

CORPORATE SOCIAL RESPONSIBILITY REPORT 2019











Message from the Chairman

Summary of Performance in 2019

02 Integrity Management and Strong

03 Sustainable Agriculture and Circular

01 Corporate Responsibility and Sustainable

Overview of the Company

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Governance

Economy

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This is the sixth Corporate Social Responsibility (CSR) Report published by Taiwan Fertilizer Co., Ltd. (hereinafter referred to as TFC, Taiwan Fertilizer Corporation, the Company and We). The compilation of this CSR Report was based on the guidelines set forth in the Global Reporting Initiative (GRI G4) and the GRI Standards Core Option.

To demonstrate TFC's efforts and performance, efforts made in economic, social and environmental aspects are compiled in this Report. Meanwhile, we also respond to our stakeholders' expectations and demands in this Report, aiming at building a long-term partnership with our customers and the social groups for the promotion of social inclusion and for the objective of sustainable growth. In addition to the disclosure of related indicators of the material topics, performance and conducts in terms of Corporate Governance, Employee Care, Customer Care, Environmental Protection and Social Participation are also disclosed in this Report.

Statistics Basis of the Report

The statistical data for this Report came from TFC's internal statistics and data collection and are presented in International Generic Indicators. The estimates in this Report will be noted in each relevant chapter and section. All the financial data were from public consolidated financial reports audited and verified by KPMG in accordance with the International Financial Reporting Standards (IFRS) and were all calculated in New Taiwan Dollars. In addition, the Company also passed the verification of ISO 9001 Quality Management System, OHSAS 18001, CNS15506 Taiwan Occupational Safety and Health Management System (TOSHMS), ISO 14001 Environmental Management System and ISO 50001 Energy Management System.

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The Editing, Auditing and Assurance of the Report

The accuracy and veracity of data and contents disclosed in this Report were assured by the independent and credible British Standards Institution (BSI) with the AA1000AS (2008) with 2018 addendum standard of moderate Assurance (Type 1). Please refer to Appendix 1 for the detailed BSI Assurance Report and statements and Appendix 2 for the GRI Content Index.

To continuously enhance the transparency in sustainability information, this Report is available in both English and Chinese and the contents of this TFC CSR Report can also be downloaded on

TFC's official website in Corporate Sustainability Section. In the future, the CSR Report with third-party assurance will continue to be published annually to actively disclose TFC's mission, commitment, strategy, specific practices and future objectives concerning sustainability to our stakeholders for effective stakeholder engagement, laying important cornerstone of sustainable development for the enterprise.

Boundary of Reporting

- TFC's CSR Report covers the economic, social and environmental performance of TFC's Taipei Head Office and the factories in Keelung, Miaoli, Taichung and Hualien. Part of the information disclosure includes TFC's subsidiaries included in the consolidated financial statements with TFC and TFC invested enterprises, excluding the invested enterprises of Hasbo Biotech Co., Ltd, TAIFER (CAYMAN) INTERNATIONAL GROUP CO., LTD. and TAIFER INTERNATIONAL (SAMOA) CO., LTD.
- The disclosure of financial performance includes consolidated financial statements with TFC and TFC invested enterprises.



From January 1st to December 31st, 2019.

Report Release Schedule

Previous edition: June 2019 Current edition: June 2020





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Reports on TFC's Official Website







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Message from the Chairman

Despite various challenges faced in 2019, Taiwan Fertilizer Corporation still made steady profits. This year, our core business of fertilizer chemicals not only absorbed the rising costs of fertilizer raw materials but also cooperated with the government's policy of fertilizer price reduction. Despite these reasons, steady profits were still made, presenting great achievement this year. In terms of our real estate business, activation of our assets still continues, laying the foundation of sustainable income. In addition, profitability can also be maintained in TFC's invested businesses. TFC keeps pursuing excellence. We went through some deficits in 2016, turned loss into profit in 2017 and made profits in 2018. In 2019, we continued the outstanding performance from the previous year, making this year a fruitful one once more.

In the face of multiple challenges this year, it is indeed not an easy task for our core business of fertilizer chemicals to achieve the goal and make profits. Through comprehensive upgrade of our products and services, cost reductions, increase in equipment use rate and enhancement of the international market layout, TFC fully demonstrates its core competitiveness. As the leading fertilizer brand in Taiwan, TFC will continue the innovative R&D of fertilizer products. This year, we have launched new #43 "King Won" Potassium sulfate nitrophosphate organic compoundfertilizer series and # 101 Biotec Organic Compound Fertilizer, using potassium sulfate as the source of potassium fertilizer, which provides chlorine-intolerant crops nutrients needed and also reduces the degree of soil acidification. Our nitrophosphate products can be greatly absorbed and have good fertilizer effects, suitable for the promotion of rational fertilization among farmers to reach the goal of eco-friendly farmland.

Yao Hsing Huang





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We continue to cooperate with the government's New Southbound Policy and uphold the strategy of leading production with sales to steadily develop the international market. We have obtained patent for our "HeyWon" Nitrophosphate Compound Fertilizer in Taiwan, Cambodia and China, which was also honored the first prize of the National Brand Yushan Award-Best Product Category. In 2019, the export sales showed growth compared with 2018; the sales regions include Malaysia, Cambodia, Indonesia, Singapore, Mainland China and Japan. The production expansion of concentrated (68%) nitric acid was successful, making the export volume in 2019 7 times more than that in 2018.

TFC continues to actively develop niche electronic grade chemicals, improve manufacturing process and increase equipment utilization rate. Meanwhile, in response to the government's promotion of circular economy, a green circular economy park is planned to be established in our Miaoli Factory, aiming at the recycle and reuse of agricultural biotechnology products and e-grade chemicals to fulfill our mission of implementing resource sustainability as a corporate citizen. It is also hoped that industrial transformation can be further promoted for an innovated profit model.

TFC continues to upgrade its services by providing domestic farmers with fertilizer in the pack size of 25 kg and absorbing the increased packaging costs to care for the elderly farmers and reduce their burden of fertilizer weight for fertilization. We also keep cooperating with the government in handling fertilizer storage operations by integrating our own warehouses and setting up fertilizer supply centers for smoother supply and more convenience. We also reduce the farmers' fertilizer costs to provide them with more diverse options of fertilizers.

TFC actively implements the revitalization of land assets to lay the foundation of sustainable income. The occupancy rate of the commercial office building in Hsinchu has exceeded 80%, and projects of overall land planning of Hsinchu Plant, Nangang C2 Hotel development project and C4 commercial office development project are all being actively promoted. In addition to the increase of stable rents, it is also hoped that through the development projects, regional development can be driven and the asset value can be increased.

Our invested business maintained stable profits. This year, Taiwan Yes successfully integrated with Deep Water Park in Hualien and actively introduced external resources. It cooperated with the government agency to establish an industry chain continued with the concept of "store in the front and factory in the back", aiming at making the park the hub of deep ocean water industry. Moreover, the results of multi-stage breeding module also showed fruitful results this year. The algae products received recognition from Japanese market and sales continued to expand.

From fertilizer production to e-grade chemical industry, from chemical fertilizer to organic agriculture, Taiwan Fertilizer Corporation has been playing a role in sustainable development, working hand in hand with farmers and our partners in all circles and moving forward together side by side on this road to an eco-friendly land.







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102-1 Name of the organization
102-2 Activities, brands, products, and services
102-3 Location of headquarters
102-4 Location of operations

Awards and Recognition

Awards



Awarded FTSE4Good TIP Taiwan ESG Index

Organizer

Taiwan Index Plus and FTSE International Taiwan Ltd

Content

In 2019, TFC passed the evaluation criteria for ESG performance and financial indicators and was awarded FTSE4Good TIP Taiwan ESG Index.

TCSA台灣企業永續獎

102-6 Markets served

Awarded 2019 TCSA's Taiwan Corporate Sustainability Reports- Gold Award in Traditional Manufacturing Industry

Organizer

Taiwan Institute for Sustainable Energy (TAISE)

Content

TFC was awarded 2019 TCSA's Taiwan Corporate Sustainability Reports- Gold Award in Traditional Manufacturing Industry, fully demonstrating the completeness and transparency of the disclosure of corporate information 經濟部國際貿易局 Bureau of Foreign Trade, MOEA

Selected Top 500 Excellent Taiwan Exporters & Importers

Organizer Bureau of Foreign Trade, MOEA

Content

102-16 Values, principles, standards, and norms of behavior

TFC was awarded Top 500 Excellent Taiwan Exporters & Importers in 2019.



The 16th National Brand Yushan Award- Best Product Category

Organizer

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台灣肥料 股份有限公司

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Elizibal Corporate entational Hitty Ferrier 名企業休閒論編

報告書 金獎

Republic of China National Enterprise Competitiveness Development Association

Content

#43 "King Won" Potassium sulfate nitrophosphate organic compound fertilizer series developed by TFC was awarded the 16th National Brand Yushan Award- Best Product Category



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Taiwan Fertilizer Co., Ltd. was established on May 1st, 1946. Originally a state-owned enterprise responsible for manufacturing and supplying domestic fertilizer products in line with the government's agricultural policy, TFC has been the largest domestic fertilizer producer. TFC successfully transformed into a listed private corporation on September 1st, 1999. The Head Office is located in Zhongshan District, Taipei, Taiwan.

In response to the continuous social-economic development and transformation and for the reason that some production factories are close to the downtown areas, the production factories have been relocated to Taichung Factory and the vacant old production plant land were transformed into real estate for commercial, residential development or for backup plant use to improve operational synergy and establish a basis for sustainable income, aiming at increasing the return on assets (ROA) and profitability.

In addition, to improve the company's operating performance and diversified profits, special chemical storage tanks are established in the Taichung Harbor Petrochemical Industry Area, providing materials needed for PU industry. The new compound fertilizer plants are established to meet the domestic needs while developing business opportunities overseas. Furthermore, the purification technology of e-grade chemicals is also improved for the development toward high-margin IC grade electrochemical products.

By adhering to the spirit of taking it from the society and giving it back to society, TFC has established the Taiwan Fertilizer Foundation to organize scholarship and charitable events every year. Meanwhile, we also strive for reaching the business philosophy of win-win-win among society, shareholders and employees, stepping toward the goals of sustainable management and fulfilling our corporate social responsibility.

Shareholder Structure



Note: Data before the book closure date before the shareholders' meeting on June 20, 2019

The major items and products of TFC are as follows. We provide high-quality services and products to meet our customers' needs.

 Manufacturing and sale of fertilizer products, including ammonium sulfate, agricultural urea, calcium superphosphate, potassium chloride, nitro-based compound fertilizer, organic fertilizer and microbial fertilizer.

 Manufacturing and sale of chemical products, including nitric acid, sulfuric acid, sulfamic acid, liquid ammonia, Industrial grade urea and melamine.

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Note: With the social development and needs for urban expansion, TFC is now actively working on the land activation development projects of the old production factories, including Nankang, Keelung Factory 1, Keelung Factory 2, Hsinchu Factory and Kaohsiung Factory after the relocation.



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Major Products and Markets



Chemical products 26.87%

Item Urea for Industrial, Melamine, Sulfanilic acid, Anhydrous Ammonia, Nitric acid, Sulfuric acid Oleum, Chemical storage tanks

Market Taiwan, Southeast Asia, Europe and America

Resale of urea 11.68%

Market Southeast Asia, China Item Residential real estate , Commercial real estate Market Taiwan

Fertilizer products 39.79%

Taiwan, Southeast Asia, Japan

Single nutrient fertilizers, Biotec Organic compound

compound fertilizer series (nitrophosphate), Organic fertilizer series. Instant Water Soluble Fertilizer

series, Biopower Stimulants series, Taifer Biopower

Electronic grade chemicals 2.32%

Etching solution series, Photoresist stripping

solution series, Cleaning solution series, Organic

phosphate-solubilizing bacteria biofertilizer, Dolomite

fertilizer series, "Hey Won" nitrophosphate organic

Item

Market

Item

solvent series

Real estate 18.70%

Market

Taiwan

Others 0.64%

Group Overview

Al-Jubail Fertilizer Company (joint venture, shareholding of 50%)

Founded in 1979, Al-Jubail Fertilizer Company is a successful example of joint venture by TFC and Saudi Basic Industries Corporation (SABIC). It mainly manufactures products of urea, 2-EH,DOP and TGU, enabling TFC to obtain stable revenues with low cost of raw materials.

Taiwan Yes Deep Ocean Water Co., Ltd. (subsidiary, shareholding of 100%)

Taiwan Yes Deep Ocean Water Co., Ltd. mainly develops deep ocean water (DOW) related products. It is devoted to becoming an expert in deep-sea minerals to introduce the health benefits of the natural deep-sea minerals to people all over the world. With the most advanced process technology, automated equipment and the largest deep ocean water manufacturing factory in Asia, Taiwan Yes produces high-quality deep sea natural minerals and high-quality packaged drinking water, deep sea salt and other deep ocean water series products.

Taifer Chemicals International Inc. (subsidiary, shareholding of 100%)

Taifer Chemicals International Inc. is mainly responsible for real estate development. In addition to the management the commercial office building of "Taiwan Hall" in Ulaanbaatar, the capital of Mongolia, it also manages the gas stations in Keelung and Miaoli. In the future, it will actively participate in the development and management of TFC's self-owned or self-developed real estate.

Peifeng Technology & Fertilizer. Co., Ltd. (subsidiary, shareholding of 100%)

PeiFeng Technology & Fertilizer. Co., Ltd. is mainly responsible for the production of nitrophosphorus-based compound fertilizers and assisting TFC in the implementation of chemical trading business.

Taifer (Cambodia) Co., Ltd. (subsidiary, shareholding of 100%)

Taifer (Cambodia) Co., Ltd. is mainly responsible for the import and export sale of the local fertilizer in Cambodia, aiming at speeding up the promotion of fertilizer and grasping the demands of fertilizer to facilitate the export of TFC's excellent fertilizer products as well as the fertilizer management techniques to ASEAN countries.

Note: Mainly the invested businesses in which the company's shareholding ratio reaches 50% and more.



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S Economy

Awarded FTSE4GOOd TIP Taiwan ESG Index	Net income after tax NTD 2,063,955 thousand		Society
Glory of corporate social responsibility	NTD 2,003,955 thousand	Funds for Taiwan Fertilizer Group's (including	The gap in the average salary between male and female employees
Market share in Taiwan's fertilizer market Ranked # 1	Sales of e-grade chemicals Increased by 5.55%	Taiwan Fertilizer Foundation) participation in public welfares and organization of education seminars on sustainable agricultural knowledge NTD 7,082,831	Female employees' have higher salar than males, and the difference is within 7 %.
2019 Taiwan Corporate Sustainability Awards TCSA) Corporate Sustainability Reports- Gold Award	New employees' participation rate of integrity and anti-corruption education advocacy programs	Safety and health education and training Participants: 1,105 Total hours: 4,344 hours	Average training hours for employees Males: 22.94 hours Females: 18.31 hours
Environment		Rate of employee's participation in the union More than 97 %	Number of work-related deaths Remained at 0
Total power generation of the solar power generation system	Ratio of recycled raw materials to the total weight of raw material used Reached 27.14%	Violation of product or service information and labeling 0 case	Employee health promoting activities 2 sessions were held, with the total participants of 48 .
Nater reclaim rate in Taichung Factory		Number of people with disabilities recruited Actual recruitment of 10 people (higher than the stipulated 6)	Organization of sessions of sustainable agricultural knowledge education 434 sessions 12,100 participants



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1-1 Development Visions and Organization Structure

102-32 Highest governance body's role in sustainability reporting

102-33 Communicating critical concerns

CSR Development Vision

In response to the rapidly changing global economic environment and to strengthen our capabilities of taking risks, we make use of the CSR management mechanism and with the combination of the core competence and the concept of sustainable development, we conduct the integration of our internal resources from top to bottom through the CSR Committee to develop sustainable strategies based on issues of the stakeholders' concern, aiming at taking care of farmers, creating an eco-friendly environment, fulfilling our corporate social responsibility and reaching the goal of corporate sustainable management.

Our vision



Economic aspect	Goal	Action Plans
Improvement of the corporate governance system	To shape corporate ethics culture and implement integrity management policies	 To implement a sustainable business management structure to enhance the transparency, accuracy and immediacy of disclosed information to create smooth communication channels for the stakeholders To promote the implementation of the integrity management policy, regularly arrange integrity management and anti-corruption related education and training for the propaganda of ethical corporate management principles to all employees The risk management control operations are conducted in accordance with the "Regulations Governing the Establishment of Internal Control Systems". With the clear division of labor, risk identification and assessment at all levels are conducted the Audit Office is responsible for urging all units to develop improvement plans and regularly track subsequent results To participate in external competitions, learn from benchmarking, improve the company's competitiveness and shape good corporate image of TFC
Creation of a corporate value chain	To optimize the supplier management mechanism and manage customer relationships carefully	 To promote suppliers' CSR assessment management and implementation to urge the suppliers to implement environmental protection, improve safety and health, attach importance to human rights to work together for the fulfillment of our corporate social responsibility To establish a complete and diverse customer service mechanism to maintain customer relationships, provide smooth customer service channels and optimize production quality through feedback from customers to reinforce market competitiveness and enhance customer satisfaction



()) 台湾肥料設化有限公司 TAIWAN FERTILIZER CO., LTD.	Social aspect	Goal	Action Plans
	Social aspect	Guai	
About this Report		To adhere to the people-oriented spirit and enhance the realization	 To provide a competitive remuneration system to enable new employees and formal staff with good performance to enjoy more opportunities for flexible salary adjustment and adjustment range
Message from the Chairman		of employees' self-fulfillment	• To develop a learning organization arranging not only general training courses but also instructor training, peer sharing and expert lectures to
Overview of the Company	Creation of a		 create a positive learning and knowledge sharing system Each factory will reinforce the voluntary inspection, regularly monitor the working environment as well as prepare necessary safety protective
Summary of Performance in 2019	healthy and happy workplace		equipment to ensure health and safety of the workplace
01 Corporate Responsibility and Sustainable Management			 Every year the company subsidizes employee health checks, and those working in places with particular health hazards are provided with special health check services
1-1 Development Visions and Organization Structure	\heartsuit	To carry out the localization management and take caring	 Workshops on rationalization of fertilization and field trials of organic fertilizer are held to assist farmers to reduce the use of chemical fertilizer so as to produce safe and high quality agricultural products for a sustainable agricultural environment
1-2 Interaction with and Management of Stakeholders	Implementation of social	actions to fulfill the corporate social responsibility	 To encourage outstanding students and poor students from domestic universities and colleges to keep working hard through the Taiwan Fertilizer Foundation Scholarship Award Scheme. We set up the "Scholarship for the Agricultural Operation Plan" to encourage young students to be engaged in business management and agricultural management
1-3 External Organization Participation and Support for and Compliance with International Initiatives	responsibility		sudents to be engaged in business management and agricultural management
02 Integrity Management and Strong			
Governance	Environmental aspect	Goal	Action Plans
03 Sustainable Agriculture and Circular Economy		To take actions to fulfill the green commitments to improve the	 To make good use of the company's core competencies and integrate the Group's resources to realize the concept of green innovation in R&D, manufacturing, marketing and other parts of corporate operations
04 Energy Conservation, Environmental Protection and Environmental Management		performance of sustainable management	 Long-term investment in agricultural waste for the application in the R&D of organic fertilizer materials to make them into organic fertilizer products to turn agricultural waste into resources
05 Caring and Friendly Workplace for Employees	Implementation of the green sustainability strategies		 To establish internal and external "organic demonstration farms", obtain verification of organic agricultural products, interact with farmers, duplicate farmers' cultivation and farming situations and introduce the Internet of Things (IoT) system to establish a complete database of organic agricultural cultivation techniques to become representative organic farms in Taiwan
06 Co-creation of Value and Common Prosperity	Strategies		 The Hualien Factory makes uses of the characteristics of the inexhaustible deep sea water. A multi-stage system for the gravity flow and sola power generation facilities are established by stages to expand multiple projects such as smart farming while high value-added products are also being developed
Appendix	nø	To implement energy efficiency integration to establish a green	 To implement energy integration and the upstream and downstream integration plan of the production chain to improve energy efficiency and promote efficient utilization of resources
—	Implementation of	brand image	 ISO 14001 Environmental Management System and ISO 14064-1 GHG Inventory Standards were introduced into our Taichung Factory and Miaoli Factory. Inventory is made annually to improve environmental performance and to reach the objective of energy saving and waste reduction
	energy conservation and waste reduction actions		 ISO 50001 Energy Management System was introduced into Taichung Factory for regular internal and external follow-up inspections and deficiency improvement to reach the target of energy saving and carbon reduction
			 Legal service providers are commissioned to carry out waste removal and disposal in accordance with the law, and the terminal treatment will be tracked and checked to prevent environmental pollution



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Operation Method of the Corporate Social Responsibility Committee

This CSR Committee, headed by the Chairman of the Board as the steering committee member, with the president serving as the Committee chairman, vice president as the committee vice chairman, and the committee members include the assistant vice presidents, division chiefs, and plant managers. The operation direction and the supervision results of the Group and the functional committees are reviewed through regular and unscheduled meetings. The implementation results are reported to the BOD.

Operation method of the CSR committee



Steering committee member/Chairman

Committee chairman/ President

Implementation of division of labor

- Board of Directors/Approve policies
- CSR Committee/Determination of CSR policy directions and development of CSR policy
- Each Sub-committee/ Setting key performance indicators (KPI), action plans and budgeting for each unit to promote and implement based on its responsibility, and evaluation of the performance will also be reviewed.
- CSR Secretariat under the Board office/ It is responsible for handling CSR education and training on a regular basis and assisting the Committee in the development and implementation of CSR policies.





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1-2 Interaction with and Management of Stakeholders



102-18 Governance structure
102-19 Delegating authority
102-20 Executive-level responsibility for economic, environmental, and social topics
102-21 Consulting stakeholders on economic, environmental, and social topics
102-31 Review of economic, environmental, and social topics
102-33 Communicating critical concerns

102-40 List of stakeholder groups
102-42 Identifying and selecting stakeholders
102-43 Approach to stakeholder engagement
102-44 Key topics and concerns raised
102-46 Defining report content and topic Boundarie
102-47 List of material topics

Dialogue with Stakeholders

At the end of 2019, we implemented the identification process and materiality rating based on the five major principles set forth in AA1000 SES Stakeholder Engagement Standards and identified eight major categories of stakeholders closely related to the operation, including the employees, government/competent authorities, the shareholders, farmers, chemical customers, fertilizer customers, real estate customers and suppliers.

Employees

Identification of material topics and communication channels

Topics of Concern	Response from TFC	Communication Channels and Frequency	
Employees TFC car its employees	es most about the employees' suggestions and feedback and responds immediately to them concerning oyees	g the issues of concern to fulfill its responsibility of taking good care of	3
Socioeconomic compliance	All departments are required to comply with relevant laws and policies for their daily operations and disclose punishments and sanctions for violations of economic and social laws and regulations in an honest manner.	 Labor-management meeting/ annual Labor conference/ quarterly TFC Quarterly/ quarterly 	
Occupational health and safety	The industrial safety and environmental protection briefing is convened every two months. In the briefing, advocacy of relevant laws and regulations as well as occupational accident cases is conducted, and relevant suggestions and reviews concerning safety, health and environmental protection are presented.	 Internal website/ at all times Trade Union and Employee Welfare Association Meeting/ quarterly Employee grievance mailbox or hotline/ at all times Internal proposal system for improvement/ at all times 	



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Appendix



Topics of Concern	Response from TFC	Communication Channels and Frequency
Government (compete	ent authorities) Council of Agriculture, Executive Yuan is the largest shareholder of agriculture and the sustainable environment	TFC, which directly affects the execution and implementation of policies of TFC's
Sustainable food We support the agricultural policy of "organization of chemical fertilizers" and have added peat into all traditional compound fertilizers to be upgraded to compound fertilizers containing organic essence that can increase the agricultural output and reduce the use of fertilizers.		· ·
Environmental Compliance	Conduct internal self-review and improvement of past violations and require unit and per charge to strictly comply with relevant laws to avoid similar situations from happening ag	rsonnel in occasional
Shareholders S	hareholders are the owners of TFC, whose interests and the company's operating performance	ce are closely related. Therefore, the shareholders have high expectations
Economic Performance	TFC not only devotes itself to reducing costs and improving market competitiveness but	also • Shareholders' meeting/ annual
	comprehensively upgrade products and technical services. The profit in 2019 increased compared with the previous year.	Financial statements/ quarterly
CO		
		Investor conference/ occasional
	Moreover, TFC is implementing the capacity expansion plan for fertilizer production, which	 Shareholders service mailbox/ shareholders service personnel/ at all times
		 Shareholders service mailbox/ shareholders service personnel/ at all times
Fertilizer customers	Moreover, TFC is implementing the capacity expansion plan for fertilizer production, which only satisfies the domestic needs among farmers but also helps with our active deployment.	 ch not ent in Shareholders service mailbox/ shareholders service personnel/ at all times Major information on Market Observation Post System (MOPS) and TFC's official website/ at all times



)台湾紀科設修有限公司 TAIWAN FERTILIZER CO., LTD.	Topics of Concern	Response from TFC	Communication Channels and Frequency	
	Chemical customers	The chemical and fertilizer business is the root of TFC. Understanding our customers' needs ar	nd suggestions is the driving force for our continuous improvement	
About this Report Message from the Chairman Overview of the Company	Effluents and waste	The Company has a complete environmental safety and health organization and internal regulations. In addition, the establishment and verification of ISO 14001 Environmental Management System in Taichung and Miaoli Factories have been completed. Each year, through the PDCA management model, TFC has budgeted for various environmental	 Customer satisfaction survey/ annual TFC quarterly/ quarterly Customer audit/ occasional Meetings, mutual visits/ occasional 	
Summary of Performance in 2019 1 Corporate Responsibility and Sustainable Management		improvement measures to reach the goal of improving the environmental performance.	TFC official website/ at all timesCustomer service hotline/ at all times	
1-1 Development Visions and Organization Structure	Farmers Farmers	s are the end users of our products. Only by listening to their suggestions and needs can we obtain the c	driving force to make continuous progress and grow	AD CONTRACTOR
 1-2 Interaction with and Management of Stakeholders 1-3 External Organization Participation and Support for and Compliance with International Initiatives 2 Integrity Management and Strong 	Customer health and safety	Before releasing our products to other distribution channels, strict inspection of raw materials and labels are conducted in accordance with domestic product regulations.	 TFC Quarterly/ quarterly TFC official website/ at all times Customer service hotline/ at all times Workshops on rationalization of fertilization/ occasional Product briefing/ occasional 	
Governance 3 Sustainable Agriculture and Circular Economy	Suppliers The qua	ality of the products and services provided by the suppliers directly affects the performance of the operation	ion and production of TFC	1J
 4 Energy Conservation, Environmental Protection and Environmental Management 5 Caring and Friendly Workplace for Employees 6 Co-creation of Value and Common Prosperity 	Supplier environmental assessment	The development, selection and evaluation of suppliers are conducted in accordance with the Supplier Management Rules and Review Operation Points for New Bulk Raw Material Suppliers to stabilize the quality of materials and to ensure the safety of materials. To encourage the supply chain to jointly establish a friendly industrial environment and social inclusion, TFC has conducted a self-assessment survey of its suppliers' CSR status for four consecutive year; the score in each aspect was superior to the passing score. We encourage the supply chain to jointly establish a friendly industrial environment for social inclusion.	 Supplier evaluation survey/ annual Annual supplier conference/ annual TFC official website/ at all times Meetings, mutual visits/ occasional 	
Appendix	Real estate custome	rs Real estate is one of the businesses of TFC's diversification strategies. We listen to the real e customers' demands	estate customers' feedback and opinions to get closer to meet our	合
	Economic performance	TFC has stable management in real estate business and seeks an interaction model of residential and commercial use along with co-prosperity in the community. In the real estate development phase, we abide by relevant laws and regulations and also have great communication with stakeholders. After the development, the local economy is boosted, creating local employment opportunities. Meanwhile, during the process of activation of our land assets, we share the development benefits with real estate customers to achieve a win-win situation.	 Customer satisfaction survey/ annual TFC official website/ at all times Customer service hotline/ at all times Review meeting/ occasional Gratitude dinner/ occasional 	



Identification of Material Topics and Boundary

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Identification process of material topics and boundary

TFC complies with the GRI Standards issued by Global Reporting Initiative (GRI) for the identification process of material topics of sustainable development as the basis for the disclosure of the CSR Report to respond to the stakeholders by providing information they desire to obtain.

-

Stakeholder identification Collecti

According to five major principles set forth in AA1000 Stakeholder Engagement Standard, there are eight categories of our key stakeholders, including the employees, government/competent authorities, the shareholders, fertilizer customers , chemical customers, farmers, suppliers and real estate customers .

8 major categories of stakeholders

Identification of material topics

The matrix analysis and prioritization of

environment, Taiwan Stock Exchange

material topics of the stakeholders' level of

concern and the level of impact on sustainable

sustainable development context, the industrial

Corporation Rules Governing the Preparation

and Filing of Corporate Social Responsibility

Reports by TWSE Listed Companies and the

discussions on the Company's current status,

and 14 major topics were finalized after the

approval of the Chairman.

14 material topics

management were conducted. Based on the

Collection and organization of topics

Topic collection was based on the 33 topics of GRI Standards and the Sustainable Development Goals (SDGs) were referred to while 4 topics related to TFC's sustainable development were added (Sustainable Food, Circular Economy and Climate Action) with a total of 37 topics being summarized and used as the guidelines for the questionnaire design.

37 material topics

8

Determination of boundary of disclosure

Based on the value chain defined by TFC, including suppliers, TFC's subsidiaries and customers (including agents and farmers), and based on the 14 material topics which were merged into 8 manage approaches, related management approaches were disclosed while the materiality boundary of the topics was determined to understand the impact and influence of each topic on the value chain.

management approaches

Survey on issues of concern

Through questionnaire survey of the Company's 14 high-level management and 73 stakeholders, the impact and level of concern of the topics in economy, environment and society were prioritized.

Review and discussion

87

This year, based on the identified material topics, responding chapters and boundary analysis, TFC will continue to strengthen management and disclose implementation results in this CSR Report.

The 6th CSR Report

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Analysis results of material topics



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1. Economic Performance 3.Marketing and Labeling 5.Sustainable Food 7.Environmental Compliance 9.Climate Action 11.Emissions 13.Anti-corruption 15. Training and Education 16.Water **17. Supplier Environmental Assessment** 19.Energy 21.Materials 23. Supplier Social Assessment 25.Anti-competitive Behavior 27. Procurement Practices 29.Non-discrimination 31. Forced and Compulsory Labor 33. Freedom of Association and Collective Bargaining 35. Public Policy Economic Aspect Environmental Aspect

2.Socioeconomic Compliance 4.Effluents and Waste 6.Customer Health and Safety 8.Occupational Health and Safety 10.Circular Economy 12.Customer Privacy 14.Labor/Management Relations 18. Employment and Labor Relations 20.Local Communities 22. Employee Diversity and Equal Opportunity 24.Indirect Economic Impacts 26.Market Presence 28.Biodiversity 30.Human Rights Assessment 32.Child Labor 34. Security Practices 36.Indigenous Rights

Note: "Occupational Health and Safety", "Supplier Environmental Assessment", "Supplier Social Assessment" and "Local Communities" are material topics of mandatory disclosure required by regulations.



Social Aspect



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Chapters and sections disclosing material topics and description of the boundary and consideration

Material topics (Priorityzation)	The corresponding index	The Boundary	Chapter and Section in this Report
Economic Aspect			©3
Economic Performance (1)	• GRI 201-1 • GRI 201-3	★ TFC Group	 2.1 Business Management 5.3 The Remuneration System and Benefits
Environmental Aspect			¢
Effluents and Waste (4)	• GRI 306-1 • GRI 306-2	 ★ Taichung Factory ☆ Raw material suppliers ★ Miaoli Factory ☆ Waste treatment service providers 	 Chapter 4 Energy Conservation, Environmental Protection and Environmental Management 4.5 Wastewater and Waste Management
Emissions (10)	• GRI 305-1 • GRI 305-5 • GRI 305-2 • GRI 305-7	 ★ Taichung Factory ★ Waste treatment service providers ★ Miaoli Factory 	 Chapter 4 Energy Conservation, Environmental Protection and Environmental Management 4.3 Greenhouse Gas Management
Circular Economy (11)	 GRI 301-2 SDGs Goal 12: Ensure sustainable consumption and production patterns 12.4 Sound management of chemicals and all wastes 12.5 Waste reduction, recycling and reuse 	 ★ Miaoli Factory ★ Hualien Factory ☆ Agricultural Research and Extension Station, Council of Agriculture, Executive Yuan ☆ Breeders ☆ Raw material suppliers 	 Chapter 3 Sustainable Agriculture and Circular Economy 3.3 Resource Circulation and Green Economy 4.4 Raw Material Management
Environmental Compliance (7)	• GRI 307-1	 ★ TFC Group ☆ Agents and contractors ☆ Suppliers 	• 2.4 Legal Compliance
Energy (12)	• GRI 302-1 • GRI 302-4 • GRI 302-3	 ★ Taichung Factory ★ Miaoli Factory 	 Chapter 4 Energy Conservation, Environmental Protection and Environmental Management 4.2 Energy Resource Management

★ Direct impact 🛛 🕁 Contributing impact 🛛 △ Business relationship



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Material topics (Priorityzation)	The corresponding index	The Boundary		Chapter and Section in this Report
Social Aspect				\heartsuit
Sustainable Food (5)	 SDGs Goal : 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture 2.3 Provide a safe and fair production environment and increase rural income 2.4 Ensure sustainable food production systems 	★ Taichung Factory ★ Miaoli Factory	 ★ TFC Head Office △ Cooperative pilot farms, farmers 	 Chapter 3 Sustainable Agriculture and Circular Economy 3.1 Upgrade of Corporate Core Competencies 3.2 Innovative Eco-friendly New Products 6.4 Promotion of Sustainable Agricultural Education
Marketing and Labeling (3)	• GRI 417-1 • GRI 417-2 • GRI 417-3	★ TFC Group ☆ Suppliers	\bigstar Agents and contractors	 2.4 Legal Compliance 6.1 Product Liability
Customer Health and Safety (6)	• GRI 416-1 • GRI 416-2	★ TFC Group☆ Suppliers	Agents and consumers	 Chapter 6 Co-creation of Value and Common Prosperity 6.1 Product Liability 6.2 Considerate Customer Service
Socioeconomic Compliance (2)	• GRI 419-1	★ TFC Group☆ Suppliers	☆ Agents and contractors	2.4 Legal Compliance

Item of Mandatory Disclo	sure			8
Occupational Health and Safety (8)	• GRI 403-1 • GRI 403-2 • GRI 403-3	 ★ TFC Group ☆ Contractors ☆ Customers 	☆ Government departments ☆ Joint prevention organizations	 5.6 A Healthy and Safe Working Environment 5.7 Emergency Response and Transport Management
Local Communities (13)	• GRI 413-1 • GRI 413-2	 ★ TFC ★ Old Hsinchu Factory ★ Old Nankang Factory 	 ★ Old Keelung Factory ★ Old Kaohsiung Factory (old factories refer to the land development projects) 	 5.6 A Healthy and Safe Working Environment 5.7 Emergency Response and Transport Management 6.6 Creation of Harmony and Common Prosperity of the Community
Supplier Environmental Assessment (16)	• GRI 308-2	★ TFC Group☆ Suppliers	☆ Contractors ☆ OEMs	6.3 Supplier Management and Procurement
Supplier Social Assessment (22)	• GRI 414-2	★ TFC Group☆ Suppliers	☆ Contractors ☆ OEMs	6.3 Supplier Management and Procurement

 \bigstar Direct impact \Leftrightarrow Contributing impact \triangle Business relationship



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- 3 External Organization Participation and Support for and Compliance with Internation Initiatives

GRI

(Note 1)

Association

TRCA

02-12 External initiative

102-13 Membership of association

- **206-1** Legal actions for anti-competitive behavior, anti-trust, and monopoly practices
- 406-1 Incidents of discrimination and corrective actions taken
- **407-1** Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk
- 408-1 Operations and suppliers at significant risk for incidents of child labo
- **409-1** Operations and suppliers at significant risk for incidents of forced or compulsory labor
- 411-1 Incidents of violations involving rights of indigenous people



In 2019, TFC participated in a total of 23 domestic and international industry associations and societies for the exchanges and cooperation to get the latest information to get closely linked up with the industry.

Industry Societies and Trade Associations

International Fertilizer Industry Association

Taipei Agricultural Chemical Association

Taiwan Deep Sea Water Development

Taiwan Responsible Care Association,

Taiwan Acid and Alkali Industries Association

Taiwan Crop Protection Industry Association

R&D Association and Society

- The Chinese Society of Soil and Fertilizer Sciences
- Financial Executives Institutes
- Taiwan Institute of Chemical Engineers
- Chinese Society for Quality
- Chinese Petroleum Institute
- Agricultural Association of Taiwan

Others

Harvest Farm Group (Note 2)

- Taiwan Stock Affairs Association
- Sino-Indonesia Cultural and Economic Association
- Middle East Business Association of R.O.C.
- Chinese National Association of Industry and Commerce, Taiwan
- Chinese International Economic Cooperation Association
- Sino-Arabian Cultural & Economic Association
- Taiwan Management Institute
- The Third Wednesday Club
- Chinese Blood Donation Association
- Chung-Hua Association for Financial and Economic Strategies

Note1: TFC is the founding company of Taiwan Acid and Alkali Industries Association and the Vice Factory Manager of Keelung Factory, Shi-Ping Jing, serves as the Chairman of the association this term.

Note2: TFC's chairman, Yao Hsing Huang, serves as the managing director.

protection of the rights of the employees, contractors and suppliers in terms of human rights, protection of labor rights and freedom of association, anti-forced labor, child labor avoidance, anti-discrimination, anti-corruption, antitrust and environmental protection, and will absolutely abide by domestic laws and comply with international statutes. In 2019, TFC and its suppliers did not have any violation of human rights issues, including discrimination, violation of freedom of association, the use of child labor and forced labor.

The Company supports and is committed to

the compliance with the UN Global

areas of Human Rights, Labor and

Environment. We are committed to

compliance with the principles and the

Compact under the 9 principles in three



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INTEGRITY MANAGEMENT AND STRONG GOVERNANCE

2-1 Business Management2-2 Corporate Governance

2-3 Risk Management

2-4 Legal Compliance



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Material topic

Economic performance

GRI

- **102-7** Scale of the organization
- 103-1 Explanation of the material topic and its Boundary
- **103-2** The management approach and its components
- 103-3 Evaluation of the management approach
- 201-1 Direct economic value generated and distributed



Importance

We have set sustainable development as our vision, creating long-term and stable profit-making structure for both our employees and stakeholders, and will continue to expand the business, making TFC the most competitive company.

Boundary

• Within the organization: TFC Group

Policy

Profit growth, optimization of competition, sustainable development

Commitments

જ

围

32

To strive to achieve the target of the overall annual profit through aggressive management of operating performance to meet the expectations of our shareholders and stakeholders

Resources

Prepare and implement the budget according to the business plan

Short-term Goals

G

- To increase production capacity of compound fertilizers, build industrial chemical storage tanks and actively carry out a new layout of domestic and foreign target markets
- · To integrate upstream and downstream product value chains of electronic grade chemicals
- · To focus the investment on agricultural biotechnology, supplemented by overseas strategic investment

Long-term Goals

R

- To combine technologies such as the Internet of Things (IoT), big data, drones and artificial intelligence to develop smart and sophisticated agricultural business models
- To adopt intellectual property rights protection measures for key products and technologies
- To accelerate the replotting of land development and establish long-term steady sales of real estate and rental income

Specific actions taken and performance in 2019

 The consolidated operating profit and net operating income increased by 10.14% and 26.39% respectively compared to 2018.



CFinancial imformation



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(consolidated)



BASIC EARNINGS PER SHARE (consolidated)



OPERATING COSTS (consolidated)



NON-OPERATING INCOME AND EXPENSES (consolidated)



EMPLOYEE WAGES AND BENEFITS (consolidated)



GROSS PROFIT FROM

OPERATIONS (consolidated)



INCOME TAX EXPENSE (consolidated)



DIVIDENDS TO SHAREHOLDERS



unit:In Thousands of New Taiwan Dollars



PROFIT (consolidated)



TAXES FOR GOVERNMENT





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2-2 Corporate Governance

GRI

102-16 Values, principles, standards, and norms of behavior
102-17 Mechanisms for advice and concerns about ethics
102-18 Governance structure
102-19 Delegating authority
102-22 Composition of the highest governance body and its commentation
102-23 Chair of the highest governance body
102-24 Nominating and selecting the highest governance body
102-25 Conflicts of interest

102-26 Role of highest governance body in setting purpose, values, and strategy
102-27 Collective knowledge of highest governance body
102-33 Communicating critical concerns
102-35 Remuneration policies

- 102-36 Process for determining remuneration
- **205-2** Communication and training about anti-corruption policies and procedures
- 405-1 Diversity of governance bodies and employee

Board of directors

A sound, diverse and professional board of directors is the most important part of the corporate governance system, and it is also an important foundation for an enterprise to pursue sustainable development. The board of directors of TFC is composed of nine directors whose term of office is three years, including three independent directors (one female) and one labor director. Mr. Yao Hsing Huang serves as the chairman of the board.

To strengthen corporate governance, the nomination system is implemented for the Director (including independent directors) Election. Members of the Board of Directors have held senior positions in well-known enterprises, government agencies or universities, with extensive experience in fertilizers and chemical engineering, financial accounting, law, agriculture, architectural design and business and management.

TFC holds training programs for directors or makes arrangement for directors' external education programs each year. The curriculum includes corporate governance and ethical corporate management best principles, the directors' responsibilities and obligations, corporate financial crisis warning and type analysis and fraud prevention and compliance with regulations. In 2019, the total number of training hours for the directors of the company was 48 hours, with an average of 5.3 training hours.

Training courses

Iraining courses and hours of individual directors





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Corporate governance structure



BOD members and expertise

Chairman

Name Yao-Hsing Huang Age 50~59 Date Assumed Position 109/02/12 Expiry Date 110/06/30 Gender Male Expertise Fertilizer chemical engineering, business management Current Position Chairman & president of Taiwan Fertilizer CO., Ltd.

Director		
NameJunne-Jih Chen Gender Male	Age 60~69 Date Assumed Position 108/03/28 Expertise Agricultural economy	Expiry Date 110/06/30
NameShih-Chi Lin Gender Male	Age 50~59 Date Assumed Position 107/07/01 Expertise Public administration	Expiry Date 110/06/30
Name Chao-Feng Li Gender Male	Age 50~59 Date Assumed Position 107/07/01 Expertise Architectural design, urban planning	Expiry Date 110/06/30
Name Sheng-Ming Hsu Gender Male	Age 60~69 Date Assumed Position 109/01/01 Expertise Fertilizer chemical engineering	Expiry Date 110/06/30
Name Yaw-Kuang Chen Gender Male	Age 60~69 Date Assumed Position 107/07/01 Expertise Architectural design, education, law	Expiry Date 110/06/30
Independent Dir	ector	

Name Horng-Chang Lin Age 50~59 Date Assumed Position 107/07/01 Expiry Date 110/06/30 **Gender** Male Expertise Media marketing, finance Name Ming-Shiuan Lee Age 40~49 Date Assumed Position 107/07/01 Expiry Date 110/06/30 Expertise Business management, financial accounting **Gender** Female Name Chao-Chin Hsiao Age 30~39 Date Assumed Position 107/07/01 Expiry Date 110/06/30 Expertise Business management, financial accounting Gender Male

Note: The 34th term of Board of Directors was re-elected on June 29, 2018 for a term of 3 years.



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Remuneration of Directors

Our remuneration policy of the directors and supervisors is set out in TFC's Corporate Charter

The remuneration of the chairman shall be calculated on the basis of the income received by the president and shall be paid at 1.25 times of that amount.

The remuneration of the other directors and independent directors shall not exceed the highest salary level in the salary table. The surplus distribution of the directors shall not be more than 1.6% of the profit of the Company for the year. The independent directors are not involved in distributions from the earnings of the

Company.

3	100
The Audit	Committee
Number of meeting	Average attendance rate
8	100

The Operation of BOD

The BOD holds a regular session at least

once a month to hear the Company's major

business strategy, operational reports and

business and financial policies and track

Attendance rate of BOD and

BOD

Remuneration Committee

Average attendance rate (%)

82.25

Average

attendance rate (%)

ate (%)

audit reports to review and monitor

policy implementation.

its committees

Number of meeting

10

Number of meeting

C Functional Committees

Audit Committee

The Independent Director, MR, Horng-Chang Lin serves as the convener to assist the board of directors in formulating or revising the internal control system, the appointment, discharge and remuneration of the certified public accountant (CPA) and the control of the existing and potential risks of the company to improve the corporate governance system.

Members and functions of the audit committee

Audit Committee

Convener Horng-Chang Lin Member Ming-Shiuan Lee, Chao-Chin Hsiao
 Performance in 2019 Reviewed 2019 consolidated financial reports for Q2 and Q3.
 Reviewed 2018 annual consolidated financial reports.
 Revised the Company's "Operating Procedures for Loaning of Funds and Making of Endorsements/ Guarantees." Revised the Company's "Operating Procedures for Acquisition and Disposal of Assets"
Established the Company's "Procedures of Related Party Transaction Management"
Drafted 2020 Audit Work Plan
 Reviewed the independence and competency assessment of the certified public accountants (CPAs) in 2019 Reviewed the appointment of the certified public accountants (CPAs) in 2020
Note: The Audit Committee members are all TFC's independent directors.

Remuneration committee

To improve the Company's salary and remuneration system for directors and managers, Ming-Shiuan Lee serves as the convener of the Remuneration Committee to assist the board of directors in regularly developing and reviewing the policy, system, standard and structure of the performance evaluation and remuneration of directors and managers, and regular assessment and setting of remuneration for managers are also made.

Members and Functions of Remuneration Committee

Remuneration committee

Convener Ming-Shiuan Lee Member Horng-Chang Lin, You Cheng Performance in 2019

 Reviewed the 2018 distribution amount of compensation to directors and supervisors • Reviewed the 2018 year-end bonuses of personnel holding the position of the vice director and above • Established the Company's "Management Measures for the Operation of the Remuneration Committee Established the "Self-Evaluation of Peer Evaluation of the Board of Directors"

· Reviewed the salary adjustment of personnel holding the position of vice president and above

Note: You Cheng is an external advisory committee member.



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Directors' Liability Insurance

As prescribed in the "TFC's Code of Practice for Corporate Governance", TFC is responsible for the directors' and supervisors' liability insurance and reports to the board of directors every year.

Implementation of Shareholder Activism

TFC has implemented the electronic voting system and been adhering to the open, transparent and instant principles of information disclosure. The English and Chinese versions of the Company's Shareholders' Meeting Agenda Handbook, meeting notices and annual reports are uploaded before the shareholders' meeting. In addition, annual reports on TFC's Corporate Social Responsibility in both English and Chinese are provided annually. Monthly English operating information is immediately released on the Company's English official website to ensure that shareholders can obtain the most immediate and correct information of TEC.

Integrity Management and Anti-corruption

When establishing business strategies and engaging in operational activities, the priorities of all staff are honesty and integrity, law-abiding probity, and telling right from wrong. Integrity is the most important core value of TFC's corporate culture. Through the establishment of the reporting channels and punishment system, we fully implement precautionary measures of dishonesty, setting up a corporate culture of good faith management and a good risk management mechanism.

- TFC's Ethical Corporate Management Best Practice Principles
- Code of Conduct and Ethics for Directors, Supervisors and First-level Managers
- Work Rules for Employees in TFC

Organizational

rules

<u>A</u>

Staff training

Report system

- Regulations for Employee Performance Evaluation in TFC
- TFC Internal and External Personnel Reporting and Handling Measures
- We arrange integrity and anti-corruption advocacy courses in orientation training, and the training ratio of new staff reaches 100%.
- The integrity and anti-corruption advocacy courses are regularly scheduled to advocate our philosophy of integrity management.
- TFC Internal and External Personnel Reporting and Handling Measures was established and released at the official website of TFC.
- Legal officers of the board of directors receive cases and provide consultation on unethical or illegal behavior.
- and handling measures • TFC's Audit Office is responsible for receiving reports: Report Box: No. 88, Sec. 2, Nanjing E. Rd., Taipei, 10406 Taiwan (R.O.C.), addressee: Supervisor of Audit Office.

Mechanism for Insider Trading Prevention

To prevent insider trading and avoid improper disclosure of information, and to ensure the consistency and correctness of information published, TFC has developed the "Internal Major Information Processing Procedures", which stipulates that those who know the major information shall not disclose to others or inquire or collect significant information that the Company did not disclose and is not related to personal duties. The regulations apply to the directors (including independent directors), managers and all employees of the Company to implement the prevention of insider trading management operations.



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2-3 Risk Management

GRI

102-11 Precautionary Principle or approach
102-15 Key impacts, risks, and opportunities
102-29 Identifying and managing economic, environmental, and social impacts

102-30 Effectiveness of risk management processes
102-31 Review of economic, environmental, and social topics
201-2 Financial implications and other risks and opportunities dueto climate change

HInternal Audit and Operation

TFC's Audit Office is an independent unit directly responding to the BOD. The Audit Office is composed of the Auditor General responsible for supervising internal audit and three full-time auditors in charge of internal audit operations, including funds and loans, insider trading and regulatory compliance on a monthly basis, and submits the results to the Board of Directors.

The audit unit shall supervise and review the internal units and subsidiaries and shall conduct internal evaluation at least once a year to identify and improve internal control deficiencies and irregularities as the reference for the Board of Directors and the president to evaluate the effectiveness of the overall internal control system and as the main basis for the issuance of the Statement on internal control.

Risk Management System

TFC follows the existing management organization system and the "Regulations Governing the Establishment of Internal Control Systems" and actively faces and controls potential risks TFC may encounter in the management of daily operations. It has clear division of functions and labor. Through the establishment of oversight responsibility, assignment of power and responsibility and the reward-punishment system, the control environment is built for the effective establishment of TFC's risk management protection network.

The Audit Office was set up to be in charge of the promotion of the internal control system and evaluating and confirming the effectiveness of the system. The Audit Office sets up the annual audit plans based on which the auditing is conducted. When risk events or internal control weakness are discovered during the process, the Audit Office will urge the accountable units to rapidly develop an improvement plan and regularly follow up the results for the PDCA cycle to strengthen risk management practices so as to assist the Company in correcting immediately and implementing necessary control operations for effective risk management and control.

Risk Management Mechanism

RIS

ACCEPT

TRANSFER

AVOID

REDUCE

The First Management Mechanism

Responsible unit/ person Competent business unit or person in charge (direct unit of risk control)

Responsibilities Initial risk awareness and assessment, and the design consideration of control and prevention responsibility

The Second Management Mechanism

Responsible unit/ person Managers (the president and vice presidents)

Responsibilities In charge of monitoring of risk management

The Third Management Mechanism

Responsible unit/ person Board of Directors and Audit Office

Responsibilities Risk inspection, assessment, supervision, improvement and follow-up and reporting



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Climate risk assessment

Risk impact level \Rightarrow High \triangle Medium O low

		Type of risk	Climate change risk	Potential financial impact	Corresponding strategies
aw of co en dis ris we CS re	TFC's management are aware of the importance of climate change to the company and the environment. Therefore, discussions on relevant risks and opportunities were made in the 2019	☆ Transformation risk- Policies and regulations	 Cap on greenhouse gas Litigation risk Renewable Energy Development Act for large electricity consumers 	 Increase in equipment and operating costs Increase in costs or decrease in demands for products due to fines A certain proportion of renewable energy power generation equipment has to be installed, leading to increase in equipment investment costs. 	 Continue to carry out energy conservation programs Use low-carbon fuel as alternative fuels Implement ISO 14064-1 GHG inventory in Taichung Factory Install solar power generation equipment
	CSR team meeting, and reports were also made to the board of directors.	▲ Transformation risk- market	 Changes in customer behavior Rising raw material costs 	 Demands for products decrease due to changes in consumer preferences Changes in input costs (energy and raw materials) 	 Predict changes in consumer behavior to adjust product properties Find alternative raw materials and energy
		☆ Physical risk-immediacy	 Increasing frequency of extreme weather incidents such as typhoons and saltwater intrusion Unstable power supply 	 Advance retirement of existing assets Increased operating costs 	 Carry out inspections of various anti-typhoon measures, use waterproof sandbags in low-lying regions prone to flooding, and prepare lights in case of power failure Regularly maintain and inspect backup generators



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Risk Management and Opportunity Benefits

Potential risks	Countermeasures	Opportunity benefits
Financial Risk		<u>Š</u>
Interest rate risk	 Seek targets with higher returns and lower costs to cope with risk of the interest rate changes and to improve the capital efficiency. 	Make use of multiple financial strategies and establish risk awareness to construct a sound and effective financial risk control mechanism.
Operational Risk		88
Strategic risk	 In response to climate change and the rise of carbon reduction awareness, we enhance the green R&D innovation and improve the market competitiveness. Continue to improve the production management efficiency and reduce operating costs. Strengthen the vertical and horizontal integration of industries and improve the marginal efficiency of production. Develop real estate business and promote the development of real estate in the appropriate development in order to increase the added value of real estate. 	Manage operational risks so that business can grow steadily and supply sufficient agricultural fertilizers to protect stakeholders' rights, such as shareholder investments, employees' jobs, and farmers' use of fertilizers.
Market Risk		-20
In response to the development trend of organic agriculture and the rising environmental protection and health awareness, the amount of chemical fertilizer used is reduced year by year.	 With the goal of obtaining the organic fertilizer certification from Council of Agriculture (COA) and being selected by COA as the recommended brand with new products, TFC conducts the reshaping the brand image of Taifer Organic Fertilizers. With the core technology of microbial fermentation as the core, combined with the technology transfer of industry-government-academia collaboration to accelerate the development of organic fertilizer products and maintain the leading position in terms of technology. Establish organic cultivation techniques and quality control process and set up internal and external organic demonstration farms. With the goal of both fertilizer efficiency and environmental protection, we fully develop organic compound fertilizers to safeguard the agricultural environment. 	Increase the green competitiveness of eco-friendly fertilizer products in TFC and increase the added value to create market differentiation.



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Potential risks	Countermeasures	Opportunity benefits
Supply Chain Risk		<u>Je</u>
Centralized purchasing	 Adopt diversified material purchase programs and seek alternatives of important imported raw materials. Actively look for new suppliers to gradually strengthen the backup supplier list. 	To fully grasp the source and stability of suppliers' supply to ensure the safety of raw materials supply.
Raw material transport and storage	 Regularly review the inventory of raw materials in the internal meeting, determine the optimal transportation plan, deploy vessels as appropriate, and purchase special insurance depending on the route of the vessels under the highest principle of uninterrupted supply of raw materials. 	
	 Pay close attention to the business situation at all times, prepare a safety stock and implement the delivery reminder and follow-ups. 	
Raw material safety	 Establish the new supplier evaluation mechanism to confirm the quality and safety of the supply. Establish a "Product Traceability System". 	

Production Risk		
Fluctuations in market demands	 If the demands for fertilizers increase in the short term due to natural disasters, other qualified factories will be arranged for manufacturing fertilizer products or fertilizers imported from abroad will be supplied. 	Stabilize the supply of fertilizer in the market, enhance customer trust and
Unbalanced production and sales	 Based on the estimated sales volume of the Sales Department, we plan and arrange production plans for each product line and adjust the annual plant checkup according to the production schedule. Through the Worry-Free Project of Continuous Supply of Fertilizers, including the annual, quarterly, monthly 	satisfaction and maintain the leading position in the market.
	and weekly balance plans, TFC will fully provide fertilizers to meet the demands in the agricultural market.	



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Potential risks	Countermeasures	Opportunity benefits	
Information Risk			
Information system abnormality and information safety management	 Set the target, scope and control measures of information security, standardize the monitoring process and strengthen information security protection. Improve the availability of information infrastructure to ensure that operational systems are fully backed up. Implement education and training of information security protection and exercises of reporting information safety. 	Maintain the confidentia integrity and availability corporate information to ensure the stable opera of corporate organizatio	
Environmental, Health a	and Safety Risk		
Occupational safety and health management	 Publish the Industrial Safety Newsletter on a monthly basis to enhance personnel safety awareness and implement risk assessments to reduce hazards. 	Effectively reduce the potential hazards in the workplace, avoid occupational disasters an protect the health and saf of employees and contractors.	
Environmental management and protection	 Invest company resources in accordance with the international management system standards in good pollution control, waste management and water resource management as well as other environmental protection operations. 		
Occurrence of emergency and disaster	 In each factory, an emergency response mechanism of disasters has been established. Besides, regular industrial safety exercises, including equipment maintenance and replacement, and establishment of disaster prevention concepts for the personnel, are carried out. 		

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Material topic

Social Compliance, Environmental Compliance, Marketing and Labeling

GRI

- **103-1** Explanation of the material topic and its Boundary
- **103-2** The management approach and its components
- 103-3 Evaluation of the management approach
- 306-3 Significant spills
- 307-1 Non-compliance with environmental laws and regulations
- **416-2** Incidents of non-compliance concerning the health andsafety impacts of products and services
- 417-2 Incidents of non-compliance concerning product and service information and labeling
- 417-3 Incidents of non-compliance concerning marketing communications
- 419-1 Non-compliance with laws and regulations in the social and
 - economic area

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Responsibility

All staff from top to bottom at TFC work together for implementation

Goals

R

- · To establish a complete and better corporate governance system
- · To set up a corporate culture of integrity management
- · To pursue zero violation and zero penalty
- To strengthen risk identification and management system

Management Approach

Importance

All the employees at TFC engage in all operational activities with the highest standards of integrity and ethical standards, which not only stabilizes the company's operations but also helps build a good company image beneficial for the pursuit of the goal of sustainable development of the Company.

Boundary

Within the organization: TFC GroupOutside the organization:Suppliers, agents and contractors

Policy

Improve corporate governance, establish corporate culture of integrity management, comply with relevant regulations and practice sustainable business management

Commitments

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Engage in operational activities with the highest integrity and ethical standards and pursue the best business performance at the same time

Resources

Improve the Company system and fully implement the policy into practice

Specific actions taken and performance in 2019

- No marketing activities (including advertising, promotion and sponsorship) in 2019 violated relevant laws and regulations.
- There were no violations of socio-economic regulations in 2019.
- Purchase the directors and independent directors liability insurance.




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Socioeconomic Compliance

There were no violations of socio-economic regulations in 2019. TFC will continue to strengthen the review and improvement of the internal procedures. Meanwhile, responsible units and personnel were required to strictly abide by the regulations to avoid similar situations from happening again.

Product Compliance

In accordance with government regulations, the inspection of product compositions in the factory is required before the fertilizer products are being distributed to various channels. However, the inspection methods of the government differ from those of TFC causing the inconsistency between the results of the product compositions and those of the inspection unit from time to time. TFC will strengthen the inspection of incoming raw materials and adjust the formula combination of fertilizers in accordance with the test values of raw materials to prevent similar situations from happening again. In 2019, there were a total of three cases of violation against

- Fertilizer Management Act.
- Fertilizer Management Act

Number

Description The compositions of the fertilizer did not comply with the regulation in the retest.

Treatment and preventive measures

- 3

- Recalled the batch of fertilizers and proposed the remanufacturing plan.
- Strengthened inspection of incoming raw materials.
- Timely adjusted the fertilizer formula composition based on the raw material test value.
- Added process equipment to maintain consistent shipment quality.

Environmental Compliance

TFC had no major leakage incidents in 2019, and the total amount of environmental penalties was NTD 1.952.000, related to violations of Air Pollution Control Act. Water Pollution Control Act and Waste Disposal Act. Therefore, TFC has reviewed and improved the air pollution control devices, SOPs for equipment maintenance and inspection process. In addition, internal education and training have also been arranged to enhance employees' environmental awareness and emergency response capabilities. We continue to actively review every deficit and propose improvement plans so as to reach our ultimate goal of zero violations and zero fines as soon as possible.

Description of Violations of Compliance

Water Pollution Control Act

Description

 The pH value and suspended solids (SS) of the effluent exceeded the discharge standard

Treatment and preventive measures

- The processing unit of the equipment is changed to increase its processing efficiency.
- Added auto control and adjustment facilities for the processing equipment.

Air Pollution Control Act

Description

- The sampling results of particulate pollutants in the discharge pipeline exceeded the Stationary Pollution Source Air Pollutant Emissions Standards
- Treatment and preventive measures
- Add annual blow-down equipment with cleaning holes to the air door of the equipment, and the on-site operator cleans it once a month.
- Arrange annual cleaning of the equipment tube walls and chimneys during annual inspections.

Description

- The sampling result of the odor pollutants in the discharge pipeline exceeded the Stationary Pollution Source Air Pollutant Emissions Standards
- Treatment and preventive measures
- Strengthen education and training of on-site operators, and operation as well as recording shall be conducted in accordance with the content of the Operating Permit.
- The exception handling sheet is written in accordance with the requirement in the corrective action of ISO 14001 Management system to propose improvement and prevent recurrence.
- · Make process improvement of the processing equipment

Description

The signal component of the pollution control equipment was damaged.

Treatment and preventive measures

- · Immediately repaired the damaged components.
- When updating the device components, attention should be paid to check if the signal is normal.
- Regularly check if the operation complies with the operating permits regulations.

Description

 Exhaust gas leak due to damaged pipes of the pollution control equipment

Treatment and preventive measures

- Completed the repair of the equipment pipeline.
- Regularly check if the operation complies with the regulations in the operating permit.

Description

- The equipment is not in a closed environment as approved in the content of the operating permit.
- The newly added facilities are not listed in the process verified in the operating permit.

Treatment and preventive measures

- After maintenance, the equipment is in a closed environment.
- Application is made for changes in the operating permit.

Waste Disposal Act

Description

• No Chinese labels marking the name of the waste on the container in the waste storage area.

Treatment and preventive measures

- Improvement was immediately made on-site.
- Regularly check if the regulations of the Waste Disposal Act are complied with.

Description

- Contents and warnings were not indicated on the waste container as prescribed.
- Inconsistency between the declared information and the actual situation.
- The processing facilities were not consistent with the business waste disposal plan.

Treatment and preventive measures

- · Strengthen the education and training of personnel
- Strengthen the on-site inspection to check the consistency with the declared content and whether the containers and the storage area are actually marked and labeled.
- The exception handling sheet is written in accordance with the requirement in the corrective action of ISO 14001 Management system to propose improvement and prevent recurrence.

Description

 Prevention measures or anti-penetration equipment for the inflow of surface water, rainwater and groundwater were not in place in the waste storage area, and the waste is stored in the open air.

Treatment and preventive measures

The waste container is placed in the storage area as prescribed in the waste disposal plan.

In the future, we will actively review each

deficiency case and propose an

improvement plan to achieve the ultimate goal of zero violation and zero penalty fees as soon as possible.



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SUSTAINABLE AGRICULTURE AND CIRCULAR ECONOMY

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3 Sustainable Agriculture and Circular Economy

Fertilizers are indispensable materials in the process of agricultural production. They not only supply needed nutrients for soil and crops but also assist farmers in producing high-yield food crops. Furthermore, they are also an important key for the promotion of soil health and sustainable farming.

Material topic

Sustainable Food

GRI

103-1 Explanation of the material topic and its boundary103-2 The management approach and its components103-3 Evaluation of the management approach

SDGS Goals

- 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- 2.3 Double the agricultural productivity and incomes
- through secure and equal access toland
- 2.4 Ensure sustainable food production systems



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Responsibility

TFC's Sales Department and R&D Department are responsible for the development and promotion of eco-friendly and organic-related fertilizer products.

Short-term Goals

(D)

- To implement the R&D personnel's green R&D capabilities with at least 15 hours of training per year
- To add two or more new industry-academia cooperation projects within 3 years, aiming to jointly develop eco-friendly products

Long-term Goals

- To add two or more new industry-academia cooperation projects within 6 years
- To improve laboratory equipment, integrate R&D resources and achieve synergies

Specific actions taken and performance in 2019

• Developed 9 organic-related fertilizer products, in which 6 have passed COA's review as being applicable for organic agriculture and are listed as commercialized materials for organic agriculture, and selected as the recommended brand of soil fertility improvement materials, while 6 were selected as the recommended domestic brand of organic fertilizers.

- Completed 5 R&D projects with cooperative technology development and strategic partners.
- The basic organic-related fertilization techniques for 32 crops were established and verified through the field experiments, and all of which have been verified to reach economic production model.

Importance

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Management Approach

Set sustainable agriculture as the corporate goal and strive for the development of eco-friendly products and cultivation techniques to facilitate the sustainable development of Taiwan's agriculture and farmland resources.

Boundary

- · Within the organization: TFC Head Office, Taichung Factory and Miaoli Factory
- · Outside the organization: Cooperative pilot farms and farmers

Policy

From three major perspectives of "sustainable agriculture", "environmental protection" and "resource conservation", we will continue to develop eco-friendly products to safeguard sustainable agriculture.

Commitments

Taiwan Fertilizer Corporation has been striving to implement Goal 2 of SDGs, "End hunger, achieve food security and improved nutrition and promote sustainable agriculture" and fully invested in sustainable agriculture.

Resources

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Listed the annual budget of NTD 60,000 thousand in 2019 for the implementation of the green research and development program.



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3 - 1 Upgrade of Corporate Core Competencies

To transform and step into the high-tech

industry-government-academia cooperation

industry, TFC's R&D Team has also

and introduced new technologies of

(Unit:NT dollars/thousand)

purification of electrochemical products,

high economic value deep-sea aquaculture

and so on to accelerate the development of

0.65%

77,477

2018

0.52%

66,624

2019

strengthened the

new business.

0.73%

82.267

2017

Percentage in turnover

TFC's Agricultural Biotechnology R&D Center innovatively combines microbial fermentation and fertilizer development technology and positively develops various high-quality microbial fertilizers, organic fertilizers and new type of eco-friendly fertilizer products and has also established internal and external organic demonstration farms and organized cooperative experiments, agricultural education seminars to lead more farmers to implement eco-friendly cultivation and organic farming to protect the health of farmers, consumers and the land.

Education and Training of the R&D Team

TFC encourages its R&D staff to participate in seminars and courses on various technology trends. The internal training includes the sustainable development issues and industrial trends such as the development and application of deep ocean water. In addition, various external education and training is also provided to enhance their professional R&D capabilities.

External education and training courses of the R&D Team in 2019



R&D team's education and training sessions and average training hours in 2019

Internal education and training	External education and training
Session 7	Session 13
Training hours (person) 6.75	Training hours (person) 5.75

Exhibitions Taifer Joined in 2019

Asia Agri-Tech Ex	po & Forum
Date	Region
October 2019	Taiwan
BioTech Expo in S	outh Taiwan 2019
Date	Region
November 2019	Taiwan





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3-2 Innovative Eco friendly New Products

In recent years, TFC has not only actively cooperated with the industry, government and academia in the development of various excellent organic fertilizers but also innovated the application of agricultural biotechnology. Various microbial fertilizers and eco-friendly products have been developed, facilitating the transformation of Taiwan's agriculture into an eco-friendly, safe and organic agriculture, increasing the overall added values of agriculture and exporting competitiveness, promoting the development of agricultural economy.

#43 "King Won" Potassium Sulfate Nitrophosphate Organic Compound Fertilizer Series

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The ingredient ratio of #43 "King Won" Potassium sulfate nitrophosphate organic compound fertilizer series is 15-15-15-2-50, making it a compound fertilizer with average content of nitrogen, phosphorus and potassium. It contains 2% of magnesium to promote the production of nutrients of the crops while the 50% indicates the content of organic matters. It is manufactured with 100% potassium sulfate as the raw material of potash fertilizer, and it does not contain chloride ions and is suitable to be used in all crops during the whole period, especially in the key growth stages, such as flowering stage, fruit hypertrophy stage, and bulb and tuber hypertrophy stage, to improve the quality and flavor of crops, enhancing market competitiveness and making it easier for storage and transport

Taichung City is one of the taro producing regions, and the producing areas cover Dajia, Da-An, Houli, Waipu and Ching-Shui Districts. The representative of Waipu Farmers' Association, Mr. Mu Rong Lin, cooperated with the Company and provided a field for the rational fertilization trial on taros, and the breed chosen for the trial was betel nut taro and the cultivation is conducted in paddy **Fertilization** field. Since the temperature in central Taiwan is lower than in southern Taiwan, the production period of taro can be adjusted in test on taros accordance with fertilizer cultivation management, and the harvest period can be extended to 12 to 15 months.

The field for the trial this time used to be a paddy field. To improve the soil texture, increase organic substances in the soil and facilitate the decomposition of rice stalks and rice stumps to release nutriments in the fertilizer for the taro to absorb and utilize, #5 Biotec Organic Fertilizer, #12 Biotec Organic Fertilizer and #39 Biotec Organic Compound Fertilizer were chosen as the base fertilizers to maintain fertilizer efficiency and help roots grow.

One week after the seedlings were planted, Taifer Biopower phosphate-solubilizing bacteria biofertilizer (Liquid bacillus amyloliquefaciens, Ba-BPD1) was chosen to be irrigated into the field with water to help taro shoots grow, increase beneficial bacteria in soil and strengthen plant resistance for the plants to absorb nutrients and grow strong.

One month after planting, # 105 Biotec Organic Compound Fertilizer was applied for top-dressing every 15 days, with a total of 6 times, and the amount of fertilizer was adjusted in accordance with the growth condition of taro plants. The goal was to make the taro stems thicker and stronger and to increase the leaf stalks to improve the nutrient production efficiency and promote the growth of bulbs.

Four months after the planting, the amount of phosphorus and potassium used was increased to help taros to accumulate starch to the taro base gradually. The harvest was expected to be conducted based on the market price in October after this experiment. Therefore, #43 Biotec Organic Compound Fertilizer was applied for fertilization adjustment every 15 days, with a total of 4 times.

Six months after planting, in order to improve the quality of the bulb, #43 "King Won" Potassium sulfate nitrophosphate organic compound fertilizer was applied once a month to reduce the production of crude fiber, increase the aroma of the bulb and promote the accumulation of starch. After that, # 6 Instant Water Soluble Fertilizer (Potassium sulfate) was also applied together to gradually increase the use of phosphorus and potassium.

Random sampling of bulbs was conducted at the end of October in this trial. In terms of yield, the taro bulbs applied with "King Won" fertilizer were averagely heavier. In terms of quality, the taros have strong aroma, less crude fiber and with dense and soft texture no matter being steamed, boiled or fried, with sweet or salty seasoning. The better quality enabled the products to improve the market competitiveness.



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Table of fertilizer application on the taros in the trial field

Base fertilizer

Category of fertilizer #5 Biotec Organic Fertilizer, #12 Biotec Organic Fertilizer, #39 Biotec Organic Compound Fertilizer

Fertilization period and methods Before planting, the fertilizer was spread all-around before soil preparation.

Top-dressing

Top dressing	
Category of fertilizer #105 Biotec Organic Compound Fertilizer	Fertilization period and methods One month after planting, apply the fertilizer every 15 days, and 6 times in total.
Category of fertilizer #43 Biotec Organic Compound Fertilizer	Fertilization period and methods Four months after planting, apply the fertilizer every 15 days, and 4 times in total.
Category of fertilizer #43 "King Won" Potassium sulfate nitrophosphate organic compound fertilizer	Fertilization period and methods Apply once six months after planting.
Category of fertilizer #43 "King Won" Potassium sulfate nitrophosphate organic compound fertilizer, #6 Instant Water Soluble Fertilizer (Potassium sulfate)	Fertilization period and methods The application ratio of #43 "King Won" Potassium sulfate nitrophosphate organic compound fertilizer and # 6 Instant Water Soluble Fertilizer (Potassium sulfate) was adjusted and applied once a month.
Microbial fertilizer	
Category of fertilizer Taifer Biopower phosphate-solubilizing bacteria biofertilizer	Fertilization period and methods One week after planting, irrigate the fertilizer with water to the field before the disease-prone period.

Spray after diluted.

#43 "King Won" Phosphate-solubilizing Bacteria Biofertilizer

TFC's new product in 2020, #43 "King Won" phosphate-solubilizing bacteria biofertilizer is microbial granular fertilizer with 100% pure potassium sulfate formula added with phosphate-solubilizing bacteria and peat microorganism. Every gram of #43 "King Won" contains more than 10 million phosphate-solubilizing bacteria, enabling effective use of phosphate fertilizer in the soil. Using potassium sulfate as the source of potash fertilizer can reduce the impact of chloride ions on the soil and reduce the level of soil acidification compared with potassium fertilizer with the source of potassium chloride. The product contains the main nutrient element "sulfur" of the plant, and at the same time improve the yield and quality of many important high-economic crops. The application effect is good when applied in sulfur-deficient soil and on the crops in need of more sulfur.



In terms of planting wax apples, farmers generally use #43 ""HeyWon"" Nitrophosphate Organic Compound Fertilizer throughout the whole stages and also apply various amino acid, plant growth hormones and trace elements. For sandy soil or in summer, #4 ""HeyWon"" Nitrophosphate Organic Compound Fertilizer would be used. However, in order to improve quality, some farmers would avoid using chlorine-containing fertilizers. In terms of the plant physiology, excessive

chlorine will inhibit the carbohydrates produced by photosynthesis from moving to the flowers and fruits, affecting the fruit in the growth stage, leading to poorer quality of the fruit and the poor texture and taste. Introducing TFC's #43 "King Won" phosphate-solubilizing bacteria biofertilizer becomes an opportunity for high-economic crops. Through the cooperation of the field experiment with the farmers, the effects can be seen by the farmers, meeting their requirements for quality.

At the end of 2019, we cooperated with Mr. Hsieh-Liang Tsai, one of the Top Hundred Young Farmers, also a member of 1st team of Nan-chou fruit agricultural production and marketing in Pingtung County, for the experiment of wax apples. The preliminary results show that application of #43 "King Won" fertilizer on the varieties of black pearl wax apples and big-fruit wax apples works well on the color change of the wax apple. The sweetness of the fruit is increased by 1.1 degrees, reaching A level (sweetness level above 10). The fruit is crisp and sweet in texture and taste, and the fertilizer efficiency of it is better than potassium chloride-type fertilizers. Before the Lunar New Year, the domestic price of special variety of wax apples can reach NTD 600/kg while that of general black pearl was apples is approximately NTD 100/kg. The results of the experiment show that the color of wax apples can be changed to improve the outward appearance, assisting farmers with the online promotion and sale to increase revenue.



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3 - 3 Resource Circulation and Green Economy

Material topic

Circular Economy

GRI

- **103-1** Explanation of the material topic and its boundary
- 103-2 The management approach and its components
- 103-3 Evaluation of the management approach
- 301-2 Recycled input materials used
- **301-5** Reductions in energy requirements of products and services

SDGS Goals

- 12 Ensure sustainable consumption and production patterns
- 12.4 Achieve the environmentally sound management of chemical and all wastes
- 12.5 Substantially reduce waste generation through prevention, reduction, recycling and reuse

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Responsibility

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TFC Production Department, Research and Development Department, Miaoli Factory and Hualien Factory are responsible for the R&D and production while Sales Department is in charge of promotion and sales.

Short-term Goals

- To increase the recycling rate of raw materials and establish a cross-enterprise cooperation model to stabilize the source of raw material recovery and supply.
- To establish a platform of deep marine aquatic products and construct an industry chain of deep sea blue gold.

Long-term Goals

To establish a business model of circular economy that has common benefits and common good with the society.

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Management Approach

Importance

Taiwan is extremely short of natural resources. TFC has turned from the economic growth model that relies on resource consumption to a resource-based circular economy to improve the problem of the lack of resources.

Boundary

- · Within the organization: TFC Miaoli Factory, Hualien Factory
- Outside the organization: Taichung District Agricultural Research and Extension Station Council of Agriculture, Executive Yuan, breeders, farmers, industrial users

Policies

Through the re-design of raw materials, products, processes and business models to form a cycle of "resources, products and renewable resources", aiming at eliminating waste.

Commitments

TFC has been advocating the Sustainable Development Goal 12 "Ensure sustainable consumption and production patterns", striving to develop a sustainable business model of circular economy.

Resources

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Use the resources of TFC Group while combining the external resources in the industry, government and academia to make joint efforts.

To successfully expand the green new business of electronic grade liquid chemical waste recovery.

Specific actions taken and performance in 2019

 Developed the purification technology of electronic grade NMP (N-methylpyrrolidone) and successfully purified industrial NMP into the highest-grade electronic grade products.

• The sales of electronic grade chemicals increased by 5.56% compared to 2018.





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Eco-friendly and Energy Saving D-Park in Hualien

Deep sea water is not only precious blue gold resource but also the source industry of biotechnology. We think highly of the development of the healthy algae market and the development of the park keeps going. The downstream algae and shrimp processing plants will also be completed. It is expected to provide a variety of fresh algae, algae powder raw materials and whiteleg shrimps rich in nutrients. Currently, discussions have been made with many manufacturers for material supply and cooperative development of products.

Meanwhile, to cope with the development of smart agriculture and combine with the Chunghwa Telcom's IoT system of smart agriculture, the culture environment is automatically monitored around the clock to keep the temperature low. By doing so, we can save water and enable algae to grow in a stable environment, resulting in more stable overall output value. Moreover, the solar power generation facilities were simultaneously installed to expand the energy efficiency of the symbiosis of fish and light.



By using sensors to automatically monitor water quality and detect the pH value, ORP, water temperature and dissolved oxygen, sampling can be done every 5 minutes while labor costs are largely saved. Data can be shown in real-time manner with high accuracy, and when integrated with the big data, the water quality parameters for best whiteleg shrimp farming can be analyzed.

Evaluation of the saving benefits

Manpower saved

If sampling and analysis of records are done by the manpower, three shifts of manpower will be needed daily, and sampling can be done 4 times per hour, with a total of 96 samples per day. However, with this system, one person is in charge of the monitoring. The system is also equipped with a warning system and alarm will go off when abnormal values occur. With this system, a total of 288 samples can be obtained in a day.



The pyranometer is used to detect the illuminance under solar panels; water temperature sensors are to monitor the temperature of algae barrels; the micro weather station is to monitor the illuminance, temperature, humidity, wind direction, wind speed and light radiation; rainfall sensors to monitor the environmental factors automatically. Data are presented in real time with high accuracy. Via big data, the best water quality and

environment parameters of best algae cultivation can be analyzed.

Evaluation of the saving benefits

Manpower saved

Water temperature thermometer

Reduce the manpower of 1 person to conduct daily measurement and report production. This equipment conducts monitoring every 2 hours.

Pyranometer

Reduce the manpower of 1 person to conduct daily measurement and report production. This equipment conducts monitoring every 2 hours. The illuminance is adjusted in accordance with the growth condition of algae.

Micro weather station

Reduce the manpower of 1 person to conduct daily measurement and report production. This equipment conducts monitoring every 10 minutes. Based on the growth status of the algae, the best parameters for algae growth can be found.

Costs saved

Water temperature thermometer

After detecting the water temperature of the culture barrel, the upper and lower thresholds of temperatures can be set. When the water temperature of the barrels is low enough, the flow of deep seawater can be adjusted in real time to save the costs of deep seawater.

Via 46 sensors, each barrel can save 0.5 ton of the deep seawater every day. The cost saved would be 46 barrels*0.5 tons*NTD 50, which is about NTD 1,150 every day, saving approximately NTD 420,000 per year.



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Green Circular Park in Miaoli

Over the years, electronic-grade chemicals have played a key role in Taiwan's high-tech industry. However, the subsequent treatment of electronic-grade chemicals after use has also become an important issue for the government and society.

To ensure a production and service model with sustainable circulation, TFC used its core technology as the basis to overcome the difficulty of waste treatment and recover the customized electronic grade chemicals provided to domestic large-scale manufacturers in the fields of panels, optoelectronics, solar energy and semiconductors. In addition, TFC also owns the advantages of the raw materials of "three acid and one alkali" (phosphoric acid, nitric acid, sulfuric acid and ammonia) and at the same time a product traceability system is established, building a trustworthy brand image in the practice of green circular economy.

Green Environmental Protection, the Recycling of Electronic Grade Chemicals Creates New Business Opportunities

TFC's Miaoli Factory has steadily operated the "Stripper Recycle System" and "Recovery System for the Reproduction of Phosphoric Acid" and has gained great reputation. Currently, about 60% of the waste aluminum etching liquid in Taiwan's panel industry is processed by TFC, which has the highest market share. In recent years, TFC has exclusively provided high quality one-stop shopping services from the supply to the recycling with its sophisticated technology, enabling our customers to worry nothing about the recycling of electronic products after purchase, creating a green circular economy with our customers together.

Solvent Recycle System

Currently, Miaoli Factory is equipped with a 5KL and a 20KL distillation columns, providing the purification, recovery, blending, quality control and logistic services of the stripper to fulfill the panel industry needs. TFC has worked on full development of a one-stop shopping services for the supply and recycling of NMP (1-Methyl-2-pyrrolidinone). The recovery rate has reached more than 90%. The product specifications in terms of purity and color both have exceeded other service providers in the industry. In 2019, the amount of sales of NMP from the SRS was 1,303 tons, a decrease of 16.1% compared with 2018.



Industrial N-methyl pyrrolidone(NMP) is mainly used as a general solvent. Electronic NMP is used in the manufacturing of lithium batteries and electronics industry. It has to be of high purity and the specifications are very strict. Since the cooperative development with Material and Chemical Research Laboratories, Industrial Technology Research Institute in November, 2016, TFC has finally overcome difficulties and successfully purified industrial NMP into the highest grade of electronic products. The technical thresholds overcame included 1) the amine

content below 1 ppm; 2) the purity increased to 99.9% and more; 3) the chromaticity reduced to below 10 APHA; and 4) the anion and cation content reached the required ppb level.

Recovery System for the Reproduction of Phosphoric Acid

After the waste etching liquid is recovered from the panel industry and from the end of the manufacturing process in the IC Industry, the evaporation and circulation equipment in Miaoli Factory is used to make secondary industrial phosphoric acid, and after treated with the purifying and recycling technology, the recovery rate of the waste aluminum etching liquid can reach 99% and more. In 2019, the amount of sale of reproduced phosphoric acid treated by the Recovery System was 3,878 tons, accounting for 31.88% of the overall sales of TFC's electronic grade chemicals a decrease of 22.48% compared with 2018 due to the suspension of production in some domestic companies in 2019, affecting the source of raw materials and sales channels, leading to the decreased sales of NPM and reproduced phosphoric acid compared with the previous year.

Sales of Electronic Grade Chemicals (unit: ton)

	2017		2018		2019
NMP	875		1,554		1,303
Reproduced phosphoric acid	5,527		5,694		3,878
Other electronic grade chemicals	3,932		4,277		6,984
Total	10,334		11,525		12,165



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4 Energy Conservation, Environmental Protection and Environmental Management

Material topics

Effluents and Waste, Emissions, Energy

GRI

103-1 Explanation of the material topic and its Boundary

- **103-2** The management approach and its components
- 103-3 Evaluation of the management approach

Management Approach

Importance

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Share and a start a st

TFC actively works on the layout in the fertilizer industry. In addition, it has been the goals for TFC to keep working on to improve energy use efficiency and reduce greenhouse gas emissions as well as environmental impacts in the expansion of production capacity for the test results to meet and exceed regulatory requirements

Boundary

- Within the organization: TFC's Taichung Factory, Miaoli Factory
- Outside the organization: Raw material suppliers, waste disposal companies

Policies

To strengthen self-management step by step and continue to promote energy conservation and waste reduction actions in accordance with standards stricter than the environmental regulations

Commitments

Implementing green environmental policies and realizing the promise of green homeland

Resources

Allocation of a total of NTD 172 million in environmental protection expenditures for 2020 and 2021

Responsibility

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The Safety and Health Center in the head office is the first-level unit for environmental and health management, which is responsible for the planning and management of environmental safety and health. The Safety Units at Taichung Factory and Miaoli Factory are responsible for matters concerning environmental safety and the implementation of various energy conservation and carbon reduction projects

Short-term Goals

- To reduce the unit energy consumption by 1% compared with the previous year
- To reduce water intensity by 1% compared with the previous year

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• To reduce GHG emission intensity in 2021 by 2% compared with the base year (2015)

Long-term Goals

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To enforce strict internal and external regulations and promote improvement programs to minimize environmental impact and continue to reach the goals of zero violation and zero penalty

Specific actions taken and performance in 2019

- The environmental protection expenditure and investment expense in Taichung Factory in 2019 was about NTD 26.83 million dollars, and the estimated expenditure in investment projects in 2020 is about NTD 10 million
- Accomplished internal and external audit tracking and improvement of ISO 50001
- Installed solar power generation system on the roofs of the administration building and bulk warehouse (for less than one year). In 2019, the power generation of the system totaled 1,127,923.7 kWh.





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4 – 1 Sustainable Green Management

Environmental Safety and Health Organization

To provide a healthy and safe working environment to protect the employees' safety as well as physical and mental health, a proper safety and health management system is in place for all management and operations to abide by. We have set up "TFC's Safety and Health Management Measures", and all the promotion of safety and health related matters of the company and all factories should not only abide by the relevant regulations concerning occupational safety and health enacted by the government but also follow the regulations and operating procedures of these Measures. We also established the Safety and Health Center in the head office as the first-level unit for environmental and health management, which is responsible for the planning and management of environmental safety and health. In addition, Environmental Safety Unit is also established at each production factory to be in charge of matters concerning environmental safety at each factory.

The Company holds an Safety and Environment Meeting every other month, and a total of six meetings were convened in 2019. The president convenes such meetings to regularly review the company's operations in terms of safety and health, environment, and energy and to follow up on schedules, review all matters and make improvements. In addition, advocacy of regulations and cases of occupational disasters are also conducted. It is hoped that through the operation of the organization, policy, goals and implementation programs of safety and environmental protection can be regularly reviewed and adjusted.

Estimated Environmental Capital Expenditures in 2020 and 2021



Introduction of International Environmental Management System

ISO 14001

To implement the green environmental policy, TFC has completed the establishment and verification of ISO 14001 environmental management system in Taichung Factory and Miaoli Factory and through the PDCA (Plan-Do-Check-Act) management model, we continue to promote improvement of environmental management and achieve the goals of environmental performance improvement, energy conservation and waste reduction as well as the protection of the natural environment.

ISO 50001

TFC's Taichung Factory completed the installation of the Energy Management System in 2016 and obtained the ISO 50001 certification, enabling the daily operations of the production factory to continue the improvement of energy saving efficiency, reaching the goal of energy conservation and carbon reduction.

ISO 14064-1

The ISO14064-1 Greenhouse Gas Inventory System was introduced in 2016 for the 2015 comprehensive GHG inventory at Taichung Factory and Miaoli Factory, and it passed the third-party verification. The year 2015 was set as the base year for GHG reduction. The statistics after 2016 would be continuously checked by the Company through self-inventory.



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4-2 Energy Resource Management

302-1 Energy consumption within the organiza

802-4 Reduction of energy consumption 803-1 Interactions with water as a shared resource 03-3 Water withdrawal



Green Energy Conservation Action Plan

In response to the trend of the increasing environmental protection awareness at home and abroad, TFC's Taichung Factory not only cooperates with the national policy to meet the needs for the stabilization of the production and supply of fertilizer chemical products but also improves the current situation of the factory, striving to create a green production factory that cares environment friendly processes.

Taichung Factory continues to control the energy use of the products. In 2019, the load of production was timely reduced to cooperate with the air pollution improvement policy of Taichung City Government, so the total output and total electricity consumption in 2019 were both lower than the previous 2 years. In 2019, the unit energy consumption was 405.5 MJ per ton of products, more than the 389.5 MJ per ton of products in 2018. This was mainly because of the cooperation with the air pollution improvement policy to reduce production, lowering the factory utilization rate (less output), which increased the power consumption per unit of product. In addition, the annual climate can also cause the difference.

Unit Energy Consumption in Taichung Factory (Unit: MJ/ ton)

	2017	2018	2019
Unit energy consumption (Unit: MJ/ ton)	379,9	389.5	405.5

Note1: Unit energy consumption is the average amount of energy used to produce per ton of products. Note2: Unit energy consumption = annual energy consumption/ annual output.

In 2019, 3 energy conservation programs were implemented in Taichung Factory, including the "Solar power generation system at the bulk warehouse", "40K step-down power generation system in the Nitric Acid Factory" and "Energy Management System (EMS)" to continue the promotion of green production in Taichung Factory.

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Solar Power Generation System at the Bulk Warehouse

A solar power generation system was installed on the roof of the bulk/finished product warehouse in Taichung Factory with the capacity of 1948.66KW, and the sale of electricity started in July 2019. Since the official sale of electricity, the system has generated a total of 1,302,243 kWh of electricity, equivalent to a total of 46,880 MJ of electricity after conversion. The energy was sold to Taiwan Power Company and was not used in the factory, which could not directly improve the areen production synergy of Taichung Factory, but it indirectly contributed to the national renewable energy production.





taichung factory

Step-down Power Generation System in the Nitric Acid Factory

The by-product generated in the nitric acid factory, high-pressure steam, is converted to low-pressure steam by the steam distribution system and is sent to the production factories for use. However, the energy difference from the conversion of high-pressure steam to low-pressure steam was not utilized at all. Therefore, the factory set up a 1.030KW back pressure steam turbine to convert the energy difference between high- and low-pressure steam into the rotational kinetic energy of the turbine rotor, and the rotational kinetic energy is converted to electricity through the generator, while the converted low-pressure steam is continued to be supplied to the on-site workshops for use. The performance test of the system was completed in October, 2019, and it has generated 1.95 million kWh of electricity for in-plant use, which is 70,200 MJ of energy after conversion.

Simple flow chart of back pressure steam turbine system in the nitric acid plant



EMS (Energy Management System)

The establishment of the Energy Management System (EMS) in Taichung Factory was completed in August 2019. This system can monitor the power consumption status of major power-consuming equipment and the goal of energy conservation in the factory can be reached through the implementation of the energy management program. In the future, the monitoring of the public materials use (water, oil, gas, steam and so on) and other important systems will also be introduced.



Energy Management System (EMS) - Electricity consumption statistics of each unit



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The energy used in TFC includes electricity, vapor, fuel oil, diesel oil, etc. The generation of vapor relies on the burning of fuel oil and the vapor from the exhaust heat collected from the Utility Workshop. In terms of energy use, TFC's use of electricity in 2019 reached 94GWh; the use of fuel oil reaches 4,553 kiloliters and use of diesel oil reaches 28 kiloliters. After conversion, the total energy usage equals 524.75tera-joules.

Our energy use is mainly based on electricity, and the total annual electricity consumption accounted for approximately 64.96% of total energy consumption, followed by fuel oil which accounted for about 34.86% of total energy consumption. The consumption of diesel oil accounted for less than 1% of total energy consumption.



Note1: 2017 ,2018 and 2019 statistics recorded data from

Note3: Calorific value of fuel oil, Taiwan = 40.2 E06 TJ/liter

Note4: Calorific value of diesel oil, Taiwan = 35.18 E06

Miaoli Factory, Taichung Factory and Hualien Factory.

Note2: Calorific value of power, Taiwan = 3.6 E06

TJ/degree

T.J/liter

Our product output in 2019 was about 808,403 tons. After calculation, the energy intensity in 2019 was 6.49E-04TJ/ ton, a 12% decrease compared with the 7.38E-04TJ/ ton in 2018. It can been seen from the data that the energy integration benefits of the integration of various production plants into Taichung Factory have been fully demonstrated since 2015, and the energy consumption per unit of production has also gradually stabilized.

Energy Intensity









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Water Resources Management

In recent years, extreme weather has caused unstable supply of water resources domestically. TFC is committed to saving water, wastewater recycling and proper treatment of wastewater discharged in the process of production. In terms of water resources management policy, our water-saving measures include rainwater recovery systems, process water recycling and steam condensate recovery.

The water source of Keelung Factory, Miaoli Factory and Hualien Factory is tap water, while that of Taichung Factory is from both seawater from Taiwan Strait and tap water. TFC's total water intake in 2019 was 38,797 kilotons, in which seawater accounted for approximately 98.25% and tap water accounted for approximately 1.75%. Water intensity increased by 14.29% compared with 2018. The quantity of seawater usage in 2019 amounted to 38,080 kilotons, which was only extracted for heat exchange in Taichung Factory, and the extracted seawater was not used in the production and processes. After the heat exchange, it was discharged into the Taiwan Strait via the external discharge outlet of Taichung Harbor. The discharge temperature promised in the Environmental Impact Assessment (EIA) shall be under 38°C, while that discharged by TFC was self-regulated to be no higher than 34°C to reduce the environmental impact on seawater.

Water resources usage (Unit: kilotons)



Water Recycling

To save water resources for water reuse, all production plants continue to implement various water saving measures and strive to improve water treatment system and water consumption in the production process. In addition, we also increase the water recovery rate of the wastewater generated during the process, such as the use of the recirculating cooling water of the heat exchanger used in the process to reduce the impact on water resources to the minimum. Taichung Factory started to implement the water conservation measures in 2015. The tap water consumption in 2019 reduced by 19.43% compared with that in 2018. This was mainly because that the reuse of process wastewater increased by 1.45 times, and that was supplied by making use of the waste heat steamproduced in the factory. As a result, although the water intensity increased compared with the previous years, the overall water reclamation rate still increased to 23%.

Water Recovery at Taichung Factory (Unit: kilotons)



Note: Water recovery rate of Taichung Factory = recovered water at Taichung Factory+ steam condensate (demineralized water) recovery / total tap water consumption at Taichung Factory



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4 - 3 Greenhouse Gas Management

305-1 Direct (Scope 1) GHG emissions

305-3 Other indirect (Scope 3) GHG emissions

Greenhouse Gas Inventory

To meet the GHG reduction control targets set in the national Greenhouse Gas Reduction and Management Act, the ISO14064-1 Greenhouse Gas Inventory System was introduced in 2016 for the 2015 comprehensive GHG inventory at all factories and passed the third-party verification. The year 2015 was set as the base year for GHG reduction for the promotion of GHG management plans and reduction of GHG emissions year by year.

In recent years, TFC has been committed to improving greenhouse gas emissions. Through process improvement, replacement of equipment and purchase of energy-saving equipment, greenhouse gas emissions and related management policies for each factory have been regularly tracked and reviewed. The GHG emission intensity in 2019 was 0.648 tonnes of CO₂e, a slight increase of 13.49% compared with 2018 and an increase of 10.96% compared with the base year (2015), mainly because of the higher emissions during the process in the nitric acid workshop compared with 2018.



GHG emission equivalent (Unit: tonnes of CO2e)

Sc	ope 1			Scope	2
and fossil fuel of	use gas emission m production proc combustion, mainly D ₂ , N ₂ O and CH ₄	ess	Mainly	ect greenhouse purchased electric from Taiwan Powe	city, all purchased
440,168 42,647 397,494	469,195 46,577 422,618	480, 49, 430,		479,834 51,380 428,454	489,899 48,147 441,752
2015 Scope 1	2016 Scope 2	20 Tota	17 	2018	2019

Note1: The greenhouse gas inventory included TFC's Taichung Factory and Miaoli Factory.

Note2: Scope 3 includes sources of greenhouse gas emissions not directly owned or controlled by the organization. Scope 3 is not included in the calculation.

Note3: The 2015 GHG emission data revealed in this Report have obtained a third-party verification. The results of 2016, 2017, 2018 and 2019 GHG emissions come from TFC's internal inventory.

Note4: The GWP Value from Greenhouse Gas Inventory is referenced by IPCC 2007 AR4 Version.

Note5: Greenhouse gas emission sources were identified by means of operational control.

Note6: Scope 1 includes fuel and diesel oil, Scope 2 includes purchased power, and the annual power coefficient of 2018 was the figure (0.533 kg/CO₂e) announced by Bureau of Energy, MOEA in 2019 for calculation. The annual power coefficient of 2017 =0.554, the annual power coefficient of 2016=0.53, and the annual power coefficient of 2015=0.525



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GHG Emission Intensity

Output of products (tons) 863,448 840,145 756,180

2018

2019

2019

2017

2017

Emissions (tons of CO2e)



Emission intensity (tons of CO2e)

2018



Note: Emission intensity = greenhouse gas emissions / annual output

Air Pollutant Emissions

All factories of TFC will operate and maintain the equipment and facilities for the prevention of stationary pollution source in accordance with the content in the Stationary Pollution Source Operating Permit, and regular tests and inspections will be conducted as required by regulations. The test results will be analyzed and tracked to ensure that the gases emissions are all in compliance with regulations and to reduce the air pollutants to the minimum to avoid impacts on the surrounding environment. Currently the air pollutants generated in all factories include nitrogen oxides (NOx), sulfur oxides (SOx), volatile organic compounds (VOC) and particulate matters (PM).

In 2019, the air pollutant emissions of Taichung Factory was slightly lower than last year; the particulate matters (PM) of Miaoli Factory were slightly higher than last year, and the values of other items were all slightly lower than last year. However, the air pollutant emissions are still far below the emission standards, showing that the current air pollution management has reached stable results.

Statistics of total amount of air pollutant emissions (Unit: ppm) Taichung Factory Miaoli Factory NOx SOx



Statutory Value: 250.00

VOC

Statutory Value: Taichung Factory 150.00 Miaoli Factory 1000.00



22.2 18.35 13.41 13.01 2017 2018 2019

Statutory Value: 300.00

ΡM

Statutory Value: Taichung Factory 50.00 Miaoli Factory 100.00





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f 4 – $f 4$ Raw Material Management	ť
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Procurement of Raw Materials and Use of Renewable Raw Materials

Within feasible technical scope and under the principle of not affecting the quality of production and product safety, TFC will continue to use recycled and reused materials instead of general raw materials to achieve the goals of environmental protection and energy conservation.

The raw materials purchased in 2019 are mainly divided into three categories, including raw materials, secondary raw materials and packing bags. The total weight of purchased raw materials was about 462,428 metric tons, all of which were non-renewable raw materials. However, 125,482 metric tons belonged to recycled raw materials, mainly from foreign smelting metal factories (63,377 metric tons) and the by-product of sulfuric acid produced from the Taiwanese Manufacturers of chemical products (62,105 metric tons). TFC uses exclusive process technology to confirm that the recycled materials do not contain hazardous materials and heavy metals and then uses them as the raw materials in the production of fertilizer.

In 2019, the recycled raw materials accounted for 27.14% of the total weight of the raw materials used, a decrease of 3.9% compared with the 31.05% in 2018. The remaining raw materials are natural ore or natural gas processed products, belonging to non-renewable raw materials. The main reason for the difference was because of the changes in the opening inventory and the closing inventory, and the adjusted amount for production.

Amount of raw materials purchased (Unit: metric tons)

No	on-renewal	ble raw materi	als
The main raw materials (liquid ammonia, urea, phosphate, peat)		materials ng fuel oil and en sulphur)	Packing bags (PP plastics)
441,672	1	8,166	2,590
	Total	462,428	

Note: The amount of PP plastics used in packing bags is obtained from the weighted conversion of the specification of the bags (mostly 25 kg and 40 kg) TFC uses and the PP consumption. Ton bags and paper bags accounting for less than 1% are not included.





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4-5 Effluents and Waste Management

306-1 Water discharge by quality and destination306-2 Waste by type and disposal method

306-4 Transport of hazardous waste306-5 Water bodies affected by water discharges and/or runof

Waste Disposal and Cleaning

Taichung Factory and Miaoli Factory are the main production bases of TFC. The general business waste in the two factories mainly include waste liquid, sludge and domestic waste. They are mostly disposed of by incineration or landfill. There is also a small amount of hazardous business waste.

Due to the active R&D, testing and production of electronic-grade related products, the amount of waste in Miaoli Factory decreased, and the waste was properly disposed by qualified service providers. The amount of recycled waste of Taichung and Miaoli Factories in 2019 amounted to 22.64 tons. The management units in the factories manage the waste in accordance with the legal requirements, and the waste is removed and disposed in accordance with the law by legitimate vendors and documents are also submitted after the waste is disposed to prevent issues of environmental pollution.

Statistics of total amount of business waste in TFC (Unit: tons)





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Wastewater Treatment

The wastewater has been discharged by each plant after being properly processed by the plant's wastewater treatment facility. The wastewater testing will be conducted on a regular basis to ensure there is no significant impact on the environment. After the completion of wastewater treatment, the wastewater will be discharged into rivers or waters nearby in accordance with the provisions. Miaoli Factory would discharge the wastewater to Houlong River while Taichung Factory would discharge it to the adjacent waters of Taichung Harbor. The rest of the factories produce only a small amount of domestic sewage.

In 2019, the concentration of pollutants in Taichung Factory and Miaoli Factory was far below the effluent emission standards.



Wastewater Discharge Average concentration value

Taichung Factory

(Unit: m³)

Statutory 268,640 268,640 228,027



Miaoli Factory Statutory

364,818 364,818 364,818

2019



Suspended Solid (SS)



Chemical Oxygen Demand (COD) Statutory Value: 100



Biochemical Oxygen Demand (BOD)

Statutory Value: 30



Handling of Environmental **Related Grievance**

Environmental related grievance hotline is available at both TFC's Taichung and Miaoli Factories. When residents or organizations around them have doubts about the environmental impact during the production process, they can make use of the hotline numbers. Once the grievance is received, investigation will immediately be conducted for improvement.

Grievance hotlines

Taichung Factory	04-2521-8588
Miaoli Factory	037-260-601



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GRI

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Human Resource Policies

TFC promotes the six major human resource policies for recruiting talents, creates a work environment full of enthusiasm and vitality for employees and provides a good salary and welfare system and a safe working environment to encourage and retain talents.

Six Major HR Policies



Labor Structure

As of December 31, 2019, the total number of employees at TFC totaled 695, including 669 formal employees and 26 contract employees. The total number of employees increased by 7 people compared with the 688 employees in 2018, and compared with the 33 contract employees in 2018, the number of contract employees decreased by 7 this year. This was because that the demand for production increased, and the existing contracted manpower was changed to full-time personnel. In addition, we also hire 54 dispatched/outsourced employees who are mainly engaged in logistics, driving, farming, planting and cleaning related work.

The number of male employees is 559 (accounting for 80.43%) while that of female employees is 136 (accounting for 19.57%). However, in terms of manpower utilization, we have complied with the international principles of human rights protection and domestic laws and regulations. There is no differential treatment or discrimination against gender difference.

In recent years, TFC has organized manpower recruitment and has hired many young and middle-aged talents and accelerated the replacement of aged workers through the talent reserve and cultivation plan to greatly improve manpower structure. After years of efforts, the average age of our employees has dropped significantly. The composition of employees is mainly in the age group of 30-39 years, accounting for 38.99% of the total number of employees.

The average age of employees at TFC was 42.76 years old, while the average length of service was 12.58 years. The distribution of education background focused on bachelor's degree, accounting for 52.66% of the total number of employees, followed by those with a master's degree and with senior high school I diploma and lower (inclusive), accounting for 23.60% and 22.73% respectively.



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2019 Analysis of Category, Age and Gender of Employees in TFC

		ormal		ontract		Total		ormal		ontract ployees	٦	otal
	No.	Percentage	No. F	Percentage	No. F	Percentage	No.	Percentage	No. I	Percentage	No. P	ercentage
	F	emale					Ma	ale				
Under 24 years old	0	0.00%	0	0.00%	0	0.00%	7	1.01%	0	0.00%	7	1.01%
25~29 years old	5	0.72%	5	0.72%	10	1.44%	36	5.18%	2	0.29%	38	5.47%
30~39 years old	47	6.76%	5	0.72%	52	7.48%	211	30.36%	8	1.15%	219	31.35%
40~49 years old	37	5.32%	1	0.14%	38	5.47%	146	21.01%	2	0.29%	148	21.29%
50~59 years old	20	2.88%	0	0.00%	20	2.88%	78	11.22%	2	0.29%	80	11.51%
60 years old and above	16	2.30%	0	0.00%	16	2.30%	66	9.50%	1	0.14%	67	9.64%
Total	125	17.99%	11	1.58%	136	19.57%	544	78.27 %	15	2.16%	559	80.43%

Total					
Formal e	mployees	Contrac	t employees	1	Total
No. 669	Percentage 96.26%	No. 26	Percentage 3.74 %	No. 695	Percentage 100%

Note: Contract employees refer to the employees who sign a regular contract of less than 12 months with TFC.

2019 Distribution of Employees' Level of Education

0.86 % / No.6	23.60%/No.164
Doctoral Degree	Master's Degree
52.66%/No.366	22.74%/No.158
Bachelor's Degree	Senior high school
0.14%/No.1	
Under senior high school	

Personnel Turnover

The entry of new recruits is the basis for the company's vitality and innovation. We recruit talents each year. In 2019, there were 35 newly recruited employees at TFC, accounting for 5.04% of the total number of employees (i.e. employment rate). The number of retired/resigned employees at TFC in 2019 reached 25 people, including 13 retired employees, 0 laid-off employee and 12 resigned employees, and the turnover rate was 3.60%. TFC's employees have strong cohesion and recognition of the company. Most of the employees have served for TFC until retirement. The turnover rate of the employees is far below the industry average (the overall turnover rate of the traditional manufacturing industry was 15.1% in 2019, source: FBI Report, 104 Job Bank).

2019 Number and Employment Rate of New Employees

	No.	Employment Rate		No.	Employment Rate
Fem	ale			Male	
Under 29 years old	0	0.00%	_	11	24.44%
30~49 years old	5	5.56%		19	5.18%
50 years old and above	0	0.00%		0	0.00%
Total	5	3.68%		30	5.37%

Total		
No.	Employment Rate	Total employment rate
35	5.04%	5.04%

Note: Employment rate = Number of newly hired employees in the age group for the entire year / Number of in-service employees in the age group at the end of the year



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2019 Number and Turnover Rate of Retired/Resigned Employees

	Retirement	Lay-off	Resignation	Total	Turnover rate	Retirement	Lay-off	Resignation	Total	Turnover rate
	Fema	ale				Male				
Under 29 years old	0	0	0	0	0.00%	0	0	1	1	2.22%
30~49 years old	0	0	6	6	6.67%	0	0	5	5	1.36%
50 years old and above	3	0	0	3	8.33%	10	0	0	10	6.80%
Total	3	0	6	9	6.62%	10	0	6	16	2.86%

Total					
Retirement	Lay-off	Resignation	Total	Turnover rate	Total turnover
13	0	12	25	3.60%	3.60%

- . .

Note:Turnover rate = Number of retired/resigned employees in the age group for the entire year/ Number of in-service employees in the age group at the end of the year

Gender Ratio of Managers

The number of managers in the Company totaled 87, accounting for 12.52% of the total number of employees. There are 74 male managers, accounting for 85.06% and 13 female managers, accounting for 14.94% of all employees.

2019 The Analysis of Gender Composition of Managers



Note 1: Managers include the president and vice president

Note 2: Senior executives include assistant vice presidents and department superintendents and higher position holders. Note 3: Mid-level managers include supervisors at different levels, such as chiefs, directors, factory managers, section chiefs and managers.

Note 4:100% of the managers are local residents



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5-2 Comprehensive Personnel Cultivation and Training System

4-1 Average hours of training per year per employee 4-2 Programs for upgrading employee skills and transition assistance programs

404-3 Percentage of employees receiving regular performance and career development reviews



Education and Training

To cultivate talents' knowledge, skills, attitudes and necessary capabilities to perform business for them to bring their potentials into full play and improve work quality and performance, TFC has been dedicated to the establishment of a complete educational training system as one of our major strategies for human resources. Basic annual training courses are planned based on the "TFC Training Map", including general training, core functional training, professional functional training and management functional training.

The company also plans a two-day, 14-hour training program for new recruits. The contents of courses include "the company's business strategies and future development directions", "quality and quality control training", "information system application", "industrial safety and health training", and "company organization and personnel system description" for the newcomers to quickly join the work and become part of the TFC family.

To reach the strategic goal of talent development, the company is devoted to the development of learning organizations. In addition to general training courses, a positive learning and knowledge sharing system is being created through the cultivation of internal lecturers, peer experience sharing, expert lecturers, knowledge management system and so on.

In addition to enhancing the work functions of its employees, the company also focuses on the physical and mental health of the employees and career development. The company holds health promotion activities and subsidizes labor unions to organize labor education and training and promotes the physical and mental health of employees as well as their career development through flexible training activities each year.







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2019 Function Enhancement Plan

General training

Former chairman Kang set up the "Lectures on Managerial Economics" in 2017, volunteering to lecture the course for nearly 200 employees, and webcam synchronization was also used at each factory for the lectures. This course continued in 2019,following the teaching materials and classroom requirements of EMBA of National Cheng Kung University, and the experienced in the industry were also invited to communicate with employees and it was hoped that the employees could apply the theories of Managerial Economics to daily operations and management decisions.

Core functional training

In 2019, the core functional curriculum was "innovative thinking capabilities", focusing on enabling the employees to be familiar with creative thinking tools and methods. Through the thematic teaching of external lecturers, the interaction between the trainees is improved and the concepts and practical tools learned are applied in daily life to improve work efficiency and to put what has been learned into practice.

Professional functional training

In accordance with the different needs at work in the fields of finances, industrial safety and environmental protection, human resources, information, procurement and English competence, external training or external instructors will help them strengthen professional functions, interact with the outside world and absorb external experience. In addition to learning from external experience, after the training, the sharing of employees' experiences and personal action plans as well as what has been learned in the training can be transformed and applied to actual work.

Management functional training

Management training courses are organized based on the reporting needs from all units and the items that need to be strengthened through the inventory of "TFC Training Map", along with the factors of industrial trends and the company's needs for project management. In 2019, the main training axis was focused on project planning and control capabilities, and the courses for "Project Management and Control Skills" were organized.

Other training

We invite experts in the industry and scholars from time to time to give keynote speeches. In 2019, six sessions of speeches were held to enhance growth in the body, mind, and knowledge of all the employees through exchanges and sharing of professional and soft discussions.

- Seminar on the latest revision trend of the Company Act in April 2019
- Seminar on self-improvement in May 2019
- Health lecture in June 2019- Health lectures on infectious diseases such as measles
- Information Security Advocacy Lecture in September 2019- Advocacy of Email Frauds
- Health lecture in December 2019- My beautiful life with Magnesium
- Information Security Advocacy Lecture in December 2019- Challenges and corresponding measures for Cyber Security Management Act

TFC provides complete and abundant courses and and cooperate closely with external training institutions with the organization of various professional functional training courses. The total education and training hours for the employees at TFC totaled 15,309 hours in 2019, with a total of 252 sessions of courses, 3,337 trainees, and the total training costs of NTD 4,238 thousand.

In 2019, the average training hours of TFC employees was 22.03 hours. The average training hours of male employees was 22.94 hours while that of female employees was 18.31 hours. The average training hours decreased compared with the previous year mainly because that the utilization rate of the original online courses which were supposed to replace most physical courses was not as good as expected due to the adaptation problems, causing the decline of training hours overall. In the future, more flexibility will be realized in the planning of the combination of online and physical courses for the promotion of employee training programs.

The Average Number of Training Hours of Education and Training of Employees at TFC in 2019

	No.	The total number of training hours (hr)	The average training hours per person (hr)		No.	The total number of training hours (hr)	The average training hours per person (hr)
Manage	ers			Top-lev	el exec	utives	
Male	3	48	16	Male	16	291	18.19
Female	0	0	0	Female	4	89	22.25
Total	3	48	16	Total	20	380	19

	No.	l he total number of training hours (hr)	I he average training hours per person (hr)		No.	I he total number of training hours (hr)	I he average training hours per person (hr)
Mid-level	manag	gers		Genera	al emplo	oyees	
Male	55	934	17.01	Male	485	11,546	23.81
Female	9	190	21.11	Female	123	2,211	17.98
Total	64	1,124	17.57	Total	608	13,757	22.63

Total number of employees

No.	The total number of training hours (hr)	The average training hours per person (hr)
Male 559	Male 12,819	Male 22.94
Female 136	Female 2,490	Female 18.31
Total 695	Total 15,309	Total 22.03

Note1: Managers include the president and vice presidents

Note2: Senior executives include department superintendents and higher position holders

Note3: Mid-level managers include supervisors at different levels, such as chiefs, directors, factory managers, section chiefs and managers



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Average Training Cost for Employees in 2019 (Unit: thousand dollars)

Male

Total training cost Average training cost 3,110 5.6 Female Total training cost Average training cost

1,128 8.3



System

Conduct performance interview 000 when needed.

Give feedback on the results of the performance appraisal to individuals for review and \checkmark improvement in accordance with the standards.

As of the end of 2019, a total of 690 employees participated in the performance appraisals, accounting for 100% of the total number of employees to be assessed, indicating that the Company's employees (including contract employees) are subject to regular performance appraisals.

The Category of Employees Participating in Performance Appraisals and Gender Analysis in 2019

1)	Contract employees No. Percentage	Total No. Percentage	Formal employees No. Percentage	Contract employees No. Percentage	Total No. Percentage
Female			Male		
126 19.03%	10 35.72%	136 19.71%	536 80.97%	18 64.28%	554 80.29%
Total					

Formal employees	Contract	employees	Total		
No. Percentage	No.	Percentage	No.	Percentage	
662 95.94 %	28	4.06%	690	100%	

Note: Employees working for more than 3 months have to receive the annual performance appraisal.

Performance Appraisal

Annual Performance Appraisal

Setting the personal project

We carry out the appraisal system for all TFC employees. The employees of all units must accept the appraisal and the results of the performance appraisals will be the basis for bonuses. Each unit will issue performance bonuses every six months based on the results of the performance appraisal, and the year-end bonuses are issued after reporting to the board of directors based on the company's operating performance. Individual performance bonuses and year-end bonuses are based on the assessment results of individual job responsibilities and contributions. Individual assessment results are used as the reference for training and career development and also as the basis for salary adjustment, promotion and bonuses.



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5-3 The Remuneration System and Benefits

GRI

201-3 Defined benefit plan obligations and other retirement plans
 202-1 Ratios of standard entry level wage by gender compared to loca minimum wage
 201-2 Reports provided to full time employees that are not provided to full time employees that are not

405-2 Ratio of basic salary and remuneration of women to men406-1 Incidents of discrimination and corrective actions taken



temporary or part-time employees

Fair Remuneration System

The salary of TFC includes base salary, additional pay for managers/directors and meal allowances. The salary will be given according to the approved positions and personal education background and experience, professional skills, seniority, ability, workload and work performance and be adjusted with the changes of jobs regardless of gender differences.

In order to retain the best talents, we provide a competitive remuneration system at TFC to take care of grassroots employees and new recruits. In terms of salary, we provide salary and benefits that are better than domestic starting salaries. In addition, we also revised the restriction of the Practitioner Remuneration Management Practices and increased the upper limit of the original position salary and increase, making it possible for the basic level new recruits and other employees to have opportunities for more flexible salary adjustment and adjustment scope to encourage and motivate our employees with actual feedback.

Comparison of Contracted Salary and Base Salary of Basic-level Employees in 2019

Technician and clerk	Assistant engineer and assistant clerk
Male Comparison with the domestic basic monthly salary 1.10 times	Male Comparison with the domestic basic monthly salary 1.48 times
Female Comparison with the domestic basic monthly salary 1.10 times	Female Comparison with the domestic basic monthly salary 1.48 times

Note1: The domestic basic monthly salary for 2019 was NT\$23,100

Note2: The formula for the comparison with domestic basic monthly salary is the starting salary/basic salary for the rank in TFC

TFC's HR policy attaches importance to gender equality, eliminates gender discrimination in the workplace and abides by the domestic Act of Gender Equality in Employment and Employment Service Act to implement equal pay for both men and women and establish a friendly and equal working environment. Our standard starting salary for men and women is the same. The ratio of the overall average salary gap between men and women is less than 7%. Compared with about 14.6% of the national average wage gap between women and men announced by Ministry of Labor in 2018, the Company shows no wage gap between women and men.

2019 The Ratio of the Overall Average Salary Gap between Men and Women

Managers	Top-level executives	Mid-level managers	General employees	Total
Male 1	Male 1	Male 1	Male 1	Male 1
Female -	Female 1.1056	Female 1.0764	Female 1.1046	Female 1.0612

Note1: The managers are all male

Note2: The basic salary of TFC includes base salary, meal allowances, additional pay for managers/directors, festival bonuses, year-end bonuses and employee remuneration



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Number and Average Salary for Employees in Non-executive Positions in 2019 (Unit: thousand dollars)

Number of full-time employees



Average salary of full-time employees

2018

2018

2018



Median salary of full-time employees



Note1: The number of employees included em working for more than 6 months, excluding the chairman, president, vice presidents and finance supervisors

Note 2: The "total salary" refers to the employee's salary of the current year calculated on accrual basis, including regular salary (base salary and monthly fixed allowance and bonuses), overtime pay (tax included or after tax) and irregular pay (non-monthly allowance, bonuses, employee compensation, etc.)

With the concept of the big TFC family, we provide our employees with the most complete and considerate welfare system, such as vacation, birthday cash gift, diverse club activities, employee travel, special store discounts and uniforms. In addition, Employee Welfare Committee was also established to provide various subsidies for all our employees.

In addition, for the cases of nourishing babies, further study or major injuries, when the employees may take a longer vacation, they can apply for parental leave or leave without pay, and after the expiration of the period, they can apply for reinstatement. This can enable our employees to take care of both the family and work.

The benefits of Employees

The Benefits of Employees

2019	Club activities	Birthday and wedding cash gift	Bonuses on Labor Day	
t ime ,273,221	There are more than 10 different clubs in TFC, including sports (badminton, swimming and billiards), health (Tai-Chi) and educational activities (board games), providing employees with the opportunity to cultivate interests and physical fitness.	Provide employees birthday and wedding cash gift through Employee Welfare Committee.	Issue bonuses or gift certificate annually.	
		Employees' travel	Uniforms	
2019		Employee Welfare Committee will organize various travels to help employees	Issue staff uniforms every 2 years according to the nature of the work.	
me .1 <u>15,3</u> 71	Benefits	restore their energy and to relieve work stress.		
	Provide scholarships to encourage employees and their children for further education and learning and provide	Nursing rooms	Recognition events	
2019 Iuded employees Iuding the and financial	childbirth allowance of NTD 20,000 per child in response to the government policy to encourage fertility.	In response to the government policy to encourage fertility, the Company has set up nursing rooms, providing parenting female employees with comfortable breast-feeding places.	Hold the recognition events for outstanding employees of the year and arrange incentive trips to celebrate Labor Day.	



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A System Better than the Legal Requirements

Legal requirement

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Family

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Sick

leave

leave

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leave

• In the event of matters which a worker must personally deal with, he shall be entitled to normal leave without pay.

TFC's requirements are superior to the legal requirement care leave

• A worker shall be entitled to seven days of paidleave and if exceeding seven days, he shall be entitled to normal leave without pay (included in personal leave).

Legal requirement

 Where accounted ordinary sick leave does not exceed thirty days in one year, fifty percent of salary shall be paid.

TFC's requirements are superior to the legal requirement

- A worker shall be entitled to fourteen days of paid sick leave.
- Where accounted ordinary sick leave does not exceed thirty days in one year, fifty percent of salary shall be paid.
- Where accounted ordinary sick leave exceeds thirty days in one year, no salary shall be paid for the leave.

Legal requirement

- On the death of parent and spouse, a worker shall be entitled to eight days of funeral leave with pay.
- · On the death of son or daughter and parent of spouse, a worker shall be entitled to six days of funeral leave with pay.

Funeral TFC's requirements are superior to the legal requirement

- On the death of parent and spouse, a worker shall be entitled to fourteen days of funeral leave with pay.
- On the death of son or daughter and parent of spouse, a worker shall be entitled to ten days of funeral leave with pay.

Legal requirement

- Female employees may request one day menstrual leave each month. If the cumulative menstrual leaves do not exceed three days in a year, said leaves shall not be counted toward days off for sick leave.
- Wages for menstrual leaves, whether said leaves are sick leaves or non-sick leaves as prescribed in the preceding Paragraph, shall be half the regular wage.

Menstrual TFC's requirements are superior to the legal requirement

- Female employees may request one day menstrual leave each month. If the cumulative menstrual leaves do not exceed three days in a year, said leaves shall not be counted toward days off for sick leave. All additional menstrual leaves shall be counted toward days off for sick leave.
- Wages for menstrual leaves, where said leaves are non-sick leaves as prescribed in the preceding Paragraph, shall be paid.
- Wages for menstrual leaves, where said leaves are sick leaves as prescribed in the preceding Paragraph, shall be paid according to the regulation.

The Protection of Retired Employees

TFC has formulated Regulations of Employees Retirement, Compensation and Severance, providing stable contribution and payment of pensions.

The Contribution of Pension and the Pension Fund Management

Applying for the New System

Since the enforcement of the Labor Pension Act in 1 July 2005, the Company has provided 6% of monthly salary to individual pension accounts for employees applicable to the Act. By the end of 2019, the amount recognized was NTD 20,662 thousand.

517 Employees 74.38%

Applying for the Old System

TFC contributes the pension fund for the old system in accordance with the Labor Standard Act, and 9% of the total monthly salary of the employees is contributed to the laborers' pension fund accounts in Bank of Taiwan. The Labor Pension Fund Supervisory Committee has been set up in accordance with Regulations of Employees Retirement, Compensation and Severance, which holds a guarterly meeting and conducts supervision and management of the old-system pension funds. Besides, it also requires professional accounting advisers to calculate and prepare enough reserves every year. By the end of 2019, the fair value of the planned assets was NTD 413,711 thousand, and the amount recognized was NTD 16,406 thousand. The amount of insufficient contribution was set out in the accrued pension liabilities. The net defined benefit liability was NTD 107,486 thousand.





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01-3 Parental leave

Parental Leave System

In 2019, a total of 82 employees in TFC were eligible to apply for parental leave without pay and the number of employees who actually applied for parental leave without pay was 7. The number of employees who were actually reinstated in 2019 was 4, and the reinstatement rate was 80%. The number of employees who were actually reinstated in 2018 and had been reinstated for 12 months by 2018 was 2. The retention rate was 50%.

TFC's Statistics of Parental Leave without Pay

	Male	Female	Total
(1) The number of employees eligible to apply for parental leave without pay in 2019	66	16	82
(2) The number of employees who actually applied for parental leave without pay in 2019	1	6	7
(3) The number of employees who were expected to be reinstated after parental leave without pay in 2019	1	4	5
(4) The number of employees who were actually reinstated in 2019	0	4	4
(5) The number of employees who were actually reinstated in 2018	1	1	2
(6) The number of employees who were actually reinstated in 2018 and had been reinstated for 12 months by 2019	1	0	1
Reinstatement rate = $(4)/(3)$	0%	100%	80%
Retention rate = $(6)/(5)$	100%	0%	50%

Sexual Harassment Prevention

TFC provides employees and job applicants with a working environment free from sexual harassment. It takes appropriate measures to prevent and punish sexual harassment. The Guidelines for Sexual Harassment Prevention and Control in TFC has been formulated according to Paragraph 1 of Article 13 of the Act of Gender Equality in Employment and Regulations for Establishing Measures of Prevention, Correction, Complaint and Punishment of Sexual Harassment at Workplace. When employees encounter sexual harassment at the workplace, they may appeal to the head of the Administration Department or the personnel director of each factory.

If the sexual harassment is confirmed to be true after the investigation, the appropriate punishment will be given to the perpetrator according to the seriousness of the circumstances, including suspension of power, dismissal, termination of membership and so on. If necessary, it will be submitted to the temporary meeting for punishment and sent to the business unit. The follow-up tracking, assessment and supervision will be necessary to avoid recurrent sexual harassment or retaliation. There were no cases of sexual harassment or discrimination in 2019.

OProtection of Job Opportunities for People with Disabilities

In accordance with "Physically and Mentally Disabled Citizens Protection Act", TFC should employ 6 persons with disabilities. TFC is willing to provide more job opportunities for persons with disabilities. By the end of 2019, the number of actual employment was10 persons with disabilities, far above the regulatory requirement.

Employment of Persons with Disabilities in 2019

	Head Office	Taichung Factory	Miaoli Factory	Hualien Factory	Keelung Factory	Total
No. of employees	224	355	95	19	2	695
Regulatory No. of persons with disabilities that should be hired	2	3	1	0	0	6
Actual No. of employment of persons with disabilities	3	6	1	0	0	10



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102-41 Collective bargaining agreements

403-4 Worker participation, consultation, and communication on occupational health and safety

Smooth Communication Channels

TFC attaches great importance to the opinions and voices of its employees. It has multiple and smooth channels and has established a number of trade unions. Through smooth two-way communication channels, we can respond to the opinions of employees in a timely and appropriate manner and turn the constructive opinions into policies.

To publicize the company's operating policies, communication with trade unions and employees is strengthened to promote labor-management relations for unity and improvement of work efficiency. We have set "Points of the Implementation of Labor Relations Forum" and in the second quarter of each year, the president or his designated vice president chairs the forum and also leads the top-level executives from the personnel or relevant departments or units to attend the labor forum to communicate with the labor representatives from trade unions together. The labors' comments and suggestions can be conveyed and expressed in the regular trade union member representative assembly, directors and supervisors' meetings and the joint meetings of the chiefs. The Company will reply formally in written forms and start working on the improvement.

Labor-management Communication Channels

Labor Relations Forum

- Whether to increase the shift allowance and include it in the calculation of the average salary for retirement.
- Increase in education grants for employees' children
- Whether to increase manpower to make up for the insufficient manpower for the self-established multi-stage breading industry in Hualien Factory.
- Ask the company to adjust the salary structure table.
- · Ask the company to increase the costs for employee health checkups.

Frequency Once/annually

Labor-Management Meeting

- Business overview and exchanges
- Discussions on employee benefits and other related matters
- Whether to restore the mentoring system to counsel new employees.
- Whether the subject design of the recruitment examination meet the needs of the positions.
- Whether to arrange exchange briefings to enable the employees to be more familiar with the new system when a new system is introduced into the company.

Frequency Once /Quarterly



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Trade union

TFC complies with the relevant provisions of the International Labor Convention and the Labor Union Act. All employees are free to organize and join trade unions, and they can conduct collective bargaining in accordance with relevant laws and regulations. There was no violation of freedom of association and collective bargaining during the reporting period.

Organization of trade unions

Taiwan Fertilizer Industry Trade Union
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Time of establishmentJuly 1961Number of members114Employee participation ratio100%MembersThe employees in Miaoli Factory and Hualien Factory

Taiwan Fertilizer Corporation Trade Union

Time of establishmentDecember 1993Number of members227Employee participation ratio100%MembersThe employees working at the Head Office

Taiwan Fertilizer Corporation Taichung Factory Trade Union

Time of establishment July 2015

Number of members 331 Employee participation ratio 95.11%

Members The employees in Taichung Factory

Collective Agreement

Taiwan Fertilizer Corporation Trade Union signed a collective agreement with TFC. We deepen the relationship between employers and employees through the legalization of employee rights and interest, surpassing the requirements of domestic labor regulations and international labor laws and conventions to implement the protection of the employees' rights and interests. The collective agreement with Taiwan Fertilizer Corporation Trade Union expired on March 19, 2018, and as prescribed in Article 21 of the Collective Agreement Law, if the duration of a collective agreement has been expired and a new agreement is not yet concluded, the collective agreement shall continue to be valid before a new labor contract is agreed upon. Currently, the employers and the employees have initiated the procedure of agreement renewal.




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5 - 6 A Healthy and Safe Working Environment

Material topics

Occupational Safety and Health, Local Communities

GRI

- 403-1 Occupational health and safety management system
- 403-2 Hazard identification, risk assessment, and incident investigation
- 403-3 Occupational health services
- **413-2** Operations with significant actual and potential negative impacts on local communities

Management Approach

Importance

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We attach great importance to the safety and health in the production and engineering activities and fully recognize that the management performance of safety and health is the most important part for an enterprise to pursue sustainable management.

Boundary

- Within the organization: All TFC factories, subsidiaries, old Keelung Factory, old Hsinchu Factory, old Nangang Factory, old Kaohsiung Factory (old factory refers to the land for development project)
- Outside the organization: government departments, contractors, customers, joint defense organizations

Policies

- · Providing a safe working environment is TFC's unshirkable responsibility
- To follow occupational safety and health regulations and strengthen self-inspection and industrial safety inspection
- To implement autonomous safety and health management system to continue improvement of safety and health
 performance
- To implement safety and health training and drills to strengthen safety awareness and resilience
- To implement risk assessment and standard operating procedures to identify and eliminate potential hazards
- To strengthen safety management of contractors and ensure the safety of construction operations
- To have a complete emergency response management system and sufficient drills to reduce catastrophic losses

Commitments

We attach importance to the employees' physical and mental health and established a sound occupational safety and health policy and system to create a safe workplace for the employees. In addition, the safety of lives and property of the employees and surrounding residents are safeguarded through a sound emergency response mechanism

Resources

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The Safety and Health Center is set as the first-level unit, and relevant budgets for safety and health are also prepared to implement the work plans

Responsibility

The Safety and Health Center of the Head Office is responsible for the implementation and preparation of budgets for the yearly safety and health work plan (including emergency response drills); all the production plants have set the "Disaster Prevention and Emergency Response Team" to carry out relevant training and drills

Goals

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To establish a complete occupational safety and health system, promote safety and health autonomous management, continue the implementation of various safety and health education training and exercise, create a healthy and safe working environment for the employees and reach the goal of zero disasters and zero fines. To implement the safety management and emergency response management systems in the plant, improve the response capabilities of the employees to ensure that when an emergency happens, correct response measures can be taken to reduce the impact of the disaster to the minimum.

Specific actions taken and performance in 2019

- Obtained certification of occupational safety and health management systems of OHSAS 18001 and CNS 15506
- · Zero injury rate and zero work-related death
- For the safety and health education and training in 2019, there were 1,105 trainees, with a total of 4,344 training hours; for the contractors' safety and health education and training, there were 722 trainees, with a total of 762 training hours; for the emergency response drills, there were 190 trainees, with a total of 452 training hours
- The health checkups were implemented for all employees, and 2 sessions of health promotion lectures were organized, with a total of 48 participants
- The 6S assessment activities of each factory was conducted every quarter, and the monthly Industrial Safety Newsletter was issued to share information concerning safety and health from time to time



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Occupational Safety and Health Committee

We have set up "Occupational Safety and Health Committee" composed of the employer and employees. The labor representatives account for more than one-third of the Committee. The president or the factory director is appointed as the chairperson. The meeting is held every three months, and the main responsibilities are to give advice regarding safety and health policies developed by the Company and to review, coordinate and advise safety and health related matters.

The Percentage of Members of the Occupational Safety and Health Committee in 2019



Safety and Health Management System Certifications

Taichung and Miaoli Factories have both obtained OHSAS 18001 and CNS 15506 Occupational Safety and Health Management System Certifications to ensure the safety and health of employees at the workplace, hoping to provide employees with a safe and healthy working environment to avoid accidents through the establishment of risk identification, risk assessment and risk control and external verification.

Safety and Health Management at Factories

TFC has established a comprehensive system of safety and health management regulations as the standard for all operations to reach the goal of zero disaster and zero injury to ensure the personal safety of our employees.

We strengthen the implementation of self-inspection in the production plants to ensure the safe use of equipment. We regularly monitor the operating environment and prepare all the necessary protective equipment. In addition, we require employees to wear the necessary protective equipment in accordance with regulations to avoid injury or harm at work.

In addition, regular safety and health education and training and disaster prevention & rescue drills are organized regularly to improve employees' safety and health knowledge and help them get familiar with emergency response skills. 6S assessment activities are carried out in each factory every quarter. By the external inspections, the potential hazards can be discovered, prevented and improved to avoid harm.

2019 Statistics of Safety and Health Education and Training / Drills

Ма	le	Fema	le	Tota	al
	health education aining and license			s)	
No. Hours	984 3,931	No. Hours	121 413		1,105 4,344
Contractor	safety and health	education a	and training		
No. Hours	699 739	No. Hours	23 23	No. Hours	722 762
Emergency	Emergency response drills				
No. Hours	171 403	No. Hours	19 49	No. Hours	190 452



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Safety and Health Management Performance

In order to implement safety and health management, the Safety and Health Center selects several important EHS indicators each year, including injury rate (IR), lost day rate (LDR), occupational diseases rate (ODR), number of emergency response drills and EHS inspection records. The five categories are used as performance indicators and the annual targets are set as the performance management standards. In 2019, the injury rate was 0.17 and the number of work-related deaths was zero, which was attributed to the continuous strengthening of safety and health management to reduce hazard incidents.

On disabling injury incident occurred when an employee slipped and fell while taking the stairs. After being treated in the hospital, this employee was discharged to recuperate at home. Reviews and discussions have been made in the factory. In addition to keeping the stairs flat and dry, obstacles have also been cleared. To prevent slipping or falling in the working environment, warning signs have to be installed and anti-skid design standards as well as warning pictures have to be set up on the floor.

2019 Statistics of Safety and Health Management Performance

No. of disabling injuries	Injury rate (IR)	Lost day rate (LDR)	Occupational diseases rate (ODR)	Absence rate (AR)	The number of work-related deaths
Male 1	Male 0.17	Male 15.63	Male 0	Male 0.43	Male 0
Female 0	Female 0	Female 0	Female 0	Female 0.66	Female 0

Note1: Injury rate (IR) = (total disabling injuries / total working hours) x 200,000 Note2: Lost day rate (LDR) = (total lost days / total working hours) x 200,000 Note3: Occupational diseases rate = (total occupational diseases / total working hours) x 200,000 Note4: Absence rate includes hours of sick leave, occupational sickness leave and personal leave. Note5: Traffic accidents are not included in the statistics

Health and Safety Management for Contractors

To enable smooth operations of the company, we attach great importance to the safety management of contractors. We have developed "Guidelines for Management of Safety and Health for a Variety of Engineering and Operations Contractors" and required the guidelines to be incorporated into the "Tender Notice" and "Service Agreement" of the project.

Regarding the safety regulations of the contractor's construction, "Health and Safety Code for Contractors' Construction" has been developed in the above-mentioned guidelines. In addition to general safety regulations, contractors shall apply for permission of construction regarding the operations with the higher risk, such as fire, high-elevated operations, confined space and the overhaul of pipelines before they start. There should be safety labels within the area of construction to prevent misconduct from causing industrial safety events.

As for various contractors, we hold regular consultative organizational meetings to negotiate and advocate the issues related to health and safety management. After the contractors win the bid and before they formally start construction, they should accept health and safety education and hazard notice training in our Safety Department and sign Work Safety Commitment for Contractors. A total of 722 trainees from contractors participated in hazard notice training in 2019.



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Employee Health Management

In order to care for the physical and mental health of our employees, we actively establish and understand the employees' basic health information and have developed "Guidelines for Employee Health Management" as a reference to the arrangement of work and improvement of the working environment. Based on the employee care policy, we have included employee health check and health management as an important part of our work. All employees accept the annual health check at our expense, while dependents of employees can also enjoy the same preferential prices and accept the health check at their own expense. In 2019, the Zhongshan District Health Center, Taipei City was invited to jointly organize free Pap smear tests and other employees in the TFC Building were encouraged to participate in the campaigns. Under the strict safety and health management protection, our employees did not have occupational diseases in 2019. The special health check will be conducted annually for employees who work in the workplace with special health hazards to fully implement protection of employee health.

Health Check Provided by TFC Is Superior to Regulatory Requirements

Health check provided by TFC	Frequency of health check required by "Regulations of the Labor Health Protection"
Under 40 years old Once a year	Under 40 years old Once every 5 years
• 40~65 years old Once a year	• 40~65 years old Once every 3 years
• years old and above Once a year	years old and above Once a yea

Number of Employees Receiving Special Health Checks in 2019

Dust in the workplace	Noise in the workplace	Use of regulatory chemicals in the workplace	Night work
167	59	15	55

Health Promotion Activities

In 2019, health promotion lectures, including "Advocacy of Infectious Diseases" and "Introduction of Thyroid Disease" were held, with a total of 48 participants.

To encourage all our employees to participate in stairs climbing activity, we have put up signs of calorie consumption on the stairs of all floors in the company along with inspiring slogans to motivate our colleagues to climb the stairs automatically, which indirectly reduces the usage of elevators so as to contribute to energy conservation and carbon reduction at the same time.

Contingency Measures for COVID-19 Pandemic

In response to the needs for COVID-19 epidemic prevention, TFC convenes weekly epidemic prevention meeting to plan manpower response plans in advance to maintain the health of our employees, reduce operational risks and ensure administrative efficiency and smooth promotion of business.

Contingency Plan for Manpower





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5-7 Emergency Response and Transport Management

TFC has a sound and complete emergency response management system and sufficient drills to ensure the safety of the life, body, and health of the employees and residents in the communities. In addition, the factory safety management is strictly implemented for all the transport act within the factory. After the products leave the factory, the shippers are also strictly required to comply with the transport safety regulations. When accidents occur during transport, TFC will provide assistance with the knowledge of the chemicals that we produce and related equipment in the handling of accidents to safeguard lives and properties.

Complete and Sound Emergency Response and Management System

The Company has developed complete and sound emergency response and management system and organization

TFC's Emergency Response Organization Chart

planning, and set up "Disaster Prevention and Response Operation Team" in each factory in accordance with the "Guidelines on Disaster Prevention and Response Operation" for emergency operation of all types of disasters and emergency of TFC to facilitate immediate responses so as to reduce disaster losses.

We strengthen the defense mobilization and emergency response mechanism through the renewal of equipment and various disaster response drills, and the emergency response personnel's disaster situation analysis and response abilities. In addition, we also develop a post-disaster recovery plan and participate in the joint defense system in the industrial zone to enhance the overall emergency response capabilities through various management behavior.



Hierarchical Management **System for Disasters**

We set a three-stage on-site response mechanism based on the severity and scope of the impact. Based on the different stages, the contingency units and notification targets and scope would gradually expand for the hierarchical management and guick combination of personnel resources of the internal and external authorities to adopt the correct contingency measures.







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TFC's Three-stage Emergency Management Operational Process

Stage 1

The impact and scope of the contingency

When a disaster occurs, the unit involved in the accident is capable of controlling and does not need support from other units.

On-site response mechanism

- Confirm the occurrence of disaster (including the type and the extent of the disaster)
 Po alort of the water sources, turn off fire and step all bet work
- Be alert of the water sources, turn off fire and stop all hot work.
 Direct relief work on-site.

Stage 2

The impact and scope of the contingency

The contingency has greater harm or is in a greater area and may result in threats to human lives and property, and support from other units are required.

On-site response mechanism

- The total commander sets up an emergency command center and ask the response groups to stand by.
- Prepare response equipment.
- Set the control area to control personnel access.
- Determine whether emergency shut-down is needed.

Perform various contingency measures.

Stage 3

The impact and scope of the contingency

The impact area is huge and the contingency has serious impacts on human lives and property safety, and the manpower as well as the rescue equipment cannot respond accordingly and support from outside is required.

On-site response mechanism

Notification scope

Fire departments

protection units

Notification scope

Start internal reporting

Notification scope

Increase the level of

internal reporting.

procedures

- Request external support, notify the government, fire department, labor inspection and environmental protection units.
 Local government response center
- Expand the scope of alert.
- When the external supporting unit arrives for rescue, the command is transferred to the commander of the supporting unit.
 Environmental
- Assisting the supporting unit in the relief work.
- Note: Based on different stages, the scope and level of the response units and notification objects will be classified into







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Investigation

 The unit in charge of the incident will make the "TFC Accident Injury Report Form" (including the investigation results and remedial measures) in accordance with the Incident Investigation Procedure.

· The safety unit of each factory shall assign personnel to the scene before the next day of the disaster emergency to address the causes of the accident, file the report of investigation and improvement measures.

Notify each factory and report

Notify each factory of the causes and countermeasures of disasters or file the report at the industrial safety and environmental protection meeting.

Inspection and Improvement

Each factory shall inspect if there are similar harmful hazards so as to make improvement to avoid similar incidents from happening again.

Emergency Drills

Before the end of each year, every production factory submits the plans of disaster prevention and emergency drills and budgets for purchasing protective equipment in the following year. Various emergency drills are conducted as scheduled annually.

After the completion of the emergency drill, a review report is prepared by the Safety and Environment Department of each factory, and the factory's safety agency is responsible for the integration of ideas in the drill and the improvement and correction of the emergency response procedure to enhance the resilience capabilities in the face of emergencies. TFC held a total of 12 sessions of emergency drills in 2019, with a total of 190 participants in the drills of ammonia leakage, acid leakage, electro-chemical leakage and fire drills.

Drill of Ammonia Evaporator Leakage



Drill of Ammonia Leakage



Set up the warning fence on-site.



tasks.

Emergency response personnel were gathered and assigned sprayed water to suppress ammonia.



3



Emergency response personnel turned off the source of leakage Δ on-site and reported safety.





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Pipeline Management

In accordance with the provisions of the national standard of CNS 9329 for pipeline identification, we have set up "Key Points for Identifying Units in Charge of the Pipelines". We use graphic expressions like arrows and colors to identify the pipelines so that the field workers can soon be aware of the information such as the fluid direction, types, names, status and level of danger of the materials in the pipelines. There is a dedicated unit in charge of the maintenance of the pipelines at each factory to ensure the normal operation of the pipelines.

Management of Unloading Materials

Raw materials needed for fertilizer production mainly depend on imports from abroad through shipping. Concerning the unloading, deliver and transport of the raw materials of chemicals needed for production, such as liquid ammonia, sulfuric acid, nitric acid, and phosphoric acid, we have established a sound management standards and paid attention to the safety and health management in every detail of the transportation process. Furthermore, the standard operating procedures (SOP) of the operations during the unloading of materials have also been set up as the basis of the execution of the details to ensure the safety of the material handling process. TFC adheres to the rigorous attitude when carrying out the management of shipping unloading operations. There were no significant accidents in the transport and loading and unloading operations in 2019.

Key Points of Unloading Operation Management



Management of Tank

The chemicals sold in the Company are

transported by tank vehicles arranged by

TFC's factories. The Company has set up

the clients to take delivery of goods at

"Safety and Health Management" and

Hazardous Materials Transport on the

Highway". Transport vehicles entering TFC

factories should comply with related safety

factories, the tank vehicles should strictly

abide by the government regulations and

and health regulations, and after leaving the

"Points for Safety Management of

Vehicles



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Key Point for Management of Tank Vehicles

Emergency response management and supporting measures

- · Conduct rescue training regularly.
- At least one rescue drill is conducted every year for the team members to strengthen their emergency response skills and capabilities.
- When notified of the tank accident, a rescue team is immediately set up to confirm the situation of the accident and prepare rescue equipment and protective gear in order to help rescue as soon as possible.
- TFC's rescue team receives the commands from the chief commander on the scene to help deal with the accident.
- After handling the accident, a written report of the situation of the accident and the rescue process will be presented to the company.

Personnel management

- The drivers the carriers hired should possess relevant licenses, receive dangerous goods transport training, be physically and mentally healthy and physically capable of the job.
- When the carrier enters the factory to take delivery of goods for the first time, the person in charge or the designated agent and the driver should receive safety and health training from the Industrial Safety and Environmental Protection Department in the Company's factories and the hazard notification is also given.
- Tanker drivers and the field workers should confirm the safety equipment before the loading and unloading operations.

Drill of Tank Leakage



Key points for

management

Equipment management

 Prepare complete rescue (repair) equipment and safety protective gear for tank transport accidents, and monthly inspection, maintenance and test of these facilities and equipment are conducted and relevant records are recorded to ensure good status of equipment.

 Vehicles and tanks should be inspected routinely. Observation of the tank safety valve and pressure gauge is conducted at all times to make sure they function well. In addition, important car parts, such as brakes and wheels should also be checked.

 Check the vehicles and tanks before and after loading and unloading should be made on the pressure gauge, safety valves, loading and unloading valves, loading and unloading pipes, ground wire of the tank car and the removal of the unloading pipe after unloading and before driving.

Avoid transporting goods during rush hours.

• Disaster relief equipment and personal protective equipment shall be equipped with the transporting vehicles by the carriers depending on the nature of the nature of the loaded dangerous goods.

Strictly request the drivers to follow the rule of "No open flames".

Compliance

- Strictly request the carriers to comply with relevant laws and regulations of the government and TFC's internal management regulations for the carriage operations of dangerous goods and receive training, inspection and supervision from the competent authorities and the Company.
- The vehicles for carrying the goods should pass the inspection from the Motor Vehicles Service Station and before the transport of goods, application for the issuance of a "Pass" should be submitted to the local Motor Vehicle Office of Directorate General of Highways.

Regional Joint Defense Organization of Toxic Chemical Substance

TFC's Taichung and Miaoli Factories have joined the Joint Defense Organization of Toxic Chemical Substance in Central Region of Taiwan in accordance with the Toxic and Concerned Chemical Substance Control Act. In addition, the first phase of registration of the existing chemical substances in accordance with the Regulations of New and Existing Chemical Substances Registration has been completed, with a total of 13 items being registered.

Each factory participates in the group training and joint defense drills independently organized by the joint defense organizations to strengthen employees' emergency responses and self-safety management capabilities and to observe as well as learn from each other in terms of occupational safety, health and environmental protection to enhance safety and health of workers. In the case of an accident, they may comply with the support agreement to assist in disaster response mutually to achieve accident control effectively, reducing damage and avoiding secondary hazards.



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6-1 Product Liability

We have been upholding the core values of "Integrity, Innovation and Responsibility" to produce good-quality, safe and healthy products through continuous innovation in technology and services. We uphold customer-oriented philosophy by strengthening the customer service mechanism and understanding customer needs and expectations to maintain long-term and stable cooperative relationship with our customers.

GRI

- 16-1 Assessment of the health and safety impacts of product and service categories
 117.1 Requirements for product and sonice information and labeling
- 417-2 Incidents of non-compliance concerning product and service information and labeling
 417-3 Incidents of non-compliance concerning marketing communications

Fertilizer Production Process



Product Quality Management

TFC has set up Quality Management Operation Guidelines" to comprehensively improve product quality and the guidelines can be applied from the beginning phase of raw materials to the completion of production for management and control. In addition, quality testing operations for three major items, including material quality control, process quality control and finished product control are also conducted. A dedicated unit is responsible for supervising all factories, and each factory also sets up a quality control unit to be in charge of various inspection operations within the factory to fully implement quality management operations.

We introduced ISO 9001 International Quality Management System into Taichung Factory and Miaoli Factory. Currently, the ISO 9001 verification has been obtained in both factories. The quality objectives are achieved by the formulation of quality policy guidelines, implementation of quality planning, assurance and improvement of the PDCA Cycle. In addition, the meeting on quality should be regularly convened at production factories to ensure that the operation of the management system is continuous, effective and appropriate.



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iso 22000	HACCP
Deep ocean water (DOW) products 100%	Deep ocean water (DOW) products 100%
Seaweed related products 100%	Seaweed related products 100%
Salt products 100%	Salt products 100%
Concentrate 100%	Concentrate 100%
Raw materials from Deep ocean water (DOW) 100%	Raw materials from Deep ocean water (DOW) 100%
Health food 100%	Health food 100%
GHP GHP	🤵 SNQ
Deep ocean water (DOW) products 100%	Deep ocean water (DOW) products 50%
Raw materials from Deep ocean water (DOW) 100%	Concentrate 50%
Concentrate 100%	Health food 43%
Salt products 100%	
ISO 9001	HALAL

The Proportion of Product Categories That Have Passed Food Safety Certification or Obtained Food Safety Certification

Deep ocean water (DOW) products 100% Fertilizer products 100% Chemical products 100% Raw materials from Deep ocean water (DOW) 75% Concentrate 100% TOF VPC VPC TQF DSW-DH V13041-BSMI Deep ocean water (DOW) 100% Deep ocean water (DOW) products 100% ISO 22716 or Voluntary Cosmetic 🧭 Health Food Label Good Manufacturing Practice Cosmetics 100% Deep ocean water (DOW) products 50%

Traceability System for Fertilizer Products

In order to establish traceability for raw materials, production, packaging, inspection and other information, since the beginning of 2016, we have promoted the establishment of a "Product Production Traceability System" to provide instant access to information on fertilizer sources, which can avoid the penetration of heavy metals and other substances into the soil. It is also the key to soil health protection and agricultural environment. Internal personnel can quickly check the information of inspection results of each batch of raw materials, storage locations in the warehouse, production process conditions, bulk storage locations and packaging lot numbers through the information platform to overcome the difficulties in the traceability of large-scale bulk products and significantly improve customer service. At the same time, quick feedback on customer issues can be given to the production factory immediately and production conditions and parameters can be instantly adjusted to ensure product quality.

Different items of solid/liquid raw materials of different batches are conducted based on their physical and chemical properties and requirements, including composition, moisture, particle fineness, content of heavy metal, density and so on to ensure that the materials are in line with regulatory standards. In addition, fertilizer products are also tested for NPK content, organic matter content, particle fineness, hardness and moisture to continue monitoring product quality. If abnormality is identified, the production and deliver units will be immediately notified and immediate improvement is required.

Product Labeling and Product Marketing

In order to enable farmers and consumers to use the products correctly and safely, our products are fully compliant with the Trademark Law and Fertilizer Management Act. We provide full information of the names of the materials, the ingredient contents, instructions and amount of application on the labeling as prescribed. In addition, we cooperate with COA and other local authorities in county or city governments and conduct regular or occasional inspections to check whether the product labeling is in line with legal regulations.

In the product promotion process, TFC has complied with the national laws and regulations and informed consumers of the content of the products. For the public to make convenient inquiries, instructions for the use of fertilizer and other information can also be available at the "Fertilizer Classroom" Section on our official website. There was no violation of product marketing in 2019.



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Customer Privacy Management

To strengthen protection of customer privacy and related business information, we have set up the "Personal Data Protection Management Committee" to draw up the policy and system for personal data protection. In addition, we have strictly enforced "Execution Points of Confidentiality" and "Personal Data Protection Act" to ensure the company's business confidentiality so as to protect the company's rights.

TFC's Management of Personal Data

Management of physical personal data	Management of electronic data
 Physical personal information is properly stored in the file cabinet which is properly locked. The personal data manager is responsible for the safekeeping of it. In the event of staff redeployment, the custodian shall register the information by item, and shall keep the confidentiality requirements. 	 Personal information stored in the information system and electronic files should be encrypted for managemen. When the storage device is discarded or not used, personal data should be deleted by the information staff.
Unified management of contact person	Education and training
 The collected personal data are only used by the staff in charge of that specific business, and the staff in particular also serve as the contact person. Non-directly related personnel do not have the access to the personal data. 	 New staff all receive the training for the concept of personal data protection. Implementation of education and training to ensure the employees are equipped with the required legal literacy and concepts of proper use of personal data files.
Results	

Information Security and Protection

TFC attaches great importance to information security protection and organizes personal information protection education and training to ensure that the practitioners are fully aware of the scope of confidentiality for business implementation and related penalty for any breach of it. New staff also receive training to avoid any leak of personal data and confidential documents that may affect the Company's operations and customers' interests.

Information Security Management Methods

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Deploy network firewalls, intrusion detection systems, and active blocking of known threats, known attacks, malicious programs, malicious URLs and C & C activities. To prevent Advanced Persistent Threat (APT), we also analyze internet files to identify new types of threats for the execution of immediate defense.

Regular disk backup of data and regular disaster recovery drills are conducted. TFC conducted 2 disaster recovery drills in 2019 and the system backup and data validation were successfully completed.

The staff's computers are installed with endpoint protection software to block threats such as malicious programs, website reputation ratings and ransomware. In addition, the virus patterns are regularly updated for anti-virus to provide a safe computer operating environment.

TFC strictly enforces the confidentiality inspection on a regular basis. As of 2019, there has not been any grievance against TFC regarding breaches of customer privacy.



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6-2 Considerate Customer Service

TFC has been upholding a customer-oriented philosophy and has built a complete service network. We have established service centers for each area, provided toll-free service and built a multiple customer service channels through the Internet and social media. Meanwhile, we also provide a sound and immediate handling mechanism for customer grievance to respond to and deal with comments from our customers. The feedback and suggestions from face-to-face contact or direct communication with farmers will become an important basis for innovative product content and services.

Providing Multiple Platforms to Serve Customers Everywhere

Instant Interaction on the Social Media

instructions for use, rationalization of

fertilization, product description and

demonstration plots. At the same time, it

also regularly shares new knowledge of agriculture at home and abroad, making

it easier for farmers in Taiwan to align

with international trends.

Three Bases Providing Services all over Taiwan

	Northern District Sales Office	Central District Sales Office	Southern District Sales Office
Various information on the use of fertilizers is provided in the "Fertilizer Classroom" on the official website of the Company.	Service areas Taichung, Miaoli, Hsinchu, Taoyuan, Taipei, New Taipei, Keelung, Yilan, Kingmen	Service areas Nantou, Changhua, Yunlin, Chiayi	Service areas Pingtung, Kaohsiung, Tainan, Hualien, Taitung
The "TFC Agriculture Promotion Center" fanpage is created on Facebook to introduce related information of various characteristics of fertilizer products,	Tel (037)269-345	Tel (05)591-6992	Tel (07)222-5717

We have set three service bases and the sales staff in the Sales Office in different districts all have service enthusiasm and abundant knowledge of fertilizers. The services provided include problem handling concerning fertilizer sales, supply coordination, product use and complaint handling.



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Customer Service Hotline

Customer service hotline for fertilizers	Customer service hotline for chemicals
Customer service hotline 0800-883-300 Unit in charge Sales Department	Customer service hotline (02)2542-2231 Unit in charge Trading Department
Customer service hotline for electronic grade chemicals	Customer service hotline for residential development projects
Customer service hotline (037)269-345	Customer service hotline 0800-258-600

Publication of the Manual of Fertilization

In "Manual of Fertilization of TFC Fertilizer Products for Major Crops", there are recommended methods for rationalization of fertilization of 83 kinds of crops for farmers free of charge. This manual is also available at TFC's official website for the public to download.

Corporate Image Publication

 Since October 2017, TFC has issued another TFC publication and provided it to all public libraries in Taiwan, college libraries, township and city offices, Farmers' Association and Fishermen's Association. The content of this publication introduced a two-way interactive communication mode and interviews of fishermen and farmers to cover their stories, serving as an interactive platform for farmers and fishermen to exchange experiences. In addition, gardening section is added to enable agriculture to step into the daily life of every family.

Handling Customer Complaints

TFC has set "Customer Relationship Management Rules" and "Business Management Guidelines" as the basis for customer complaint handling procedures, striving to improve the quality of the production unit within a time limit to prevent similar cases from happening again.



With our effort in the conducting and strengthening customer relationship management, cases of customer grievance are maintained at a very low number. In 2019, only 2 cases of customer grievance was reported, in which agglomeration was found in our #43 biotec organic compound fertilizer. We have identified the cause of fertilizer agglomeration and carried out countermeasures. Finally, the production department checked and tracked the implementation of the follow-up improvement plan.

Description of Customer Grievance Cases in 2019



Fertilizer

 Increased the particle size of the finished products and increases the wrap oil and talcum powder.

 Increased the temperature of the furnace and adjusted the amount of phosphoric acid according to granulation situation and urged the source of the feed not to mix other raw materials.



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Material topic

Supplier Environmental Assessment, Supplier Social Assessment

GRI

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- **103-1** Explanation of the material topic and its Boundary
- 103-2 The management approach and its components
- 103-3 Evaluation of the management approach
- 204-1 Proportion of spending on local suppliers
- **308-1** New suppliers that were screened using environmental criteria
- **308-2** Negative environmental impacts in the supply chain and actions taken
- 414-1 New suppliers that were screened using social criteria

414-2 Negative social impacts in the supply chain and actions taken

Management Approach

Importance

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Supplier chain management is an important part to the TFC. We and our suppliers jointly establish a friendly industrial environment to achieve the win-win goal of environmental sustainability and economic efficiency

Boundary

- Within the organization: Taiwan Fertilizer Group
- Outside the organization: Suppliers, contractors, OEM factories

Policies

We are committed to setting up a sound suppliers management system and building a good partnership with our suppliers while forming a value supply chain for sustainable management, caring for the environment and business ethics compliance

Commitments

We are committed to working closely with our suppliers to implement the supply chain management system which ensures compliance with CSR aspects including corporate governance, business ethics, the environment, human rights, labor benefits and workplace safety

Resources

Implement related plans in accordance with the latest supplier management system

Responsibility

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The trading department of TFC's head office is responsible for the procurement

Short-term Goals

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- The mineral sources are from non-conflict mineral suppliers to fulfill our corporate social responsibility
- To increase the number of the suppliers' self-evaluation of CSR for annual purchase amount exceeding NTD 10 million
- Promote the signing of Supplier Corporate Social Responsibility Commitment

Long-term Goals

- To revise Supplier Management Guidelines and add supplier CSR assessment
- To add contract content into the CSR clause, requiring our suppliers to protect human rights and focus on labor rights
- · To conduct field visits to major suppliers to learn about the suppliers' implementation of environmental and social assessment

Specific actions taken and performance in 2019

- In 2019, all the imported phosphate ore and potassium chloride are 100% conflict-free.
- The results of the suppliers self-assessment showed that 100% of them are excellent suppliers.
- In 2019, TFC did not receive any lawsuit against any supplier due to environment, labor, human rights, social impacts and other violations.





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Supply chain management is an important part of TFC's management policy. Through the diversified development of the Group's internal supply chain, TFC creates its unique value in the market. In addition, we strengthen the external supply chain management system through our internal system experience and gradually introduce the CSR spirit to further form a corporate value chain of sustainable growth with our suppliers to lead the simultaneous leap of the industries in Taiwan.

The supply chain is divided into the external supply chain and internal supply chain. The external supply chain mainly focuses on fertilizers, chemical products and electronic chemical products while the internal supply chain focuses on real estate development and the supply and marketing of health care products, striving to construct a sound and complete quality management and supplier management system.



TFC has branched out to different business units with its wholly-owned subsidiary companies to develop an internal supply chain of Health Care, Real Estate Development and so on. TFC serves as the provider of upstream raw materials and products to its subsidiaries for sale or management, and substantial control is generated through the Group system. From the front-end R&D to the end sales problems, every detailed step is strictly controlled to ensure safety and quality of the products.



Management of External Suppliers

In TFC's value chain of the chemical industry, TFC plays a role in the midstream of the production and supply. Due to the scarcity of natural resources in Taiwan, the raw materials for fertilizer production almost completely rely on imports. After purchasing fertilizer making materials from foreign suppliers, the production factory conducts production and makes compound fertilizer products such as nitric acid, superphosphate, sulfuric acid, sulfaminic acid, nitrophosphate or phosphorus compound fertilizers. Among them, the fertilizer products are sold to agricultural users while chemical raw material products are sold to downstream customers (for industrial users) for the production of terminal petrochemical products.



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TFC's Value Chain of Chemical Industry

Upstream raw materials	Midstream p	roducts Downstream ap	oplication
anhydrous ammonia, urea, potassium ch potassium sulfate, phosphorus, sulfur	nloride, ammonium sulfate, sulfamir nitrophosphate or phosphor fertilizers	nic acid, melamine, manufacturers and farmers.	stry, fertilizer industry, stry, power ental protection
Global Distribution of Exter	nal Raw Material Suppliers	and Purchase Percentage in 2019	
	Inited Kingdom - Ger	many China Kore	
	Israel	Jordan Hong Kong 1	Faiwan
	United Ara	b Emirates Malaysia	
Taiwan 6.28%	No. 9 China 9.45%	No. 7 Malaysia 5.23%	No.
	United Arab Emirates	6.96% No. 1 Singapore 34.43%	No.
	Japan 18.47%	No. 2 Germany 4.91%	No.
Sh I	Israel 6.28%	No. 1 Korea 1.20%	No.
Purchase percentage	Qatar 0.26%	No. 1 France 0.45%	No.
percentage	Jordan 5.49%	No. 1 United Kingdom 0.5	9 % No.

Total 100%



Raw materials for fertilizer production are mostly natural minerals and natural gas derivatives that Taiwan lacks. Therefore, these types of raw materials have to be purchased overseas. TFC totally purchased approximately NTD 4.34 billion of raw materials for Fertilizer Chemical Business in 2019, of which NTD 210 million was used to purchase raw materials produced in Taiwan or local manufacturers and NTD 100 million was used to purchase fertilizer packaging bags manufactured in Taiwan. The suppliers of the fertilizer bags are mostly manufacturers in Yulin, Changhua and other central and southern counties and cities. In all procurement operations, products made in Taiwan are purchased with priority to support the development of SMEs in Taiwan. TFC also works hand in hand with local enterprises and assists with the creation of local jobs opportunities to take care of the livelihood of families in Taiwan.

TFC's Ratio of Local Procurement (Unit: NTD 100 million)



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The upstream raw materials we need, such as anhydrous ammonia, urea, potassium chloride and phosphate ore must rely on imports. Most of our upstream suppliers are long-term partners, and the supply quality and reputation of these suppliers are good. In terms of our downstream customers, we maintain long-term and stable business cooperation relationship with our fertilizer, chemicals and electronic grade chemicals customers.

In order to completely implement the external supplier management system, we have developed "Supplier Management Rules", "Guidelines on New Bulk Raw Material Suppliers Review" and "Table of Supplier Evaluation and Selection" to regulate the development, selection and assessment of suppliers to ensure stable quality of materials and safety of material sources. In addition, we also encourage the supply chain to work on positive development concerning issues of environmental protection and human rights together, forming a supply chain with sustainable development.

Supplier selection and evaluation criteria mainly include contract compliance capability, price, quality and safety, supplemented by the following items for the selection of suppliers that share consistent sustainable development goals and concepts with TFC as the basis for our evaluation and selection. In addition, we also urge our suppliers to follow local laws and regulations concerning corporate governance, environmental protection, labor and human rights and so on in the process of providing services while working on sustainable management and obeying business ethics and at the same time fulfilling their corporate social responsibility concerning issues of environmental protection, safety and health during production process and social human rights to provide high quality products and services.

Table of Supplier Evaluation Criteria and Selection and TFC's CSR Evaluation Standards



To reach the goal of sustainable development and to ensure that the suppliers can comply with the laws and regulations, meet social standards and positively respond to environmental protection and social related issues and to bear the corporate social responsibility as well as to make continuous improvement in the process of providing products and services, we have promoted the signing of Supplier Social Responsibility Commitment with our suppliers since 2020 and have made it one of the criteria for new supplier selection.

Promotion of Supplier Self-assessment

In 2019, TFC continued to promote the supplier self-assessment to track potential risks for further control. Analysis is made based on the suppliers' self-assessment results. Suppliers are divided into three levels, including "excellent", "qualified" and "to be improved" based on the evaluation scores. A total of 19 suppliers were introduced this year. The results showed that all the suppliers scored 85 points and more, and the ratio of qualified suppliers of TFC reached 100%.

TFC has conducted the self-assessment questionnaire of supplier CSR status for three consecutive years. The results of supplier assessment scored better than the passing score in every aspect, including the environmental aspect, labor rights, human rights, social aspects and product liability aspect.

In 2019, TFC did not receive any complaint cases of its suppliers concerning violations in terms of environment, labors, human rights or social impacts.

We continue to implement CSR supplier management assessment and set short-, medium- and long-term management goals. In the future, we will also continue to promote and establish a comprehensive supplier management approach to urge our suppliers to implement CSR related sustainability issues together to create sustainable growth and a win-win-win situation.

Scores of Supplier Information

Disclosure in all Aspects

Supplier Information Disclosure Classification





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In the selection of contractors, in addition to require them to observe various government regulations, it is also necessary for them to comply with labor, environment and human rights and other conditions to ensure that partners involved in the supply chain have healthy and safe working environment and are treated with respect and enjoy human dignity. All the operational activities have to incorporate environmental protection awareness and comply with business ethics to jointly enhance and leverage the overall value of the supply chain.

OEM Management

To ensure the quality and safety of our products, we handle quality management operations in accordance with "Operation Directions for Outsourcing Manufacturers' Audit and Quality Management". The Production Department" is responsible for the inspection operations. TFC has 3 OEMs in total, and they mainly assist with the production of some fertilizer items. In 2019, we conducted an audit in the 3 OEMs, and all OEMs passed the audit.



TFC's OEM Management

The selection of OEMs

Choose excellent manufacturers with a good reputation.

The control of raw materials

Require manufacturers to provide complete product formula, the whole composition of raw materials specifications (including supplier information), raw material efficacy and related certification, which clearly detail the quality requirements and the control method of raw materials and provide inspection reports or affidavit to avoid violations of the relevant laws and regulations or any fact that causes a consumer hazard.

Process audit

When the first batch of products are manufactured, the product development staff will check the manufacturing process in the outsourcing manufacturers. For the official mass production, the process conditions and control specifications need to be ensured.

Product specifications

Develop clear product "specifications" (standards or instructions), establish quality requirements, control points, control and inspection methods and acceptance criteria. Samples of each batch should be sent to Quality Assurance and Health Department for inspection to ensure the quality of each batch.

Audit team

 The Production Department sends employees to receive ISO-related internal audit or lead auditor training, and established human resources database of auditors in order to conduct audits exactly.

• The audits are categorized into first, regular and occasional ones. The frequency of audit should be at least once a year.



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6-4 Promotion of Sustainable Agricultural Education

The sustainable use of land is closely related to agricultural sustainable environment. As the leader in Taiwan's fertilizer industry, TFC is well aware of the importance and urgency of promoting education of sustainable agriculture. When conducting education in different places, we not only help farmers obtain professional knowledge of crops cultivation but also hope to help farmers make use of excellent and proper agricultural materials on the basis of agronomy so that under the premise of saving costs, time and effort while protecting the environment, the reduction of fertilizer use is achieved to protect the agricultural environment and to reach the goal of producing safe and high-quality crops.

Spreading the Concept of Rationalized Fertilization

TFC often organizes rationalized fertilization workshops. The so-called "rationalization of fertilization" is to adjust the amount of fertilizer, items, fertilization methods and fertilization time in accordance with different cultivated land conditions and crop types. In other words, it is "to apply right amount of fertilizer at the right time".

In addition, the farmers were also taught to use the "Soil Data Supply Inquiry Platform" established by the Agricultural Research Institute, Council of Agriculture to inquire about soil survey conditions of farmland of different lot numbers. TFC will also provide a set of complete agricultural technique service such as the timing for rational fertilization and pest and disease consultation based on the nature of the soil and characteristics of the major crops.

The Demonstration Farm for Fertilization

In recent years, TFC has produced various high-quality fertilizers in cooperation with the transformation of farming practices, assisting farmers to smoothly transform into safe farming that is good for humans and also the environment. TFC also organizes fertilization demonstration for safe or organic farming on the demonstration farms in agricultural towns across the country, transforming knowledge learned in class into practical operations in the fields. In 2019, TFC held 192 sessions of safe or organic farming on the demonstration farms throughout Taiwan, and compared with 2018, the number of sessions increased by 6.

F

Free Soil Testing to Help

Every year, TFC provides free soil acidity and electric conductivity testing for farmers. After the soil is tested, suitable materials for suitable crops are recommended to farmers based on the characteristics of the acid or alkaline soil to improve soil quality or assistance is provided in finding other factors that affect crop growth. In 2019, TFC conducted soil fertility testing for farmers at 121 locations in total.





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Contributions and Results of Rational Fertilization

Over the years, TFC has been committed to promoting rational fertilization education and fertilization demonstration farms, investing human resources and expenses every year and fruitful results were achieved. According to statistics, in the past three years, a total of approximately 4,395 people and over 36,000 farmers have participated in the promotion activities, and the expenses invested reached NTD 13.520.521 with fruitful results of a total of 1,285 sessions of fertilization workshops and demonstration farms.

After years of efforts, farmers gradually apply the concept of rational fertilization into their farming habits. From the analysis of the amount of chemical fertilizer application used by farmers from 1990 to 2019, it was found that after the promotion of rational fertilization, the domestic application amount of fertilizers reduced by 12,218 tons/year, equivalent to NTD 96,216,750 saved annually for farmers in Taiwan after conversion, which also helped reduce emissions by 113,627.4 tons/CO₂e (equivalent to 292 Daan Forest Parks). It indeed helped achieve the goal of carbon reduction in agriculture.

The difference between the domestic chemical fertilizer application from 1990 to	Fertilizer costs are calculated based or price of TFC's bestselling #1 ""HeyWor
2018 from the statistics of the COA times the annual average value of TFC in the	nitrophosphate organic compound ferti NTD 8,875 per ton.
market share of fertilizer market.	
The carbon footprint coefficient of fertilizers	According to the statistics of the Burea
was based on the public research data of a	Energy, MOEA, Daan Forest Park can
Norwegian Fertilizer Company, Yara International, and the fertilizer life cycle	absorb approximately 389 tons of carb dioxide every year.
factor is 9.3 kg CO_2 /kg.	alonido orong jodin
3	

The Impacts of Rationalization of Fertilization Workshops and Demonstration Farms for Rationalization of Fertilization



2017

2018

2019

Chapter 6 Co-creation of Value and Common Prosperity

192

2019

1,544

2019

4.513,737

2019

186

Note: "King Won" organic compound fertilizer series were launched in 2019, and the main implementation targets were the fertilization demonstration fields



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6-5 Implementation of Corporate Social <u>Responsibility</u>



TFC Group and TFC Foundation Public Welfare Contributions

Since the establishment of TFC Foundation in 2007, it has always adhered to the principle of promoting sustainable development of agriculture to jointly improve the quality of life of people in Taiwan. In the future, TFC Foundation will continue to work with TFC for the agricultural development and education.

In 2019, TFC Group and TFC Foundation jointly participated in charitable donations, arts and cultural activities promotion, sports promotion, agricultural product subscription and industrial exchanges.

In terms of charity donation, donation was made to the Cancer Care Charity Concert held by Formosa Cancer Foundation. In terms of sports promotion, we sponsored the 2019 Swinging Skirts LPGA Taiwan Championship. For the agricultural product subscription, in order to solve the problem of surplus agricultural products, TFC subscribed domestic guavas and bananas. In terms of arts promotion, donation was made to the General Association of Chinese Culture for the 2019 Presidential Office Concert, Double Tenth Day Lighting and Towel & Farm Art Festival in 2019. For the industrial exchanges, we made donations to sponsor Taiwan Chemical Industry Summit Forum, Annual Meeting of Taiwan Institute of Chemical and annual meeting of Agricultural Association Union. The implementation funds amounted to NTD 7,082,831, a decrease of NTD 7,946,317 compared to 2018.

45.05%

30.63%

No. of cases 5

No. of cases 5

No. of cases 2

No. of cases 5

No. of cases 22

7.11%

100%

Public Contribution of TFC Group



Donation to charities • No. of cases 8

TFC Foundation Donations

· Amount (NTD) 1,532,831 • Ratio **100**%



TFC Foundation has been caring for agriculture and the disadvantaged groups for vears silently. Since the establishment of the scholarship in 2017, we have implemented four times of scholarship granting to a total of 120 students, and the accumulated scholarship issued has reached NTD 1.500.000 to excellent and hard-working college students to continue making efforts to support them to step toward their goals in life. In addition, we also encourage graduate students to write eco-friendly business plans, hoping that the students can make comprehensive thinking about the structural challenges of agricultural management in Taiwan while at school and to contribute to Taiwan's agriculture in the future.



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6-6 Creation of Harmony and Common Prosperity of the Community

TFC upholds the belief of developing a good relationship with the surrounding environment and communities. We are pursuing symbiosis with the environment in the industrial use of land. We are seeking an interactive model with the communities in the commercial and residential use of land. While developing, TFC complies with all the laws and regulations and fully communicates with stakeholders to reduce the impact of development on the environment and the communities.

GRI

S-1 Operations with local community engagement, impact assessments, and development programs

413-2 Operations with significant actual and potential negative impacts on local communities

EE

100% Impact Assessment of TFC's Business Units

At the beginning of planning the industrial use of the current production factories of Taichung Factory, Miaoli Factory and Hualian Factory, public exhibitions and explanation sessions were held in accordance with the provisions. In addition, local residents or groups also submitted written comments during the period of exhibition in public, and after the approval from the Urban Planning Commission, the industrial use of the factories could then start. We conducted the environmental impact identification when Taichung Factory was constructed. After the conservation measures were drafted and the environmental impact assessment (EIA) was submitted, we held public briefings to collect comments from local residents and stakeholders. The construction did not start until the EIA was reviewed and approved by the Environmental Impact Assessment Review Committee. The percentage of the implementation of local community engagement, impact assessment and development plan of TFC's business units reached 100%.

Transformation and Utilization of Land of Old Factories

TFC used to have six production factories in Taiwan. With the industrial transformation and urban expansion, Taichung Factory has been reintegrated into the base for fertilizer and chemical production and logistics, while Miaoli Factory becomes the agricultural biotechnology R&D base and Hualien Factory has been transformed into the production and R&D base for deep ocean water. Property Management Department, C2 Preparatory Office and Real Estate Development Department are responsible for the land development operations of old Nangang, Hsinchu, Kaohsiung and Hualien factories, and the operations would cooperate with the surrounding urban development and planning. Besides, public hearings, symposiums and public exhibitions were also held in accordance with the law to listen to the expectation and opinions of the community residents, so as to reposition the transformation and utilization of the old factories.



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In the development process, through the overall planning and design, the urban space has public facilities like park and parking lots to enhance urban living environment and quality and reshape the urban landscape. In addition, the business activities after development will also boost local economic development and create local employment opportunities. In the process of land assets revitalization, we share the development benefits with the local residents and share the mutual

benefits to create a win-win situation.

2019 Real Estate Development Projects

Old Hsinchu Factory

The original Hsinchu Factory is changed into technology and business district designated for the "Hsinchu Science and Technology Business District" to cooperate with the government's overall plan. Hsinchu Factory completed the demolition operation in 2016 and currently it is under two phases of urban land rezoning; the reassigning in the first phase has been completed. Currently we cooperate with the "Hsinchu Science Park Project X" with the local government and the industry demands in the market and develop real estate for business use in different phases, transforming it into a "Composite Technology Business Park".

Hsinchu TFC One Building, TFC's first commercial office building was completed in 2017, The operation and leasing of the building has started already. TFC One is quite attractive. Major local and oversea technology corporations thus chooses to set up their workplaces here.

Old Kaohsiung Factory

The original Kaohsiung Factory is changed into specific area designated for "Kaohsiung Multi-functional Commerce & Trade Park". Kaohsiung Factory completed the demolition operation in 2016. It will undergo urban land readjustment by Kaohsiung City and is scheduled to be developed into commercial and office area in the future.

Taipei (Old Nankang Factory)

To cooperate with the government's overall planning, it was changed into residential and commercial area designated for the "Nankang Economic-Trade Park Project", and the development of congregate housing has been completed. Currently, the development of international tourist hotels and office buildings is still ongoing.

Old Keelung Factory

After the completion of Taichung Factory, Keelung Factory was transformed into the backup production factory. The quantity of production will depend on market demand. We will refer to the market condition and come up with the medium- and long-term land reuse projects.

Old Hualien Factory

The land development for Hualien Factory focuses on the d-park. The services and functions include a tourism factory and the development of deep ocean water related industries.



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Appendix 1 : Warranty Statement



INDEPENDENT ASSURANCE OPINION STATEMENT

Taiwan Fertilizer Co., Ltd. 2019 Corporate Social Responsibility Report

The British Standards Institution is independent to Taiwan Fertilizer Co., Ltd. (hereafter referred to as TFC in this statement) and has no financial interest in the operation of TFC 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 TFC only for the purposes of assuring its statements relating to its corporate social responsibility (CSR), more particularly described in the Scope below. It was not prepared for any other purpose. The British Standards Institution will not, in providing this independent assurance opinion statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used, or to any person by whom the independent assurance opinion statement may be read.

This independent assurance opinion statement is prepared on the basis of review by the British Standards Institution of information presented to it by TFC. 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 TFC only.

Scope

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

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

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

Opinion Statement

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

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

Methodology

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

Materiality

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

Responsiveness

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

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

GRI Sustainability Reporting Standards (GRI Standards)

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

Assurance level

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

Responsibility

The CSR report is the responsibility of the TFC'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:

AA1000 Licensed Assurance Provider

Peter Pu, Managing Director BSI Taiwan

...making excellence a habit."

Statement No: SRA-TW-2019002 2020-05-21

Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd.; Nei-Hu Dist., Taipei 114, Taiwan, R.O.C. BSI/Taiwan is a subsidiary of Bruish Standards Institution.



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 102-32 Highest governance body's role in sustainability reporting 	1.1 Development Visions and Organization Structure	P12
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102-54 Claims of reporting in accordance with the GRI Standards	About this Report	P2
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• 102-56 External assurance	About this Report Appendix 2	P97

GRI topic-specific disclosure 2016 / GRI 103 : Management approach 2016

Category / Topic	GRI Standards diclosure	Related CSR Section	Page number(s)
200 Economic perform	nance		
GRI 201:	103-1 Explanation of the material topic and its Boundary	2.1 Business management	P24
Economic performance	103-2 The management approach and its components	2.1 Business management	P24
	103-3 Evaluation of the management approach	2.1 Business management	P24
	201-1 Direct economic value generated and distributed	2.1 Business management	P25



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GRI topic-specific disclosure 2016 / GRI 103 : Management approach 2016

Category / Topic GRI Standards diclosure		Related CSR Section	
200 Economic perform	nance		Page number(s
GRI 201: Economic performance	201-2 Financial implications and other risks and opportunities due to climate change	2.3 Risk management	P31
	201-3 Defined benefit plan obligations and other retirement plans	5.3 The Remuneration System and Benefits	P66
GRI 202: Market presence	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	5.3 The Remuneration System and Benefits	P66
	202-2 Proportion of senior management hired from the local community	5.1 The Hire of Employees	P60
GRI 203: Indirect economic impacts	203-1 Infrastructure investments and services supported	6.4 Promotion of Sustainable Agricultural Education6.5 Implementation of Corporate Social Responsibility	P92 P94
GRI 204: Procurement practices	204-1 Proportion of spending on local suppliers	6.3 Supplier Management and Procurement	P89
GRI 205:	205-2 Communication and training about anti-corruption policies and procedures	2.2 Corporate governance	P26
Anti-corruption	205-3 Confirmed incidents of corruption and actions taken	No corruption incidents occurred in TFC in 2019	-
GRI 206: Anti-competitive behavior	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	1.3 External organization participation and support for and compliance with international initiatives	P22
300 Environmental			
GRI 301:	301-1 Materials used by weight or volume	4.4 Raw Material Management	P56
Materials	301-2 Recycled input materials used	4.4 Raw Material Management	P56
GRI 302:	103-1 Explanation of the material topic and its Boundary	Chapter 4 Energy Conservation, Environmental Protection and Environmental Management	P48
Energy	103-2 The management approach and its components	Chapter 4 Energy Conservation, Environmental Protection and Environmental Management	P48
	103-3 Evaluation of the management approach	Chapter 4 Energy Conservation, Environmental Protection and Environmental Management	P48
	302-1 Energy consumption within the organization	4.2 Energy Resource Management	P52
	302-3 Energy intensity	4.2 Energy Resource Management	P52
	302-4 Reduction of energy consumption	4.2 Energy Resource Management	P50
	302-5 Reductions in energy requirements of products and services	4.2 Energy Resource Management	P50
GRI 303:	303-1 Water withdrawal by source	4.2 Energy Resource Management	P53
Water	303-3 Water recycled and reused	4.2 Energy Resource Management	P53
GRI 305:	103-1 Explanation of the material topic and its Boundary	Chapter 4 Energy Conservation, Environmental Protection and Environmental Management	P48
Emissions	103-2 The management approach and its components	Chapter 4 Energy Conservation, Environmental Protection and Environmental Management	P48
	103-3 Evaluation of the management approach	Chapter 4 Energy Conservation, Environmental Protection and Environmental Management	P48



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300 Environmental				
GRI 305:	305-1	Direct (Scope 1) GHG emissions	4.3 Greenhouse Gas Management	P54
Emissions	305-2	Energy indirect (Scope 2) GHG emissions	4.3 Greenhouse Gas Management	P54
	305-4	GHG emissions intensity	4.3 Greenhouse Gas Management	P55
	305-5	Reduction of GHG emissions	4.3 Greenhouse Gas Management	P54
	305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	4.3 Greenhouse Gas Management	P55
GRI 306:	103-1	Explanation of the material topic and its Boundary Chapter 4 Energy Conservation, Environmental Protection and Environmental Management		P48
Effluents and waste	103-2	The management approach and its components	Chapter 4 Energy Conservation, Environmental Protection and Environmental Management	P48
	103-3	Evaluation of the management approach	Chapter 4 Energy Conservation, Environmental Protection and Environmental Management	P48
	306-1	Water discharge by quality and destination	4.5 Effluents and Waste Management	P58
	306-2	Waste by type and disposal method	4.5 Effluents and Waste Management	P57
	306-3	Significant spills	2.4 Legal compliance	P36
	306-4	Transport of hazardous waste	4.5 Effluents and Waste Management	P57
	306-5	Water bodies affected by water discharges and/or runoff	4.5 Effluents and Waste Management	P58
GRI 307:	103-1	Explanation of the material topic and its Boundary	2.4 Legal compliance	P35
Environmental compliance	103-2	The management approach and its components	2.4 Legal compliance	P35
	103-3	Evaluation of the management approach	2.4 Legal compliance	P35
	307-1	Non-compliance with environmental laws and regulations	2.4 Legal compliance	P36
GRI 308:	103-1	Explanation of the material topic and its Boundary	6.3 Supplier Management and Procurement	P87
Supplier environmental	103-2	The management approach and its components	6.3 Supplier Management and Procurement	P87
	103-3	Evaluation of the management approach	6.3 Supplier Management and Procurement	P87
	308-2	Negative environmental impacts in the supply chain and actions taken	6.3 Supplier Management and Procurement	P88
400 Social				
GRI 401:	401-1	New employee hires and employee turnover	5.1 The Hire of Employees	P61
Employment	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	5.3 The Remuneration System and Benefits	P67
	401-3	Parental leave	5.4 An Equal and Friendly Workplace of Happiness	P69
GRI 402: Labor/management relations	402-1	Minimum notice periods regarding operational changes	TFC handled it in accordance with article 16 of the laborst and ards act	-

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	400 Social			
About this Report	GRI 403:	103-1 Explanation of the material topic and its Boundary	5.6 A Healthy and Safe Working Environment	P72
	Occupational health and safety	103-2 The management approach and its components	5.6 A Healthy and Safe Working Environment	P72
Message from the Chairman		103-3 Evaluation of the management approach	5.6 A Healthy and Safe Working Environment	P72
Overview of the Company		403-1 Workers representation in formal joint management–worker health and safety committees	5.6 A Healthy and Safe Working Environment	P73
Summary of Performance in 2019 Corporate Responsibility and Sustainable		403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	5.6 A Healthy and Safe Working Environment	P74
Management		403-3 Workers with high incidence or high risk of diseases related to their occupation	5.6 A Healthy and Safe Working Environment	P75
2 Integrity Management and Strong		403-4 Health and safety topics covered in formal agreements with trade unions	5.5 Labor-management Communication	P71
Governance	GRI 404:	404-1 Average hours of training per year per employee	5.2 Comprehensive Personnel Cultivationand Training System	P64
3 Sustainable Agriculture and Circular	Training and Education	404-2 Programs for upgrading employee skills and transition assistance programs	5.2 Comprehensive Personnel Cultivationand Training System	P64
Economy Economy Environmental		404-3 Percentage of employees receiving regular performance and career development reviews	5.2 Comprehensive Personnel Cultivationand Training System	P65
Protection and Environmental Management Caring and Friendly Workplace for	GRI 405: Diversity and equal	405-1 Diversity of governance bodies and employees	2.2 Corporate governance 5.1 The Hire of Employees	P27 P60
Employees	opportunity	405-2 Ratio of basic salary and remuneration of women to men	5.3 The Remuneration System and Benefits	P66
6 Co-creation of Value and Common Prosperity	GRI 406: Non-discrimination	406-1 Incidents of discrimination and corrective actions taken	 1.3 External organization participation and support for and compliance with international initiatives 5.3 The Remuneration System and Benefits 	P22 P69
Appendix	GRI 407:Freedom of association and collectivebargaining	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	1.3 External organization participation and support for and compliance with international initiatives	P22
Warranty Statement GRI Content Index	GRI 408: Child labor	408-1 Operations and suppliers at significant risk for incidentsof child labor	1.3 External organization participation and support for and compliance with international initiatives	P22
Reference Table of Taiwan Stock Exchange Corporation Rules Governing the Preparation and	GRI 409: Forced or compulsory labor	409-1 Operations and suppliers at significant risk for incidents of forcedor compulsory labor	1.3 External organization participation and support for and compliance within ternational initiatives	P22
Filing of Corporate Social Responsibility Reports by TWSE Listed Companies	GRI 411: Rights of indigenous peoples	411-1 Incidents of violations involving rights of indigenous peoples	1.3 External organization participation and support for and compliance with international initiatives	P22
	GRI 413:	103-1 Explanation of the material topic and its Boundary	5.6 A Healthy and Safe Working Environment	P72
画	Local communities	103-2 The management approach and its components	5.6 A Healthy and Safe Working Environment	P72
		103-3 Evaluation of the management approach	5.6 A Healthy and Safe Working Environment	P72
		413-1 Operations with local community engagement, impact assessments, and development programs	6.6 Creation of Harmony and Common Prosperity of the Community	P95
		413-2 Operations with significant actual and potential negative impacts on local communities	6.6 Creation of Harmony and Common Prosperity of the Community	P95



3.3 Resource Circulation and Green Economy

103-3 Evaluation of the management approach

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item	Content of indicator	Related CSR Section	Pag	e number(s)
Supplements for chemical industry (1)	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities.	5.6 A Healthy and Safe Working Environment	P7	74
Supplements for chemical industry (2)	Operations with significant actual and potential negative impacts on local communities.	6.6 Creation of Harmony and Common Prosperity of the Community	PS)5
Supplements for chemical industry (3)	Negative environmental or social impacts in the company itself and its supply chain and actions taken.	6.6 Creation of Harmony and Common Prosperity of the Community	PS)5
Article 4	The number of its full-time employees who are not in a managerial position, the average and medium of the salaries of the full-time employees who are not in a managerial position, and the difference of the three figures from the previous year	5.3 The Remuneration System and Benefits	P6	57
Article 4	The company's governance around climate-related risks and opportunities, actual and potential climate-related impacts, how to identify, assess and manage climate-related risks, and metrics and targets used to assess and manage relevant climate-related issues.	2.3 Risk management	PE	31



