We are also developing wind power and solar power in coordination with the development of the group's green energy business, playing a key role in the supply chain of Taiwan's green energy industry.

■ Deepening the culture of labor safety and implementing responsible care

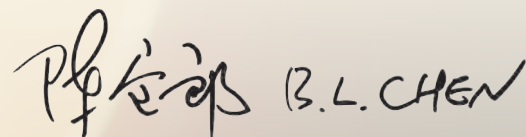
As an important member of the global refining and petrochemical industry, FPCC is committed to providing employees with a safe and healthy workplace environment. Besides strengthening the accountability of all employees in operational safety, we are implementing management, hazard prevention, and risk management, creating a culture of safety and health through solid education and training and emergency response activities. We are also implementing a responsible care system, and continue to make improvements to achieve the goal of zero accidents. We also require suppliers to take labor safety seriously and create a safer work environment.

■ People-oriented and deeply rooted in local communities

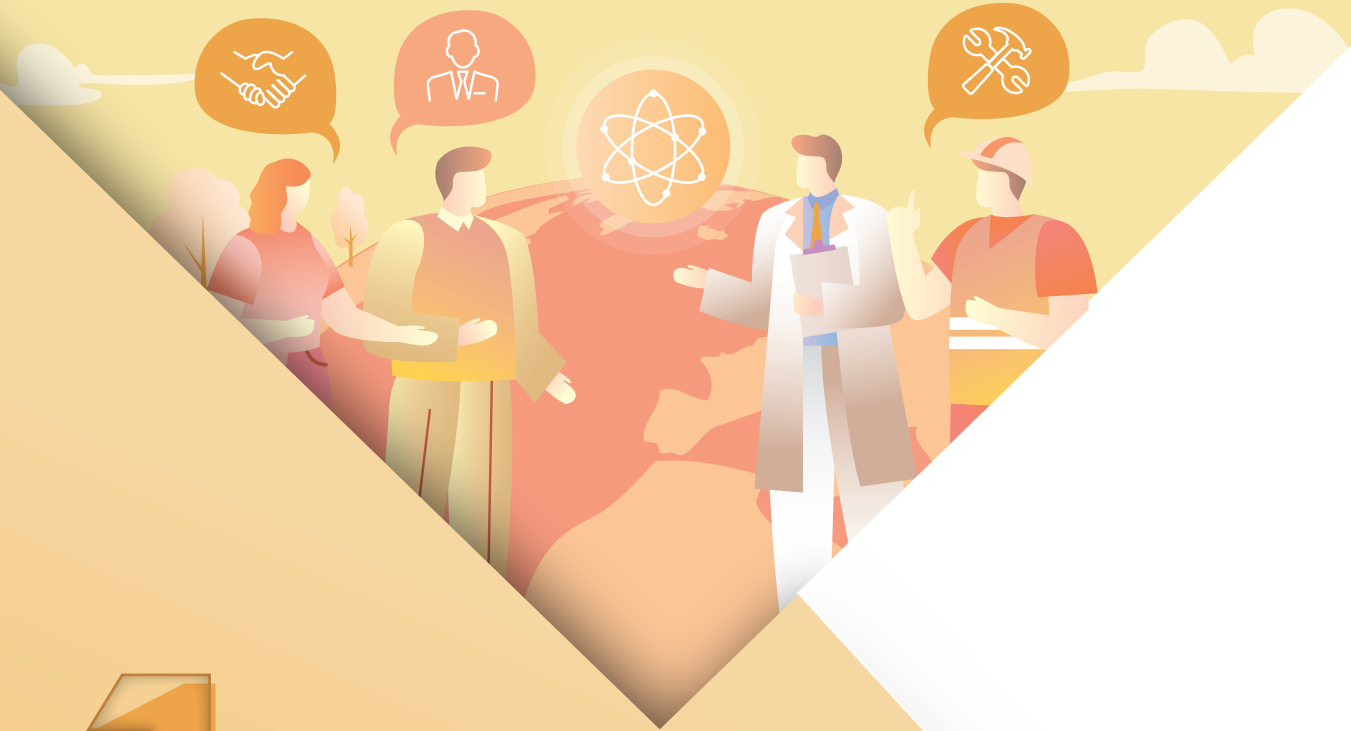
Despite the challenges we face, we still show how much we value employees, and provide a complete career development path along with training to fully develop employees' potential, so that they can grow together with the Company. On the path to sustainable development, FPCC focuses on social projects that utilize its integration ability and influence. Starting in 2019, we began working with the Taiwan Fund for Children and Families in the protection of children, and called on our business partners and nearly 500 franchise gas stations to provide abused children with temporary shelter, as well as participate in the Project to End Poverty. The project eliminates any constraints on the education and learning of children, and encourages children to use their gifts and bravely pursue their dreams, bringing more warmth and happiness into society. The reforestation project we implemented for environmental protection has planted tens of thousands of native trees in Taiwan, and periodically organizes beach and river cleanup activities to contribute to Taiwan and the Earth.

Looking towards the future, we are fully aware that understanding the low carbon economy is the only way to gain a foothold in new industries, but the integration of internal and external resources and cooperation between different sectors is still necessary to face the challenges of technology, resources, and funding on the path to carbon neutrality. We continued to learn and bravely face the challenges of ESG as the world was forced to transform during the pandemic, and hope to maximize our influence to jointly achieve sustainability with our value chain, so as to create a better future for the next generation.

Formosa Petrochemical Corporation
Chairman

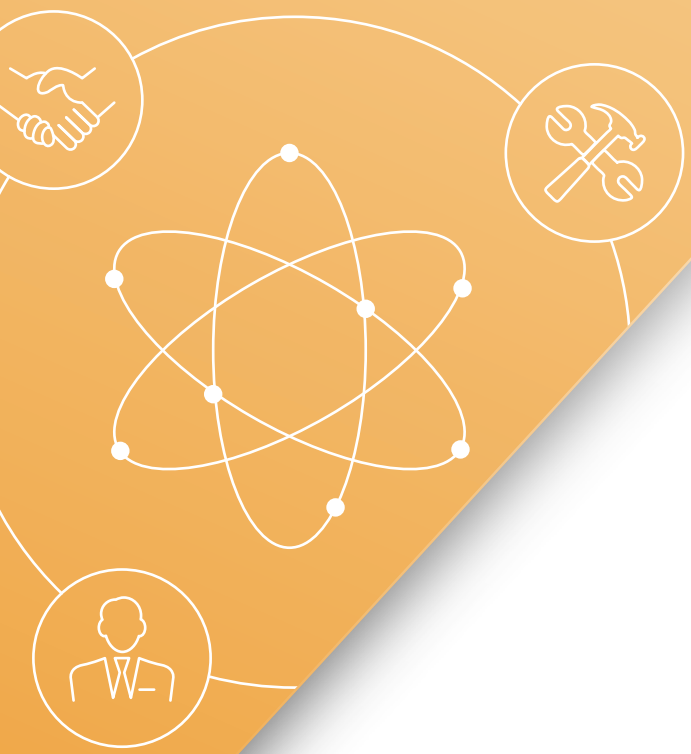
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Sincerely
2022



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Sustainability Plan



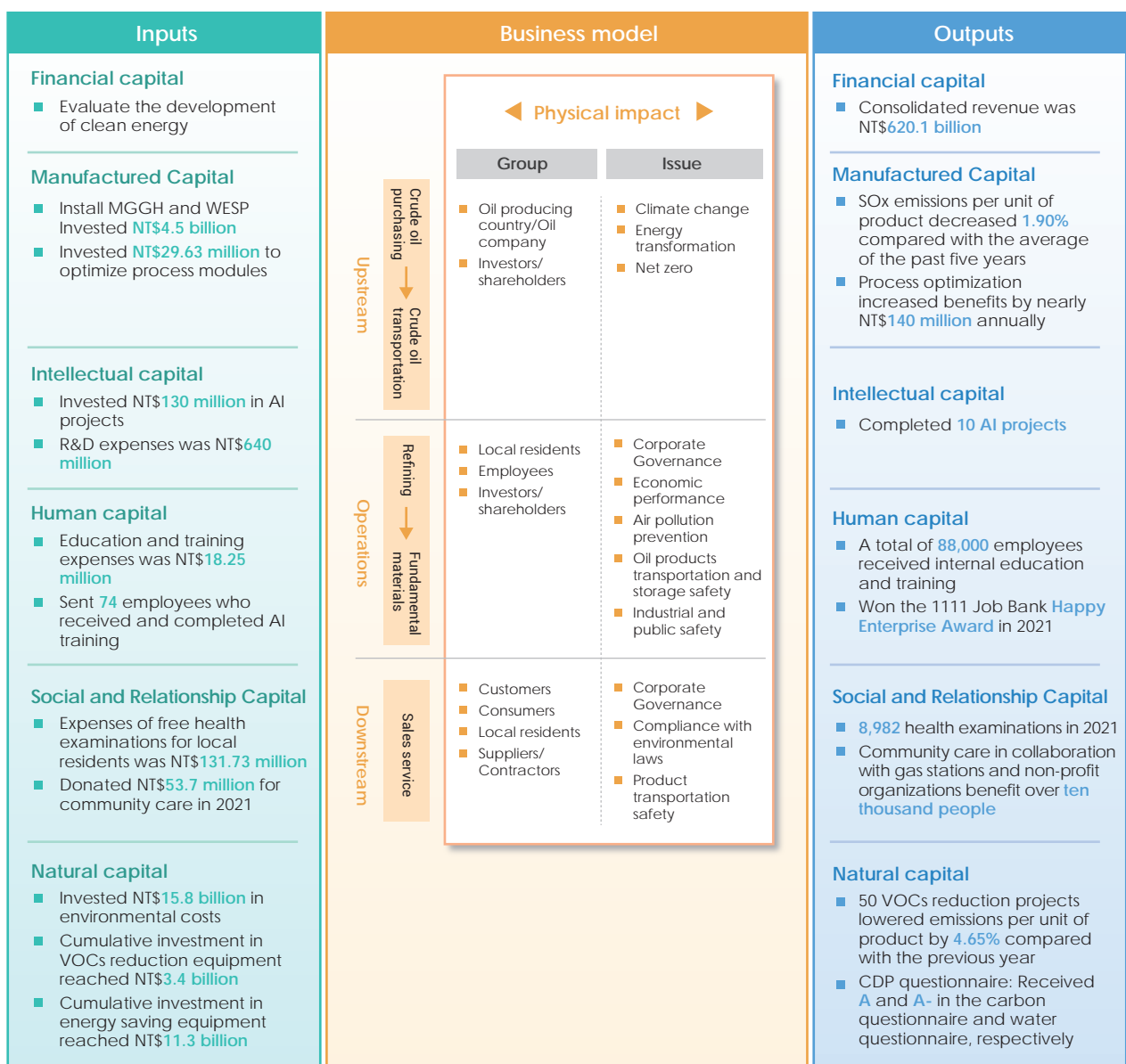
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1-1 Sustainable development strategy

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 and 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	Meaning to FPCC	Responsible Department	Communication channel and frequency	Main Points of Communication	Response and Engagement
 Employees	Employees are the key to maintaining our core competitiveness, and also our partner in sustainable growth. Employee engagement is enhanced through sound educational training and a friendly working environment.	President's Office	<ul style="list-style-type: none"> Employee-employer coordination meetings (Once/2 months) Welfare Committee (Once/2 months) Opinion box/email (Any time) Release letter (As needed) 	<ul style="list-style-type: none"> Employee profile and benefits Occupational health and safety 	<ul style="list-style-type: none"> 97% completion of proposals at employer-employee meetings 97% completion of Welfare Committee proposals Abnormal results in grade 4 special health examinations decreased to 0.28%
 Investors/ shareholders	Investors and shareholders are important roles that support FPCC's sustainable development. As an enterprise that has attracted great attention, we have upheld the principles of ethical corporate management as our core philosophy.	President's Office	<ul style="list-style-type: none"> Shareholders' meeting (Once) Investor conference (4 times/year) Email/phone number (Whenever they occur) 	<ul style="list-style-type: none"> Corporate Governance Risk and Crisis Management Economic performance Green investment and innovative transformation (NEW) 	<ul style="list-style-type: none"> Entered the Top 5% in the Corporate Governance Evaluation for the first time Rated at the "leadership level" by the CDP, received an A- rating in the climate change questionnaire, and received an A rating in the water questionnaire

Stakeholders	Meaning to FPCC	Responsible Department	Communication channel and frequency	Main Points of Communication	Response and Engagement
 Residents at the operation site	Maintaining good interactions with residents at operation sites is a key point of FPCC's operations. When formulating annual strategies and goals, this is a factor considered in evaluations for operations planning, so as to realize the vision of becoming like family to residents at plants.	Regional Management Department	<ul style="list-style-type: none"> Email/phone number (Whenever they occur) 	<ul style="list-style-type: none"> Air pollution prevention 	<ul style="list-style-type: none"> There were 0 complaints by nearby residents of odor
 Customers	To provide customers with high value products, we are devoted to becoming a trustworthy business partner of our customers that grows together with them	Operation units under each business department	<ul style="list-style-type: none"> Satisfaction survey (1 times/year) Email/phone number (Whenever they occur) Meeting (Once a month) 	<ul style="list-style-type: none"> Customer service satisfaction 	<ul style="list-style-type: none"> Indicators with performance higher than "Satisfied" in the satisfaction survey
 Government agencies	Apart from abiding by applicable laws and regulations, FPCC also engages in two-way communication with the government, and provides its own industry experience to jointly promote sustainable industrial development.	President's Office	<ul style="list-style-type: none"> Meeting (at least 4 times/year) Email/official letter (As needed) 	<ul style="list-style-type: none"> Industrial and public safety Emergency response measures 	<ul style="list-style-type: none"> 0 deaths from major occupational disasters 202 emergency response operations were executed
 Suppliers and Contractors	Suppliers and contractors provide high quality products and services, and mutual trust strengthens FPCC's relationship with its supply chain	Safety and Health Management Office of each business department	<ul style="list-style-type: none"> Meeting (As needed) Contractor audit (As needed) Email/phone number (Whenever they occur) 	<ul style="list-style-type: none"> Industrial and public safety 	<ul style="list-style-type: none"> 618 Supplier educational training sessions
 Environmental Protection Organizations	Due to industry characteristics, FPCC takes environmental protection issues very seriously. We exchange opinions with environmental protection groups and jointly work towards environmental sustainability	President's Office	<ul style="list-style-type: none"> Email/phone number (Whenever they occur) Meeting (once/quarter) 	<ul style="list-style-type: none"> Climate change strategy GHG management Air pollution prevention 	<ul style="list-style-type: none"> Energy conservation measures reduced carbon emission by 210,000 tons CO₂e
 Experts and scholars	We value the advice provided on the sustainability issue in academic theories and put the theories into practice to enhance the competitive advantages of industries in Taiwan as a whole.	President's Office	<ul style="list-style-type: none"> Email (Whenever they occur) Meeting (once/quarter) 	<ul style="list-style-type: none"> Climate change strategy GHG management 	<ul style="list-style-type: none"> In coordination with the Company's carbon reduction goal to reduce carbon emissions in 2025 and 2030 by 20% and 35% compared with the baseline year (2007), respectively.

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.



Double materiality analysis results

FPCC assesses the materiality of sustainability issues through financial and impact materiality, conducting double materiality analysis. Besides responding to international trends, we hope to identify material sustainability issues through more aspects. We understand the level of concern that stakeholders have for FPCC's sustainability issue through an inside out approach. We discuss the financial impact of material issues on FPCC's operations through an inside out approach. Strengthen the resilience of FPCC in sustainability issues.



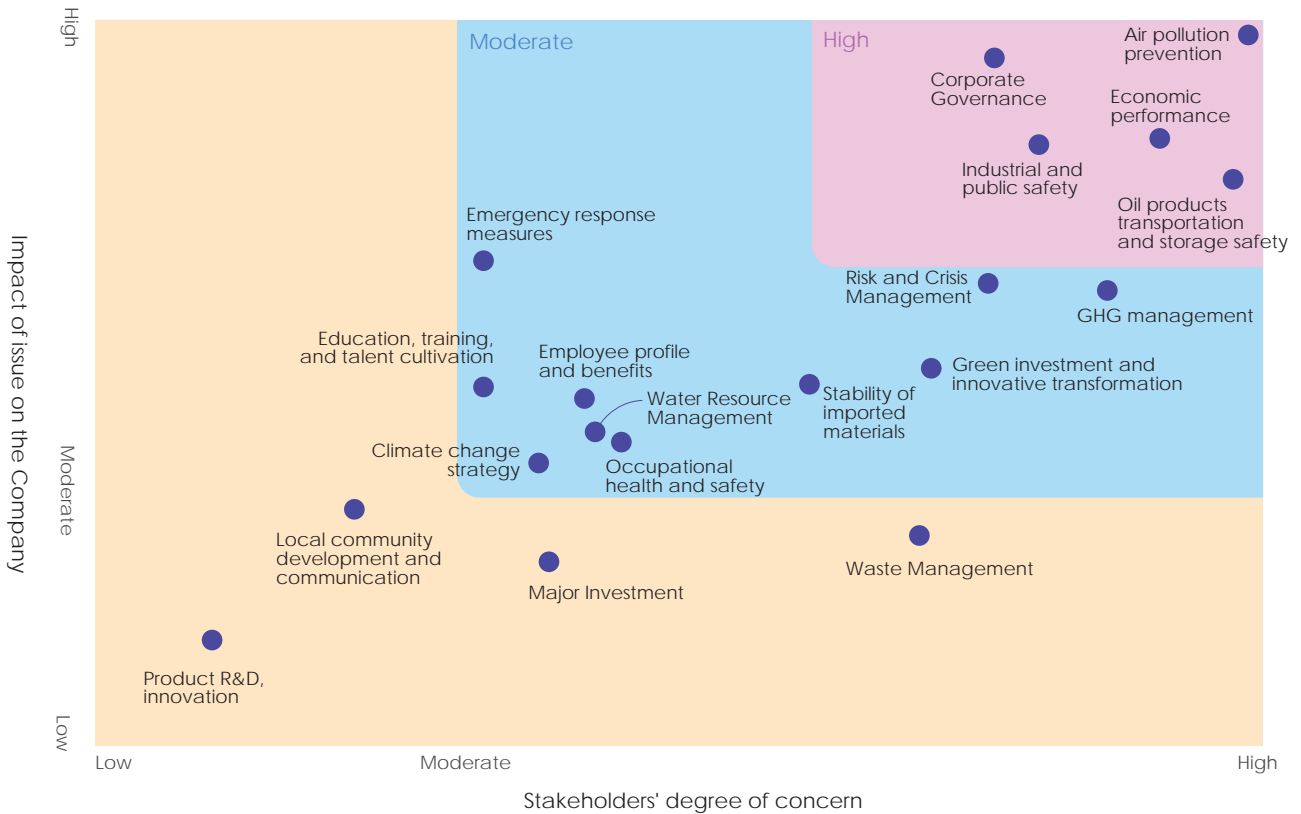
Impacts: ■ Direct / ▲ Indirect

Facets of issues	Material Sustainability Issue	GRI 11 (2021)	Boundaries of impact on value chain			Financial impact			Likelihood		
			Upstream	Operations	Downstream	high	Medium	Low	high	Medium	Low
Economic	Economic performance	Industry issue	■	■	■	✓				✓	
	Corporate Governance	Industry issue		■	▲			✓		✓	
	Risk and Crisis Management	Industry issue	■	■	■	✓			✓		
	Stability of imported materials	Industry issue	■	■	▲	✓				✓	
	Green investment and innovative transformation	Industry issue		■		✓				✓	
Environmental	Climate change strategy	GRI 11.2 Climate adaptation, resilience, and transformation		■	▲		✓			✓	
	GHG management	GRI 11.1 Greenhouse gas emissions		■	▲	✓				✓	
	Air pollution prevention	GRI 11.3 Air pollutant emissions		■	▲			✓	✓		
	Water Resource Management	GRI 11.6 Water and effluents		■	▲	✓				✓	
	Oil products transportation and storage safety	GRI 11.8 Asset and emergency event management	■	■	▲				✓		✓
Social	Employee profile and benefits	GRI 11.10 Employment practices		■				✓			✓
	Education, training, and talent cultivation			■				✓			✓
	Occupational health and safety	GRI 11.9 Employee Health & Safety		■	▲			✓			✓
	Emergency response measures	GRI 11.8 Asset and emergency event management		■				✓			✓
	Industrial and public safety	GRI 11.9 Employee Health & Safety		■		✓				✓	

Note 1: Definition of financial impact: "High" is an impact of over NT\$800 million on the organization/company; "Medium" is an impact of over NT\$400 million but under NT\$800 million on the organization/company; "Low" is an impact of under NT\$400 million on the organization/company
 Note 2: Definition of probability: "High" is a probability > 80% that it will occur in the organization/company; "Medium" is a probability > 50% that it will occur in the organization/company; "Low" is a probability < 50% that it will occur in the organization/company

Materiality Analysis Matrix

FPCC identified 30 sustainability issues that stakeholders were concerned about. After discussions between each unit and the FPCC Sustainable Development Task Force, 15 material sustainability issues with moderate and high levels of impact were used as the foundation for preparing this report, and their management method and performance results are disclosed in this report.



Explanation of the list of changes to sustainability issues

Sustainability Issue	Impact on FPCC	Issue changes compared to 2021
Occupational health and safety	An excellent safety culture is indispensable to maintaining stable production, and it is the obligation and responsibility of FPCC to protect the health and safety of employees.	High concern issue - Moderate concern issue The level of concern among stakeholders declined. Hence, it was lowered from high to moderate and FPCC will continue to monitor the impact of this issue.
Local community development and communication	Maintaining good interactions with local communities is a key point of FPCC's operations. When formulating 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.	Moderate concern issue - Low concern issue The level of concern among stakeholders declined. Hence, it was lowered from moderate to low and FPCC will continue to monitor the impact of this issue.
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.	Low concern issue - Moderate concern issue Stakeholders have been taking the impact of climate change very seriously in recent years, so the level of concern for related issues is higher compared with previous years.

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

FPCC continues to observe trends in global risks to achieve sustainable development. 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 supervision and review and risk information communication and reporting.



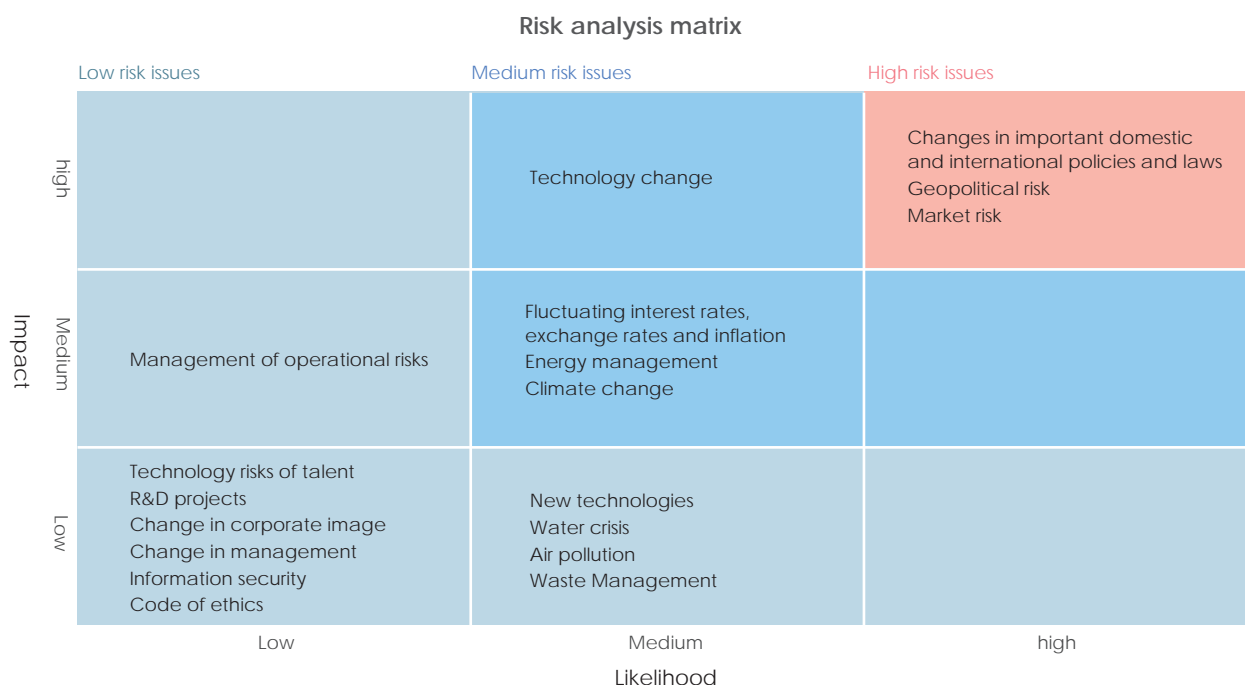
Risk identification

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 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"> In response to the risk of purchase concentration, we utilize refining technologies and processes that allow flexible feed, and sign long-term contracts with foreign suppliers to disperse risk. With regard to sales 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.
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.


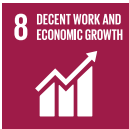






Risk information communication and reporting

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 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.

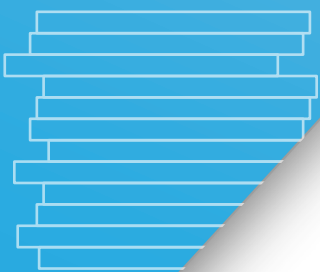
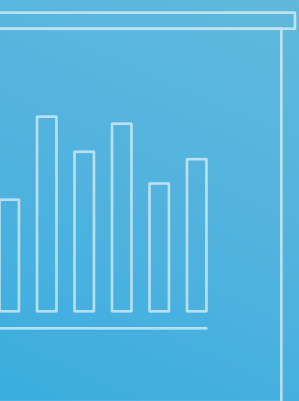


Sustainable Development Goals (SDGs)		Material Sustainability Issue	Sustainability Measures of FPCC in 2021	FPCC's long-term vision
Goal	Targets			
Tier 1 Core-linked goals				
	7.3 Double global energy efficiency	<ul style="list-style-type: none"> Climate change strategy Green investment and innovative transformation 	<ul style="list-style-type: none"> 2,282 improvement cases in total Cumulative investment amount of NT\$8.65 billion 	<ul style="list-style-type: none"> Expand the provision of sustainable energy worldwide through the improvement of energy efficiency
	8.2 Increase production capacity through diversification, technology upgrade, and innovation	<ul style="list-style-type: none"> Economic performance Risk and Crisis Management Corporate Governance 	<ul style="list-style-type: none"> Entered the Top 5% in the Corporate Governance Evaluation for the first time Planned the installation of 6 wind turbines with total installed capacity of 25.2 MW outside the Mailiao Plant 	<ul style="list-style-type: none"> Optimize the production and sales process, improve the efficiency of energy, use, and reduce harm to the environment Promote local employment development, improve work environment safety, and lead the industry towards higher added value
	12.2 Achieve the sustainable management and efficient use of natural resources	<ul style="list-style-type: none"> Climate change strategy Green investment and innovative transformation 	<ul style="list-style-type: none"> Used RDF to replace coal and reduced GHG emissions by approximately 4,290 tons CO₂e 	<ul style="list-style-type: none"> Engage in low carbon transformation and evaluate investments in renewable energy generation facilities
Tier 2 Middle layer linked goals				
	3.4 Reduce non-communicable diseases through prevention and treatment and promote mental health and wellbeing	<ul style="list-style-type: none"> Employee profile and benefits Occupational health and safety 	<ul style="list-style-type: none"> Abnormal results in grade 4 special health examinations decreased to 0.28% 	<ul style="list-style-type: none"> Used the electronic evaluation system and health examination data management software to manage and track cases
	6.3 Improve water quality, reduce pollution, and reduce the release of toxic chemical substances and hazardous materials	<ul style="list-style-type: none"> Climate change strategy Water Resource Management 	<ul style="list-style-type: none"> Received an A in the 2021 CDP water questionnaire Rain water storage rate reached 87.2% 	<ul style="list-style-type: none"> Increase water usage and properly carry out wastewater treatment to protect water ecological systems
	13.3 Mitigation and adaptation of climate change, and improve human and institutional capabilities through education	<ul style="list-style-type: none"> Climate change strategy GHG management Green investment and innovative transformation Air pollution prevention 	<ul style="list-style-type: none"> Became a TCFD supporter 	<ul style="list-style-type: none"> Reduce the impact on climate change through the control and reduction of GHG emissions, and implement energy conservation and carbon reduction measures in coordination with the Greenhouse Gas Reduction and Management Act
Tier 3 Outer layer linked goals				
	14.2 Implement sustainable management and protection of marine and coastal ecology	<ul style="list-style-type: none"> Water Resource Management 	<ul style="list-style-type: none"> Released a total of 3.208 million fish fry in nearby sea areas 	<ul style="list-style-type: none"> Reduce the impact of land waste on the ocean to protect marine ecology
	15.4 Implement protection of mountain ecosystems	<ul style="list-style-type: none"> The SDG is not linked to any material issue this year and will continue to be tracked by FPCC 		<ul style="list-style-type: none"> Reduce actions that damage natural habitats to protect ecological resources and species on land



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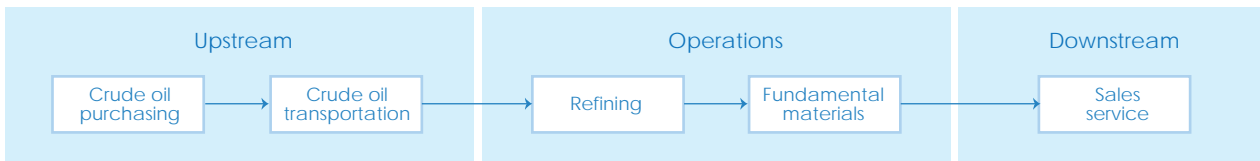
Driving New Industrial Developments



2.1	Business Philosophy, Organizational Structure, and Corporate Governance	20
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2.4	Partnership maintenance	35

Chapter Summary

In order to become aligned with the international trend of net zero emissions, we started by optimizing our processes and implementing circular economy, promoting sustainable development through three aspects "green factory, green energy, and green innovation." In terms of corporate governance, we referenced Corporate Governance Blueprint 3.0 of the FSC and global trends, and actively disclose information in accordance with international standards, while strengthening Board competencies, risk management, and information transparency. FPCC was ranked in the top 5% in the 7th Corporate Governance Evaluation, which shows our determination to strengthen our governance and meet international standards.



Strategy

- Steady operation – Improve corporate governance, increase information transparency, and protect the rights and interests of shareholders
- Sustainable development – Continued business expansion, develop green factories, green energy, and green innovation
- Strong partnerships – Strict supply chain management and customer relations for joint growth

Sustainable Development Goals (SDGs)



Sustainability Issue

Corporate governance, economic performance, green investment, transformation and innovation, and stability of imported raw materials

Stakeholders

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



● 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 improve the immediacy and consistency of disclosures in Chinese and English, and increase the Company's transparency in communication.
- Participated in at least 4 investor seminars, at least once each quarter
- We fulfilled our obligation of information disclosure and were not fined for any violation of this obligation

● 2021 Performance

- Held 7 Board of Directors meetings with an average attendance rate of 94%.
- Completed the second performance evaluation with a 100% questionnaire response rate, and reported it to the Board of Directors.
- Entered the Top 5% for the first time in the 7th Corporate Governance Evaluation.
- All 52 audit plans approved by the Board of Directors were completed, and all deficiencies found were improved.
- Completed an assessment of the effectiveness of the internal control system, verified the effectiveness of internal controls and issued a statement.
- Material information is announced in Chinese and English at the same time to prevent any gap in information.
- We were not fined for any violations of our reporting obligation in 2021
- As of the end of 2021, a total of 4 investor conferences were held in March, May, August, and November



Corporate Governance

● Targets in 2022

- Held at least 6 Board of Directors meetings with an average attendance rate of at least 80%.
- The Board performance evaluation questionnaire response rate reaches 90% and above
- Top 20% in the Corporate Governance Review
- Completed the internal audit plan approved by the Board of Directors, and effectively improved 100% of deficiencies
- Evaluate the effectiveness of the internal control system.
- Continue to improve the immediacy and consistency of disclosures in Chinese and English, and increase the Company's transparency in communication.
- Participated in at least 4 investor seminars, at least once each quarter
- We fulfilled our obligation of information disclosure and were not fined for any violation of this obligation
- Evaluate the establishment of other functional committees to enhance Board functions
- Strengthen the Board supervision mechanisms for climate-related risks and opportunities.

● Mid-term and Long-term Goals

Ensure corporate governance operations strictly comply with regulatory requirements, the Company's material information is immediately and transparently disclosed according to regulatory requirements, and plan responses in advance based on the FSC's Corporate Governance Blueprint 3.0, in order to achieve the goal of steady operation.



Economic performance, green investment, transformation and innovation

● Targets in 2021

- Continue to implement the UVC LED air disinfection system investment and R&D project
- Develop clean energy
- Promote AI carbon reduction applications, circular economy, and low carbon transformation of processes

● 2021 Performance

- The joint venture NKFG Corporation collaborated with Global Mall in implementing the UVC LED air disinfection system to build the first disinfected shopping center.
- Planned the installation of 6 wind turbines outside the Mailiao Plant, submitted an application for an environmental impact assessment, and also planned the installation of solar power generation facilities
- Completed 10 AI energy conservation projects, 160 energy conservation improvement projects, and process waste gas recycling and reuse, reducing carbon emissions by 525,000 tons CO₂e/year

● Targets in 2022

- Promote smart factories and the low carbon transformation of processes
- Continue to develop clean energy
- Evaluate the development of green low-carbon products
- Improve the energy conservation and waste reduction performance of offices and processes

● Mid-term and Long-term Goals

To achieve sustainable development, besides ensuring the competitiveness of the Company's current products and further developing eco-friendly green products, we are also searching for new investment and development opportunities



Supply chain management (Stability of imported materials)

● Targets in 2021

- Supplier CSR commitment/questionnaire response rate both reached 70%
- e-Invoice use reached 80%
- Electronic operations for concentrated delivery by suppliers reached 80%
- Indicators that reached "Satisfied" in the customer satisfaction survey

● 2021 Performance

- Supplier CSR commitment/questionnaire response rate reached 81% and 78% in 2021, respectively
- e-Invoice issuance reached 91.48%
- Electronic operations for concentrated delivery by suppliers reached 96.89%
- Indicators with performance higher than "Satisfied" in the customer satisfaction survey

● Targets in 2022

- Supplier CSR commitment/questionnaire response rate both reached 80%
- e-Invoice use reached 90%
- Electronic operations for concentrated delivery by suppliers reached 90%
- Indicators that reached "Satisfied" in the customer satisfaction survey

● Mid-term and Long-term Goals

Work closely with supply chain partners to build a sustainable supply chain while maintaining quality and lower risk

2.1 Business Philosophy, Organizational Structure, and Corporate Governance

Management approach (MA)

Self-defined Material Sustainability Issue

- **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.

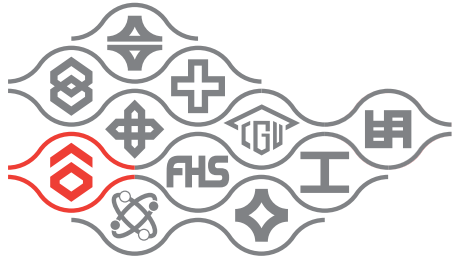
Organizational Structure, Ethical Corporate Management

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 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 Mailliao Industrial Park.

Company Name	Formosa Petrochemical Corporation
Date of Establishment	April 6, 1992
Listing Date	December 26, 2003
Capital	NT\$95,259,596,520
Number of employees in 2021	5,274 people
2021 Consolidated Revenue	NT\$620,062,330,000
Location of operations	Headquarters: No. 1-1, Taisu Industrial Park, Mailliao 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

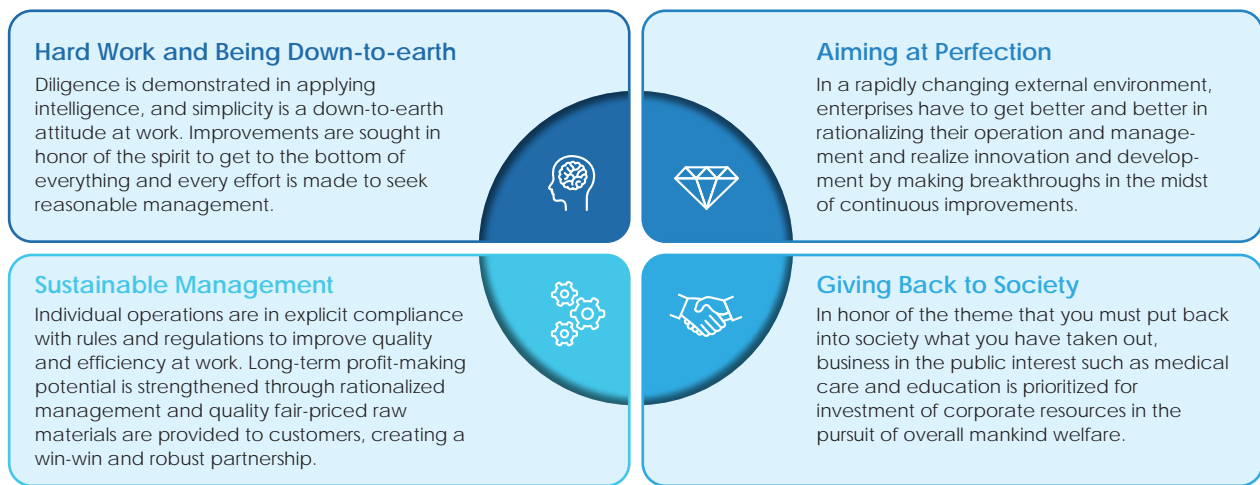
Note: As of December 31, 2021



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

Business Philosophy

The Formosa Plastics Group has now developed into a comprehensive industrial group, and is active in a variety of fields. The 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.



Governance Structure and Sustainable Governance Organization

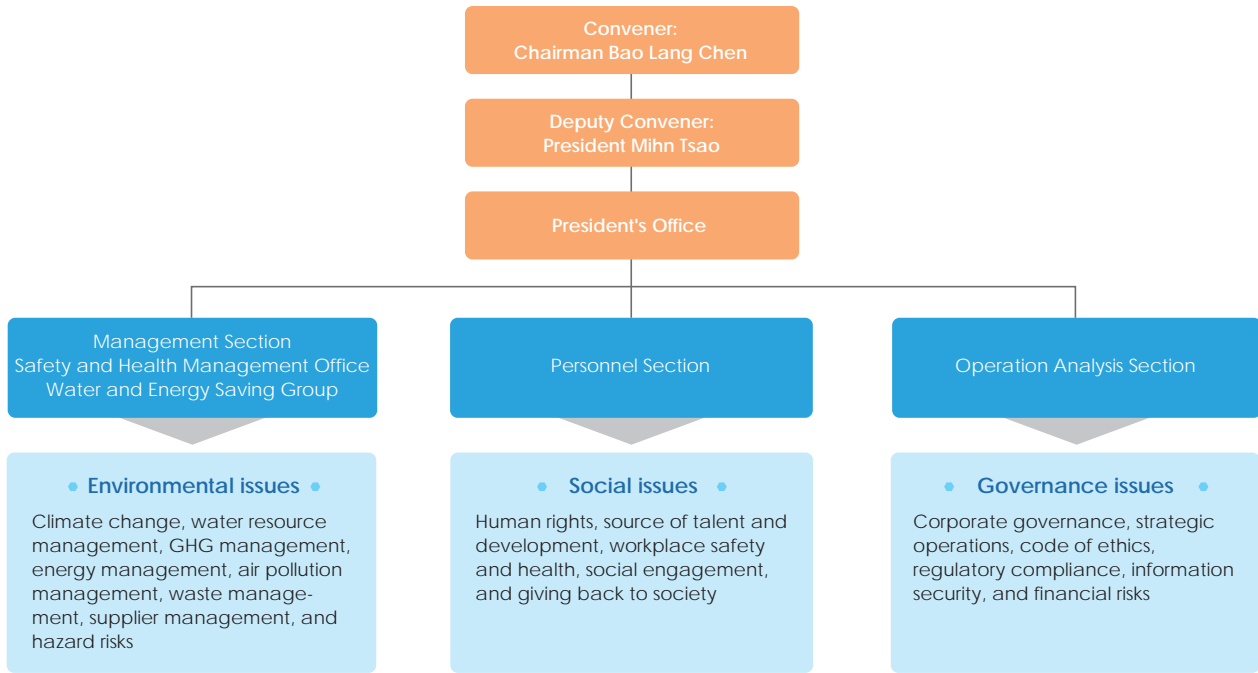
The Board of Directors is the highest level governance unit of FPCC, and Bao-Lang Chen serves as the chairman. To ensure clear responsibilities in the organizational structure and the independence of company operations, the chairman does not hold any managerial positions. For the Company's organizational structure, please visit the company website (<http://www.fpcc.com.tw/tw/about/organization>). The Board of Directors passed the Corporate Social Responsibility Code of Practice in 2020 to set forth the CSR policy, system, management approach, and communicate and disclose information to stakeholders. Please refer to the company website

• Role of Formosa Petrochemical Corporation's Board of Directors •



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

Organizational chart of the FPCC Sustainable Development Task Force



Board of Directors, Audit Committee, Compensation Committee

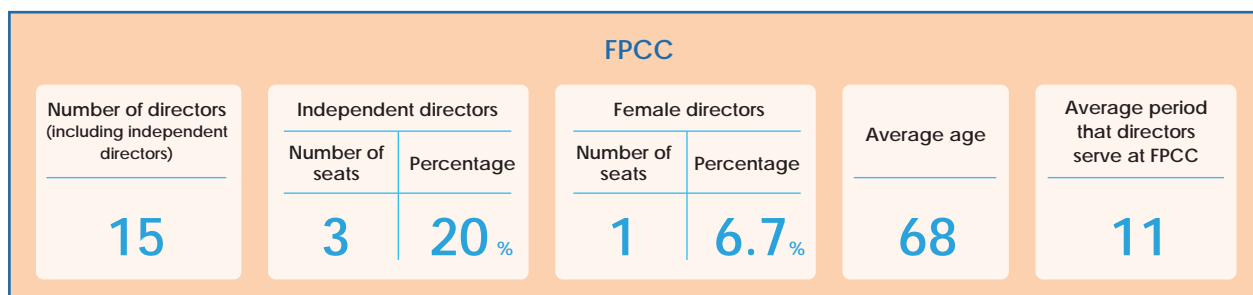
Overview of the Board of Directors



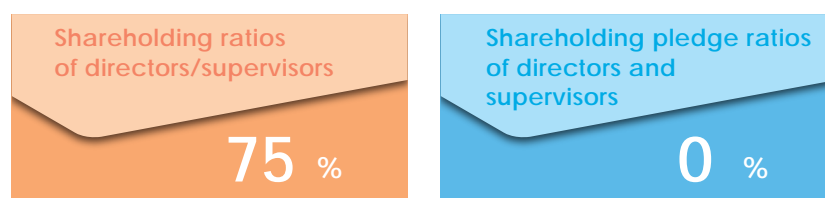
FPCC directors are elected to three-year terms via the candidate nomination system. The Corporate Governance Best Practice Principles was established to ensure the Board of Directors diversity policy is implemented and that directors have the knowledge, skills, competencies, and conflicts of interest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

The Board of Directors currently has 15 members with an average age of 68 years old. Directors on average serve about 11 years at FPCC, in which 6.7% of directors are female, providing the most suitable strategies and guidance for the Company's development. To improve the professional competencies and legal literacy, FPCC arranges courses for directors to gain new knowledge each year. For details on the academic background and experience of directors, their professional knowledge and independence, continuing education, and shareholding, please refer to our website (<http://www.fpcc.com.tw/tw/corporate/board-of-directors>) and the annual report disclosed at shareholders' meetings.

The Board of Directors, in principle, meets at least once a quarter. A total of 7 board meetings were held in 2021 with an attendance rate of 94%. The Board of Directors established the "Board of Directors Performance Evaluation Guidelines" in 2020. Annual performance evaluations are conducted for the Board of Directors and functional committees. Performance results of the overall Board of Directors and individual directors were excellent, and were submitted to the Board of Directors on December 9, 2021.



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 the former is thus trustworthy for the latter. The shareholding structure is disclosed on the company website.



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 4 times in 2021 with an actual attendance rate of 92%. Details are disclosed on the company website.

Title	Name	2018		2019		2020		2021	
		Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate
Convener	C.P. Chang	6	100%	5	100%	5	100%	4	100%
Committee Members	Sush-Der Lee	4	100%	5	100%	5	100%	3	75%
Committee Members	Yu Cheng	6	100%	5	100%	5	100%	4	100%
Committee Members	Chi-Tang Lo	2	100%	-	-	-	-	-	-
Total		18	100%	15	100%	15	100%	11	92%

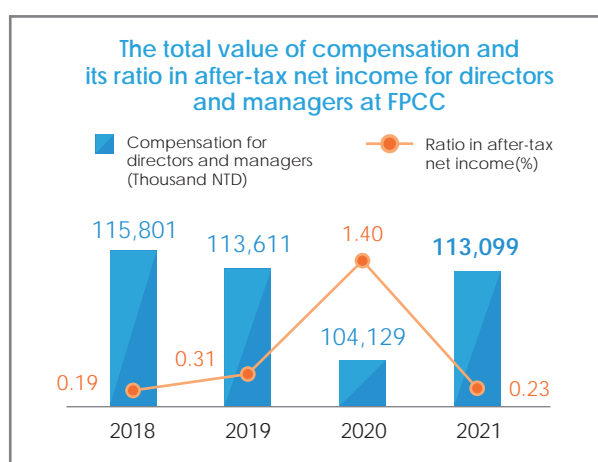
Overview of Operation of the Compensation Committee

FPCC set up the Remuneration 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 violate business ethics and engage in behavior that exceeds the Company's risk appetite. At present, all 3 members of the Remuneration Committee are independent directors. The committee met 2 times in 2021 with an actual attendance rate of 100%. Detailed information is disclosed on the company website.

Title	Name	2018		2019		2020		2021	
		Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate	Actual attendance	Attendance rate
Convener	C.P. Chang	3	100%	3	100%	2	100%	2	100%
Committee Members	Sush-Der Lee	2	100%	3	100%	2	100%	2	100%
Committee Members	Yu Cheng	3	100%	3	100%	2	100%	2	100%
Committee Members	Chi-Tang Lo	1	100%	-	-	-	-	-	-
Total		9	100%	9	100%	6	100%	6	100%


Compensation for directors and managers

Currently, only independent directors receive fixed compensation on a monthly basis. All directors do not receive variable compensation, and only receive transportation subsidies based on their actual attendance in Board meetings. Annual compensation for managers mainly includes the salary, incentives, and bonuses in addition to the pension fund and the welfare fund. The chairperson rates managers' overall performance and attainment of personal "annual objectives at work" within the scope of responsibilities, such as business performance, labor safety incidents, and energy and water conservation, so as to ensure that executives understand and work together to accomplish corporate strategic goals and to link the incentive system to 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 2021, 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.

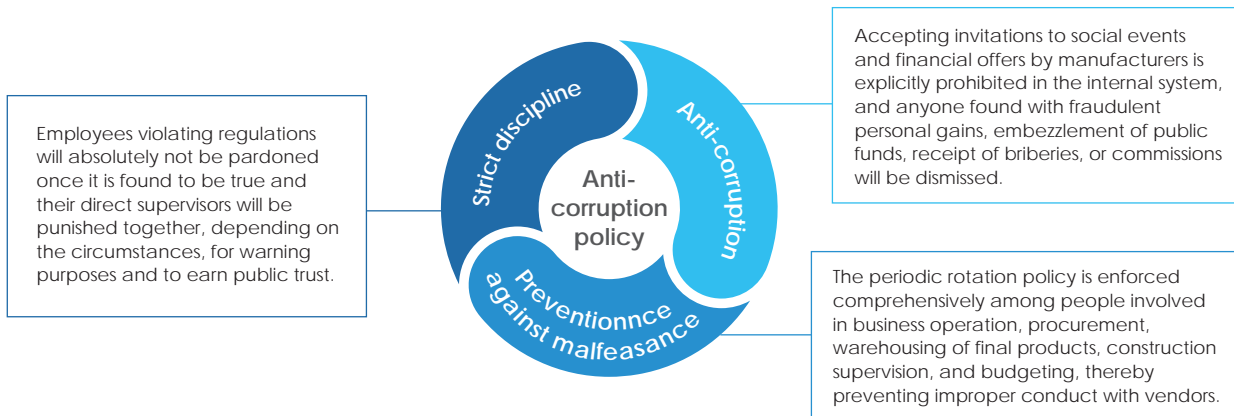
Concrete results are reflected in each accreditation performance review. In the Information Disclosure and Transparency Ranking System of the Taiwan Stock Exchange, FPCC has secured a Grade A or higher rating for ten consecutive years, starting from the 3rd session of the ranking system in 2006. In addition, in the Corporate Governance Evaluation that started in 2014, FPCC ranked in the Top 20% for six consecutive years among listed companies that took part in the rating, and was further ranked in the Top 5% in 2021. 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 22 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



Complaints channel

- Fill out an application form
- Employee Complaint Operating Guidelines
- Regulations for Reporting Unlawful and Unethical Conduct of Internal and External Personnel

Complaints channel



Framework of the Code of Ethics

- Anti-corruption
- Compliance with labor laws
- Environmental protection
- Protection of intellectual property rights
- Personal information and privacy protection
- Gender equality

Establishing Systems and Rules



Self-discipline document

- Signing the "Letter of Commitment"
- Compliance with the "Trade Secrets Act"
- Individual "Work Rules" Manual
- The Company's "Ethical Corporate Management Best Practice Principles"
- Corporate Governance Best Practice Principles
- Personnel Management Regulations
- Self-discipline Conventions
- Work Ethics Guidelines for directors and managers
- Regulations for the Prevention of Insider Trading

Self-discipline document



Training category

- New employee training
- On-the-job training
- Basic job training
- Professional job training
- Professional job re-training
- Reserve management training
- High-level management training course
- Physical face-to-face course
- Online course

Education and training



Execution

Based on the policy described above, we conducted a corruption risk assessment for all of our business locations in 2021, 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.

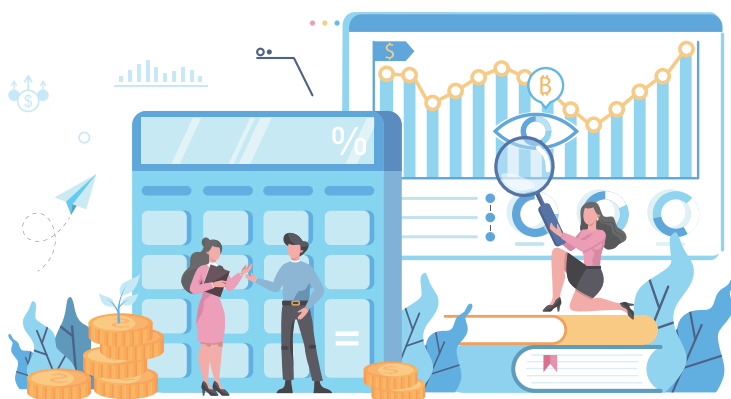
Internal Audit

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 2021 effectiveness evaluation was approved by the Board of Directors on Tuesday, March 8, 2022.

According to the 2021 audit plan approved by the Board of Directors, items to be audited include sales and receivables, purchase and payment, production, salaries and wages, financing, fixed assets, computer information, and investment in a transaction cycle – 52 items in total, in order to accomplish goals relating operational effectiveness and efficiency, reliability of financial reports, and compliance with applicable laws. Results of the actual audit showed 11 areas with deficiency and most of them had to do with documentation or incomplete data; they were not major deficiencies. Internal control system deficiencies and abnormalities found in the inspection were already included in the produced audit report and have been followed up periodically, and have been completed corrected as of now. The improvement rate is 100%.



	2018	2019	2020	2021
audit projects	52 items	52 items	52 items	52 items
Number of deficiencies found	15 cases	11 cases	13 cases	11 cases
Number of improvements completed	15 cases	11 cases	13 cases	11 cases
Improvement rate	100%	100%	100%	100%



2.2 Business Model and Operational Performance

Management approach (MA)

GRI Standards: GRI 11.14 Economic impact; GRI 201 Economic performance; GRI 202 Market Presence



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

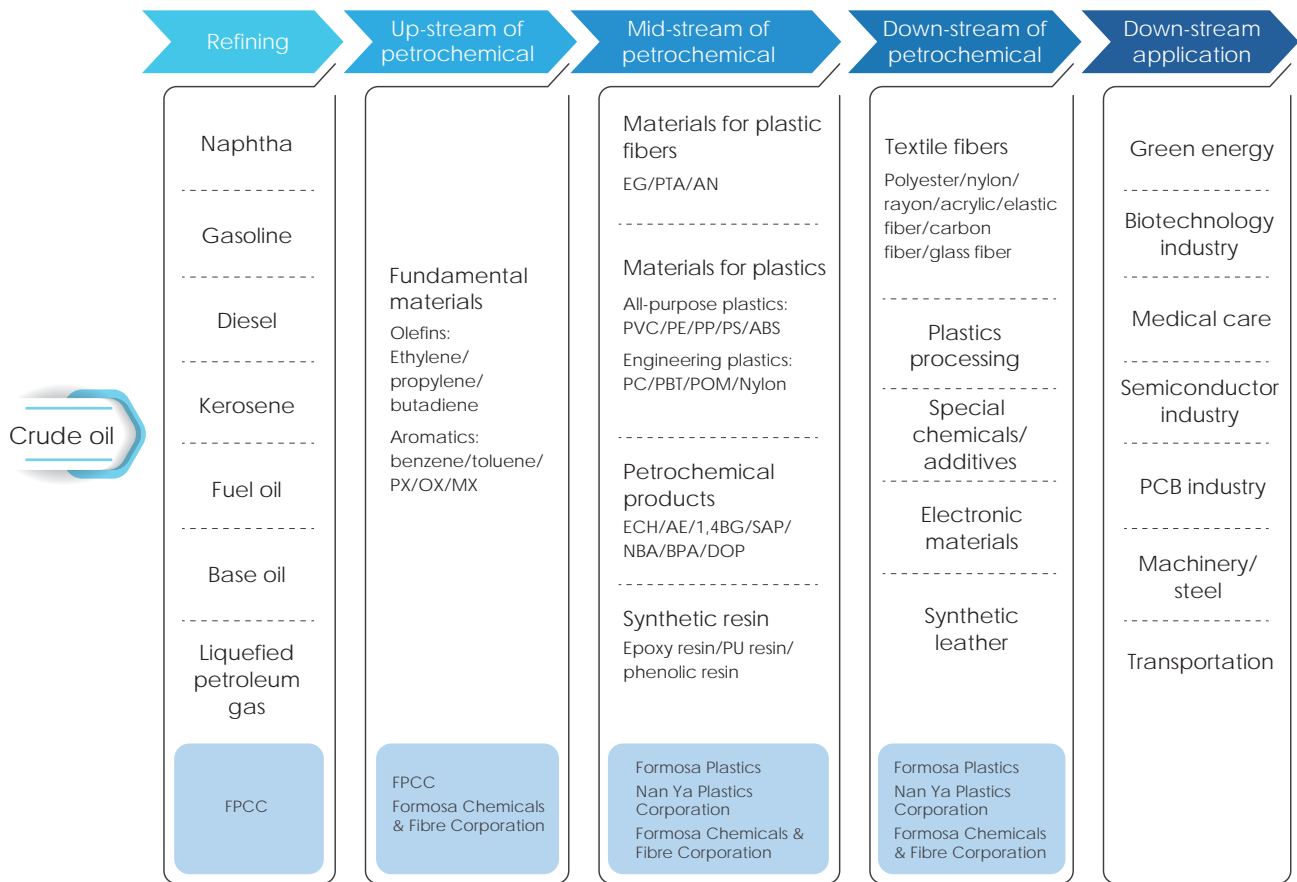
The domestic petrochemical industry is affected by the direction of policies. There have been no major expansions in recent years. We are gaining new production capacity in Asia, including China and South Korea, but product demand still depends on the COVID-19 pandemic. In addition, due to the high level 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 for information on the supply of main raw materials and main suppliers and customers.





FPCC's production capacity and organizational scale in 2021

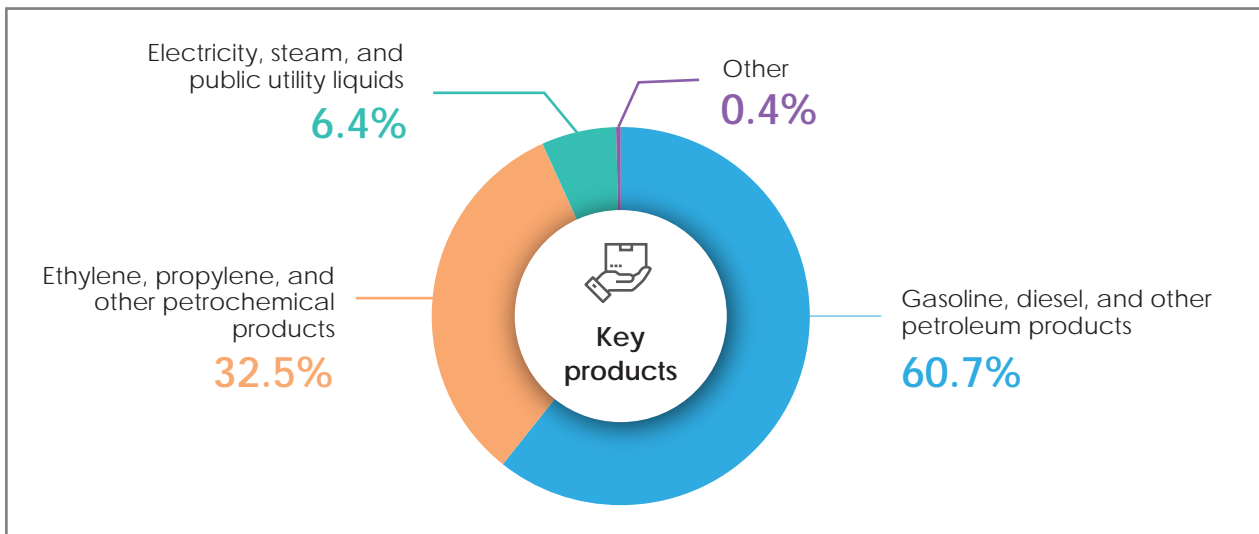


2021 Production Volume

In terms of production volume, we maintained stable production throughout 2021. Besides improving the utilization rate of production capacity in coordination with positive investment spread of oil products, RDS#2 was repaired and began production, and refining volume increased 3.5% compared with 2020. For details, please refer to our website and the annual report disclosed at shareholders' meetings.

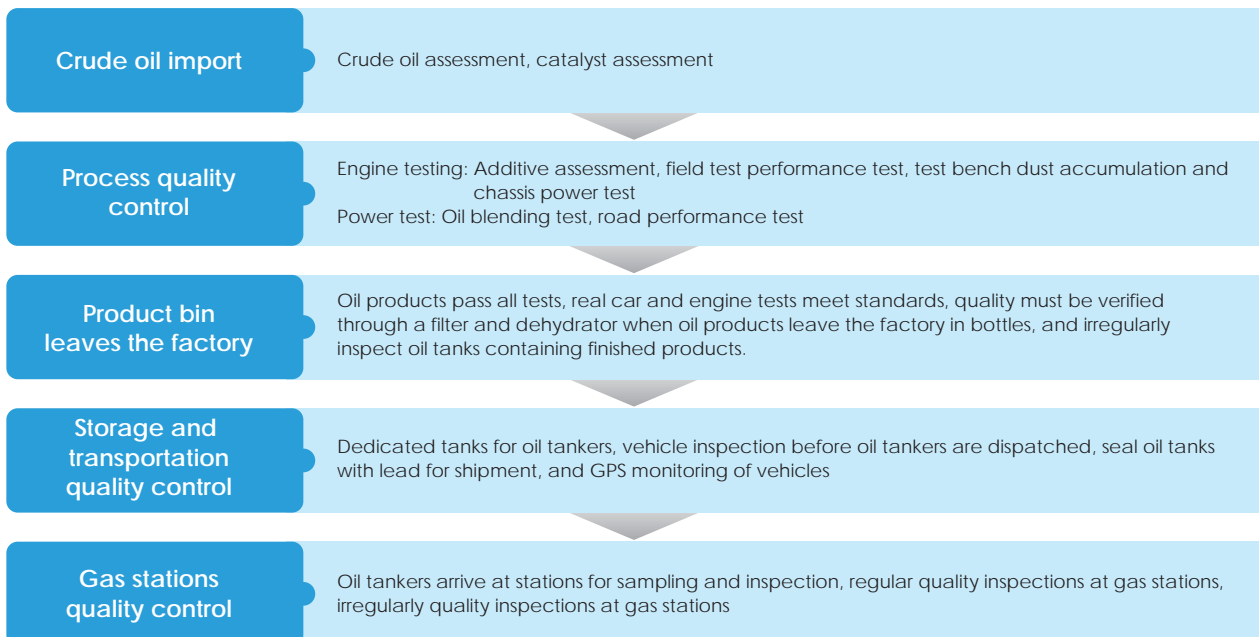
Main products and services

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.



Assessment of the impact and hazard of products to customer health

All products of FPCC comply with the National Standards of the Republic of China (CNS), and passed the inspection of the Bureau of Standards, Metrology and Inspection. We strictly assess and manage products from raw materials until products are delivered. Please refer to the company website for related inspections and certification.



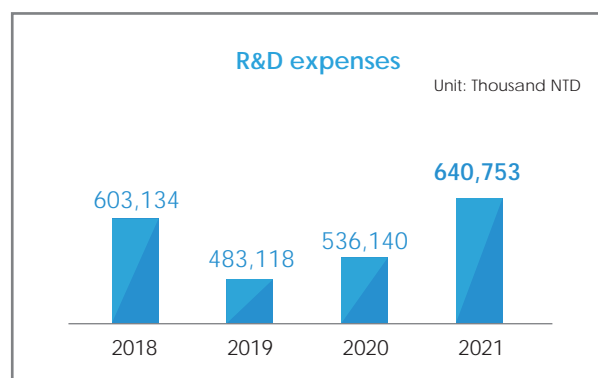
Quality certified products and services

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 Japanese and European 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 contents of products and services, please see the company website.

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\$620,062,330 thousand in 2021, up 49.3% compared to 2020. Consolidated net profit before tax was NT\$60,484,980 thousand, up 598% compared to the previous year. We flexibly responded to the rapidly changing global market trends through flexible production and sales adjustments, and benefited from the rise in international crude oil prices, which generated profits from raw material purchase and inventory; the price difference between main products and raw materials increased compared with the same period last year, and resulted in the significant increase in our profits this year, in which ROE and dividend yield both increased compared with the past.

Operational performance

Unit: Thousand NTD

Item	Year	2018	2019	2020	2021
Operating income	▶	767,550,218	646,022,809	415,281,764	620,062,326
Operating cost	▶	689,934,663	598,303,798	402,313,818	554,282,477
Net operating margin (loss)	▶	77,615,555	47,719,011	12,967,946	65,779,849
Total operating expenses	▶	11,146,231	10,933,355	10,199,178	10,602,464
Operating profit (loss)	▶	66,469,324	36,785,656	2,768,768	55,177,385
Total non-operating income and expenses	▶	8,077,789	8,112,695	5,896,281	5,307,590
Pre-tax profit	▶	74,547,113	44,898,351	8,665,049	60,484,975
Income tax costs (profit)	▶	14,476,282	8,150,178	1,292,594	11,121,093
Current after-tax net profit	▶	60,070,831	36,748,173	7,372,455	49,363,882

Financial ratios

Item	Year	2018	2019	2020	2021
Return on assets (%)		14.48	9.26	1.98	11.83
Return on equity (%)		17.54	10.89	2.28	14.64
Profit margin (%)		7.83	5.69	1.78	7.96
After-tax earnings per share (NTD)		6.31	3.86	0.78	5.19

Dividend distribution

Item	Year	2018	2019	2020	2021
Dividend per share		4.80	2.90	0.59	3.78
Average closing price		120.4	105.92	86.5	99.81
Dividend yield		3.99%	2.74%	0.68%	3.79%
Interest rate of one-year term deposit		1.04%	1.04%	0.89%	0.78%



2.3 Creating a Green Future

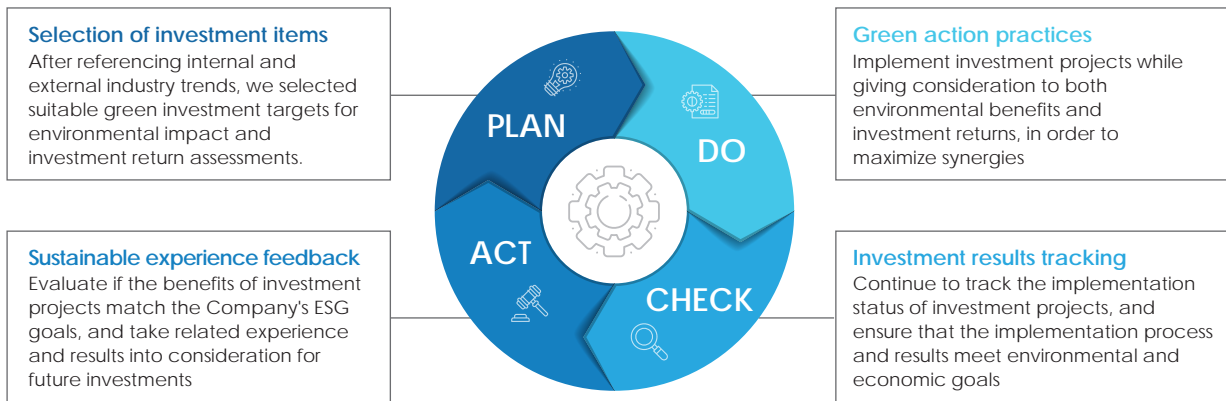
Management approach (MA)

Self-defined Material Sustainability Issue

- **Sustainability Issue:** Green investment and innovative transformation
- **Our commitment and responsibilities:** Combine the trend of circular economy and green processes, continue to improve production efficiency and product value, and improve energy use efficiency through clean energy investments to achieve the vision of becoming eco-friendly
- **Our goals:** Continue to work towards sustainable development with equal emphasis on corporate development and environment co-prosperity

Meaning to FPCC and management approach

The global economy began to gradually recover as the COVID-19 pandemic was gradually controlled in 2021. However, the path to reopening the economy is full of challenges due to inflation caused by the monetary easing policy of countries around the world, as well as the supply chain crisis caused by logistics. To maintain FPCC's leadership, we have monitored the progress in clean technology and industry innovations, and comprehensively evaluated market trends, investment conditions, and expected benefits according to internal investment management regulations. We conduct rolling reviews of investment results to protect stakeholders' interests while obtaining environmental benefits.



The Company has dedicated years of effort to AI process optimization, and has made eco-friendly improvements. We have focused on process optimization and circular economy to improve the efficiency of resource use and mitigate environmental impact. In response to the trend of environmental protection in recent years, we further planned an energy conservation and carbon reduction path and searched for more active and comprehensive environmental measures, including green factory, green energy, and green innovation.



Green factory

Item	2021 Performance	Short-term plans (1 to 2 years)	Mid-term plans (3 to 5 years)	Long-term plans (5 years and above)
Smart factory	Completed a total of 10 AI carbon reduction projects and reduced carbon emissions by 66,000 tons CO ₂ e/year	<ol style="list-style-type: none"> Continue to deepen the application of AI, Internet, and automated production technologies in processes, and exert every effort in digital transformation to improve production/sales efficiency The 27 ongoing AI carbon reduction projects is expected to reduce carbon emissions by 98,000 tons CO₂e/year 		Continue to expand the application of digital technology in production/sales and management, and evaluate application scenarios and the necessity of adopting emerging technologies, such as 5G and blockchain
Circular economy	<ol style="list-style-type: none"> Process waste gas recycling and reuse, reduce coal consumption by 205,000 tons/year, and reduce carbon emissions by 285,000 tons CO₂e/year Application for the GHG offset project for the "Low Temperature Thermal Electric System and Waste Heat Recycling Project" is currently being reviewed by the Environmental Protection Administration, and is expected to obtain 13,000 tons CO₂e of carbon rights 	<ol style="list-style-type: none"> The 140 ongoing circular economy projects are expected to reduce carbon emissions by 86,000 tons CO₂e/year Continue to develop process waste gas recycling and reuse methods, and carry out cross-plant resource and energy integration and reuse. 	<ol style="list-style-type: none"> Plan the recycling of waste lubricant for reuse by blending in fuel after treatment Evaluate the recycling and refining of waste plastic/waste oil to produce green oil products. Trial production will begin after processes are selected in the future. 	Continue to look into the recycling and reuse methods of process resources through industry-government-academia collaboration and international exchanges, in order to achieve carbon reduction, decontamination, and maximization of resource efficiency
Low carbon transformation of processes	Completed 160 process improvements in 2021, and reduced carbon emissions by 174,000 tons CO ₂ e/year; Completed a total of 1,772 process improvements, and reduced carbon emissions by 5.268 million tons CO ₂ e/year	<ol style="list-style-type: none"> The 502 ongoing process optimization and energy conservation and carbon reduction projects are expected to reduce carbon emissions by 671,000 tons CO₂e/year Evaluate the feasibility of using low carbon raw materials (e.g. biomass naphtha) in processes 	<ol style="list-style-type: none"> Continue to promote the reduction of process energy use, manufacturing process optimization, equipment efficiency improvement, and various energy conservation and carbon reduction projects at each factory Gradually expand the scope of carbon footprint from raw materials procurement to product sales, and reduce carbon emissions in the process 	Continue to implement process optimization and improvement, and use more efficient production technologies and equipment based on industry trends
Green buildings	Use LED lights in offices and process areas, and improvement projects that have been completed can reduce electricity consumption by 198 kWh/hour	<ol style="list-style-type: none"> Expanding the use of LED lights is expected to save an additional 318 kWh/hour Implement improvements for building energy conservation, waste reduction, and eco-friendly goals according to the 9 indicators of green buildings 	<ol style="list-style-type: none"> Expanding the use of LED lights is expected to save an additional 476 kWh/hour Gradually adopt the use of solar power in administrative areas and dormitories 	All administrative areas and dormitories using solar power is expected to reduce carbon emissions by 13,000 tons CO ₂ e/year
Electric vehicles	Plan the purchase/lease of electric and hybrid vehicles for company cars in the future	<ol style="list-style-type: none"> Continue to promote the replacement of long-distance company vehicles with electric vehicles, hybrid vehicles, or electric bicycles Provide subsidies to employees who purchase electric scooters 		Evaluate the feasibility of providing subsidies for electric vehicles used for logistics within the company

Green energy

Item	2021 Performance	Short-term plans (1 to 2 years)	Mid-term plans (3 to 5 years)	Long-term plans (5 years and above)
Solar power	Comprehensively review the Company's idle land and factory rooftops in coordination with the government's energy transition policy, and include it in the planning of future solar power plants	Expected to complete power plants with total installed capacity of 1.9 MW, and reduced carbon emission by 2,105 tons CO ₂ e/year	Expected to complete power plants with total installed capacity of 13.1MW, and reduced carbon emission by 14,000 tons CO ₂ e/year	Power plants with total installed capacity of 71.8MW are currently being planned, and are expected to reduce carbon emission by 56,000 tons CO ₂ e/year
Wind power	Planned the installation of 6 wind turbines with total installed capacity of 25.2 MW outside the Mailiao Plant, which is expected to reduce carbon emissions by 68,000 tons CO ₂ e/year; an application has been submitted for environmental impact assessment	<ol style="list-style-type: none"> 1. Continue to make progress in environmental impact review 2. Carry out preliminary engineering design, geological exploration, and airline survey for wind power plants 	The wind power plant outside Mailiao Plant is expected to begin construction in the middle of 2023 and begin commercial operation at the end of 2024	Continue to evaluate the feasibility of independently or jointly investing in onshore and offshore wind power plants
Hydroelectric power	-	Evaluate the feasibility of constructing a S-type hydroturbine at Luchangke canal and run-of-the-river hydroelectric power plant in Yunlin County		Continue to evaluate the feasibility of hydroelectric power applications at each site
Low carbon energy development	Mass-burning of 5,999 tons of fuel derived from waste and reduced carbon emissions by 4,290 tons CO ₂ e/year, while reducing the amount of waste	<ol style="list-style-type: none"> 1. Continue to conduct review and communicate with government agencies to increase the ratio of mass-burning of fuel derived from waste 2. Evaluate the feasibility of mass-burning biomass fuel, such as wood pellets, from the Utilities Department 	Evaluate the use of ammonia to replace a portion of coal used by the Utilities Department as fuel for electricity generation	Evaluate the feasibility of applying hydrogen power, including hydrogen power generation, hydrogen fuel cells, and related applications

Green innovation

Item	2021 Performance	Short-term plans (1 to 2 years)	Mid-term plans (3 to 5 years)	Long-term plans (5 years and above)
Carbon capture/sequestration	-	In the future, we will cooperate with the government's net zero emissions path and strategy, continue to evaluate global development trends in carbon capture/sequestration technology, as well as related reuse paths, and then gradually conduct tests when technologies are relatively mature.		



2.4 Partnership maintenance

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.).

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:

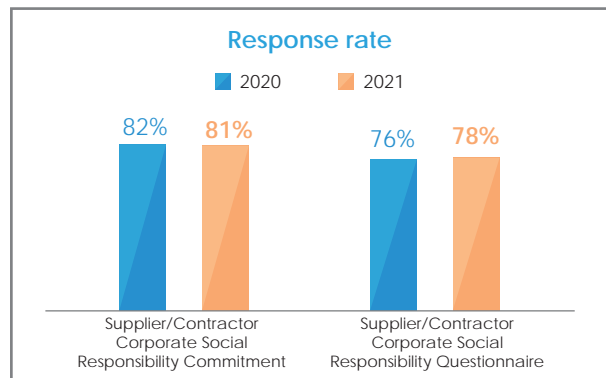


Implementation of management and evaluation

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. Manufacturers need to properly recycle used containers or carrying aids, and give priority to products made by organizations for persons with disabilities. Suppliers are asked to precisely follow the requirements in the Quotation and Order Notice, and the Company's stance on upholding the spirit of sustainable management and requirements to comply with fair trade principles is stated in the forms above. Our goal is for vendors we do business with to meet requirements on environmental protection, labor safety, and human right, otherwise we will reject their products.

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

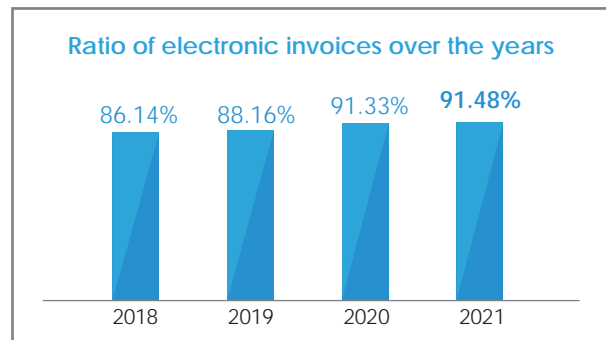
Vendor evaluations are arranged in the following year as needed based on the response to the "supplier/contractor social responsibility commitment" and "supplier/contractor social responsibility questionnaire" in the previous year, ensuring that our vendors fulfill their CSR according to requirements. Supplier evaluation results in 2021 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 2021, electronic operations for concentrated delivery by suppliers reached 96.89%.

Furthermore, we have replaced paper invoices with electronic invoices, and 91.48% of the vendors we do business with are also using electronic invoices as of the end of 2021.



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 385 green products, including plastic pallets, toner cartridges, and fluorescent lamps, and the procurement amount of green products recognized by the government was NT\$12.23 million in 2021.

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 2021.

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
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
2021	4.6	4.7	4.6	4.6	4.6	4.6	4.4	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 2021 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.

Customer feedback

We attach great importance to the feedback of all customers. It is the greatest motivation for us to make progress. Besides strictly maintaining quality to provide high quality products, we are also developing employees' character and service attitude, transforming slogans into actual actions, so that customers will gain a satisfying experience through every interaction in the purchase process, and thereby build trust in our brand.




Public Policy and Membership in Associations

Donation and political contribution policy

Our donations are 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.

Considering that most industries in Taiwan have been impacted considerably by the outbreak of COVID-19 in 2021, severely affecting the survival of many companies and people's livelihood, we upheld the spirit of "giving back to society what is taken from society," and decided to donate NT\$250 million to the government as relief funds for humanitarian aid, helping industries and people who were severely impacted by the pandemic to overcome their difficulties.

 Donation proposals submitted to the Board of Directors for approval in 2021	Date approved by the Board of Directors	2021/8/5	2021/11/4
	Recipient	Executive Yuan	Chang Gung University
	Donated value (Thousand NTD)	250,000	3,780

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 2021 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
	Consultant	Chairman Bao Lang Chen
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 Representative	Chairman Bao Lang Chen
Taiwan Russia Association	Vice Chairperson	President Mihn Tsao
Taiwan Responsible Care Association	Director	Senior VP Heng-Sheng Wu

Achievements

Awards in 2021



Recognized by the Industrial Development Bureau, MOEA with the Best Performance Award for GHG reduction



Won the silver award in the Energy Saving Benchmark Award of the Bureau of Energy, Ministry of Economic Affairs



Recognized with the Gold Award, Category 1, Sustainability Report Category of the Taiwan Corporate Sustainability Awards from the Taiwan Institute for Sustainable Energy



Won the "2021 Manufacturing Industry Happy Enterprise Gold" Award of 1111 Job Bank



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



Continue to be selected into the TWSE Corporate Governance 100 Index of Taiwan Index Plus Corporation



3

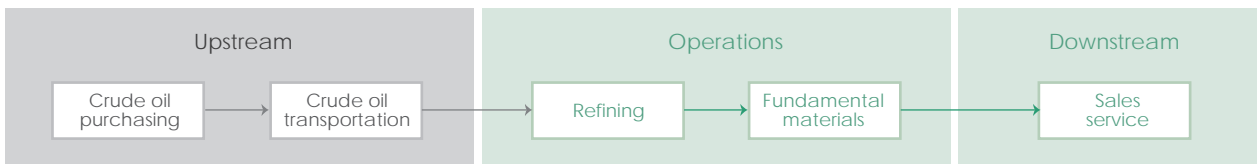
Creating a New Green Appearance



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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 2021

- Disclose risks and opportunities brought by climate change for the Company to make policy decisions
- Engage in low carbon transformation
- Departments reduce energy consumption by 3%, water consumption by 2%, waste by 1%, and electricity consumption by 1% each year

● Targets in 2022

- Continue to disclose risks and opportunities brought by climate change for the Company to make policy decisions
- Continue to participate in the Carbon Disclosure Project (CDP)
- Continue to engage in low carbon transformation
- Continue to reduce energy consumption by 3%, water consumption by 2%, waste by 1%, and electricity consumption by 1% each year

● 2021 Performance

- Became a TCFD supporter
- Rated at the "leadership level" by the CDP, received an A- rating in the climate change questionnaire, and received an A rating in the water questionnaire in 2021
- Used 5,999 tons of solid recycled fuel (RDF or SRF) to replace coal in 2021, and reduced GHG emissions by approximately 4,290 tons CO₂e
- Invested approximately NT\$840 million in energy conservation and carbon reduction plans in 2021, and reduced GHG emissions by approximately 173,500 tons CO₂e

● Mid-term and Long-term Goals

- Evaluate investments in renewable energy generation facilities (wind power, solar power) and energy storage systems
- Evaluate investments in the recycling and reuse of waste oil and plastic
- Evaluate investments in hydrogen power and ammonia industries
- Further develop high value petrochemical products and search for new investment and development opportunities



GHG management

● **Targets in 2021**

- Implement energy conservation measures
- Participate in the Carbon Disclosure Project (CDP)
- Supported the industry GHG reduction audit by the Industrial Development Bureau, Ministry of Economic Affairs

● **Targets in 2022**

- Continue to implement energy conservation measures
- Continue to support the industry GHG reduction audit by the Industrial Development Bureau, Ministry of Economic Affairs
- Establish an internal carbon pricing system

● **2021 Performance**

- GHG emissions in 2020 was reduced by 19.7% compared to 2007
- Reduced GHG emissions by 40,357 tons CO₂e in response to the GHG reduction audit by the Industrial Development Bureau, Ministry of Economic Affairs

● **Mid-term and Long-term Goals**

- Evaluate investments in carbon capture and use (CCU)
- Cooperate with the long-term goal of achieving carbon neutrality by 2050



Air pollution prevention

● **Targets in 2021**

- Install MGGH and WESP
- Modify perforated plate in FGD prevention equipment to improve the efficiency of SO_x 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)

● **Targets in 2022**

- Added a WESP to improve the concentration of particulate emissions
- Added the most suitable amount of ammonia to improve the concentration of NO_x emissions
- Modify perforated plate in FGD prevention equipment to improve the efficiency of SO_x removal
- Continue to coordinate professional technicians to conduct tests for connecting high voltage shore power to cargo ships

● **2021 Performance**

- Completed the installation of 17 MGGH and 8 WESP in 2021
- SO_x emissions in 2021 decreased 1.90% compared to the average of the most recent five years
- Completed the installation of the high voltage shore power system for cargo ships
- Submitted an application for an environmental impact assessment for the oil product quality improvement plan

● **Mid-term and Long-term Goals**

- Continue to implement the oil product quality improvement plan



Water Resource Management

● **Targets in 2021**

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

● **Targets in 2022**

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

● **2021 Performance**

- Water conservation measures reduced water use by 5,691 tons/day in 2021
- Rain water storage rate reached 87.2%

● **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, and consistently implements the 8 principles. Furthermore, the Company continues to plan and implement energy conservation and carbon reduction measures in response to the challenges brought by climate change, as well as the government's GHG reduction goals, and is engaging in low carbon transformation to achieve the goal of sustainable management.

Climate change mitigation and adaptation

- Engage in low carbon transformation
- The mid- to long-term goal is to set an internal carbon pricing system
- Disclose risks and opportunities brought by climate change for the Company to make policy decisions

Air pollution management

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

Water Resources and Wastewater Management

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

Waste Management

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

Environmental Expenditures and Benefits

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

Total expenditures in 2021

15,778 million

As a percentage of revenue

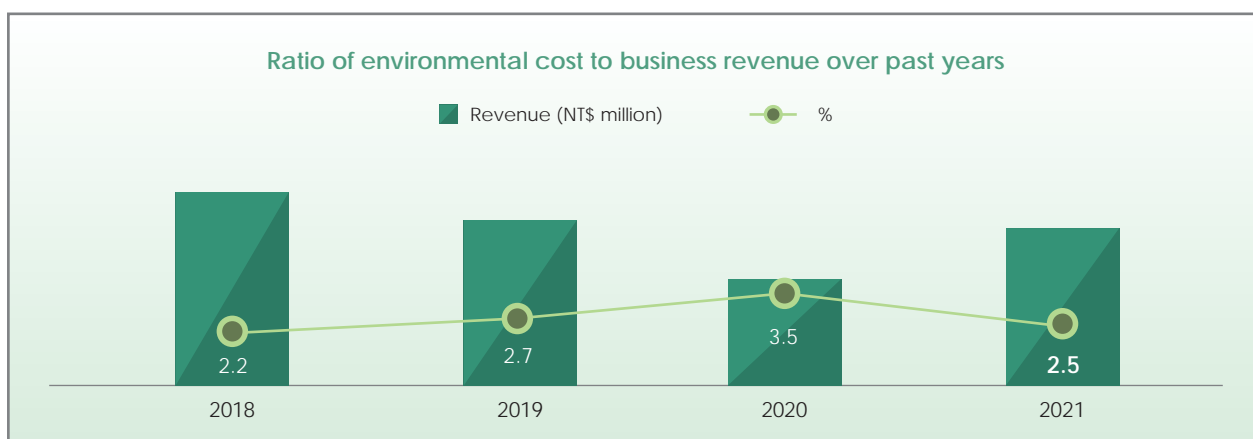
2.5 %

Breakdown of environmental cost in past years

Unit: NT\$ million

Item	2018	2019	2020	2021
Business overhead	15,072	15,411	12,703	13,845
Related costs from the downstream and upstream of suppliers and customers	26	23	23	21
Activity management cost	392	465	398	380
R&D cost	6	2	3	4
Social events cost	133	128	136	131
Losses and compensation	13	6	9	6
Other expenses such as processing fees, taxes, and energy tax	1,258	1,358	1,401	1,391
Total	16,900	17,393	14,673	15,778

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.



Violations

We received 12 environmental protection fines in 2021, in which 4 were major environmental protection violations (major events involving NT\$1 million or more disclosed on the Market Observation Post System). Our violations were mainly due to abnormal emissions from equipment components, and we have thus strengthened management mechanisms for equipment components. We further analyzed our fines, and found that it was mainly due to disputes over the determination of products and waste, we have filed administrative appeals in accordance with the law.

	2020	2021
Air pollution	3/NT\$5,200,000 in total	3/NT\$615,000 in total
Water pollution	0	1/NT\$231,000 in total
Waste pollution	3/NT\$9,000,000 in total	7/NT\$12,018,000 in total
Other	0	1/NT\$600,000 in total

3.2 Climate change mitigation and adaptation

Management approach (MA)

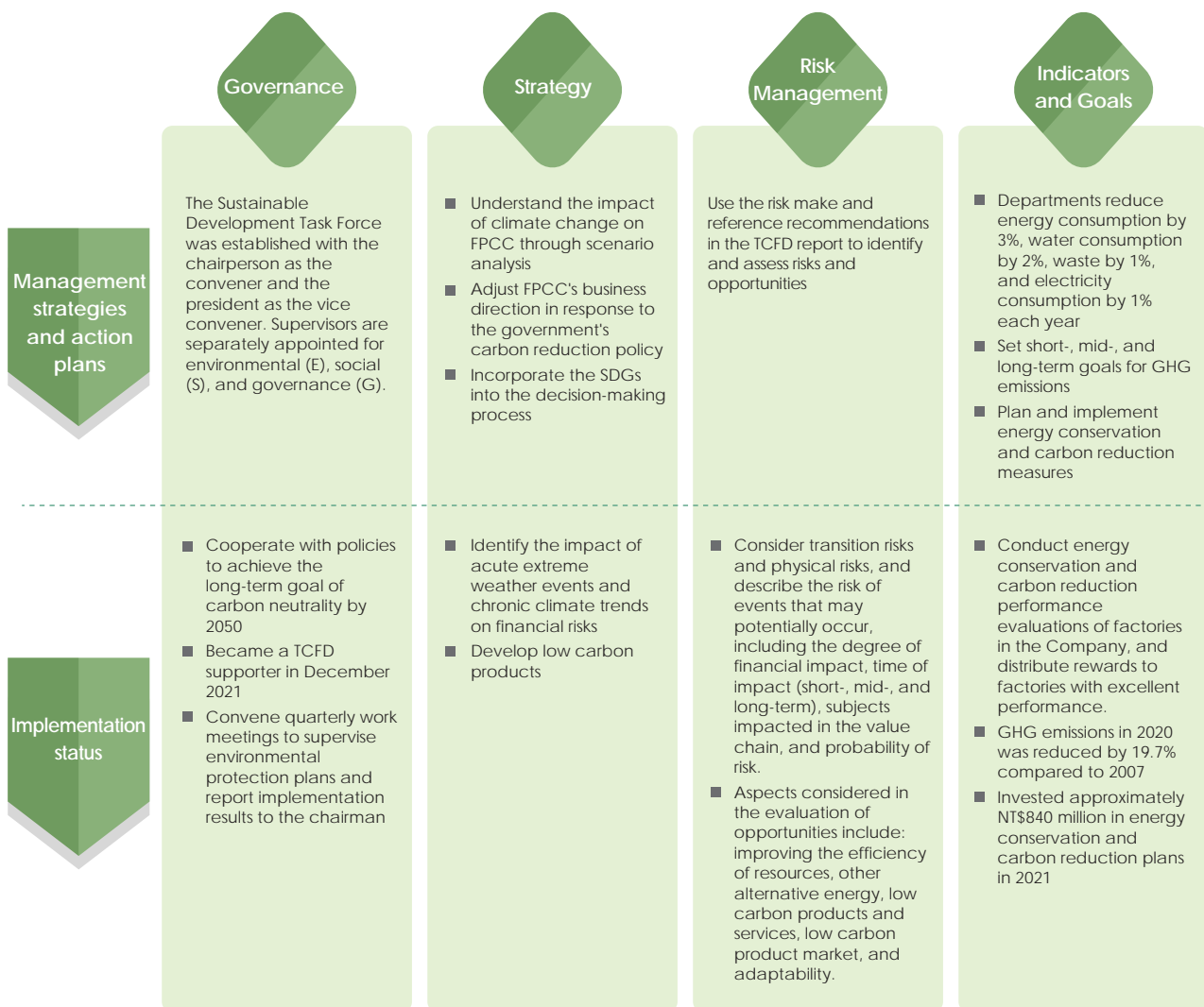
GRI Standards: GRI 11.2 Climate adaptation, resilience, and transformation.

GRI 201 Economic performance; GRI 305 Emissions



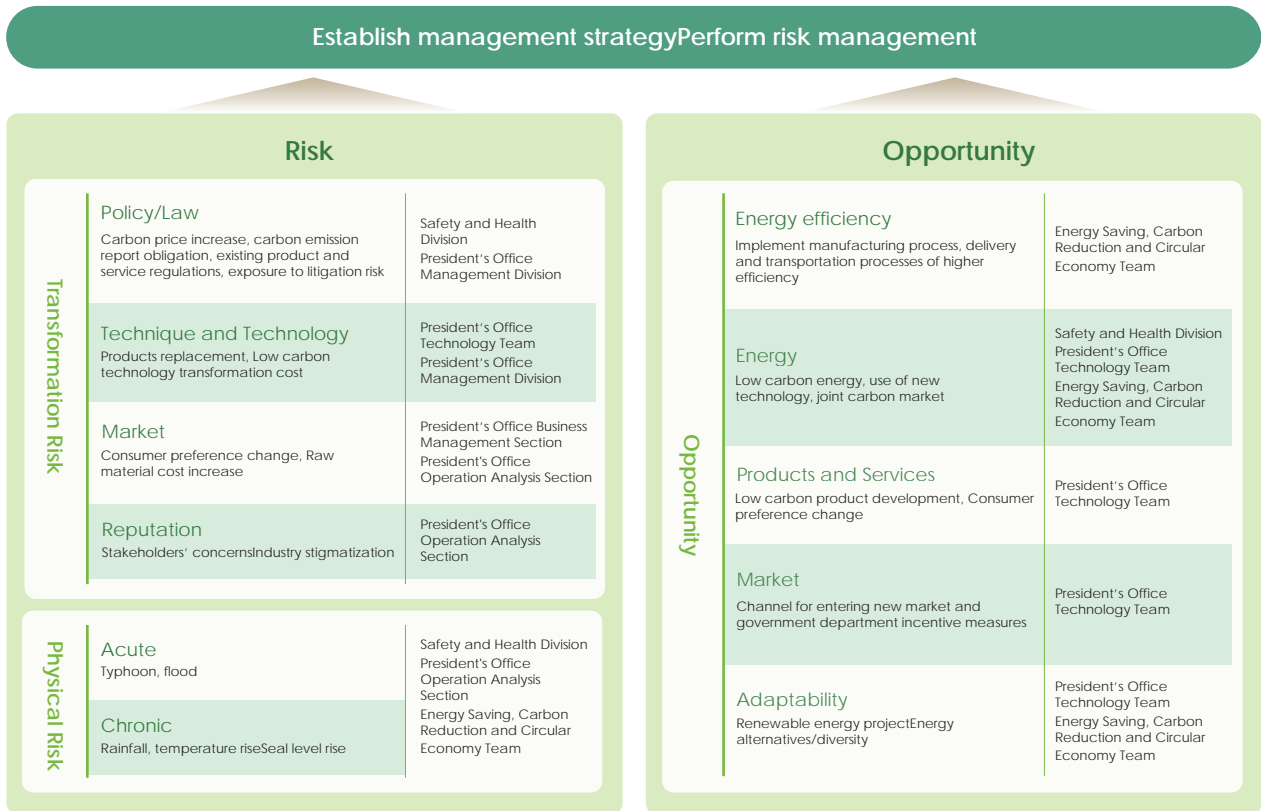
- **Sustainability Issue:** Climate change strategy
- **Our commitment and responsibilities:** Disclose the risks and opportunities brought by climate change, formulate and plan the Company's sustainability policy, and work towards energy conservation, carbon reduction, resource integration, and zero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

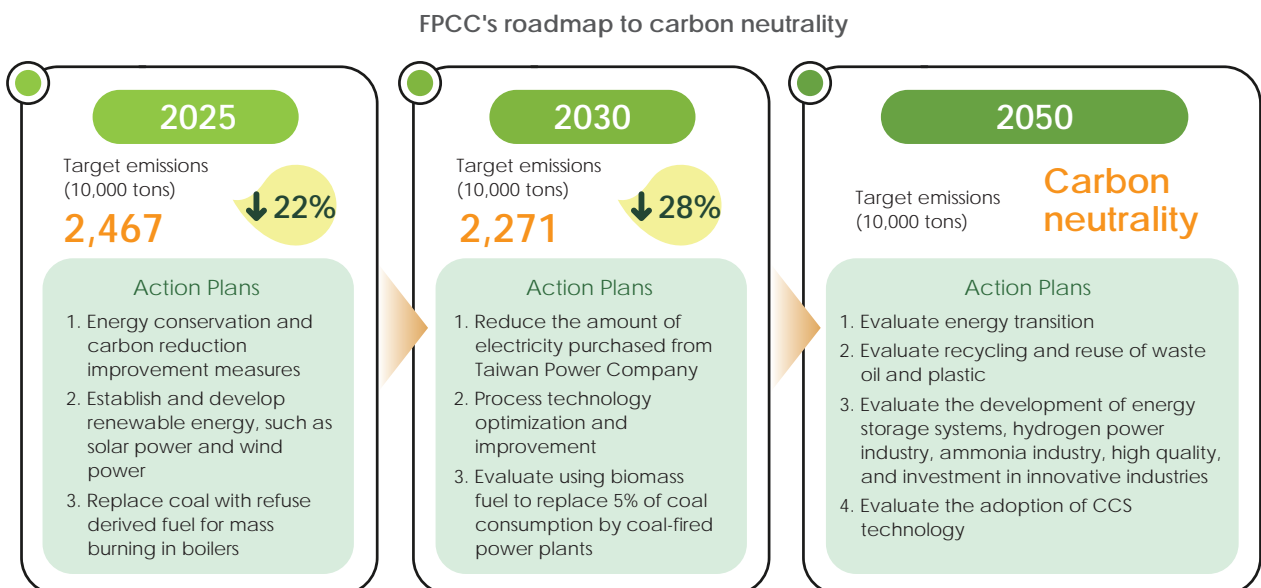


Departments responsible for identifying and assessing climate change risks/opportunities

The Sustainable Development Task Force was established with the chairperson as the 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.



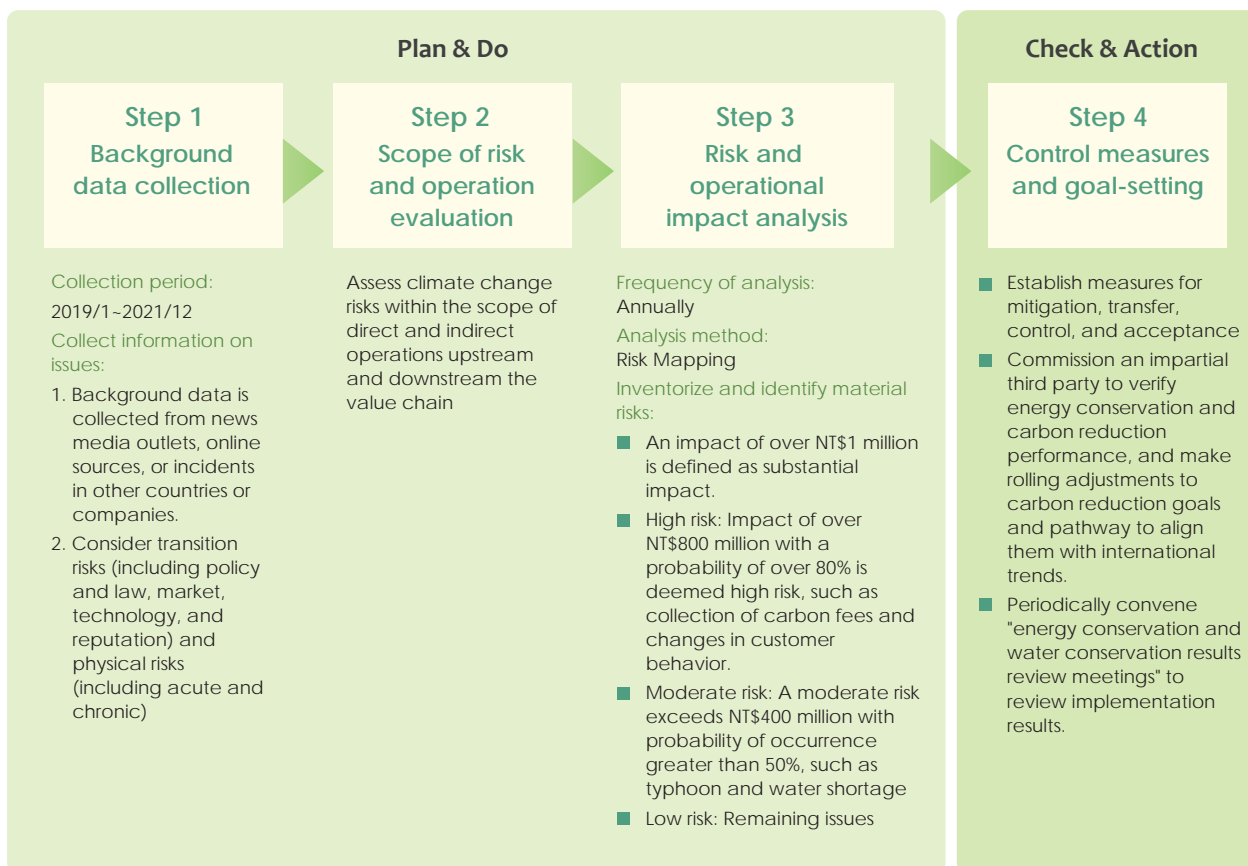
3.2.1 Climate change mitigation and adaptation strategies



3.2.2 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.

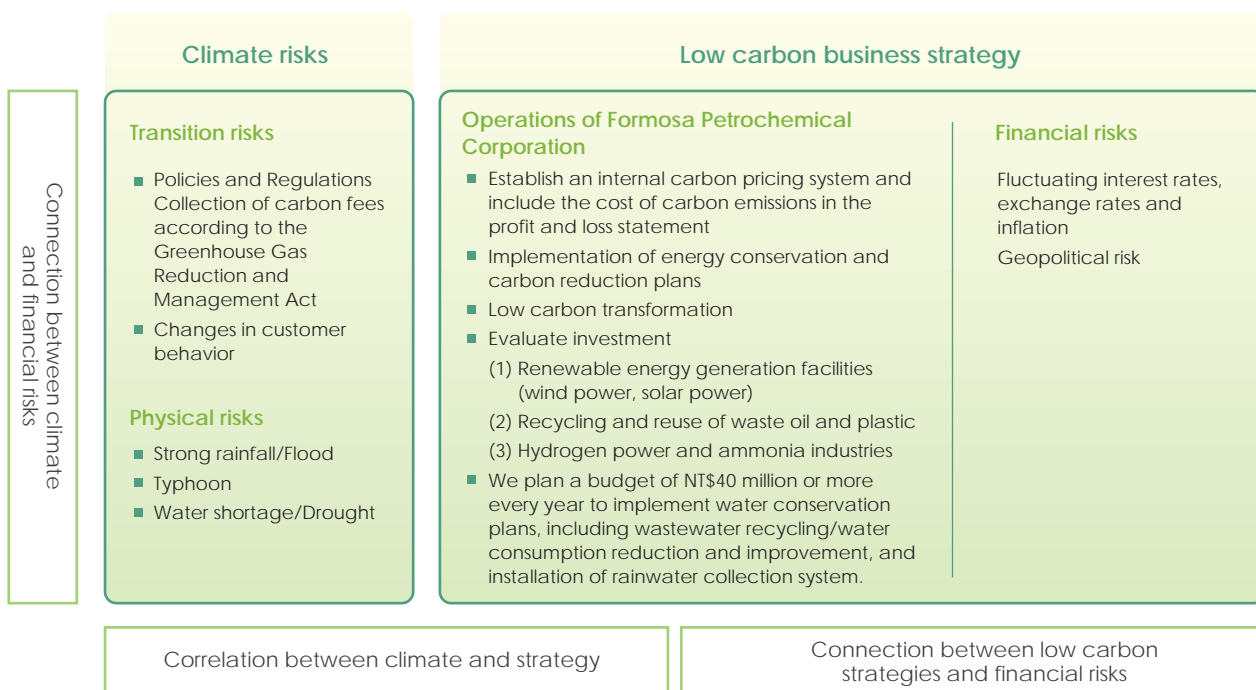
Analysis process for climate change risk issues



Analysis results of climate risk issues

Risk type	Risk identification bracket		Describe the risk management approach	Occurrence of events in 2021
	Financial impact	Likelihood		
High risk	Over NT\$800 million	Probability of 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	The Environmental Protection Administration announced a draft amendment to the Greenhouse Gas Reduction and Management Act in October 2021, and plans to collect carbon fees.
Moderate risk	Over NT\$400 million	Probability of greater than 50%	No actions currently need to be taken, but changes still need to be monitored	A large scale drought occurred in western Taiwan at the beginning of 2021. It was the most severe drought since 1947, and was thus called the drought of a century. The Company responded via reduced pressure water supply and limited water supply.
Low risk	Remaining issues	Remaining issues	Acceptable risk	Impact of COVID-19

Climate change risk and low carbon business strategy



Financial impact of risk issue

Risk type Transformation/ Physical	Risk issues	Risk type	Main climate-related risk factors	Risk management plan
Transition risks	Policies and Regulations	High risk	<p>Greenhouse Gas Reduction and Management Act – Carbon fee collection</p> <ol style="list-style-type: none"> Carbon emissions not exceeding the quota: Taiwan’s government announced a draft to amend the Greenhouse Gas Reduction and Management Act into the Climate Change Response Act in 2021, and plans to collect carbon emission fees at the price of NT\$100 per metric ton. Estimating based on the GHG emissions of approximately 25.55 million metric tons CO₂e in 2020, if carbon reduction measures are not implemented, the financial impact will be NT\$2.555 billion assuming that carbon fee is NT\$100 per metric ton. Carbon emissions exceeding the quota: For carbon emissions exceeding the quota allocated by the central competent authority, the limit on fines for the volume exceeding the quota is maintained at NT\$1,500 per metric ton. The Company’s GHG emissions in 2020 was approximately 25.55 million metric tons CO₂e. If carbon emissions is not reduced by 2050 and carbon rights are not purchased to offset emissions, then the Company might need to pay NT\$1,500/ton as carbon fees. 	<ol style="list-style-type: none"> The Company implemented an internal carbon pricing mechanism in 2022, which references the draft Climate Change Response Act and method for calculating additional fees for carbon emissions exceeding the target value, and included carbon emission cost in the profit and loss statement for internal management, using it as the basis for implementing carbon risk management. We implemented various energy conservation and carbon reduction plans for low carbon transformation, and evaluated investments in (1) renewable energy generation facilities (wind power, solar power) and energy storage systems, (2) recycling and reuse of waste oil and plastic, (3) hydrogen power and ammonia industries.

Risk type Transformation/ Physical	Risk issues	Risk type	Main climate-related risk factors	Risk management plan
Transition risks	Changes in customer behavior	High risk	The International Energy Agency indicated that there will be approximately 300 million electric vehicles on the road before 2040, and will lower global demand on oil by 3.3 million barrels a day. Estimating based on the daily demand of 45.1 million barrels a day for transportation in 2021, the demand on oil for transportation will decrease 7%.	Due to the decrease in demand on oil for transportation, we plan to produce high value products in response to the asset losses caused by changes in customer behavior.
Physical risks	Acute-Extreme weather event Strong rainfall/ Flood/Typhoon	High risk	The frequency of extreme weather events has gradually increased due to climate change, and torrential rain and strong typhoons may cause flooding that damages equipment, affecting the stable operation of processes and causing losses due to suspension.	Instead of constructing a drainage system, we adopted a closed water barrier (+1.2M) and installed water pumps in low-lying areas, in order to improve puddles in low-lying areas, pump water into the drainage system, and increase drainage capacity. (Completed in April 2019 and invested NT\$60,418 thousand)
Physical risks	Acute- Extreme weather event water shortage/ drought	High risk	Climate anomalies have caused the impact of water shortage/drought, and processes will need to reduce production when water supply is limited if the Company cannot respond. Severe water shortage will cause processes to reduce capacity or be suspended.	The Company plans a budget of NT\$40 million and above for water conservation plans. The Company invested a total of NT\$420 million to implement 50 water conservation improvement plans, which saved 5,691 tons a day with annual improvement benefits reaching NT\$26.39 million. Main water conservation plans include wastewater recycling/ water consumption reduction and improvement, and installation of rainwater collection system



Financial benefits of opportunity

Opportunity issues	Opportunity category	Main climate-related risk factors	Risk management plan
Low-carbon energy technology transition	Transformation opportunity	<ol style="list-style-type: none"> 1. Low Temperature Thermal Power System and Waste Heat Recycling Technology Project 2. Refuse Derived Fuel Project 	<ol style="list-style-type: none"> 1. We plan to implement a ten-year GHG offset project (waste heat recycling at low temperatures for electricity generation), and currently expect to obtain carbon rights for 13,220 tons CO₂e. In addition, the project will generate 1,622,186 kWh of electricity, and the cost of electricity will be reduced by NT\$36 million over 10 years using an average price of NT\$2.2/kWh for calculation. 2. We began using RDF to replace a portion of coal consumption starting in 2019, and up to 49,932 metric tons of RDF is expected to be used each year. With the cost of each metric ton at NT\$900, we expect this to increase fuel cost by NT\$44,939 thousand. It will reduce coal consumption by 23,349 metric tons. Calculating the price of coal at US\$150 per metric ton, this will reduce energy purchasing cost by NT\$105,071 thousand. Furthermore we reduced GHG emissions by approximately 72,000 tons. Using NT\$1,532.8 per metric ton based on investments made to reduce carbon emissions over the years, this will reduce carbon reduction expenses by NT\$110,362 thousand, and the overall potential income from this project is estimated at NT\$215,433 thousand.
Increased energy efficiency	Transformation opportunity	The Company generates tail gas from the production process, and recycles 100,000 tons of tail gas for use as fuel each year to reduce air pollution, which reduces fuel consumption.	We recycled 1,010,000 tons of excess process gas between 2013 and 2021, reducing GHG emissions by an average of approximately 321,000 tons CO ₂ e a year, and further reducing coal use by approximately 447,000 tons. If each ton of coal is calculated at US\$150, it will reduce coal expenses by approximately NT\$2.01 billion.
Installation of renewable energy facilities	Transformation opportunity	The Renewable Energy Electricity Generation System Establishment Project has planned three solar power systems with total installed capacity of 1.8 MW+0.081 MW+13.054MW=14.935 MW.	The total investment amount of the three solar power systems is NT\$1.34 billion, and is expected to reduce electricity fees by NT\$43 million each year (the solar power capacity factor in Yunlin = 15.07% and each kWh is NT\$2.2).

3.2.3 Climate risk scenario analysis

FPCC mainly uses the 4 Representative Concentration Pathways (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.

FPCC considers scenarios for 2030-2050. All plants and upstream and downstream the supply chain are included in FPCC's scenario 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	Active mitigation scenario
Scenario Description	RCP8.5	RCP4.5 RCP6.0 Reduce emissions in 2030 to 20% of emissions in 2005 Reduce emissions in 2050 to 50% of emissions in 2005	RCP2.6 The long-term goal is to achieve carbon neutrality by 2050
Analysis Results	Average temperature rise exceeds 2.0°C. Annual rainfall in Yunlin County in 2050 may be 56.6mm lower than 1985-2005	Average temperature rise is limited to within 2.0°C. Annual rainfall in Yunlin County in 2050 may be 49.8mm lower than 1985-2005	Average temperature rise is limited to within 1.5°C. Annual rainfall in Yunlin County in 2050 may be 47.6 mm lower than 1985-2005
Risks	<ol style="list-style-type: none"> Global temperature rise will directly impact process cooling ability and increase electricity consumption by air conditioners, which will further affect the productivity of naphtha and lower the performance of compressors. Climate anomalies have caused the impact of water shortage/drought, and processes will need to reduce production when water supply is limited if the Company cannot respond. Severe water shortage will cause processes to reduce capacity or be suspended. If the dependence of Mailliao Plant on natural water resources cannot be lowered, it may increase production cost and operational risks in the future, which will lower our competitiveness. 		
Action Plans	<ol style="list-style-type: none"> 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 tons/day desalination plant establishment project in recent years. 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"> Rainwater-sewage separation increased rainwater collection to approximately 3.66 million tons in 2021 Processed discharged water is used for cleaning and shaft seal Process water recycling reduces refill and discharge with water recycling rate at 98.7% Plan low carbon energy technology transition (1. Low Temperature Thermal Power System and Waste Heat Recycling Technology Project and 2. Refuse Derived Fuel Project) and renewable energy installation (solar power). In the mid-term and long-term, we will evaluate replacing 5% of coal consumption by coal-fired power plants with RDF, evaluate investments in the recycling and reuse of waste oil and plastic, evaluate investments in hydrogen power and ammonia industries, evaluate the adoption of CCU technology, further develop high value petrochemical products, and search for new investment and development opportunities. 		

3.2.4 GHG management

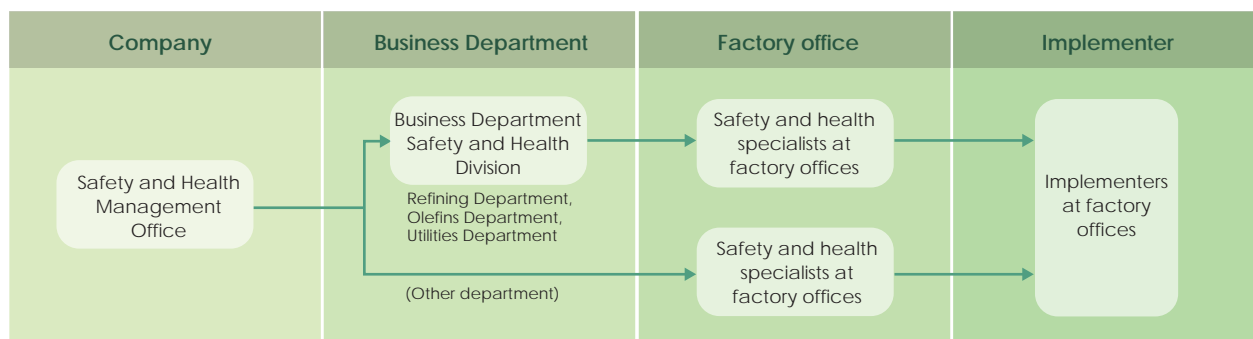
Management approach (MA)

GRI Standards: GRI 11.1 Greenhouse gas emissions; GRI 302 Energy; GRI 305 Emissions

- **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 to achieve carbon neutrality by 2050.
- **Our goals:** Achieve the vision of low carbon economy transformation

Inventory framework

FPCC compiles its GHG inventory in accordance with ISO 14064-1:2018, and commissioned BSI Taiwan to verify the GHG inventory.



Greenhouse gas emission status

Unit: tons CO₂e

	2007 (Baseline year)	2018	2019	2020
Scope 1	31,680,876	28,070,653	27,256,866	25,329,780
Scope 2	143,113	108,520	136,173	221,111
Gross emissions (Scope 1 + Scope 2)	31,823,989	28,179,173	27,393,038	25,550,891
Scope 3	Began compiling the inventory in 2019		29,333,461	55,545,097

Note 1: Scope 1 refers to direct emissions from energy, i.e., GHG emissions from burning fuel.

Note 2: Scope 2 refers to indirect emissions from energy, i.e., GHG emissions from steam and electricity.

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 2021 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.

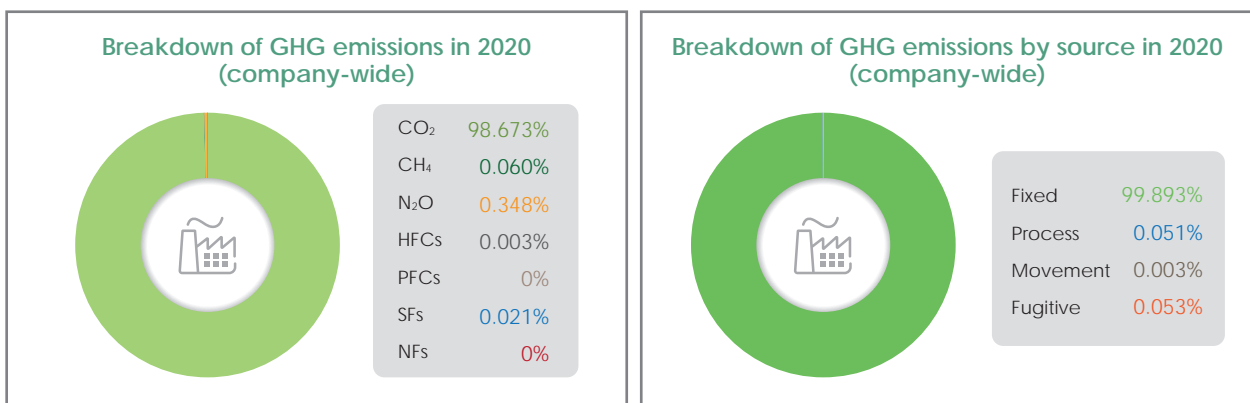
Note 6: Scope 3 refers to other indirect emissions, such as: products and services purchased, fuel and energy related activities, and upstream (downstream) transportation and delivery.

Note 7: The following items were added to Scope 3 GHG emissions in 2020: capital goods, processing of products sold, use of products sold, and ultimate disposal of products sold.

Analysis of GHG emissions over the years (company-wide)

	2007 (Baseline year)	2018	2019	2020
Greenhouse gas emissions (Thousand tons CO ₂ e)	31,824	28,179	27,393	25,551
Business revenue (NT\$1 million)	701,195	767,550	646,023	415,282
GHG emission per unit revenue (Thousand tons CO ₂ e/NT\$1 million)	0.045	0.037	0.042	0.062

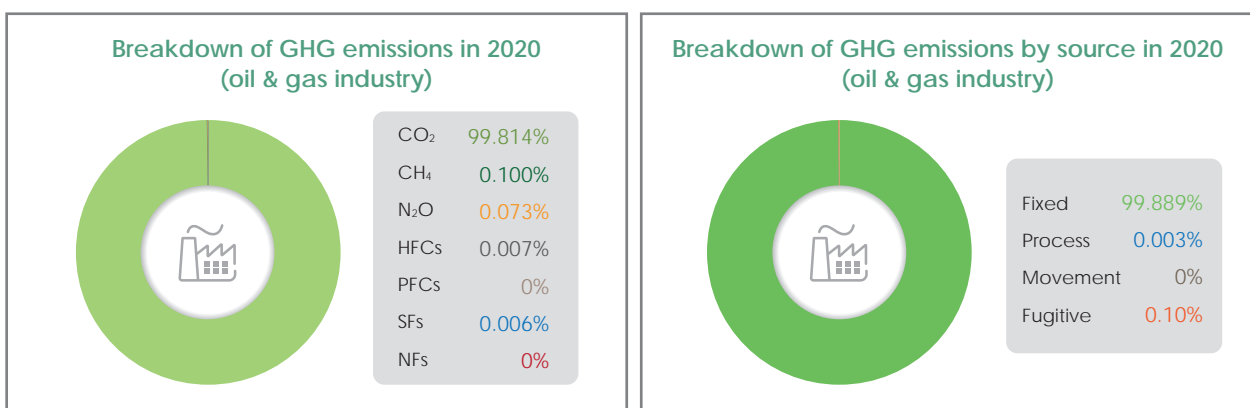
Further analysis of GHG emission per unit revenue shows that GHG emissions in 2020 decreased 6.7% compared to the previous year while revenue also decreased 35.7%. Hence, GHG emission per unit revenue increased to 0.062 thousand tons CO₂e/NT\$1 million.



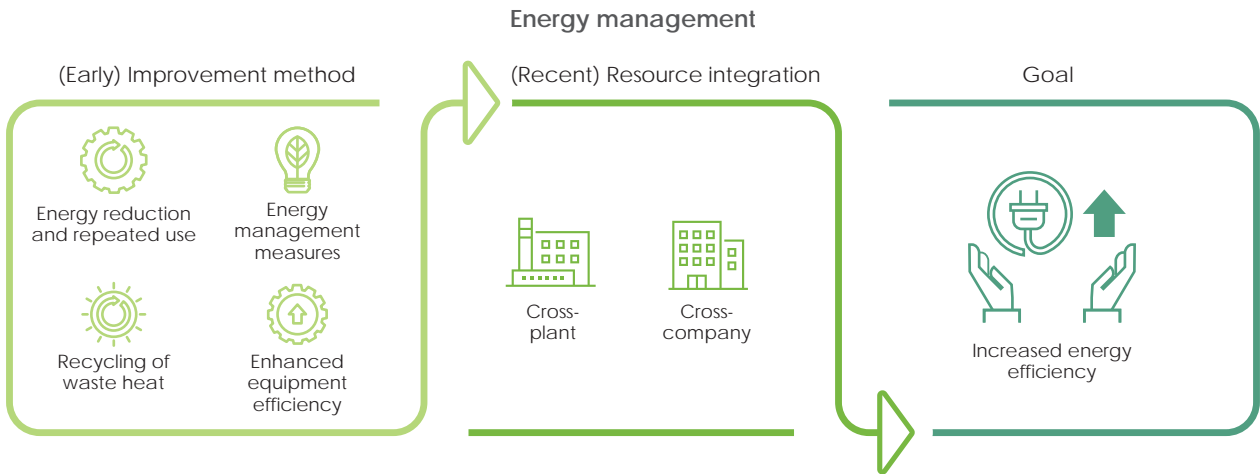
Analysis of GHG emissions over the years (oil-gas industry)

	2007 (Baseline year)	2018	2019	2020
Greenhouse gas emissions (CO ₂ e thousand tons)	10,500	11,999	12,116	10,902
Business revenue (NT\$1 million)	667,799	722,848	604,348	378,125
GHG emission per unit revenue (Thousand tons CO ₂ e/NT\$1 million)	0.016	0.017	0.020	0.029

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 2020 decreased 10% compared to the previous year, while revenue decreased 37.4% due to the pandemic and vehicle suspension during an incident. Hence, GHG emission per unit revenue increased to 0.029 thousand metric tons CO₂e/NT\$1 million.



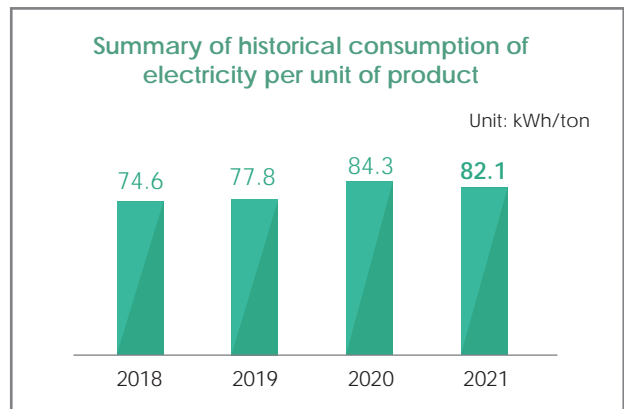
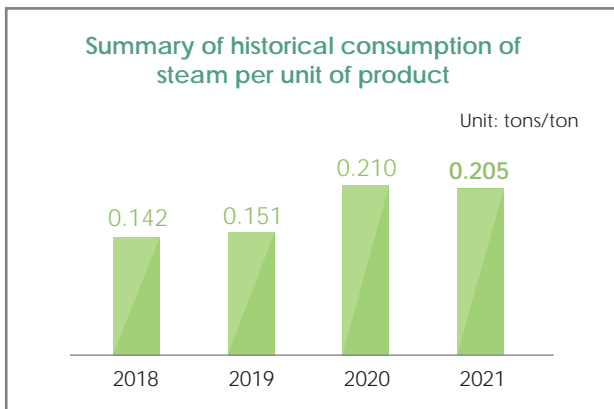
We appointed dedicated personnel at business departments and factory offices to implement numerous process improvement and energy management projects, so as to continue reducing emissions.

Energy use and consumption

Total energy consumption over the years

Energy category	2018	2019	2020	2021
Non-renewable energy	95.6%	83.7%	82.4%	83.1%
Renewable energy	0%	0%	0%	0%
Natural gas	4.4%	16.3%	17.6%	16.9%
Diesel	0%	0%	0%	0%

Energy category (x10 ⁶ MJ)	2018	2019	2020	2021
Non-renewable energy	261,757	242,343	222,279	251,553
Renewable energy	0	0	0	0
Natural gas	18,046	71,670	74,596	77,840
Diesel	0	0	0	0



Note: Source: Formosa Plastics Group Business Intelligence system database



In 2021, FPCC's total production capacity was 29,864.9 thousand tons, used 6,131.1 thousand tons of steam, and used an average of 699.9 tons of steam per hour, which is equivalent to 0.205 tons/ton per unit. Total electricity consumption for the entire year was 2,452 million kWh, and hourly average electricity consumption was 279,879 kWh, which is a unit electricity consumption of 82.1 kWh/ton. Steam consumption and electricity consumption per unit product in 2021 were both lower than the previous year.

Implementation status of main energy conservation projects

Energy conservation action plans

Project name	Year/Schedule	Expected benefits	Actual outcomes in 2021
Adding a coal control and optimization system to UPC units	2021/01/26~ 2021/12/29	Reduced 22,714 tons of CO ₂ e	Reduced 32,750 tons of CO ₂ e
Adding a coal control and optimization system to UPB units	2020/01/30~ 2021/12/30	Reduced 22,714 tons of CO ₂ e	Reduced 23,311 tons of CO ₂ e
Steam saved on lowering the temperature of ARU5 stripper	2020/09/16~ 2021/08/30	Reduced 3,471 tons of CO ₂ e	Reduced 17,343 tons of CO ₂ e
HYD2 methane gas feed improvement to reduce gas use by reformer	2020/02/27~ 2021/11/30	Reduced 14,412 tons of CO ₂ e	Reduced 14,412 tons of CO ₂ e
DCULCGO low-end heat recycling	2006/12/28~ 2021/12/28	Reduced 13,841 tons of CO ₂ e	Reduced 13,768 tons of CO ₂ e

Summary of historical energy-saving performance

	Accumulated volume (1999~2020)	2021	Accumulated volume (1999~2021)	Ongoing	Total
Number of cases improved	1,612	166	1,778	510	2,288
Steam saved (tons/hour)	943.12	31.45	974.57	78.16	1,052.73
Electricity saved (Thousand kWh/hour)	146.40	4.23	150.63	35.87	186.50
Fuels saved (tons/hour)	92.36	4.00	96.36	14.06	110.42
CO ₂ e reduction (10 thousand tons)	509.47	17.35	526.82	58.26	585.08
Investment amount (NTD 100 million)	78.15	8.39	86.54	26.46	113.00

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.

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 2021. Our performance in the past three years is shown in the table below. We will continue to carry out GHG and water consumption-related management, actions, and disclosures in the future. For more detailed information, please visit the Company's ESG website: <https://fpcc-esg.com/>

	Climate change	Water consumption
2019 rating	A-	A-
2020 rating	A-	A
2021 rating	A-	A

3.3 Air pollution management and prevention

Air pollution prevention

Management approach (MA)

GRI Standards: GRI 11.3 Air pollutant emissions; GRI 305 Emissions; GRI 416 Customer health and safety



- **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.

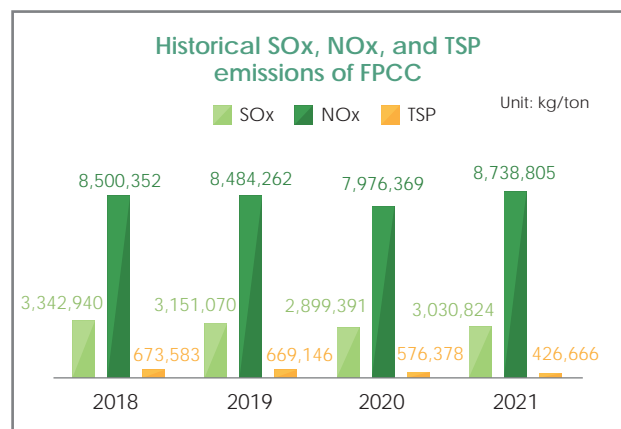
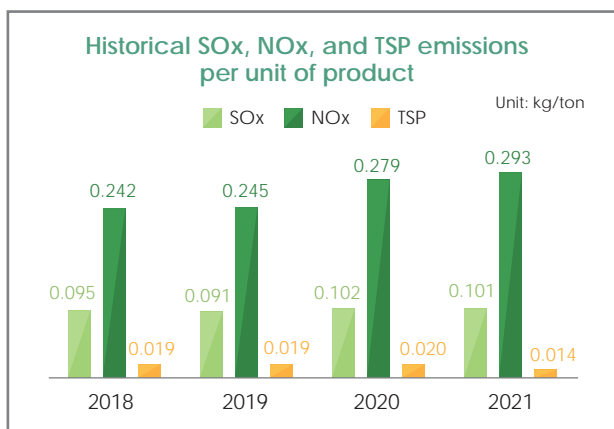
	<p>Best Available Control Technology (BACT)</p> <p>Low-contamination gases and fuels are used. Oil-gas recycling systems are established. Static dust collectors and bagged dust collectors are set up. Low nitrogen oxide burners and denitrification exhaust facilities as well as desulfurization exhaust 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.</p>
	<p>Monitoring (Inspection) Operations Management</p> <p>Continuous Emission Monitoring System (CEMS), factory-wide chimney monitoring and filming, Fourier Transform InfraRed (FTIR) surrounding surveillance, (GasFindIR) gas detection infrared camera, external air quality monitoring, weekly joint (roving) testing for foreign odors, periodic testing of equipment elements, periodic testing of discharge channels, waste gas burning tower monitoring facilities.</p>
	<p>Volume Reduction Measures Management</p> <p>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.</p>
	<p>Pollution Emission Control</p> <p>Air pollutant emissions cap, fixed air pollutant operation certificate control, environmental evaluation-based commitment to emission control.</p>

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

Category	Ingredient	Domestic market		International market	
		Guidelines	Actual value	Guidelines	Actual value
Gasoline	Benzene	1.0 vol%,max	0.55	1.5vol%,max	0.80
	Lead	0.013 g/l,max	<0.003	0.01g/l,max	<0.003
	Sulfur	10ppm,max	6.11	50ppm,max	27.19
Diesel	Sulfur	10ppm,max	7.30	200ppm,max	140.00
				10ppm,max	7.01

The best available pollution prevention equipment is used for air pollution prevention. In 2021, FPCC's total production capacity was 29,864.9 thousand tons, sulfur oxides (SOx) emission per unit of product was 0.101 kg/tons and nitrogen oxides (NOx) was 0.293 kg/tons.

SOx emissions was 3,030,824 kg, NOx emissions was 8,738,805 kg, and TSP emissions was 426,666 kg in 2021.



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

Our SOx and NOx emissions in 2021 were higher than 2020. In the future, we will continue to reduce emissions of SOx, NOx, and TSP per unit product, continue to add MGGH, and WESP, add the most suitable amount of ammonia, and plan the use of low sulfur fuels in processes.

Park_Air Quality Assessment

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

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



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

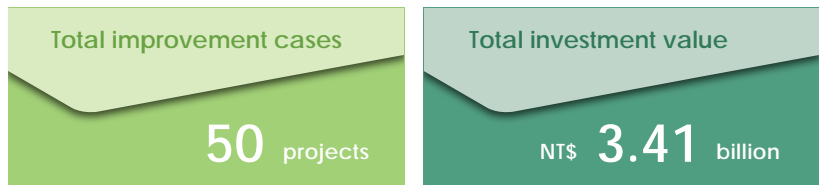
Locations of monitoring equipment inside the premises



VOCs Reduction and Foreign Odor Control

Mailliao 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\$3.41 billion in 50 improvement projects as of 2021.



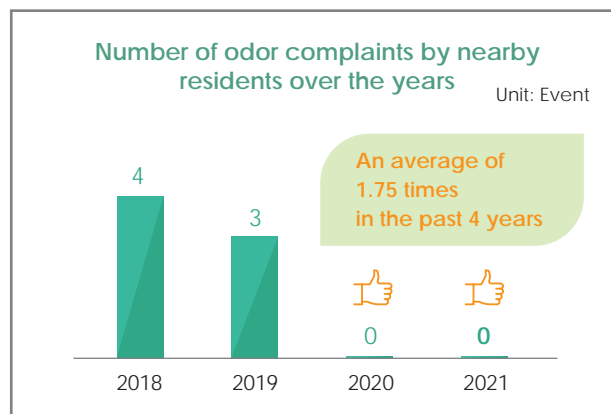
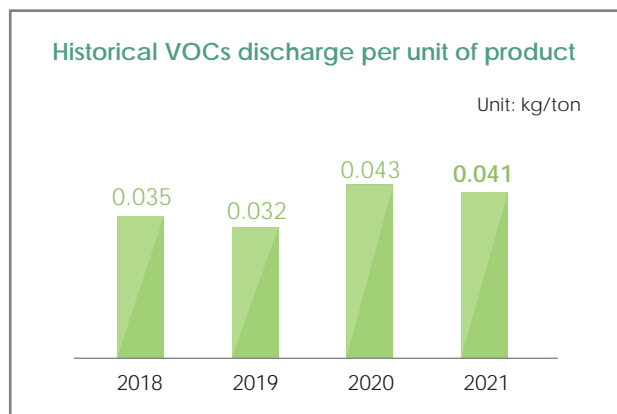
VOCs discharge reduction and improvement over the years

Item \ Year	2018	2019	2020	2021	Accumulated volume 1999~2021
Number of cases improved	2	1	3	1	50
Discharge channels (Tons)	0	0.14	145.42	0	174.46
Equipment elements (Tons)	0	0	0	0	5.25
Storage tanks (Tons)	71.90	0	0	130.2	224.74
Loading facilities (Tons)	0	0	0	0	0.31
Total (Tons)	71.90	0.14	145.42	130.2	404.76
Investment amount (NT\$1,000)	376,123	309,700	200,240	361,123	3,411,242

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

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. In 2021, total production capacity was 29,864.9 thousand tons, and VOCs discharge per unit product decreased 4.65% compared with the previous year. In the future, we will increase air pollution reduction equipment (collection from storage tank to CFB), and continue to reduce VOCs discharge per unit product.



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

Complaints of odor by nearby residents

After odor source improvements at Mailliao Industrial Park, the number of odor complaints by nearby residents has gradually decreased each year. There were 0 odor complaints by nearby residents in 2021, show that overall control has obtained excellent results.

Monitoring of moving pollution sources

To maintain the air quality in Yunlin County, we require diesel vehicles that enter Mailliao 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, of the 167 diesel vehicles stopped on roads (the exhaust inspection was performed if the vehicle has not yet been inspected for the year) near Mailliao Industrial Park in 2021, only 1 did not conform to standards; the non-conforming rate of inspections was 1.18%, and the non-conforming rate of stopped vehicles was 0.60%. 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)
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%
2021	1,502	167	85	1	1.18%	0.60%	0.07%

We completed the installation of a high voltage shore power system in December 2020 in coordination with Mailliao Harbor's need to pass the EcoPorts certification. Reengineering of equipment for connecting ships to shore power was completed in 2021, and will begin use before June 2022 after technicians conduct shore power connection tests, in order to further improve air quality in the harbor.

3.4 Water Resources, Wastewater, and Waste Management

Management approach (MA)

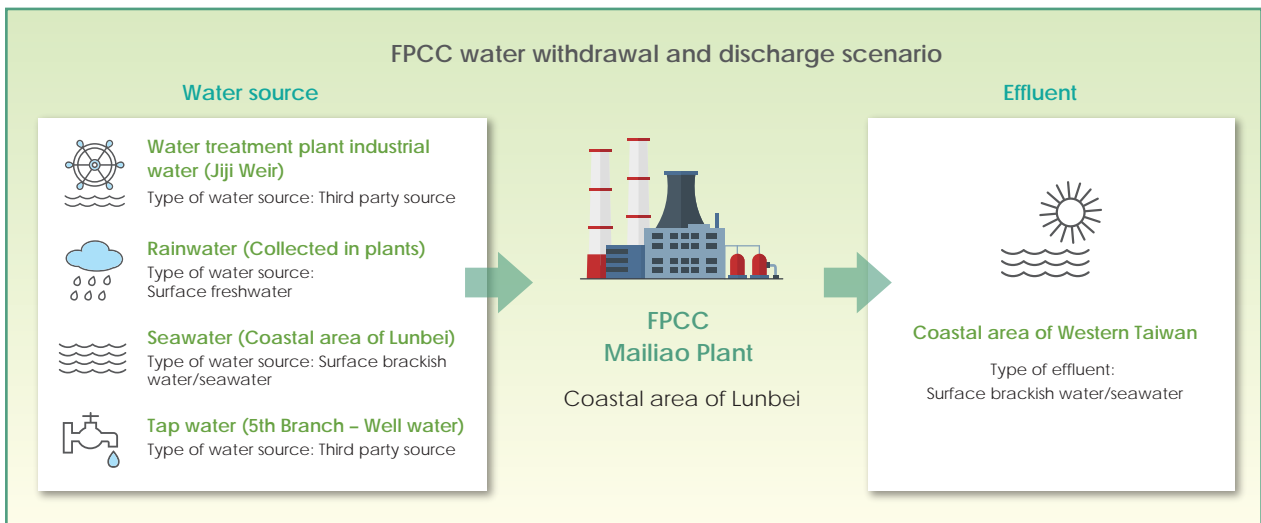
GRI Standards: GRI 11.6 Water and effluents: GRI 303 Water and effluents in 2018

- **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 after treatment along Taiwan’s west coast includes third party terminals and seawater.



Water withdrawal from source

Unit: Million L

Water source	2018	2019	2020	2021
Surface water (Industrial water)	48,638.531	46,361.055	43,436.974	43,367.214
Seawater	1,796,063.179	2,113,824.000	1,846,872.000	2,166,124.800
Rainwater	2,876.568	3,669.710	3,576.758	3,601.497
Tap water	125.395	110.869	95.229	89.460
Total water withdrawal	1,847,703.673	2,163,965.634	1,893,980.961	2,213,182.971

Water resource risk and impact assessment

The AWARE method is used for assessing water resource risk and impact assessment. The method assumes decreasing water supply in each area to assess the potential effect of water shortage on human beings or the ecosystem (Boulay et al. 2016). The method divides Taiwan into 18 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:



Formosa Petrochemical Corporation

Mailiao Plant 1

Mailiao Plant 2

Mailiao Plant 3

River basin	WULCA (Water Use Life Cycle Assessment) coefficient	
Coastal area of Lunbei	Basin code 7375	Monthly average 0.70

Water situation response measures

Unit: Days

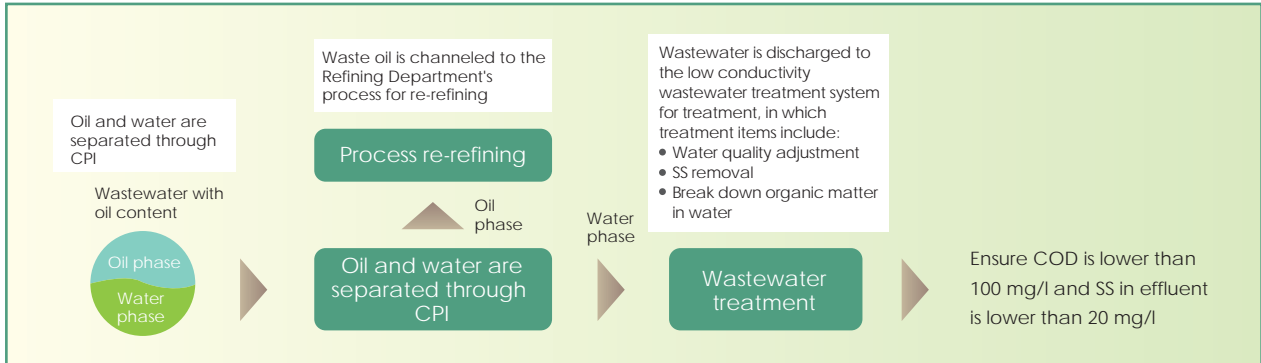
Water situation light	Normal water supply	Slight water shortage	Reduced pressure water supply	Reduced water supply	Water supply by area or at fixed location
FPCC's water situation response measures	Water rationing not necessary	1. Water conservation management measures 2. Reduction of process water usage 3. Reduce evaporation loss 4. Recycling and reuse of wastewater	Suspend industrial water consumption unrelated to production	1. Increase the concentration times of cooling water tower 2. Gradually suspend the operations of some processes	Suspend the operations of at least half of all processes and only provide necessary water for process safety and fire safety
Situations in 2021	193	70 (20210101~20210224; 20210607~20210621)	102 (20210225~20210606)	0	0

Source: Website of the Water Resources Agency (<https://www.wra.gov.tw/EarlyWarning.aspx?n=18804&sms=0>)

Water Improvements Over the Years

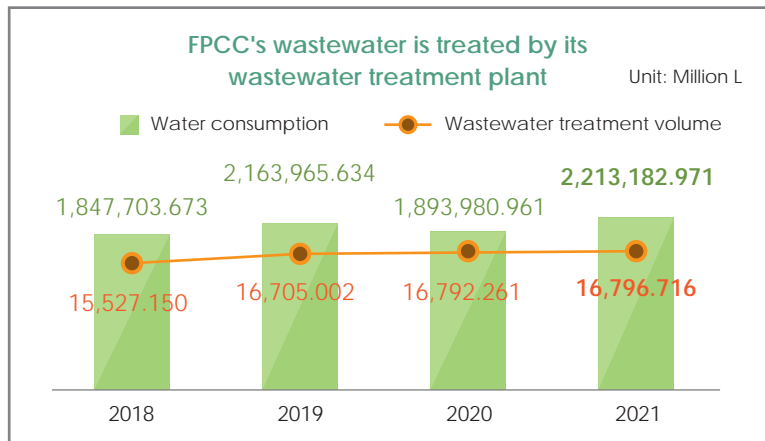
Item	Accumulated volume (1999~2020)	2021	Accumulated volume (1999~2021)	Ongoing	Total
Number of cases improved	536	50	586	96	682
Volume of water conserved (Million liters/Day)	90.553	5.691	96.244	4.994	101.238
Investment amount (NTD 100 million)	14.21	4.16	18.37	1.92	20.29
Improvement results (NTD 100 million)	3.94	0.26	4.20	0.20	4.40

3.4.2 Water Pollution Prevention and Treatment Guidelines and Wastewater Management



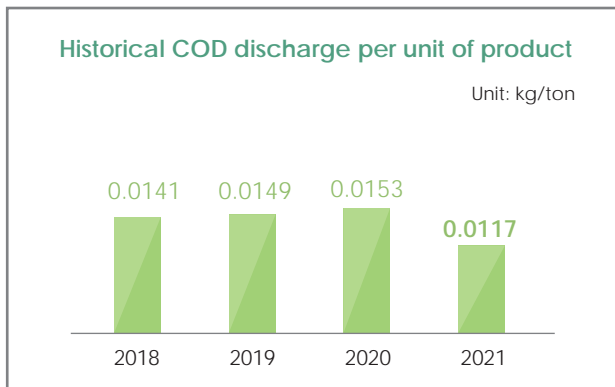
Water resources used in product manufacturing include industrial ultra pure water and steam, which are mainly used for equipment heating, heat exchange, heat recovery, equipment cooling, and power generation facilities, allowing raw materials to be made into high quality products through the manufacturing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

FPCC's wastewater is treated by its wastewater treatment plant.

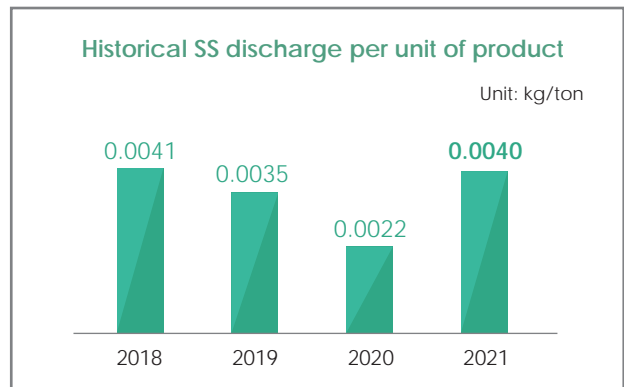


Note: FPCC's wastewater treatment volume is the same as its water discharge.

FPCC's COD discharge per unit of product was 0.0117 kg/ton and SS discharge per unit of product was 0.0040 kg/ton, 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.

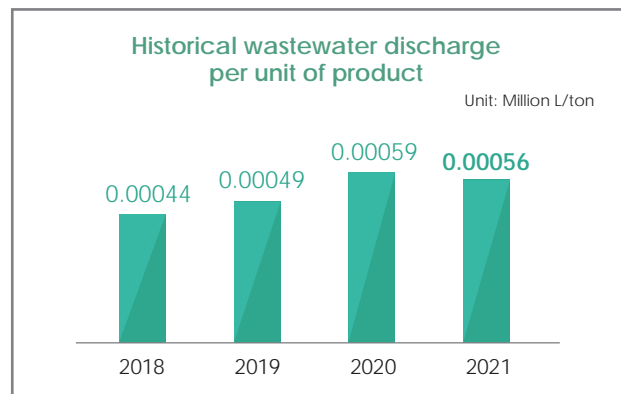


Source: The Formosa Plastics Group water pollution prevention and treatment management computer-based database



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

The effluent volume generated by FPCC throughout 2021 was 46 thousand tons per day. The quality of water eventually discharged into the Taiwan Strait met effluent standards after wastewater treatment. The volume of wastewater discharged per unit of product in 2021 decreased 5.08% compared to the previous year to 0.00056 million L/ton. 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.



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

Year	Effluent water quality control statistics										
	CMD		pH value			COD(mg/L)			SS(mg/L)		
	Permitted volume	Discharge	Regulation (environmental impact assessment)	Internal control value	Average	Regulation (environmental impact assessment)	Internal control value	Average	Regulation (environmental impact assessment)	Internal control value	Average
2018	119,395	42,540	6-9	6.5-8.5	7.3	100	80	28.54	20	16	8.98
2019	119,395	45,767	6-9	6.5-8.5	7.2	100	80	21.82	20	16	5.99
2020	119,395	46,006	6-9	6.5-8.5	7.6	100	80	19.26	20	16	4.31
2021	123,828	46,018	6-9	6.5-8.5	7.6	100	80	18.09	20	16	7.25

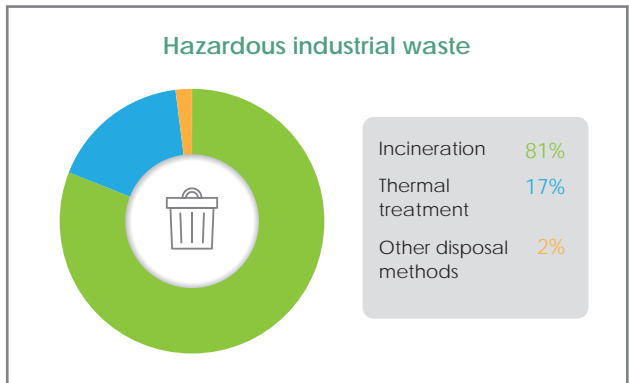
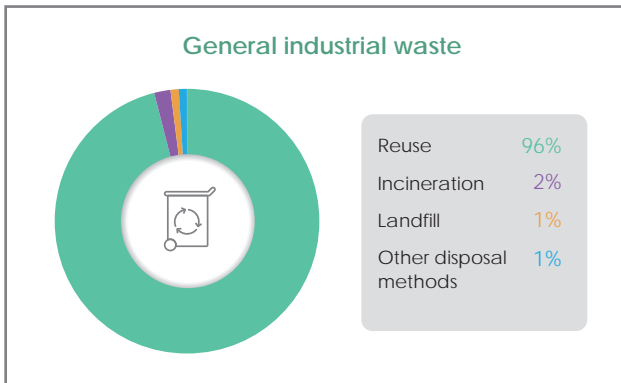
3.4.3 Waste Management

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 2021 totaled 1,217,132 tons, in which general industrial waste accounted for 1,216,709 tons and hazardous waste accounted for 423 tons. There were no severe leakages of waste in 2021.

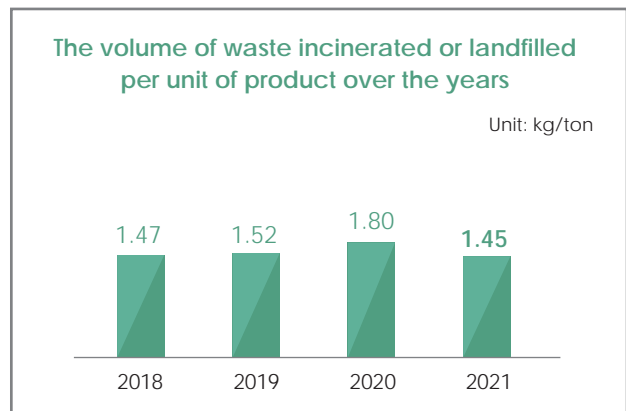
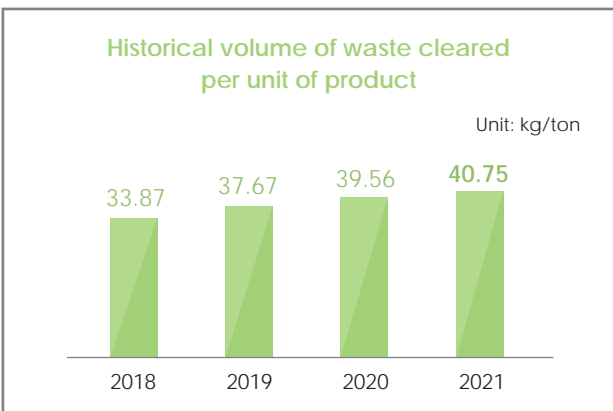
Overview of waste management over the years

	2018	2019	2020	2021
General industrial waste (Tons)	1,189,879	1,294,358	1,129,260	1,216,709
Hazardous industrial waste (Tons)	277	902	403	423
Waste clearance quantity (Tons)	1,190,156	1,295,260	1,129,663	1,217,132
Product (Tons)	35,143,295	34,381,905	28,555,947	29,864,862
The volume of waste cleared per unit of product (Kg/Ton)	33.87	37.67	39.56	40.75
Incineration and landfill (Kg)	51,754,636	52,108,767	51,427,602	43,342,889
The volume of waste incinerated or land filled per unit of product (Kg/Ton)	1.47	1.52	1.80	1.45

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



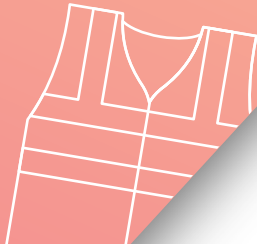
Of the general industrial waste, 96% (1,163,641 tons) was recycled, 2% (29,148 tons) was incinerated, 1% (13,852 tons) was landfilled, and 1% (10,068 tons) was treated using other methods (e.g., physical treatment and thermal treatment) Of the hazardous waste, 81% (343 tons) was incinerated, 17% (73 tons) used thermal treatment, and 2% (7 tons) was treated using other methods (e.g., solidification and chemical treatment).



The volume of waste cleared per unit of product was 40.75 kg/ton in 2021, an increase of 1.19 kg/ton compared with last year. The volume of waste generated due to periodic and annual maintenance increased 87,000 compared with 2020, resulting in the increase in volume of waste cleared per unit of product. The volume of waste incinerated and buried per unit of product was 1.45 kg/ton, down 0.35 kg/ton compared with last year, which was due to the percentage of waste recycled in 2021.

4

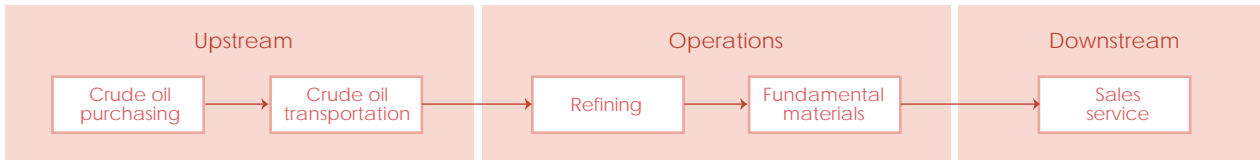
Deepening the New Culture of Labor Safety



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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 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."



Strategy

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

Sustainable Development Goals (SDGs)



Sustainability Issue

Industrial and public safety, oil products transportation and storage safety, and emergency response measures

Stakeholders

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



Industrial and public safety

● Targets in 2021

- Continue to conduct PHA analysis for the same (similar) processes in each business department. Implement Procedural HazOp.
- Formulate and implement countermeasures for causes of accidents in the previous year.
- Contractor management:
 - Prepare a checklist for spot inspections by supervisors required by law to improve the implementation of spot inspections.
 - Compiled JSA checklists to improve the implementation of JSA.

● 2021 Performance

- Organized PSM certifications in 2021: "Six certifications including employee participation," "Five certifications including incident investigation" and "3 PHA certifications" were obtained by 16, 21, and 36 people, respectively.
- Commissioned TUV Rheinland Taiwan Ltd. to organize LOPA-SIS training, and 55 people qualified in the training
- Completed 18 similar processes in 2021 and 33 similar processes in total with a completion rate of 100%.
- Completed the review of all analyzed content based on learning experience (51 people received technique training and learning through drills) in the "Refinery Plant 2 Amine Area Procedure Hadzop Review"
- Implementation results of countermeasures formulated based on accident analysis: 2 accidents. 0 deaths from major occupational disasters. frequency of disabling injuries was 0.23; severity of disabling injuries was 1, same as 2020.
- Implemented "inspection by operations supervisor of contractor and JSA inspection by construction safety personnel."
- The average number of abnormalities found in monthly labor safety compliance audits was 0.82 cases/plant



Industrial and public safety

● **Targets in 2022**

- Implement Procedural HazOp.
Promoted false alarm case study and database construction
- Personnel at each level carry out tasks according to regulations before, during, and after operations.
- Formulate and implement countermeasures for causes of accidents in the previous year, and prevent accidents from occurring again.
- Continue to implement contractor self-management:
 1. Improve the implementation of JSA spot inspections.
 2. Improve the implementation of spot inspections by supervisors.

● **Mid-term and long-term vision**

- Aim to achieve zero accidents
- Establish the Company's safety culture.
- Continue to improve the completeness of PHA
- Promote self-management by contractors and lower their accident rate.

4.1 Creating a Labor Safety Culture

Management approach (MA)

GRI Standards: GRI 11.9 Employee Health & Safety; GRI 403 Occupational Health and Safety (2018)

- **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.

<p>Our Commitment in Operations</p> <p>We will improve the industry's work environment to achieve zero accidents</p>	<p>Understanding Hazards and Risks</p>			<p>Learning from Experiences</p> <p>Continued Optimization in Two Aspects</p> <ul style="list-style-type: none"> ● Periodically conduct statistical analysis of incidents (false alarms) and findings in internal/external audits, and formulate improvement and action plans ● Collect and promote cases (EHS reporting and professional technology management platform)
<p>Excellent Risk Management</p> <p>We achieve "disaster mitigation" and "disaster prediction" through hazard and risk identification and analysis</p>	<p> Safe transportation</p>	<p> Contractor management</p>	<p> Environmental management</p>	
	<p> Occupational health and safety</p>	<p> Chemical safety of products</p>	<p> Emergency response</p>	

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

In 2021, our death rate due to occupational accidents was 0, frequency of disabling injuries was 0.23, severity of disabling injuries was 1, and comprehensive injury index was 0.02, the same as 2020.

There were 2 occupational accidents involving employees and 4 occupational accidents involving contractors in 2021, resulting in 4 disabling injuries, specifically:

- 2 occupational accidents involving employees: 1 collision accident (1 person) and 1 pinch accident (1 person).
- The 4 occupational accidents involving contractors included 1 falling accident (2 people), 1 slip accident (1 person), 1 collision accident (1 person), and 1 cut accident (1 person).

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

There were no major violations (NT\$1 million and above) in 2021, and the competent authority imposed 2 fines for violations of regulations.

2020		2021	
Number of cases	Amount of fine	Number of cases	Amount of fine
2	NT\$360,000	2	NT\$360,000

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					
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
2021	4,650	427	5,077	1,287,022	10,311,445	2	12	0.19	1	0.02

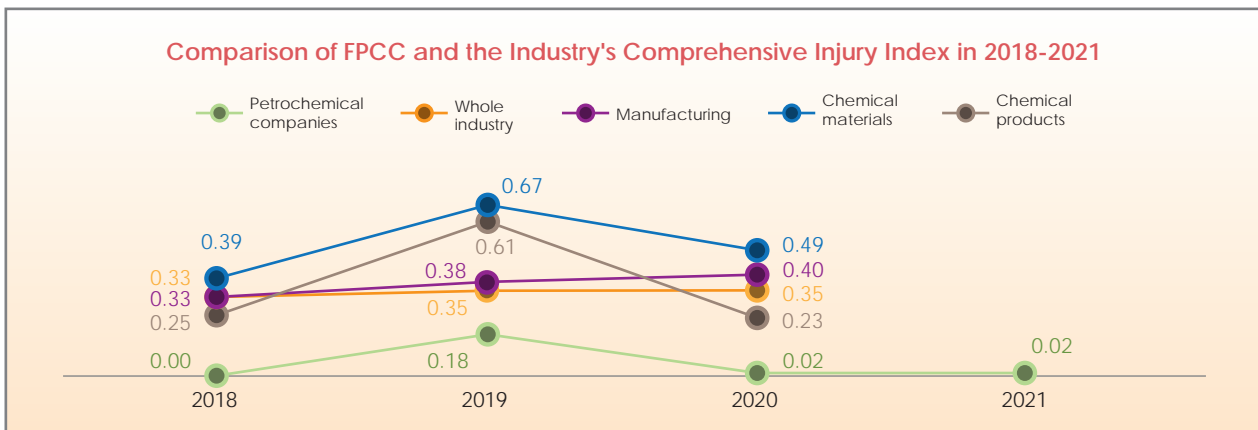
Note 1: Severity of disabling injuries (SR) = (Total number of days lost × 10⁶) / Total work hours elapsed

Note 2: Frequency of disabling injuries (FR) = (Number of disabling injuries × 10⁶) / Total work hours elapsed

Note 3: Comprehensive injury index = ((FR*SR)/1,000)^(1/2)

Note 4: For the past four years, accidents at work have only happened to men and all of them happened in our Mailliao Plant in Yunlin County; the number of employees injured at work in 2021 was 2.

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



Note: Industry data for 2021 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	Severity of disabling injuries	Comprehensive injury index
	Total work days	Total work hours elapsed					
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
2021	1,130,317	9,042,533	4	31	0.44	3.43	0.04

Note 1: Severity of disabling injuries (SR) = (Total number of days lost × 10⁶)/Total work hours elapsed

Note 2: Frequency of disabling injuries (FR) = (Number of disabling injuries × 10⁶)/Total work hours elapsed

Note 3: Comprehensive injury index = ((FR*SR)/1,000)^(1/2)

Details of violations of the Occupational Safety and Health Act in 2021

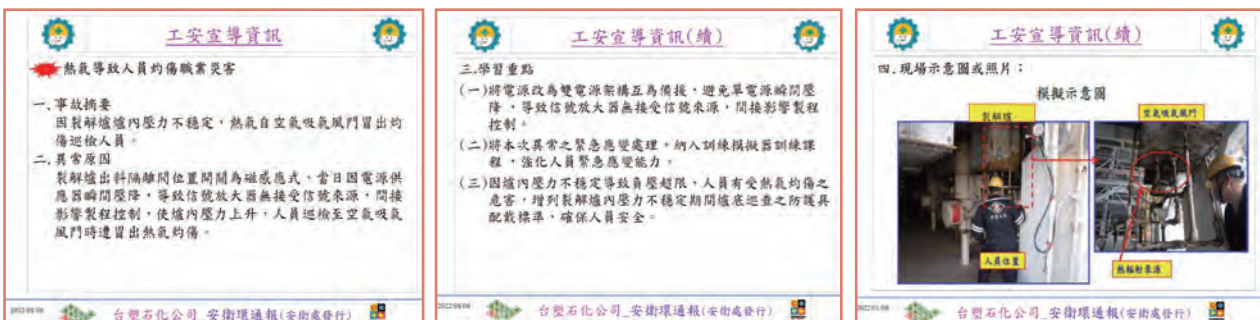
Item	Reason for fine due to violation of regulations	Amount of fine (NT\$10,000)	Improvement status
01	Normal operation of emergency shower equipment installed next to the tanks of specific chemicals was not maintained (did not have water during the inspection).	NT\$60,000	1. Improved water sources to ensure stable water supply. 2. Conducted on-site inspections, recorded abnormalities in detail, and immediately made improvements.
02	During the pressure buildup and maintenance leakage test for a periodic equipment inspection on August 24, a leakage occurred at the flange of the flow meter and caused a fire accident.	NT\$300,000	1. Changed the model of the ultrasonic flow meter to prevent abnormal construction quality from creating the risk of leakage. 2. When removing flange bolts, the tightening torque must be recorded for each bolt.

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 cause of employee accidents was "insufficient safety awareness." We will strengthen inspection and supervision by supervisors at each level and carry out safety observations and interviews in 2022 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."

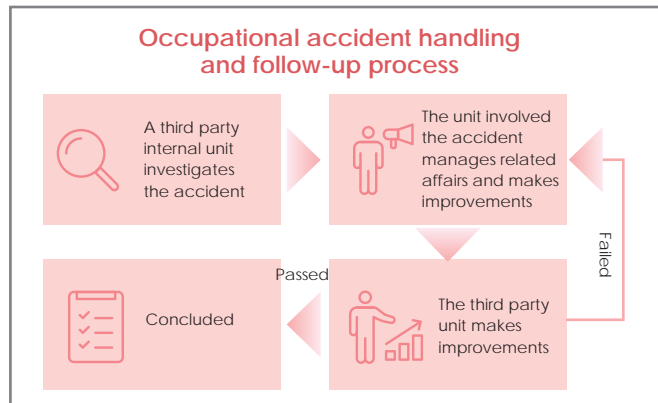


Promotion of occupational accident prevention and EHS reporting

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

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

Year	Number of cases		Days lost
	Going to work	Leaving work	
2018	7 (63%)	4 (37%)	532
2019	10 (44%)	13 (56%)	946
2020	6 (50%)	6 (50%)	6,787
2021	6 (50%)	6 (50%)	6,553

Note: There was 1 death from a traffic accident in 2021.

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 2021, and the number of days lost was 6,553 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.

Case Studies



Implement new approaches to traffic safety management

Promotion of traffic safety videos on a professional technology management platform



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 incidents, 1 incident, and 1 incident occurred in 2019-2021, respectively. 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 EHS Center continues to commission the Technical Training Center to assist in personnel training, hoping that the training mission will establish more accurate knowledge and management of process safety by employees.

Date of abnormality 2021.08.24	Number of days affected 23
Reason for abnormality A flange gasket of the ultrasonic flow meter in the oil pipeline area at the bottom of the high pressure separation tank was unevenly fastened and leaked during operation; the high pressure hydrogen leaked caused a fire accident.	Improvement measure 1. Changed the model of the flow meter to prevent poor construction quality by personnel from creating the risk of leakage. 2. The construction supervisor must accompany the contractor in testing the tightening torque of flange bolts on equipment/pipelines with pressure level $\geq 900\text{lb}$, and verify quality specifications of the original manufacturer.

Year	Item	MOC	PHA	PSM			
				5 certifications	6 certifications	MI certification	3 certifications
2018		3	8	21	33	-	-
2019		2	3	17	22	1	21
2020		-	-	21	19	-	36
2021		-	-	16	21	-	36
Total		5	11	75	95	1	93

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.

A total of 442 false alarms^{Note 1} were reported in 2021 (general occupational safety incidents: 331/Process safety incidents: 111). Statistical analysis shows that the main types of accidents were 77 falling accidents, 60 exposure to hazardous substances, and 45 struck by falling objects accidents. We conducted investigations and convened meetings to review and formulate improvement measures, in hopes of continuing to discover potential hazards, and further prevent occupational accidents and fire accidents from occurring.

Reported False Alarms in 2021

2021									
Falling	Tripping	Collision	Struck by falling objects	Hit by an object	Caught	Stepped on	Electrical shock	Cuts, lacerations, scrapped	Object collapse
10	77	8	45	9	4	10	9	12	8
Broken object	Fire accident	Improper action	Exposure to high/low temperatures	Exposure to hazardous materials		Other ^{Note 2}	Traffic accidents not during commute to work		Total
29	31	10	4	60		112	4		442

Note 1: False alarm: Refers to unexpected situations where no hazard occurred, but would result in casualties or asset loss if the situation was slightly different.

Note 2: Other: Such as an unexpected or accidental equipment abnormality occurs, operational parameters exceed the normal scope of operation, failure or abnormal results in safety facility inspections and tests, pipeline corrosion, etc.

4.2.2 Contractor Operational Safety Management

The Company convenes daily toolbox meetings and monthly coordination organization meetings to communicate, promote, and discuss safety, health, and epidemic prevention with contractors. Requirements that must be immediately met are communicated through the messaging group between the Company's engineering department and contractors at any time. Contractors can use the group to ask questions at any time, and the Company's personnel will immediately respond and provide assistance.

Rotating Equipment Operational Safety Management

Based on analysis of contractor accidents in the previous year, the main issue was found to be "insufficient safety awareness of personnel using rotating equipment." 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

1. 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.



Example of checklist for supervisors



Example of JSA inspection

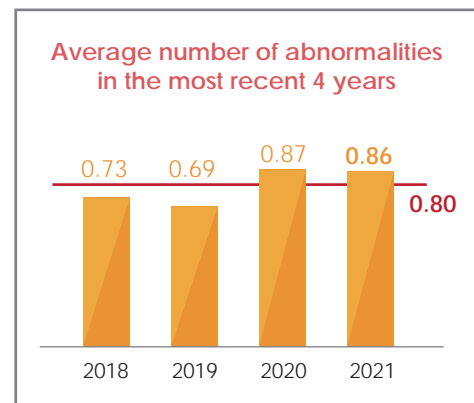
2. JSA inspection by construction safety personnel before, during, and after construction:

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

Compliance audit


We verify the implementation results of all EHS systems and compliance of all units through monthly compliance audits. With regard to safety management by each plant and division, there was an average of 0.86 abnormalities/plant in 2021, which was higher than the average of 0.80 abnormalities/plant in the past four years. "Contractor self-management and inspection implementation" was listed as a key audit item in 2019, but the number of abnormalities has already decreased (from 28% to 13% of abnormalities). Construction safety personnel of contractors not properly conducting inspections before, during, and after construction (accounted for 38% of abnormalities) has been listed as a key audit item in 2022.


Year	2018	2019	2020	2021	Total
Number of abnormalities	44	58	81	76	259
Number of times at the plant	60	84	93	88	325
Number of abnormalities/plant	0.73	0.69	0.87	0.86	0.80

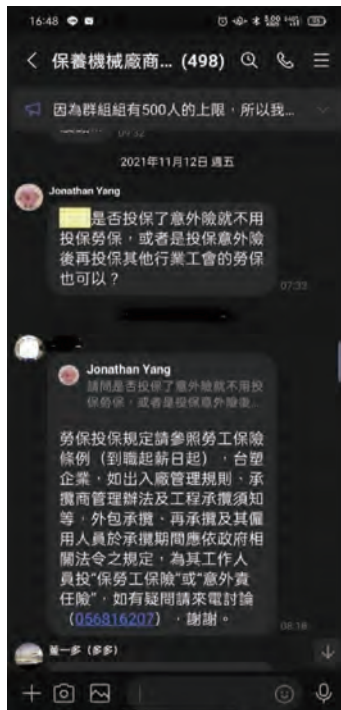
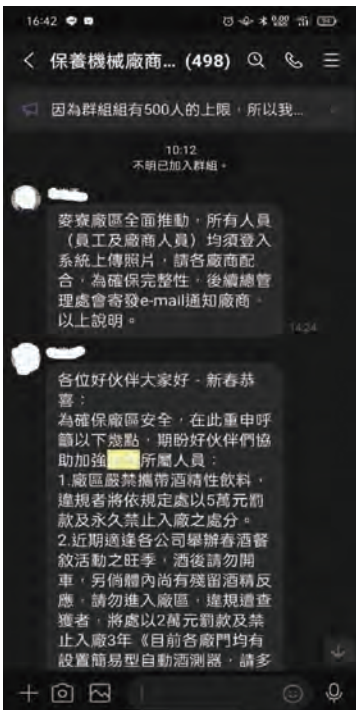


Employee and Contractor Professional Training and Certification

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.

Trainees	Training and Certification Category	Training item	Training direction and purpose	2021 training results
 Employees	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 32 batches of training were held; 15 types of training were organized with 687 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 852 training sessions were held with 43,176 participants.
	Position-specific certification	Employee position-specific certification	To improve employees' work ability and quality and ensure their professional competency	63 types of operational certifications. Number of employees that obtained certifications in 2021 reached 1,995.

Trainees	Training and Certification Category	Training item	Training direction and purpose	2021 training results
 Contractors	On-site Education and Training	On-site Education and Training	Contractors must complete "safety and health education and training" and pass tests organized by each business department (second line of access control) to obtain formal construction qualifications.	Access control safety and health training: 618 sessions with 27,625 participants from 2,142 contractors
	Contractor Certification	Safety and health management personnel certification	Strengthen the basic management skills of contractors' safety and health management personnel	A total of 556 people obtained the 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	274 people obtained professional technology certifications





4.2.3 Finished Goods Transportation and Traffic Safety

Management approach (MA)

GRI Standards: GRI 11.8 Asset and emergency event management; GRI 306 Effluents and waste

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

Oil products transportation safety

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



Long-distance Pipeline Safety Management

To ensure that transportation through long-distance pipelines outside the premises is safe, we inspect the pipelines on a daily basis. In addition, we perform cathodic protection potential tests on a quarterly basis. 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. We 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. There were no long-distance pipeline leakage incidents in 2021.

Statistical Analysis of Accidents

The number of traffic accidents that occurred in the most recent four years (2018-2021) was 1, 3, 0, and 1; the number of traffic accidents per million kilometers was 0.13, 0.37, 0, 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, and there was no leakage incidents when transporting finished products in 2021.

Year	Number of traffic accidents	Number of traffic accidents per million kilometers ^{Note}	
		Transportation Company	Taiwan
2018	1	0.13	3.24
2019	3	0.37	3.25
2020	0	0	3.17
2021	0	0	3.38

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 and reducing the hazards and risks of drivers.



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

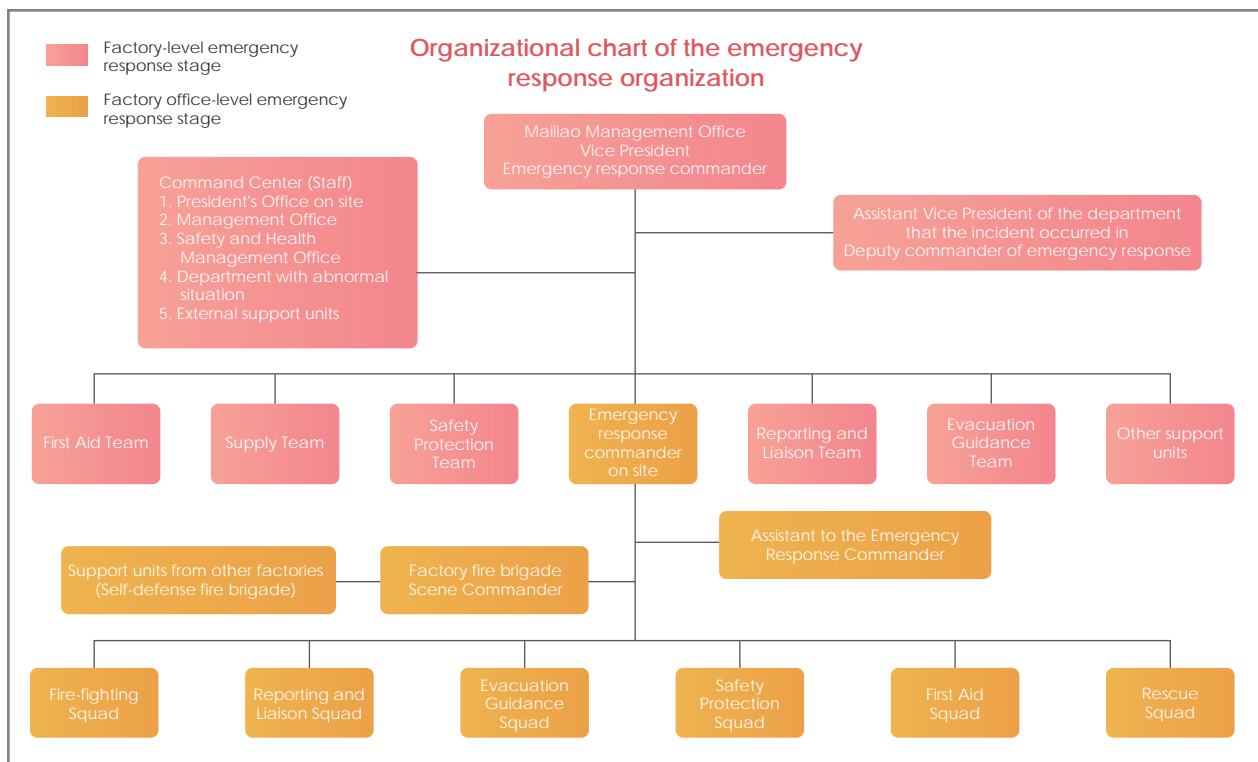
We established a complete emergency response organizational structure (invert color part in Figure 1), and implement emergency response management operations in two parts, "readiness" and "drills."

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

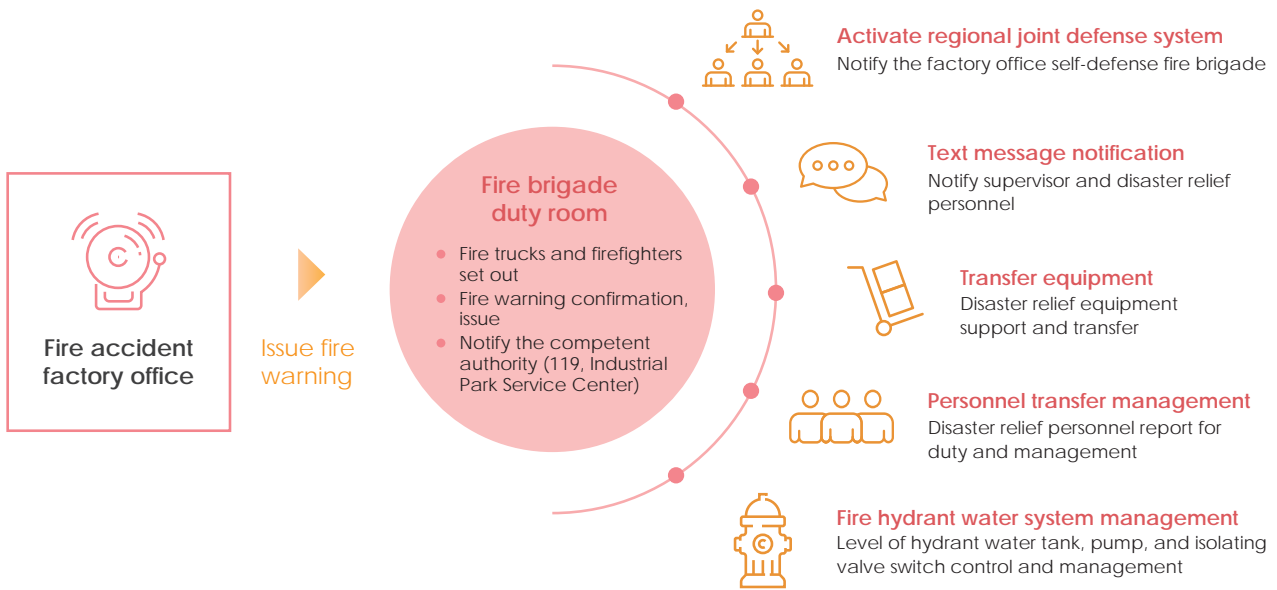
Drills are conducted according to emergency response plan, in order to improve disaster relief when an emergency occurs. Personnel are educated through live drills, and the President's Office, Business Department and other plants form a team to jointly conduct evaluations, learning from each other's strengths and internalizing them to gain better disaster relief capabilities for emergency events.



Regional Joint Defense Organization of Plants

FPCO planned four regional joint defense areas of responsibility by region and plants. Each region has a self defense fire brigade with a total of 430 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. FPCO 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

Training level		Training item	Trainees	Training frequency
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 fire safety and disaster relief 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 industrial park conducts joint drills with the county government every year, expanded joint drills with Mailliao Association for Safety & Health, annual ocean pollution drills, public area pipe carrier drills, irregular national toxic chemical substance disaster response drills, and national key infrastructure protection 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 2021 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, control room, and conveyor belt fire accident response 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
National key infrastructure protection drills	0	1	The drill is jointly conducted by the central competent authority, local government, and departments of companies, strengthening the industrial park's anti-terrorism ability
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 Mailliao 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	172	Except for personnel on duty, shifts that are not included in drills also conduct drills on their own.
Total		202	



Designated drills for national key infrastructure protection



Annual marine pollution prevention and response drills



Conveyor belt fire accident response drills



Nighttime toxic chemical leakage response drill

Issues of concern

A fire accident occurred at 23:49 on August 24, 2021 due to leakage from the flow meter's flange during the pressure buildup and maintenance leakage test after a periodic equipment inspection. 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 formed a water line to lower the temperature, carried out emergency pressure leakage at 23:54, and extinguished the fire at 00:45.

Besides being investigated by the Occupational Safety and Health Administration, MOEA Industrial Development Bureau, and Yunlin County Government, we have completed all improvements based on the cause of the incident, repaired all instruments and equipment in the area damaged by the fire, and obtained permission to resume operations on September 17, 2021.



5

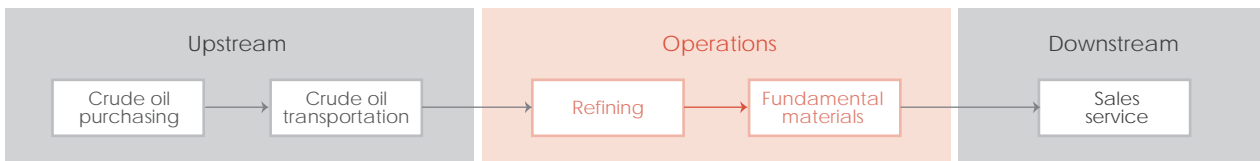
New Concepts for Talent Cultivation



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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 continue develop the employee care and protection net and created a healthy and happy culture of care. Facing the COVID-19 pandemic, we established the "COVID-19 Prevention Employee Manual" after referencing the US OSHA and Ministry of Health and Welfare, helping employees take effective health protection measures during the pandemic to protect the health and safety of employees and their family members. We rapidly implemented epidemic prevention measures 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 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
- We offered "supervisor counseling courses" to care for supervisors by strengthening their stress resistance and emotion management ability, and also organized supervisor commendation meetings

● Targets in 2022

- Construction of employee dormitories and the indoor activity center is expected to be completed in August 2022.
- Employee turnover rate of 3% and under
- Promote assistance programs for employees that require high level of care, so that more employees will receive assistance from the Company
- We offered "supervisor counseling courses" to care for supervisors by strengthening their stress resistance and emotion management ability, and also organized supervisor commendation meetings
- Promote the electric scooter subsidy project

● 2021 Performance

- Construction of the dormitory and activity center in Haifeng District was completed, and the dormitory in Mailliao District is 86.5% complete.
- Employee turnover rate of 2.33% and under
- Dedicated personnel were arranged to assist personnel reported by units as requiring high level of care
- Suspended due to the impact of the pandemic
- Won the 1111 Job Bank Happy Enterprise Award in 2021

● 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



Occupational health and safety

● 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

● Targets in 2022

- 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%
- Continue to follow up on employees with poor blood cholesterol, blood pressure, and blood sugar control
- All employees participate in CPR+AED skills training
- Organize health seminars

● 2021 Performance

- Sixth employee healthy lifestyle challenge: Suspended due to COVID-19 to prevent cluster infections
- Ratio of employees who received general and special physical examinations reached 100%
- Abnormal results in grade 4 special health examinations decreased to 0.28%
- Completed the third Nordic Musculoskeletal Questionnaire administered to all employees (4,663 people), in which 46 people were suspected to be work related. After on-site interviews with an occupational illness specialist, 1 person was verified to be work related.
- Organized the second middle age and elderly healthcare seminar

● 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 2021, the total number of full-time employees at FPCC was 5,274 with an average age of 43. 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%. 77% 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 15 years.

Formal employees accounted for 96.9% of all employees in 2021 and informal employees (e.g. consultants, fixed-term contract-based personnel, work-study students, directors) accounted for 3.1%. Except for directors, 100% of employees are Taiwanese and hold full-time positions.

Unit: persons

Type of staff	2018			2019			2020			2021		
Gender	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Formal employees(A)	4,690	421	5,111	4,726	430	5,156	4,718	428	5,146	4,683	428	5,111
Consultant	5	1	6	4	1	5	6	0	6	8	0	8
Fixed-term contract-based employees	113	22	135	114	36	150	99	37	136	86	38	124
Work-study students	19	8	27	16	4	20	30	4	34	15	9	24
Director	5	1	6	6	1	7	6	1	7	6	1	7
Non-official staff subtotal(B)	142	32	174	140	42	182	141	42	183	115	48	163
Total(C=A+B)	4,832	453	5,285	4,866	472	5,338	4,859	470	5,329	4,798	476	5,274
Ratio of formal employees(A/C)	96.6%			96.7%			96.6%			96.9%		

We continue to implement innovative organization management and streamline the organizational structure. In 2021, a total of 119 formal FPCC employees were separated (including 42 retirees), which is an employee turnover rate of 2.33%. The separation rate of our formal employees remained below 3% in the most recent 4 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						Average separation rate in Taiwan's industries
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	
2018	Age 30 and below	42	0.82%	5	0.1%	8.50%
	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%	
2020	Age 30 and below	32	0.62%	3	0.06%	10.31%
	Ages 31-50	27	0.52%	7	0.14%	
	Age 51 and above	36	0.70%	0	0%	
	Subtotal	95	1.84%	10	0.20%	

Age distribution of separated formal employees of FPCC						Average separation rate in Taiwan's industries
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	
2021	Age 30 and below	29	0.57%	6	0.12%	9.78%
	Ages 31-50	36	0.70%	1	0.02%	
	Age 51 and above	45	0.88%	2	0.04%	
	Subtotal	110	2.15%	9	0.18%	

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

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

FPCC has been fair, impartial, and open with its recruiting operation and has never hired child labor to do any work. We maximize our recruitment sources through multiple channels and hire according to the performance of each examinee. The number of new formal employees totaled 78 in 2021, accounting for 1.53% of all employees. Most new employees were under the age of 30, and accounted for 1.45% of all employees. We will continue to recruit new employees as the source of organizational innovation.

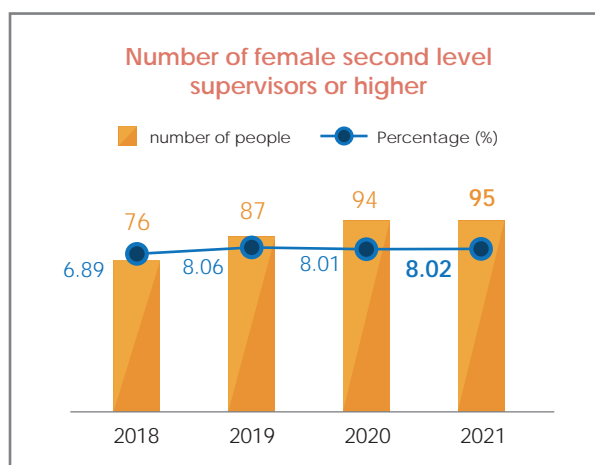
New formal employees of FPCC in 2021

Category	Sub-committee	Male		Female	
		Head count	As a percentage of total	Head count	As a percentage of total
Age	Age 30 and below	69	1.35%	5	0.10%
	Ages 31-50	4	0.08%	0	0%
	Age 51 and above	0	0%	0	0%
	Subtotal	73	1.43%	5	0.10%

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 2021. 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 4 years, and shows our efforts in creating a workplace environment with gender equality.



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 4 consecutive years.

Unit: persons

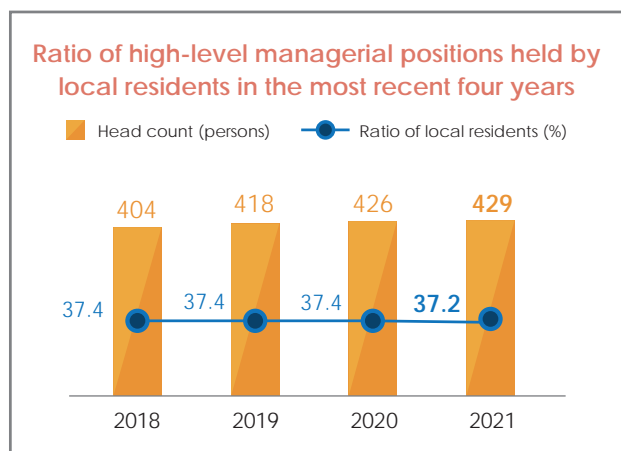
Status	2018			2019			2020			2021		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Number of employees eligible for parental leave	282	26	308	266	24	290	192	6	198	165	7	172
The actual number of employees who applied for parental leave	3	0	3	4	1	5	2	2	4	3	8	11
Number of employees expected to reinstate their employment status for the year (A)	1	0	1	4	1	5	2	4	6	2	6	8
Number of employees who applied for reinstatement of their employment status for the year (B)	1	0	1	4	1	5	2	4	6	2	6	8
Reinstatement rate % (B/A)	100%	-	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Number of employees retained	3	2	5	1	0	1	4	1	5	2	4	6
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 4 years.



Note: "Local residents" refers to senior managers whose permanent residence is registered in Yunlin, Chiayi, and Changhua Count

5.2 Employee career development

Management approach (MA)

GRI Standards: GRI 11.10 Employment practices GRI 401 Labor Relations

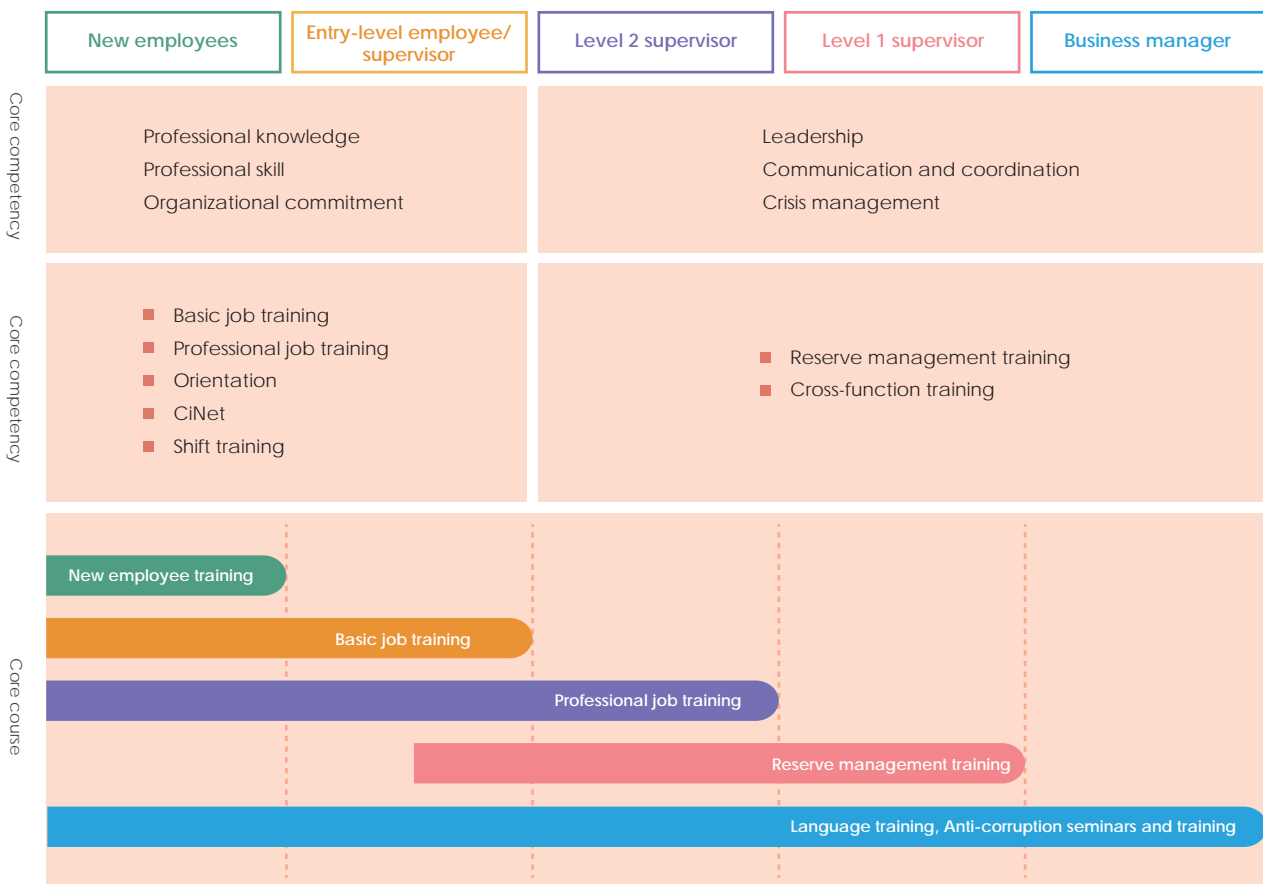
- **Sustainability Issue: Education, training, and talent cultivation**

As of the end of 2021, FPCC had sent 74 employees to receive and complete AI training (8 employees are still in training). Employees that complete training will engage in AI improvements at the production site.

- **Our commitment and responsibilities:** FPCC views employees as the foundation stone of sustainable development. We use a computerized training management system to organize training of required competencies at each stage, and utilize the latest AI technologies in training to enhance our competitiveness.

- **Our goals:** To provide a good and complete training framework and create an excellent training environment to improve employees' professional skills, so that they can continue to learn and improve when they are not at work. We hope to thus attract and retain outstanding talent and develop an outstanding enterprise.

Career Learning Map



Employee Learning Framework

Level 2 supervisors and above (inclusive)		Entry-level supervisors and under (inclusive)	
Required core competency 1. Leadership 2. Communication and coordination 3. Crisis management	Type of education and training 1. Reserve management training 2. Cross-function training	Required core competency 1. Professional knowledge 2. Professional skill 3. Organizational commitment	Type of education and training 1. Basic job training 2. Professional job training 3. Orientation 4. CiNet 5. Shift training
Training hours 23,028 hours in total, on average 19.6 hours per person		Training hours 226,965 hours in total, on average 58.5 hours per person	

Overall Performance

- Total amount invested in education and training: **NT\$ 18,248,087**
- Average hours of training received by each employee: **49.5 hours**
- Total training participation: **88,209 participants**

Major education and training results in 2021

Position-specific certification programs	VT training	New manager workshop, workshop to improve passion for work and team performance
2021 Results A total of 1,995 participants were certified 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 68 position-specific certifications in 2021.	2021 Results A total of 1,727 participants completed training 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.	2021 Results A total of 88 people participated in the workshop 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	Job Level	Management level			Entry-level supervisors and under			Company-wide mean number of hours		
		Male	Female	Subtotal	Male	Female	Subtotal	Male	Female	Subtotal
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
2021		20.7	6.4	19.6	63.1	7.7	58.5	53.2	7.4	49.5

Note: The number of training hours received by each male employee in 2021 was around 53.2 and it was around 7.4 for each female employee. This is mainly due to our emphasis on professional training for on-site operations. Female employees required relatively little professional training because most of them held office positions. 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 11.10 Employment practices GRI 402 Labor/Management Relations; GRI 404 Training and Education

- **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 131% 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.

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
2019	5,327	NT\$1,392,088	NT\$1,290,645
2020	5,215	NT\$ 1,307,167	NT\$ 1,204,604
2021	5,178	NT\$ 1,545,594	NT\$ 1,451,975

Note 1: The number of full-time employees in 2021 decreased by 37 compared to 2020, and average salary increased NT\$238,427 compared to 2020

Note 2: We began disclosing relevant information in 2018 in response to the "New Corporate Governance Blueprint (2018-2020)" announced in April 2019.



Ratio of highest salary to total annual salary of employees in 2021

Ratio of highest salary to median salary of employees (Note 1) **13.87**

Salary growth (Note 2) **54.88%**

Note 1: Ratio to annual salary = Annual salary of the highest paid employee/Median annual salary of other employees

Note 2: Growth in ratio to annual salary = Grow in annual salary of highest paid employee/Growth in median annual salary of all employees (excluding the highest paid employee)

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.



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 2021. There were no human rights cases filed through the internal complaints mechanism. All employees are 100% protected by any agreement reached in labor-management meetings or with labor unions on salary increase or year-end bonus, for example. Details are provided below:

Item \ Committee	Welfare Committee		Labor-Management Meeting		Labor Union	Occupational Safety and Health Committee	
	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	
Head count	5	12	9	9	3,563	26	13
Ratio	29%	71%	50%	50%	82%	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	2021 communication results
Welfare Committee	Statutory use of the employee welfare fund	Once every two months	All employees	<ul style="list-style-type: none"> A total of 39 benefits proposals were made and 97% were passed and implemented. The proposal that was not completed was proposed in the last meeting of 2021.
Labor-Management Meeting	Coordination of labor relations	Once every two months	All employees	<ul style="list-style-type: none"> A total of 34 proposals were made and 97% was completed. The proposal that was not completed was proposed in the last meeting of 2021, and we plan on conducting an evaluation in the following year.
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"> A total of 3 meetings were convened, 1 meeting was changed to communication in writing due to the impact of COVID-19, and a total of 107 people participated in discussions. Units with outstanding performance are encouraged during routine meetings, and units that had incidents are asked to share their experience, thereby building a consensus with regards to safety and health.
Dedicated Personnel for Providing Employee Guidance	Providing employee consultation channels	Any time	All employees	<ul style="list-style-type: none"> The 2021 EAP completed employee care 326 times, in which 133 times were new employees
Teacher Chang Foundation Taichung Branch	Providing employee consultation channels	Any time	All employees	<ul style="list-style-type: none"> Services of the Employee Consultation Hotline: 163 cases Consultation services: 111 times (114 hours)
Labor Union	Communication of labor conditions, labor benefits	Once every three months	All union members	<ul style="list-style-type: none"> A total of 12 proposals were made and 67% was completed. The 4 proposals that were not completed are extempore motions in the last meeting of 2021, and we plan on conducting an evaluation in the following year.

Violations

The Company received 1 fine notification (NT\$200,000 fine) for violation of the Labor Standards Act in 2021. The fine was due to employee overtime exceeding the legal limit. The Company has enhanced management. There were no violations in 2020.

5.4 Employee occupational health management

Management approach (MA)

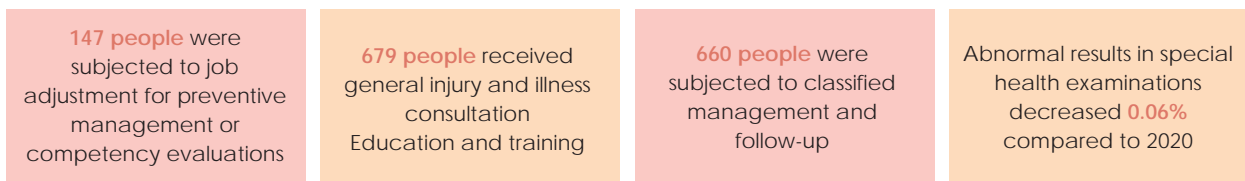
GRI Standards: GRI 11.9 Employee Health & Safety: GRI 40 3 Occupational Health and Safety

- **Sustainability Issue:** Occupational health and safety
- **Our commitment and responsibilities:** Create a happy, healthy, and safe workplace
- **Our goals:** The Company's employees and non-employees all comply with requirements of the Occupational Safety and Health Act and comprehensively implement ISO45001: 2018, using an electronic evaluation system and health examination data management software for management and follow-up on individuals. Departments work together to prevent cerebral and cardio vascular diseases caused by work, and implement numerous workplace health management projects, including ergonomic assessments and improvement, workplace maternal health protection measures, middle age and elderly employee competency assessments and improvement, epidemic prevention, and first aid. Contracts specify that an additional 10-15% is provided as a safety and health management fee for contractors to implement safety and health management, and epidemic prevention and health notices are promoted during daily toolbox meetings and monthly coordination organization meetings.

5.4.1 Occupational Illness Prevention and Management

Special Operations that are Hazardous to Health

There are 13 statutory special operation sites at FPCC (dust, noise, high temperature, n-hexane, vinyl chloride, benzene, ionizing radiation, butadiene, dimethyl formamide, carbon disulfide, chromic acid, cadmium, and mercurate). 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. We continue to prevent occupational illnesses through health examination follow-up, individual healthcare for employees, and operating environment and individual exposure monitoring. Overall results in 2021:



Comprehensive improvement of hearing protection.

Personnel under level 4 management all engage in noise operations, and the Company has been making workplace improvements in recent years. 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.

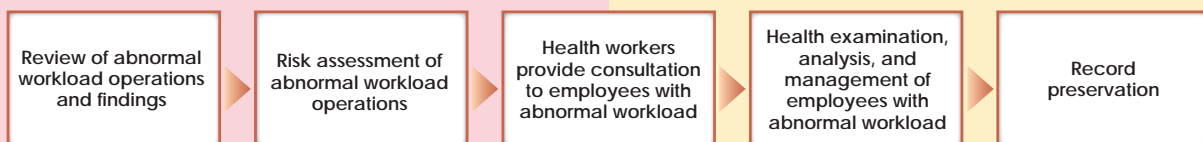
100 %
special health examination rate
There were no occupational disease cases
As of 2021

Employee health management and occupational disease prevention results

Item	2018	2019	2020	2021	
Physician provides on-site services	Number of people subjected to job adjustment for preventive management or competency evaluations	206	210	182	147
	Number of people who received general injury and illness consultation and educational training	435	392	551	679
Nurses carry out graded management based on examination results and number of people tracked (employees with abnormal results in special health examinations)	535	564	746	660	
Number of employees that received annual special health examinations	1,414	1,435	1,458	1,434	
Number of employees under level 1 management	872	856	787	959	
Number of employees under level 2 management	535	574	666	471	
Number of employees under level 4 management	7	5	5	4	
Abnormality rate in special health examinations (number of employees under level 4 management/total number of employees)	0.49%	0.35%	0.34%	0.28%	

Preventive management of cerebral and cardio vascular diseases caused by work

Flowchart for the prevention and management of diseases caused by abnormal workload



Authority and responsibility

1. Safety and Health Management Office
2. Departments

Related documents

1. Framingham Risk Score
2. Questionnaire on abnormal workload
3. Cerebral and cardio vascular disease risk assessment form
4. WHO cardiovascular disease risk prediction and degree of cardiovascular disease risk
5. Cerebral and cardio vascular disease risk and risk grading of workload-triggered cerebral and cardio vascular diseases
6. Hazard classification and interview recommendation form
7. Abnormal workload operating procedure
8. New employee physical examination and active employee medical check-up form

Authority and responsibility

1. Safety and Health Management Office
2. Physician (occupational illness specialist) on site
3. Departments

Related documents

1. Labor health protection rules
2. Special physical examination
3. General medical check-up
4. Assessment of the questionnaire on abnormal workload
5. Physician determines whether or not the employee should receive abnormal workload consulting
6. Abnormal workload consulting and guidance record
7. On-site health service record

Assessment results of diseases caused by abnormal workload in 2021

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%	923 (57.8%)	366 (22.9%)	55 (3.4%)
	10~20%	168 (10.5%)	58 (3.6%)	7 (0.4%)
	≥20%	15 (0.9%)	6 (0.3%)	0

■ Low risk ■ Medium risk ■ High risk

1. We continued to use the electronic evaluation system to continue tracking high risk personnel in 2021, 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 cardio vascular disease among employees through case management and health promotion events.
2. Employee medical check-ups only began in November 2021 to avoid cluster infections during the COVID-19 outbreak and are still ongoing; high risk personnel are also being tracked.
3. Occupational illness specialists gave a lecture on "cardiovascular disease and first aid" for employees to better understand the prevention and hazards of cardiovascular disease, learn first aid, and perform simple first aid during emergencies.



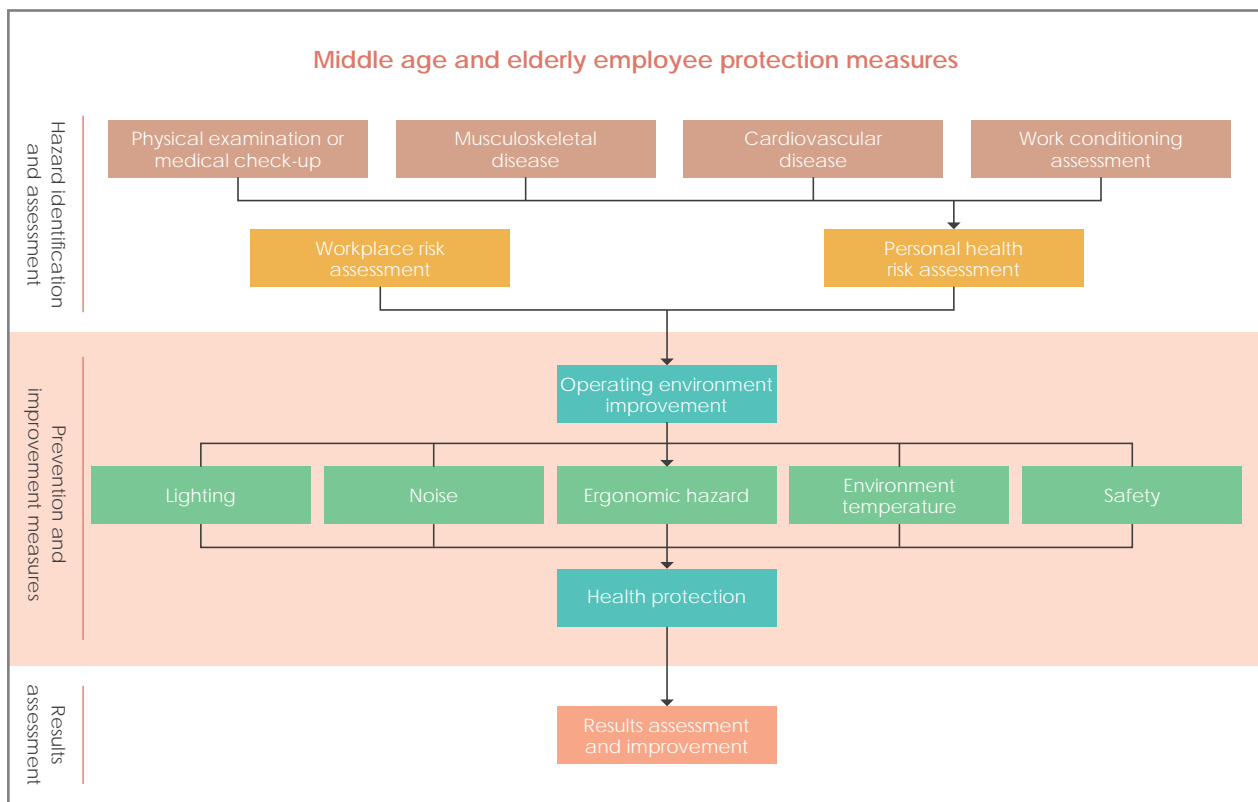
公佈函			
發文字號	聖安函字oN110111011	公佈日期	2022/01/11
經辦部門	040210 台塑石化 安全衛生處工安組	經辦人	顏敏如 435-6516; 435-6515
屬理修訂企業 安全知識庫規 章制度	<input type="checkbox"/> 是 <input checked="" type="checkbox"/> 否	企業知識庫 機能類別	
機密別	<input checked="" type="checkbox"/> 非機密 <input type="checkbox"/> 機密 (僅開放受文單位查閱)		
受文單位	<input checked="" type="checkbox"/> 受文單位明細		
<p>主旨 因應中央氣象局發佈1月11-14日「低溫天氣特報」，夜間及清晨低溫戶外作業請加強人員掌握及宣導。</p> <p>說明 中央氣象局發佈1月9-12日「低溫天氣特報」(預測平地溫度夜間及清晨降至10℃以下，請見附件)，請各部門配合進行下述作業：</p> <p>一、預防宣導事項</p> <p>(1) 承攬商： 工具箱會議請加強宣導備妥保暖及禦寒衣物、鄰近AED置放處、身體不適立即就醫及強化施工負責人或承攬商工安人員對於所屬出工人員動態掌握等資訊。</p> <p>(2) 員工： a. 心血管中、高風險及罹患慢性病同仁如發現身體不適，請立即告知同仁或主管並立即就醫。 b. 戶外作業(尤其是夜間)盡量二人一組、備妥保暖禦寒衣物並減少戶外長時間暴露。 c. 值班主管及課長應隨時掌握所屬人員動態。</p> <p>二、工具箱會議 要求承攬商工安人員自主管理所屬人員，如發現人員有酒精反應或攜帶酒類除依企業規定辦理，承攬商工安人員未自主管理則連坐處分。</p>			

公佈函			
發文字號	聖安函字oN100107009	公佈日期	2021/01/07
公司	台塑石化	經辦部門	安全衛生處工安組
經辦人	顏敏如(435-6516)		
<p>主旨：因應中央氣象局發佈2021年01月07日-2021年01月09日「低溫天氣特報」，夜間及清晨低溫戶外作業請加強人員掌握及宣導。</p> <p>說明：中央氣象局一月七日發佈之「低溫天氣特報」(預測平地溫度夜間及清晨降至6℃以下，請見附件)，請各部門配合進行下述作業：</p> <p>一、預防宣導事項</p> <p>(1) 承攬商： 工具箱會議請加強宣導備妥保暖及禦寒衣物、鄰近AED置放處、身體不適立即就醫及強化施工負責人或承攬商工安人員對於所屬出工人員動態掌握等資訊。</p> <p>(2) 員工： a. 心血管中、高風險及罹患慢性病同仁如發現身體不適，請立即告知同仁或主管並立即就醫。 b. 戶外作業(尤其是夜間)盡量二人一組、備妥保暖禦寒衣物並減少戶外長時間暴露。 c. 值班主管及課長應隨時掌握所屬人員動態。</p> <p>二、現場作業調整 如欲暫停現場相關作業，以「緊急處理概況表」報經 總經理核准後得暫停現場作業。</p> <p>三、工具箱會議 要求承攬商工安人員自主管理所屬人員，如發現人員有酒精反應或攜帶酒類除依企業規定辦理外，承攬商工安人員及工地負責人未落實自主管理連坐處分。</p>			

Artificial Hazard Assessment and Management

- All employees are subjected to the Nordic Musculoskeletal Questionnaire every 3 years starting in 2015 to identify high risk groups. All employees filled out the third Nordic Musculoskeletal Questionnaire through the electronic evaluation system in 2021, and evaluation results are as follows:
- As of the end of December 2021, physicians completed interviews with 46 employees (suspected to be work related), in which 1 was work related, and the unit's supervisor and safety and health engineer are currently formulating an improvement plan.

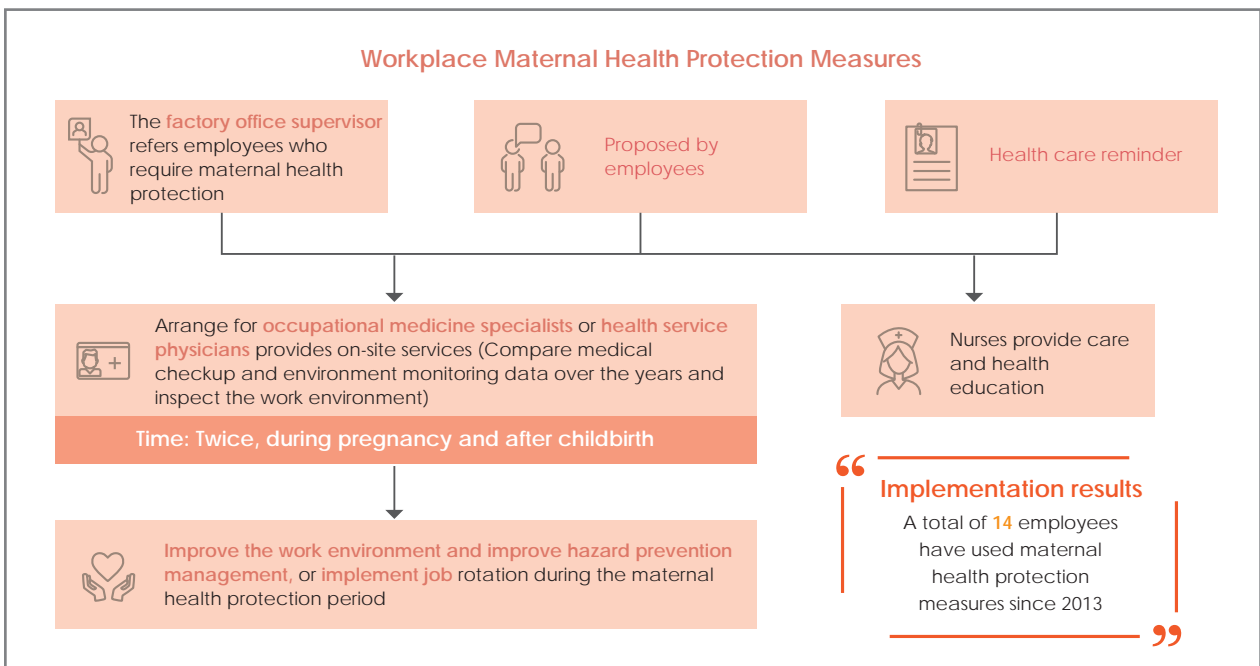
Phase	Target	Method	Head count
I	All employees	Send electronic questionnaires for the survey	4,663
II	Employees with suspected hazard score of 3 points or above	Fill out the questionnaire on perceived relationship between musculoskeletal pain and work	97
III	Suspected to be work related	On-site visit and interview by occupational illness specialist	45
IV	Work related	Diagnosis of occupational illness specialist	1



- We began distributing questionnaires for middle age and elderly employees (age 45 and above) to conduct self-assessments of their work conditioning every 3 years starting in 2021. Health workers then conduct objective assessments of questionnaire results to prevent deterioration in physical functions, such as musculoskeletal, cardiovascular, and respiratory systems, vision, and hearing, from affecting their work performance. Severe cases may even result in occupational illness. The questionnaire aims to improve employee safety and health, and results of the first assessment are as follows: There are no unfit employees in the current phase.

Phase	Measures	Target	Description	Implementation results	Head count
I	Send electronic questionnaires for the survey	Employees age 45 and above	Employees age 45 and above are selected for assessment according to the Safety and Health Guidelines for Middle Age and Elderly Workers	Number of employees required to fill out questionnaire: 2,068 employees Number of employees that actually filled out the questionnaire: 2,013 employees Number of employees that refused to fill out the questionnaire 55 employees Coverage: 97.3%	2,013
II	Questionnaire survey results	Overall self-assessment of work ability: Poor	Distribute work ability self-assessment questionnaires, and assess employees that were rated as "poor"	Reason for "poor" rating in work ability self-assessment Due to chronic illness (7 employees), cancer (5 employees), mental health (3 employees), and musculoskeletal disease (3 employees)	18
III	Verification through interview with physician providing health services	Competent	Arrange for physicians to conduct interviews for work conditioning assessment	All determined by physician to be competent for current job	18

- Physicians providing health services conducted interviews and found the causes of employees who were rated "poor" in the work ability self-assessment Due to chronic illness (7 employees), cancer (5 employees), mental health (3 employees), and musculoskeletal disease (3 employees). All employees were determined to be competent for their current job.
- We invited a speaker from Chang Gung Biotechnology to offer the "Middle Age and Elderly Health Seminar," which allowed employees to understand how to adapt in life to mitigate the impact of aging, and also the importance of maintain physical and mental health.

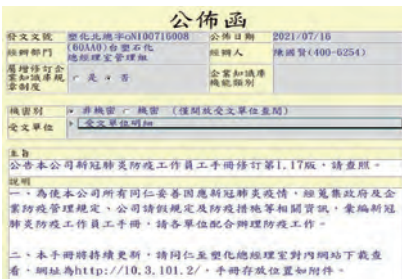
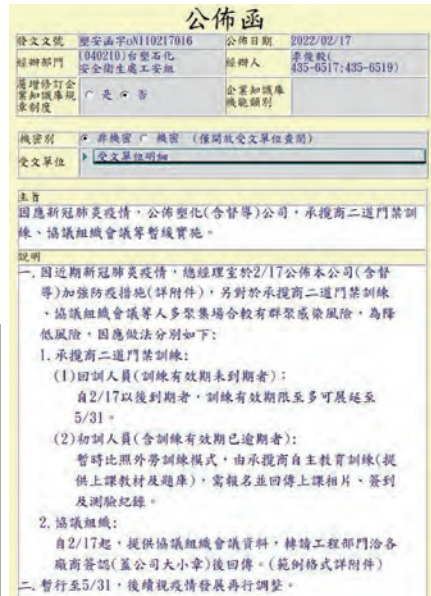


Emerging Infectious Disease Prevention and Health Education

COVID-19 prevention

The Taiwan Centers for Disease Control, Ministry of Health and Welfare listed COVID-19 as a Category 5 Notifiable Disease on January 15, 2020. We established and make adjustments to the COVID-19 Prevention Employee Manual after referencing the US OSHA Guidance on Preparing Workplaces for COVID-19 and Ministry of Health and Welfare, and also prepared epidemic prevention posters for employees to carry out epidemic prevention measures:

Raising awareness of COVID-19



Periodic re-training of first aid personnel

Appointment of first aid personnel in accordance with the law: We appoint one first aid personnel for every 50 employees in accordance with the Occupational Safety and Health Act, and maintain the effectiveness of their professional certification and their first aid skills to protect the lives of employees and contractors.

We improved first aid equipment and employees' first aid knowledge by completing Cardiopulmonary Resuscitation (CPR)+AED training.

- Maillao Industrial Park has 524 entry-level first aid technicians (EMT-1), and 8 hours of first aid re-training is scheduled every year
- We installed a total of 34 AEDs for first aid
- Organized 13 CPR+AED re-training courses in 2021
- Prepared 312 inhalers and 26 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)
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%
2021	32.9%	48.4%	30.6%	16.9%

Health Promotion Activities that Encourage Healthy Lifestyles

1. Sixth employee healthy lifestyle challenge in 2021. Suspended to prevent cluster infection due to the COVID-19 outbreak.
2. We invited a professional lecturer to offer the course "becoming aware of abnormal emotions," which trains employees to become aware of their abnormal emotional responses, so that their supervisor or employees in various units can assist in referral.





6

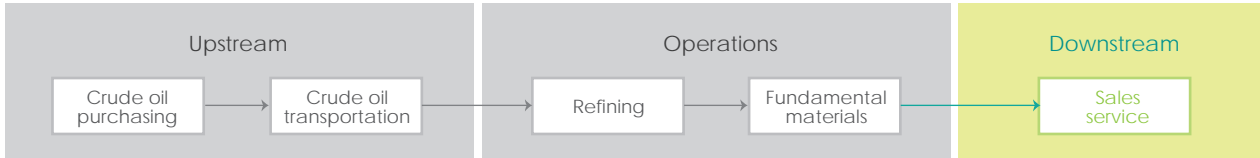
New Value of Connecting with Communities



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6.2	Local ecological conservation	103

Chapter Summary

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



Strategy

- Expand social engagement and improve local residents' living environment

Sustainable Development Goals (SDGs)



● Targets in 2021

- We set out from four charity themes "care for the disadvantaged," "health protection," "education and growth," and "mutual prosperity with ecology" according to the Company's sustainable development goals, and continue to engage in charity events.

● 2021 Performance

- Care for the disadvantaged:**
 - We collaborated with the Taiwan Fund for Children and Families and participated in Child Protection Good Neighbor and Project to End Poverty to improve the quality of life for underprivileged children.
 - Emergency relief subsidies and subsidies for low income households
- Health protection:**
 - Free health examinations for 8,982 residents of Mailliao Township and Taixi Township
 - Subsidized the breakfast of 1,333 students
- Education and growth:**
 - Construction of Mailliao Social Education Park is currently 90.8% completed
 - Scholarship subsidies and after-class tutoring of students in rural areas
- Mutual prosperity with ecology:**
 - Port and land ecology protection
 - Organized a beach clean-up at the north embankment in support of Earth Day

● Targets in 2022

- Continue to engage in charity events according to the four charity themes
- Cooperate with the remediation of Zhuoshui River by the Water Resources Agency, and participate in the establishment of environmental education facilities (measures)

● Mid-term and Long-term Goals

- Be like family to local residents so that the Company can co-exist and mutually prosper with local communities
- Continue to monitor urban and rural development, education, underprivileged groups, and environmental and ecological issues, provide timely assistance to people in need, and expand the scope of participation in charity

6.1 Local community development and communication

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	Child Protection Good Neighbor	Project to End Poverty – Kan-ko Life Festival	Beyond Love concert	Charity video jointly produced with Taiwan Fund for Children and Families
Subjects	Abused children	Underprivileged children Underprivileged families	Underprivileged children	Underprivileged children
Target of communication	General public and cardholders of Formosa Oil			
Content	FPG Chinese New Year event: NT\$25 discount on single purchases of 25L or above on Wednesdays, and we donate NT\$5 to the Taiwan Fund for Children and Families for each transaction	We invited children from the Taiwan Fund for Children and Families to experience routine work of gas stations, communicate the value of work and passion for serving others; income from the car wash of Formosa gas station that day is donated.	Sponsoring the Beyond Love concert organized by the Taiwan Fund for Children and Families (originated from the Talent Training Project of the Taiwan Fund for Children and Families, which provides underprivileged children with adaptive development and diverse learning opportunities)	Under the slogan "Formosa, For More Children," daily life and learning of children at the Taiwan Fund for Children and Families is shown in a video
Description of results	1. Donated a total of NT\$3 million 2. A total of 470 stations around Taiwan participated in the event	1. Donated a total of NT\$500,000 2. Assisted children at the Taiwan Fund for Children and Families with accumulating knowledge and experience of daily life, and raise concern for underprivileged groups in society	1. Switched to TV broadcast due to the pandemic and completed recording 2. Viewership ratings on FTV was 0.06% (viewed by approximately 15,000 people every minute) on July 25, 2021, and also released on MOD and YT	Promoted charity events co-organized by the Company and Fund for Children and Families, in hopes that society will take the difficulties of underprivileged children in life and their learning more seriously



Event photos in 2021

Participation in Local Events of Mailliao, Giving Back to Communities

Unit/Project category	Mailliao 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 Mailliao Township			
Content	<p>Provided a total of NT\$3.54 million in subsidies to 1,333 students in 30 elementary and junior high schools in 7 townships</p>	<p>Provided a total of NT\$6.9 million in subsidies to 2,531 individuals from medium and low income households in Taixi and Mailliao Townships; subsidy standards:</p> <ul style="list-style-type: none"> • NT\$5,000 for high school students and NT\$10,000 for college students from low income households • NT\$3,000 for high school students and NT\$5,000 for college students from medium income households • NT\$1,500 for high school students and NT\$2,500 for college students from regular income households 	<p>In 2021, we provided a total of NT\$13.17 million to 3,915 individuals from low income households in seven townships for the three holidays; subsidy standards:</p> <ul style="list-style-type: none"> • Employees personally delivered NT\$3,000 and the Company's products every holiday 	<p>Provided a total of NT\$3.22 million in subsidies for 64 emergency aid applications from seven townships in 2021; subsidy regulations:</p> <ul style="list-style-type: none"> • Funeral subsidies of up to NT\$55,000, medical subsidies of up to NT\$100,000, and living subsidies of up to 3 months
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 Mailliao Township			
Content	<ol style="list-style-type: none"> 1. Seven townships nearby 2. Sponsored artistic and cultural performances in coordination with local temple fairs or folk events for local cultural development 3. Suspended in 2021 due to the pandemic 	<ol style="list-style-type: none"> 1. Limited to Mailliao Township residents 2. National Health Insurance and electricity subsidies of NT\$7,200 per Mailliao resident 3. NT\$319,650,000 in total benefited 45,763 residents in 2021. 	<ol style="list-style-type: none"> 1. Limited to residents of Mailliao and Taixi Township (including government agencies) 2. Provided free health examinations for local residents, and actively notified them to return for follow-up when any abnormal results were found 3. NT\$131.73 million in subsidies for 8,982 participants in 2021 	<ol style="list-style-type: none"> 1. All 20 townships in the county 2. To increase the forestation area for air quality improvement, greening, and beautification, we matched government forestation subsidies 3. NT\$62.31 million in 2021

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 three major action plans, including the utilization of technology to provide agricultural assistance, aquacultural assistance, and releasing fry into surrounding sea areas, which aim to boost the development of primary industries. 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.

 <p>Releasing fry into sea areas at harbors</p>	 <p>Agricultural assistance</p>	 <p>Aquacultural assistance</p>
<p>We began releasing fry into sea areas near our factories, and have released 3.208 million fry so far, which will help increase the catch of fishermen. We also hired marine experts to give lectures on the conservation of fishery resources, and help build the concept of sustainable management among local fishermen.</p>	<p>Starting in July 2011, we assisted farmers in using scientific methods for cultivation through a team of experts, in order to reduce the use of pesticides, grow high quality and health agricultural products, and work towards building a local brand. Over 100 farmers have benefited so far, and total assistance expenses has reached NT\$32.06 million.</p>	<p>We assisted fishermen in building the management concept of healthy fish farms without using medicine, and also improve their product quality, which will further increase their catch and output value. Over 100 fish farmers have benefited so far and total assistance expenses has reached NT\$46.39 million.</p>

6.2 Local ecological conservation



EcoPorts – Mailiao Port

Mailiao Port continues to work towards developing green operations, and implements green port control measures.

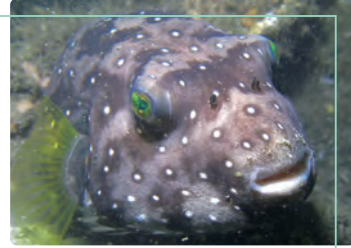
Mailiao Port began implementing a plan to apply for the EcoPorts Certification of the European Sea Ports Organization in October 2016, in hopes changing the trend of port facilities and activities causing the environment to deteriorate. After years of efforts, Mailiao Port passed the EcoPorts Certification and obtained the certificate on September 7, 2018. It is the first industrial port in Asia to receive this recognition, and obtained the certificate for 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 2021. The cumulative number of species has increased along with the higher frequency of surveys.

Scientific name:
Spondylus sp.
Common name:
Spiny oysters



Scientific name:
Arothron hispidus
Common name:
White spotted blaasop

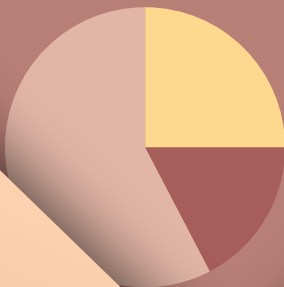
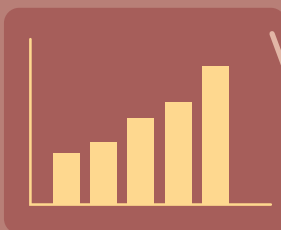
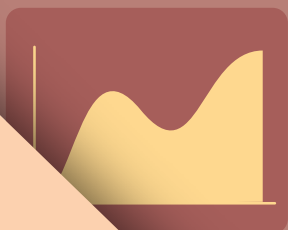
Mailiao Port – Intertidal Zone and Land Ecology

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

Scientific name:
Elanus caeruleus
Common name:
Merlin



Scientific name:
Chlidonias hybrida
Common name:
Whiskered tern



Appendix



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I. Corresponding GRI Indicators

Usage Statement	(FPCC) reports matters between January 1 and December 31, 2021 according to the GRI Standards	
Use of GRI 1	GRI1: Foundation (2021)	
Applicable to GRI 11	GRI11 Oil and Gas Sector (2021)	
Disclosure indicator	Corresponding chapter in the report	Omitted/Notes
2-1 Organization details	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	-
2-2 Entities included in the organization's sustainability report	Report Overview	-
2-3 Time and frequency of reporting and contact person	Report Overview	-
2-4 Restatements of information	Report Overview	-
2-5 External assurance	Appendix	-
2-6 Activity, value chain, and other business relationships	2.2 Business Model and Operational Performance	-
2.7 Employees	2.2 Business Model and Operational Performance 5.1 Employee Structure	-
2.8 Workers that are not employees	2.1 Business Philosophy, Organizational Structure, and Corporate Governance 5.1 Employee Structure	-
2.9 Governance structure and composition	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	-
2.10 Nominating and selecting the highest governance body	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	-
2.11 Chair of the highest governance body	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	-
2.12 Highest governance body's role in the supervision of impact management	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	-
2.13 Responsibility to appoint/assign impact management	2.1 Business Philosophy, Organizational Structure, and Corporate Governance 3.2 Climate change mitigation and adaptation	-
2.14 Highest governance body's role in sustainability reporting	Report Overview	-
2.15 Conflicts of interest	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	-
2.16 Communication of key issues	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	-
2.17 Collective knowledge of highest governance body	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	-
2.18 Performance evaluation of the highest governance body	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	-
2.19 Remuneration policy	2.1 Business Philosophy, Organizational Structure, and Corporate Governance 5.3 Employee Benefits and Care	-
2.20 Process for determining remuneration	2.1 Business Philosophy, Organizational Structure, and Corporate Governance 5.3 Employee Benefits and Care	-
2.21 Annual salary ratios	5.3 Employee Benefits and Care	-
2.22 Sustainable development strategy declaration	Message from the Chairperson	-
2.23 Policy and commitment	2.1 Business Philosophy, Organizational Structure, and Corporate Governance 5.2 Employee career development	-

Disclosure indicator	Corresponding chapter in the report	Omitted/Notes
2.24 Internalize policies and commitments	2.1 Business Philosophy, Organizational Structure, and Corporate Governance 5.2 Employee career development	-
2.25 Remedial procedures for negative impacts	2.1 Business Philosophy, Organizational Structure, and Corporate Governance 5.3 Employee Benefits and Care	-
2.26 Mechanisms for seeking recommendations and concerns	1-2 Sustainability Issue Management	-
2.27 Compliance with laws and regulations	3.1 Environmental Protection Strategies and Policies 4.1.2 Statistics of occupational accidents and fines: Prevention, Methods, and Follow-up	-
2.28 Membership of Associations	2.4 Partnership maintenance	-
2.29 Stakeholder engagement path	1-2 Sustainability Issue Management	-
2.30 Collective Bargaining Agreement	5.3 Employee Benefits and Care	No collective bargaining agreement signed

GRI 11 Oil and Gas Sector

GRI No.	Issue	Sector standards No.	Corresponding GRI Topic, Standards, and Indicators	Corresponding chapter in the report	Omitted/Notes			
GRI3-1	Management approach	-	Procedures for determining material topics	1-2 Sustainability Issue Management	-			
GRI3-2		-	List of material topics					
Sustainability Issue: GHG management								
GRI3-3	Management approach	11.1.1	Material topic management	3.2 Climate change mitigation and adaptation	-			
		11.1.2	302-1 Energy consumption within the organization					
11.1	Greenhouse gas emissions	11.1.3	302-2 Energy consumption outside of the organization	-	Information unavailable/incomplete Energy consumption outside of the organization must include upstream and downstream of the value chain. The boundaries and methods for calculation are currently being summarized, so data on energy consumption outside of the organization is unavailable.			
						11.1.4	302-3 Energy Intensity	
						11.1.5	305-1 Direct (Scope 1) GHG emissions	
						11.1.6	305-2 Energy indirect (Scope 2) GHG emissions	3.2 Climate change mitigation and adaptation
						11.1.7	305-3 Other indirect (Scope 3) GHG emissions	
						11.1.8	305-4 GHG emissions intensity	
Sustainability Issue: Climate change strategy								
GRI3-3	Management approach	11.2.1	Material topic management	3.2 Climate change mitigation and adaptation	-			
11.2	Climate adaptation, resilience, and transformation	11.2.2	201-2 Financial implications and other risks and opportunities due to climate change	2.3 Creating a Green Future 3.2.2 Management of climate risks and opportunities	-			
		11.2.3	305-5 Reduction in greenhouse gas emissions	3.2 Climate change mitigation and adaptation	-			

GRI No.	Issue	Sector standards No.	Corresponding GRI Topic, Standards, and Indicators	Corresponding chapter in the report	Omitted/Notes
Sustainability Issue: Air pollution prevention					
GRI3-3	Management approach	11.3.1	Material topic management	3.3 Air pollution management and prevention	-
11.3	Gas emissions	11.3.2	305-7 NOx, SOx, and other significant air emissions		
		11.3.3	416-1 Assessment of the health and safety impacts of product and service categories	2.2 Business Model and Operational Performance	
11.4	Biodiversity	11.4.2	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	-	Immaterial issue
		11.4.3	304-2 Significant impacts of activities, products, and services on biodiversity		
		11.4.4	304-3 Habitats protected or restored		
		11.4.5	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations		
11.5	Waste	11.5.2	306-1 Waste generation and significant impacts related to waste	-	Immaterial issue
		11.5.3	306-2 Management of significant impacts related to waste	-	
		11.5.4	306-3 Waste generation	3.4.3 Waste Management	
		11.5.5	306-4 Waste disposal and transfer	-	
		11.5.6	306-5 Direct disposal of waste	3.4.3 Waste Management	
Sustainability Issue: Water Resource Management					
GRI3-3	Management approach	11.6.1	Material topic management	3.4 Water Resources, Wastewater, and Waste Management	-
11.6	Water and Effluents	11.6.2	303-1 Effects of Water Resource Sharing		
		11.6.3	303-2 Management of Drainage Related Impacts		
		11.6.4	303-3 Water withdrawal		
		11.6.5	303-4 Water discharge		
		11.6.6	303-5 Water consumption		
11.7	Close and restore factory	11.7.2	402-1 Minimum notice periods regarding operational changes	5.3 Employee Benefits and Care	Immaterial issue
		11.7.3	404-2 Employee competency enhancement and assistance programs	5.2 Employee career development	
Sustainability Issue: Oil products transportation and storage safety					
GRI3-3	Management approach	11.8.1	Material topic management	4.2 Labor safety risk management	-
11.8	Asset and emergency event management	11.8.2	306-3 Significant spills (306 Effluents and waste 2016)		
Sustainability Issue: Industrial and Public Safety, Occupational Health and Safety					
GRI3-3	Management approach	11.9.1	Material topic management	4.1 Creating a Labor Safety Culture 5.4 Employee occupational health management	-
11.9	Employee Health & Safety	11.9.2	403-1 Occupational Safety and Health Management System	5.3 Employee Benefits and Care	
		11.9.3	403-2 Hazard Identification, Risk Assessment, and Incident Investigation	4.1 Creating a Labor Safety Culture	
		11.9.4	403-3 Occupational Health Services	5.3 Employee Benefits and Care 5.4 Employee occupational health management	

GRI No.	Issue	Sector standards No.	Corresponding GRI Topic, Standards, and Indicators	Corresponding chapter in the report	Omitted/Notes
11.9	Employee Health & Safety	11.9.5	403-4 Worker participation, consultation, and communication related to occupational health and safety	5.3 Employee Benefits and Care	-
		11.9.6	403-5 Worker training related to occupational health and safety	4.2 Labor safety risk management 5.2 Employee career development	
		11.9.7	403-6 Worker Health Promotion	5.4 Employee occupational health management	
		11.9.8	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	
		11.9.9	403-8 Workers included in the occupational safety and health management system	4.2 Labor safety risk management	
		11.9.10	403-9 Occupational injury	4.1 Creating a Labor Safety Culture	
		11.9.11	403-10 Occupational disease	5.4 Employee occupational health management	
Sustainability Issue: Employee profile and benefits; education, training, and talent cultivation					
GRI3-3	Management approach	11.10.1	Material topic management	5.2 Employee career development 5.3 Employee Benefits and Care	-
11.10	Employment practices	11.10.2	401-1 New employee hires and employee turnover	5.1 Employee Structure	
		11.10.3	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	5.3 Employee Benefits and Care	
		11.10.4	401-3 Parental leave	5.1 Employee Structure	
		11.10.5	402-1 Minimum notice periods regarding operational changes	5.3 Employee Benefits and Care	
		11.10.6	404-1 Average hours of training per year per employee	5.2 Employee career development	
		11.10.7	404-2 Employee competency enhancement and assistance programs	5.2 Employee career development	
		11.10.8	414-1 New suppliers that were screened using social criteria	2.4 Partnership maintenance	
11.10.9	414-2 Negative social impacts in the supply chain and actions taken	2.4 Partnership maintenance			
11.11	No discrimination and equal opportunity	11.11.2	202-2 Proportion of senior management hired from the local community	5.1 Employee Structure	Immaterial issue
		11.11.3	401-3 Parental leave	5.1 Employee Structure	
		11.11.4	404-1 Average hours of training per year per employee	5.2 Employee career development	
		11.11.5	405-1 Diversity of governance units and employees	2.1 Business Philosophy, Organizational Structure, and Corporate Governance 5.1 Employee Structure	
		11.11.6	405-2 Ratio of basic salary and remuneration of women to men	5.1 Employee Structure 5.3 Employee Benefits and Care	
		11.11.7	406-1 Incidents of discrimination and corrective actions taken	5.1 Employee Structure	
11.12	Forced labor and modern slavery	11.12.2	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	2.4 Partnership maintenance	Immaterial issue
		11.12.3	414-1 New suppliers that were screened using social standards	-	
11.13	Freedom of association and collective bargaining	11.13.2	407-1 Operations and suppliers in which the right to freedom of association and	5.3 Employee Benefits and Care	Immaterial issue

GRI No.	Issue	Sector standards No.	Corresponding GRI Topic, Standards, and Indicators	Corresponding chapter in the report	Omitted/Notes
Sustainability Issue: Economic performance					
GRI3-3	Management approach	11.14.1	Material topic management	2.2 Business Model and Operational Performance	
11.14	Economic impact	11.14.2	201-1 Direct economic generated and distributed	2.2 Business Model and Operational Performance	
		11.14.3	202-2 Proportion of senior management hired from the local community	5.1 Employee Structure	
		11.14.4	203-1 Infrastructure investments and services supported	2.3 Green investment and innovative transformation	
		11.14.5	203-2 Significant indirect economic impacts	2.3 Green investment and innovative transformation	
		11.14.6	204-1 Proportion of spending on local suppliers	2.4 Partnership maintenance	
11.15	Communication with local communities	11.15.2	413-1 Operations with local community engagement, impact assessments, and development programs	3.3 Air pollution management and prevention	Immaterial issue
		11.15.3	413-2 Operations with significant actual and potential negative impacts on local communities	6.1 Local community development and communication	
11.16	Land and resource rights	11.16.1	GRI 3-3 Material topic management	-	Immaterial issue
11.17	Rights of indigenous people	11.17.2	411-1 Incidents of violations involving rights of indigenous peoples	-	Immaterial issue
11.18	Conflict and safety	11.18.2	410-1 Security personnel trained in human rights policies or procedures	-	Immaterial issue
11.19	Anti-competitive behavior	11.19.2	206-1 Legal actions for anti- competitive behavior, anti- trust, and monopoly practices	-	Immaterial issue
11.20	Anti-corruption	11.20.2	205-1 Operations assessed for risks related to corruption	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	Immaterial issue
		11.20.3	205-2 Communication and training on anti-corruption policies and procedures	2.1 Business Philosophy, Organizational Structure, and Corporate Governance 2.4 Partnership maintenance	
		11.20.4	205-3 Confirmed incidents of corruption and actions taken	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
11.21	Political donations	11.21.2	201-1 Direct economic generated and distributed		Immaterial issue
		11.21.3	201-4 Financial assistance received from government		
		11.21.4	207-1 Tax policy		
		11.21.5	207-2 Tax governance, control, and risk management		
		11.21.6	207-3 Communication with and management of stakeholders in tax related issues		
		11.21.7	207-4 Country-by-Country Report		
11.22	Public Policy	11.22.2	415-1 Political contributions	2.4 Partnership maintenance	Immaterial issue
Sustainability Issue: Corporate Governance					
GRI3-3	Management approach	-	Material topic management	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	
-	Industry issue	-	-	2.1 Business Philosophy, Organizational Structure, and Corporate Governance	

GRI No.	Issue	Sector standards No.	Corresponding GRI Topic, Standards, and Indicators	Corresponding chapter in the report	Omitted/Notes
Sustainability Issue: Green investment and innovative transformation					
GRI3-3	Management approach	-	Material topic management	2.3 Green investment and innovative transformation	-
-	Indirect Economic Impacts	-	203-1 Infrastructure investments and services supported	2.3 Green investment and innovative transformation	-
Sustainability Issue: Risk and Crisis Management					
GRI3-3	Management approach	-	Material topic management	1-2 Sustainability Issue Management	-
-	Industry issue	-	-	1-2 Sustainability Issue Management	-
Sustainability Issue: Stability of imported materials					
GRI3-3	Management approach	-	Material topic management	2.4 Partnership maintenance	-
-	Industry issue	-	-	2.4 Partnership maintenance	-
Sustainability Issue: Emergency response measures					
GRI3-3	Management approach	-	Material topic management	4.3 Public Safety Emergency Response	-
-	Industry issue	-	-	4.3 Public Safety Emergency Response	-

II. Corresponding SASB Indicators

Indicator code	Disclosure indicator	Corresponding disclosure				Chapter	
		2018	2019	2020	2021		
Topic of disclosure: Greenhouse gas emissions							
EM-RM-110a.1	Emissions as a percentage of regulatory restrictions/internal regulations (Unit: %)	28,070,653	27,256,866	25,329,780	Related internal data is currently being summarized Disclosed in the 2022 Sustainability Report	3.2.3 GHG management	
EM-RM-110a.2	Long- and short-term carbon reduction management strategies or plans for Scope 1 GHG emissions, carbon reduction goals, and performance analysis with respect to the goals	Carbon Disclosure Project (CDP)					
Topic of disclosure: Air Quality							
EM-RM-120a.1	Air pollutant emissions: (Unit product: kg/ton)	(1) NOx (excluding N ₂ O)	0.242	0.245	0.279	0.293	3.3 Air pollution management and prevention
		(2) SOx	0.095	0.091	0.102	0.101	
		(3) Suspended particles	0.019	0.019	0.02	0.014	
		(4) H ₂ S	Not disclosed				
		(5) Volatile organic compounds (VOCs)	0.035	0.032	0.043	0.041	
EM-RM-120a.2	Number of refineries in densely populated areas or nearby areas	Total population of Mailiao Township in 2021 was 47,951					
Topic of disclosure: Water Management							
EM-RM-140a.1	1. Total freshwater extraction (Unit: Million liters)	51,640	50,142	47,119	47,118	3.4.1 Water resource management	
	2. Percentage recycled (Unit: %) (Recycling rate of plant (reuse rate) = (Total recycling water + Total reuse water) ÷ Gross water × 100%)	98.69	98.66	98.74	98.9		
	3. Percentage of area with high or very high baseline water stress (Unit: %) 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.	0%	0%	0%	0%		
EM-RM-140a.2	Number of violations relating to water quality permit, standards, and regulations	No violations				3.4.2 Water Pollution Prevention and Treatment Guidelines and Wastewater Management	
Topic of disclosure: Hazardous Materials Management							
EM-RM-150a.1	Total amount of hazardous waste generated (Unit: Metric tons)	277	902	403	423	3.4.3 Waste Management	
	Percentage of hazardous waste recycled (Unit: %)						
EM-RM-150a.2	1. Total number of USTs 2. Number of cases requiring cleaning due to UST oil leakage 3. Percentage of states with a UST guarantee fund (Unit: %)	Related internal data is currently being summarized					

Indicator code	Disclosure indicator	Corresponding disclosure				Chapter	
		2018	2019	2020	2021		
Topic of disclosure: Workforce Health & Safety							
EM-RM-320a.1	1. Total recordable incident rate (TRIR) (Unit: %) *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 ⁶)/Total work hours elapsed	0.19	0.56	0.19	0.19	4.1.2 Occupational Accident Statistics, Prevention, Methods, and Follow-up	
	2. Fatality rate (Unit: %)	0	0	0	0		
	3. Near Miss Frequency Rate (NMFR) (Unit: Cases)	Disclosure began in 2021			442		
EM-RM-320a.2	Description of the management system used to create a safety culture	Disclosed in the report				4.2 Labor safety risk management 4.2.1 Process Safety Management (PSM) 4.2.2 Contractor Operational Safety Management 4.2.3 Finished Goods Transportation and Traffic Safety	
Topic of disclosure: Product Specifications & Clean Fuel Blends							
EM-RM-410a.1	Percentage of renewable volume obligation (RVO) achieved: (Unit: %) 1. Manufacturing of renewable fuel 2. Purchase of renewable identification number (RIN)	Related internal data is currently being summarized				-	
EM-RM-410a.2	Total addressable market and share of market for advanced biofuels and associated infrastructure	Related internal data is currently being summarized				-	
Topic of disclosure: Pricing Integrity & Transparency							
EM-RM-520a.1	Total amount of monetary losses as a result of legal proceeding associated with price fixing or price manipulation	Related internal data is currently being summarized				-	
Topic of disclosure: Management of the Legal & Regulatory Environment							
EM-RM-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	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 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.				2.4 Partnership maintenance	
Operation indicators							
EM-RM-000.A	The total volume of crude oil and other feedstocks processed in the refinery system	Daily volume refined of crude oil (barrels/day)	540,000	540,000	540,000	540,000	2.2 Business Model and Operational Performance
		Ethylene (thousand tons/year)	2,935	2,935	2,935	2,935	
		Power generated (GW)	275	275	275	275	
EM-RM-001.B	Refining capacity	See the annual report to the shareholders' meeting				-	

III. Corporate Governance Evaluation ESG Indicators

Topics	Indicator	Description	Results in 2021	Remarks
Environmental issues				
Greenhouse gas emissions	Direct (Scope 1) GHG emissions	t CO ₂	25,329,780	We expect to obtain an assurance statement in August 2022 for data verified in 2021. This report discloses 2020 data.
	Energy indirect (Scope 2) GHG emissions	t CO ₂	221,111	
	Indirect (Scope 3) GHG emissions	t CO ₂	55,545,097	
	GHG emissions intensity	t CO ₂ /Revenue	62 tons/million NTD	
	Strategies, methods, and goals of GHG management	Qualitative description	3.2 Climate change mitigation and adaptation	
Energy management	Renewable energy usage rate	Renewable energy/ Total energy	0	-
	Energy usage efficiency	Qualitative description	3.2.4 GHG management	-
	Policy to use recycled materials	Qualitative description		-
Water resources	Water consumption	Metric ton	2,213,182,971	-
	Water unit intensity	Water consumption/ Revenue	3,569 tons/million NTD	-
	Water resource management or reduction goals	Qualitative description	3.4 Water Resources, Wastewater, and Waste Management	-
Waste	Amount of hazardous waste	Metric ton	423	-
	Amount of non-hazardous waste	Metric ton	1,216,709	-
	Total weight (hazardous + non-hazardous)	Metric ton	1,217,132	-
	Waste intensity	Waste/Unit product, service, or revenue	1.96 tons/million NTD	-
	Waste management or reduction goals	Qualitative description	3.4 Water Resources, Wastewater, and Waste Management	-
Social issues				
Human resource development	Average salary of employees	NTD/person	1,530,186	-
	Average employee benefits	NTD/person	58,310	-
	Average salary of non-managerial full-time employees	NTD/person	1,545,594	-
	Median salary of non-managerial full-time employees	NTD/person	1,451,975	-
	Percentage of female managers	Percentage	8.02%	-
	Number of people involved in occupational accidents	Head count	2	-
	Ratio of occupational accidents	Percentage	0.043	-
Governance issues				
Board of Directors	Number of director seats	Number	15	-
	Number of independent director seats	Number	3	-
	Ratio of female directors	Percentage	6.70%	-
	Attendance rate of Board meetings	Percentage	94%	-
	Ratio of directors and supervisors that completed the required number of continuing education hours	Percentage	100%	-
Communication with investors	Number of investor conferences convened by the Company	No. of sessions	4	-



IV. Independent Third Party Assurance Statement



INDEPENDENT ASSURANCE OPINION STATEMENT

2021 Formosa Petrochemical Corporation Sustainability 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 purpose of assuring its statements relating to its sustainability report, 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 2021 Formosa Petrochemical Corporation Sustainability 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 2021 Formosa Petrochemical Corporation Sustainability Report provides a fair view of the FPCC sustainability programmes and performances during 2021. The sustainability 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 performance information of Environment, Social and Governance (ESG) are fairly represented. The sustainability performance information disclosed in the report demonstrate FPCC's efforts recognized by its stakeholders.

Our work was carried out by a team of sustainability 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 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.
- 10 interviews with staffs involved in sustainability management, report preparation and provision of report information were carried out.
- review of key organizational developments.
- review of the findings of internal audits.
- review of supporting evidence for claims made in the reports.
- an assessment of the organization's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness and Impact as described in the AA1000AP (2018).

Conclusions

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

Inclusivity

This report has reflected a fact that 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 the information of Environment, Social and Governance (ESG) 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 2021 (For each material topic covered in the applicable GRI Sector Standard and relevant GRI Topic-specific Standard, comply with all reporting requirements for disclosures). Based on our review, we confirm that 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 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 sustainability 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.

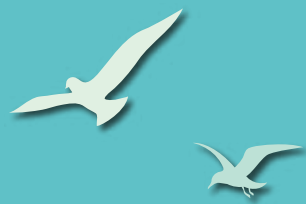
For and on behalf of BSI: 
 Peter Pu, Managing Director BSI Taiwan



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