



TAIWAN SUGAR CORP.

2024 Sustainability Report



TABLE OF CONTENTS

002 PREFACE

- 002 ABOUT THIS REPORT
- 003 MESSAGE FROM THE TOP MANAGEMENT
- 006 2023 SUSTAINABILITY ACHIEVEMENTS AND PERFORMANCE
- 008 2023 SUSTAINABLE MANAGEMENT PERFORMANCE OF ESG

CHAPTER 1

010 STEPPING TOWARD SUSTAINABLE GOVERNANCE

- 012 1.1 BE A GREEN BENCHMARK ENTERPRISE
STAKEHOLDER ENGAGEMENT AND MATERIALITY ANALYSIS
- 036 1.2 CORPORATE GOVERNANCE
- 047 1.3 IMPLEMENTATION OF INTEGRITY MANAGEMENT

CHAPTER 2

058 MITIGATING CLIMATE IMPACT

- 061 2.1 TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)
- 070 2.2 STATISTICS OF ENERGY AND CARBON EMISSION
- 073 2.3 NET ZERO EMISSIONS PATHWAY PLANNING
- 083 2.4 GREEN PRODUCTION

CHAPTER 3

090 LEVERAGING NATURAL CAPITAL

- 092 3.1 RENOVATION PLAN OF MODERN LIVESTOCK HOUSING
- 095 3.2 SUSTAINABLE AGRICULTURE
- 098 3.3 MAINTENANCE OF NATURAL RESOURCES
- 103 3.4 LAND ACTIVATION AND UTILIZATION
- 105 【SPECIAL COLUMN】 TAINAN CHONGXIAN CIRCULAR HOUSING FOR INTERGENERATIONAL CO-RESIDENCE HONORED WITH THE BRONZE MEDAL AWARD IN THE NET-ZERO BUILDING DESIGN COMPETITION

160 APPENDIX

- 161 APPENDIX I : BRITISH STANDARDS INSTITUTION (BSI) VERIFICATION STATEMENT
- 163 APPENDIX II : GRI SUSTAINABILITY REPORTING STANDARDS (GRI STANDARDS) REFERENCE TABLE
- 171 APPENDIX III : TAIWAN STOCK EXCHANGE CORPORATION RULES GOVERNING THE PREPARATION AND FILING OF SUSTAINABILITY REPORTS BY TWSE LISTED COMPANIES — SUSTAINABILITY DISCLOSURE INDICATORS- COMPARISON TABLE FOR THOSE WHOSE REVENUE FROM FOOD INDUSTRY AND CATERING ACCOUNTS FOR MORE THAN 50% OF THE TOTAL OPERATING REVENUE
- 172 APPENDIX IV : TAIWAN STOCK EXCHANGE CORPORATION RULES GOVERNING THE PREPARATION AND FILING OF SUSTAINABILITY REPORTS BY TWSE LISTED COMPANIES — CLIMATE — RELATED INFORMATION OF TWSE/TPEX LISTED COMPANIES
- 172 APPENDIX V : SUSTAINABLE DEVELOPMENT GOALS (SDGS) INDEX
- 173 APPENDIX VI : SUSTAINABILITY ACCOUNTING STANDARDS BOARD (SASB) INDEX

CHAPTER 4

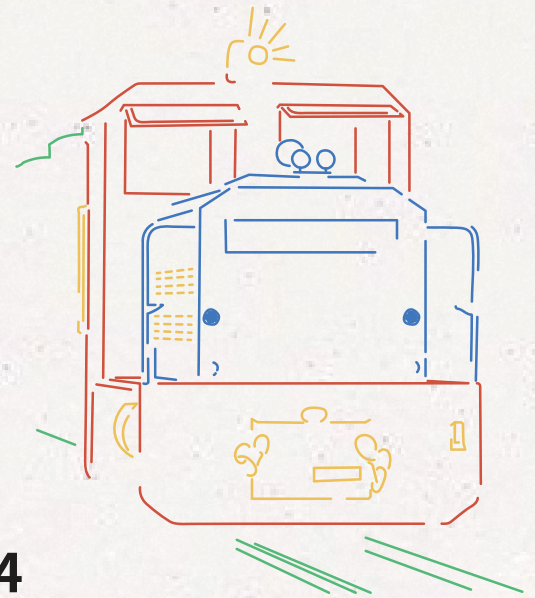
106 CREATING SOCIAL VALUE

- 109 4.1 FOOD SAFETY MANAGEMENT
- 112 4.2 DEVELOPING HIGH-QUALITY AND HEALTHY FOODS
- 114 【SPECIAL COLUMN】 FOOD SAFETY GUARANTEED AT TSC- TWO MORE FOOD ITEMS CERTIFIED WITH CLEAN LABEL 100% ADDITIVE FREE
- 115 【SPECIAL COLUMN】 FROM FISH SCALES TO COLLAGEN — “BEAUTY COLLAGEN JELLY” HONORED WITH 2023 HAIYAN AQUATIC PRODUCT QUALITY AWARD BY THE FISHERIES AGENCY OF MINISTRY OF AGRICULTURE
- 116 4.3 SUSTAINABLE MANAGEMENT OF THE VALUE CHAIN
- 112 4.4 SOCIAL CARE AND COLLABORATION WITH ALLIES
- 125 4.5 ACTIVATION OF SUGAR FACTORY LOCATIONS
- 132 【SPECIAL COLUMN】 EXTENDED ROUTE TO THE SOUTHERN BRANCH OF NATIONAL PALACE MUSEUM — YUNCHAI OPERATION BRANCH
- 136 【SPECIAL COLUMN】 GOVERNMENT AND INDUSTRY COLLABORATE TO PROMOTE SECURE PARENTING — HUALIEN'S “GUANFU PARENT-CHILD CENTER” LAUNCHED IN OCTOBER 2023

CHAPTER 5

138 TAKING CARE OF TAIWAN SUGAR CORPORATION PARTNERS

- 140 5.1 TALENTS AND ORGANIZATION OPTIMIZATION
- 146 5.2 HUMAN RIGHTS PROTECTION AND LABOR/MANAGEMENT RELATIONS
- 150 5.3 REINFORCED OCCUPATIONAL SAFETY



About this Report

Taiwan Sugar Corporation (hereinafter referred to as “Taiwan Sugar,” “TSC,” “the Company,” and “We”) has been publishing its Corporate Sustainability Report continuously for 15 years since 2010. This 2024 Sustainability Report focuses on the core of “Corporate Culture of TSC,” “Climate Impact,” “Business Planning,” and “Social Influence,” combined with the five major future business strategies of “Deep Rooting Healthy Products and Leisure Business,” “Introducing Circular Economy Concept for the development of high-quality agriculture and livestock business,” “Asset Activation and Sugar Industry Cultural Preservation,” “Continuously Promoting Carbon Reduction Cycle Towards the Goal of Net Zero Emissions,” and “Establishing a High-Quality Corporate Image and Enhancing Operational Performance,” as the editorial principle of this Report.

The Report is divided into five chapters, including “Stepping Toward Sustainable Governance,” “Mitigating Climate Impact,” “Leveraging Natural Capital,” “Creating Social Value,” and “Taking Care of Taiwan Sugar Corporation Partners,” with thirty-one major sustainability topics, disclosing its endeavors and achievements in terms of sustainable development indicators, including economy, product liabilities, environmental and social participation, labor care, and human rights related matters, and reinforced disclosure of our Management Approaches to respond to the importance of all the major topics to Taiwan Sugar Corporation.

TSC is actively constructing a sustainable business operation model, and making efforts to implement the UN’s Sustainable Development Goals (SDGs). In the future, we will continue to evaluate our sustainability-related performance and make rolling adjustment of the sustainable development strategies and goals. We aim to enhance transparency in the corporate information disclosure through regular issuance of sustainability reports. It is hoped that with the release of this Report, the general public can have a better understanding of and trust in Taiwan Sugar’s performance and efforts in every aspect of the corporate sustainability.

Taiwan Sugar has established a Corporation Sustainability Development Website to constantly update the results of the promotion of sustainable development. In addition, ESG issues of the public’s concern and major events related to Taiwan Sugar will be immediately reported and responded to on the official website to demonstrate our attitude to fulfill the corporate social responsibility.

Scope of the Report

This Report covers Taiwan Sugar’s corporate sustainability efforts and results from Jan. 1 to Dec. 31, 2023. For complete disclosure, some content also includes historical data and information. Except that financial performance and part of corporate governance include data of overseas branches, other performance disclosure focuses on the Company’s operation and activities in Taiwan.

Referred Guidelines and Principles

This Report was compiled in accordance with the GRI (Global Reporting Initiative) Standards and Article 4 of the Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Corporate Social Responsibility Reports by TWSE. The food industry shall strengthen the disclosure of sustainability indicators and listed companies shall disclose climate-related information in a dedicated chapter as stipulated in Article 4-1. Through the collection of sustainable norms and standards, combined with the stakeholders’ opinions and suggestions of external experts, TSC’s material sustainability topics were analyzed, and relevant strategies, targets and management approaches were disclosed in accordance with its reporting principles and requirements. While referring to the principles of Sustainability Accounting Standards Board (SASB), Task Force on Climate-Related Financial Disclosures (TCFD), ISO 26000 Guidance on Social Responsibility, the Earth Charter, the OECD Guidelines for Multinational Enterprises, United Nations Global Compact, Sustainable Development Goals (SDGs), and as the focus and direction for long-term development in the future.

■ The Editing, Review and Authorizing Procedure and Verification of this Report

Sustainability Report Editing Group :

The Sustainability Report Editing Group for this 2024 Sustainability Report is under the Corporate Sustainable Development Committee, in charge of the overall planning, communication and integration, data consolidation and editing and revision, with the Vice President supervising the Department of Planning serving as the convener of the editorial team, the Director of the Planning Department as the executive secretary. The members include representatives from all Staff Room of the Headquarters, all business divisions, all Operation Branch, the research institute and Taiwan Sugar Labor Union. Detailed disclosure of information concerning TSC's management approaches and performance of various sustainability topics are presented in common language, numerical values, and descriptions to demonstrate our determination to implement sustainable development.

Compared with the 2023 Sustainability Report, there is some merge or withdrawal in this 2024 Sustainability Report, and the reorganized data are detailed in this Report. The chapters are slightly different for the complete presentation of the sustainable development framework, but it does not prevent readers from comparing the contents with those in the 2023 Sustainability Report.

Internal Audit of the Sustainability Report :

The Editorial Team of this Sustainability Report is composed of members assigned from all units. After collecting data for the Department of Planning to compile the first draft, the members of the Editorial Team were then in charge of the review and revision of relevant content and data before submitting the report to the executives of all units (members of the Corporate Sustainability Committee), the president (the Committee Chair), and the Chairman (the Steering Committee) for further review and finalization of this report. The finalized content was verified by an impartial third party before submitted to the 3rd Board Meeting (July, 2024) of the 36th Session of Board of Directors for approval in accordance with the administrative procedure, and will be disclosed on TSC's Corporation Sustainability Development Website.

External Verification of this Report :

The financial data disclosed in this Report are information publicly published after verification by KPMG. Other information in this Report was verified by the world renowned British Standards Institution (BSI), and both the editing framework and procedure fitted the core items of GRI Standards and AA1000 Accountability Principles Standard v3 Type I. In addition, to reinforce the reliability of relevant information disclosed, the part stipulated in Article 4 of the Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Corporate Social Responsibility Reports by TWSE Listed Companies that listed companies within the food industry shall reinforce disclosure items was under the verification of AA1000 AS v3 Type II, high level of assurance. BSI verification report can be found in Appendix I.

Message from the Top Management

Taking a comprehensive view of 2023, amidst the global economic recovery, climate change and sustainable development continued to be the pivotal global issues. The COP28 resolutions did not explicitly phase out fossil fuels, but it indicated an accelerated transition to net-zero energy system, and the imposition of carbon taxes has added to the challenges for corporate operations. Moreover, the rapid development of digital technology innovation will continue to influence consumer behavior and business models, which will set off waves of business reforms. Furthermore, the changes in the international situation caused by Russo-Ukrainian war, the Israel-Kazakhstan conflict, and geopolitical risks have caused fluctuations in material supply and energy markets. These all challenge the enterprises' capabilities in supply chain management, cost control and risk assessment. This is also an undeniable reality.

In early 2024, TSC faced a severe crisis on brand trust due to the incident where a box of TSC Safety Pork (Pork Boston Butt Sliced) was found to contain cimbuterol. In the midst of over a month of turmoil, all the staff worked together to alleviate doubts from all works of life, provided immediate clarification, and cooperated with government agencies and impartial third parties to conduct inspections of TSC's feed, livestock farms, and meat products, and the results showed zero detections, progressively restoring consumer confidence in our brand. Finally, the Office of Food Safety, Executive Yuan, held a press conference based on the conclusion of the expert meeting and clarification was made to eliminate the risk that cimbuterol was in the stages of agricultural pig farming, slaughtering, cutting, and sales,

allowing the public to understand TSC's steadfast commitment over the past century and restored our innocence.

Now that everything goes back on the right track, it is also time for TSC to demonstrate its resilience. TSC will continue to build upon our expertise in agricultural and livestock experience and technology, make good use of the land resources based on the principles of circular economy, and align with national policies and social needs to incorporate net-zero and carbon reduction, environmental education, and social public welfare into the operational sales strategies, stepping toward "developing renewable energy," "satisfying residential needs," "promoting sustainable agriculture," "providing eco-friendly and health-conscious services and products," and "promoting cultural assets preservation and social welfare."

Development of Renewable Energy to Support National Green Energy Policy

In terms of solar Photovoltaics, as of the end of 2023, TSC has established 99 rooftop solar PV fields, 6 ground-type solar PV zones, and 9 floating solar PV zones in its operating bases for grid-connected PV power generation, among which included 2 agrivoltaics demonstration sites, and the solar PV power generation can reach 672.86 GWh annually. We will continue to evaluate locations suitable for solar PV power generation sites to support the goals of the green power policy. As for biogas power generation, in the future, the installation capacity of biogas power is estimated to reach 59.22 GWh annually after the successive renovation of the livestock farms.

Circular Housing for Intergenerational Co-residence for the Implementation of Residential Justice

The increase of domestic ageing population and inflation have driven up the housing prices, making it increasingly urgent to address the needs for the care of the elderly and the housing for the young people. On the basis of circular housing, TSC targets at net-zero buildings by 2050 and had introduced the concept of intergenerational co-residence from abroad for the construction of intergenerational co-living residence and won the award in the first Net Zero Building Design Award. In addition, TSC also provides land for the National Land Management Agency, Ministry of the Interior, and local governments to evaluate the construction of social housing, and for the Ministry of Health and Welfare to evaluate the construction of residential long-term care institutions. Furthermore, 1,598 units of TSC's 6 self-owned student dormitories have been transformed into social housing. Only when settled can one work in peace and contentment. TSC strives to ensure that the elderly is cared for, the adults are employed in jobs that make full use of their abilities, and the children are nourished, thereby realizing social equality and justice.

Carbon Reduction and Carbon Negativity for the Promotion of Sustainable Agriculture

The renovation plan of the livestock farms combining solar PV power generation, biogas power generation, waste reduction and water conservation is scheduled to be completed in 2025. By then, TSC will not only step closer to its goals of green energy and net-zero emissions, but also upgrade the livestock industry and move toward sustainable management. For more than the past two decades, TSC has assisted the government with the promotion of organic cultivation by constructing self-owned organic parks and cooperating with local governments, and the phased task has been completed. We will provide organic farmland and facilities to continue supporting organic farming in Taiwan.

For the sustainable management of our core business, sugar refinery, in addition to process improvements and collaborative flue gas carbon capture experiment, TSC also makes efforts toward sustainable agriculture in sugarcane field management. We make use of biogas residue and biogas slurry to irrigate sugarcane fields and plant green manure during fallow periods to help local governments solve the problem of livestock manure removal, increase soil organic matter, nurture sustainable land resources, and reduce subsequent use of nitrogen fertilizers to carry out circular economy. The cultivation area of sugarcane ratooning is gradually increasing yearly, reducing the amount of diesel and chemical fertilizers required for plowing, resulting in the benefit of carbon reduction. In addition, we are currently cooperating with the Forestry and Nature Conservation Agency in the application for forest carbon sink and participating in International Smallholder Farmers Carbon Farming Soil Carbon Sequestration Project to evaluate the carbon sequestration potential of sugarcane plantations.

■ Providing Eco-friendly and Health-conscious Services and Products

TSC not only attaches great importance to people's health, but also treats nature as well as cherish the earth with the same attitude. These principles are embodied in the products and services we provide.

In terms of product management, TSC has developed many products in recent years based on the concepts of circular economy and resource reuse. We have made use of pig gallbladder, discarded oyster shells and fish scales from milkfish farmed locally and successfully developed shampoo, calcium carbonate biomass materials and Beauty Collagen Jelly, and all of these products have won the recognition and encouragement from relevant government awards. At the same time, the brand image of the existing products has also been improved. The cooking oil products have been upgraded from the original carbon label to the carbon reduction label, and our canned fish and cereal products have also obtained the Clean Label or Eco-label.

For the aspect of eco-friendliness, TSC has obtained environmental education certification in 5 sites since 2016, and is currently planning the sixth one. We also develop natural ecological and cultural tourism activities based on the characteristics of each operating base to allow more people to understand issues like ecological conservation, industrial culture, renewable energy and so on. Through lifelong learning and experiential engagement, we can achieve the physical and mental health as well as the health of the ecological environment.

■ Promotion of Cultural Assets Preservation and Social Welfare

To promote local prosperity and development, the extension of the sugar train from Suantou Sugar Factory to HSR Chiayi Station was completed and commenced for operation on October 8, 2022, while the extension of the sugar train from Suantou Sugar Factory to the Southern Branch of National Palace Museum was commenced for operation on October 7, 2023. The completion of the extension of the sugar train can not only help promote local development but also contribute to the preservation of important cultural assets.

For social welfare, with the idea of reaching common good as the cornerstone, TSC incorporates social welfare into its marketing plans, develops activities such as public welfare coffee, points collection for charity concerts, public welfare markets, lectures, and charity road runs. In addition, we also organize over 100 neighborhood assistance programs, striving for the common prosperity of the community. In terms of talent cultivation and care, besides providing stable income and job security, TSC also provides various welfare subsidies, recreational activities, educational training courses, and incentive systems to ensure that our employees are free from worries and can continue to learn, grow, and achieve self-fulfillment in the workplace. We believe that with the support of our employees, the communities and society, TSC's path to sustainability will be more solid and steady for sure.





Awarded "Comprehensive Performance Award - Top 100 Sustainability Exemplary Awards" and "Corporate Sustainability Report Award-Platinum Award in the Traditional Manufacturing Industry Category"



TSC won silver award at the Taiwan Sustainability Action Award (TSAA)- "TSC's Leap Forward of Boiler Carbon Reduction"



Awarded BSI (British Standards Institution) Sustainable and Resilient Award



"The powdered composition of OGG1 and its uses" won the Bronze Medal Award in the competition of the 2023 Taiwan Innotech Expo



From fish scales to collagen- "Beauty Collagen Jelly" was honored with the 2023 Haiyan Aquatic Product Quality Award by the Fisheries Agency of Ministry of Agriculture



Tainan Operation Branch won the Bronze Medal Award in the Ministry of Interior's first Net Zero Building Design Competition "Net Zero Building N Squared" with the Tainan Chongxian Circular Housing



TSC's two products, Roasted Eel with Black Garlic and the Taisugar Tuna with Sweet Corn passed the Clean Label and 100% additive-free verification



TSC was awarded the Excellent Enterprise Unit for Labor-Management Harmony by Tainan City Government in 2023



Taisugar Liuying Jianshanpi Resort was honored with Five-Star Occupational Safety and Health Award by Ministry of Labor and National Corporate Environmental Protection Award by the Ministry of Environment



TSC was awarded the Gold Award in the 16th Arts and Business Award by the Ministry of Culture with six projects, including the restoration project of the headquarters office of the former Ensuiiko Sugar Refining Co., Ltd. in Tainan City



In TWCAE 3rd, 2023, TSC was honored with Best State-Owned Enterprise Award with the themes of Shalun Smart Green Energy Circular Residential Park and Dong Hai Feng Agricultural Circulation Park



In 2023 Taiwan International Orchid Show, the Phalaenopsis variety "P. Taisuco Berylline" researched and developed by TSC won the silver medal, and the orange-red Phalaenopsis won the third place



TSC's industrial zone project south of Shashe Creek won the third place in the Excellent Construction Site Evaluation by the Environmental Protection Bureau of the Pingtung County Government



Kaohsiung Operation Branch promoted environmental education in Qiaotou Sugar Industry Culture Park and was awarded 2023 Social Education Contribution Award by Kaohsiung City Government in 2023



2023 Sustainability Achievements and Performance



2023 Sustainable Management Performance of ESG



TSC's

Featured Performance



NTD **36** /kg / NTD **169**

Stabilized the commodity prices, the retail price of sugar remained at **NTD 36/kg**, and retail price of soybean oil (3L) remained at **NTD 169**.



14,137 pigs

Stabilized the hog prices and allocated **14,137 pigs** in total for supply and demands.



11,541 hectares / **128,600** tonnes

The area for afforestation and tending has amounted to **11,541 hectares** in total, absorbing approximately **128,600 tonnes of CO₂e**.



312 hectares / **1032.29** hectares

Promoted organic agriculture and farming, and provided the government with land for lease to set up organic agricultural zones of an area of **312 hectares**; other agricultural land was leased for organic crops, with an area of **1032.29 hectares**.

E

Environmental Aspect



39.33 tonnes of CO₂e

A total of 546 sessions of green meetings were held, reducing **39.33 tonnes of CO₂e**.



19,751 GJ / **1,445** tonnes of CO₂e

Implemented power and energy conservation, and the total energy saved at TSC in 2023 was approximated 19,751 GJ, reducing approximately **1,445 tonnes of CO₂e**.



542.39 MW

The cumulative installation of solar photovoltaic facilities has reached **542.39 MW**, including 15.83 MW of rooftop equipment, 99.95 MW of floating PV energy generation equipment (detention ponds), 426.61 MW of ground-mounted (including low-fertility agricultural land).



11.0618 million kWh

Made use of residual bagasse for power generation for self-use, and the total power generated in 2023 totaled **11.0618 million kWh**.



903.7 thousand kWh

Made use of pig manure and urine for biogas energy production, and the total power generated amounted to **903.7 thousand kWh**.



98.50 %

The total green procurement rate in 2023 was **98.50%**.

S

SOCIAL Aspect



12,672 hours

TSC's total reading certified hours was **12,672 hours**.



125 public / NTD 7.12 million

We organized a total of **125 public** welfare activities such as educational and cultural events and activities for the benefits of the elderly, the weak, and those with disabilities. The amount of subsidy totaled **NTD 7.12 million**.



48.75 hours / NTD 41.55 million

The average training hours were **48.75 hours**, and the staff training expenses totaled **NTD 41.55 million**.



100%

100% of TSC's food products are included in our own Food Safety & Traceability Management System (FT).



96.69 points

The score of customer satisfaction survey in 2023 was **96.69 points**, a 0.84 points increase compared with 2022.

G

GOVERNANCE Aspect



99.29% / Excellent

The average attendance rate of directors in the board meetings was **99.29%**; the 3 functional committees under the board convened 41 meetings, and the results of the performance evaluation all reached "**Excellent**".



219 cases

The Board of Directors reviewed a total of **219 cases**, including 146 cases related to policies, economics, environment, and social issues.



4,065 employees

A total of 16 sessions of anti-corruption briefings, 29 sessions of anticorruption training and advocacy exercises were organized in 2023, with **4,065 employees** participating.



100%

In the handling of various types of procurement tenders, **100%** of the business partners have been notified of anti-corruption policies.



68 meetings

A total of **68** labor-management meetings were held in 2023.



5 female directors / more than 1/3

In the board of directors of TSC, there are **5 female directors**, accounting for **more than one-third** of the total board seats.



CHAPTER

1

SUSTAINABILITY ASPECTS

STEPPING TOWARD SUSTAINABLE GOVERNANCE

MATERIAL TOPICS

CORPORATE GOVERNANCE, ANTI-CORRUPTION,
CUSTOMER PRIVACY

- 1.1 BE A GREEN BENCHMARK ENTERPRISE
STAKEHOLDER ENGAGEMENT AND MATERIALITY ANALYSIS
- 1.2 CORPORATE GOVERNANCE
- 1.3 IMPLEMENTATION OF INTEGRITY MANAGEMENT

10 REDUCED
INEQUALITIES



16 PEACE, JUSTICE
AND STRONG
INSTITUTIONS





Material Topics — Corporate Governance, Anti-corruption, Customer Privacy

☒ achieve ☐ unaccomplished

2023 Goals and Achievements

- ✓ To have zero incidents concerning privacy violation and data leakage.
 - ▶ There were no incidents concerning privacy violation and data leakage.
 - ▶ In 2023, the Management Points for Personal Data Protection was revised, adding the reporting mechanism for major high-profile personal data leakage case within 24 hours upon the receipt of notification or knowledge of the leakage. In addition, the Personal Data Protection Contract Clauses (contract template) is also revised for reference when signing a contract that involves personal data.
- ✓ To implement the self-assessment system and performance evaluation of the board of directors.
 - ▶ The results of the performance evaluation all reached "Excellent."
- ✓ Directors continue to participate in advanced courses concerning corporate governance.
 - ▶ Directors continue to participate in advanced courses concerning corporate governance, with more than 11.14 hours of training per person averagely.
- ✓ Continue to participate in the corporate governance evaluation organized by Department of State-owned Enterprise Affairs, Ministry of Economic Affairs (MOEA).
 - ▶ The Ministry of Economic Affairs outsourced the evaluation of corporate governance, and the result was "excellent." In March 2024, the corporate rating was upgraded by Taiwan Ratings to long-term "twAA" (compared to "twAA-" in 2023) and short-term "twA-1+," with a "stable" outlook.
- ✓ No major violations of laws and regulations.
 - ▶ There were no major violations of laws and regulations in 2023.



2024 Goals

- ▶ To have zero incidents concerning privacy violation and data leakage.
- ▶ Conduct the self-assessment system and performance evaluation of the board of directors at least once annually.
- ▶ Directors continue to participate in advanced courses concerning corporate governance.
- ▶ To continue to participate the corporate governance evaluation organized by Department of State-owned Enterprise Affairs, Ministry of Economic Affairs (MOEA).
- ▶ Each unit is required to organize at least 2 anti-corruption activities (such as integrity promotion, community involvement, administrative transparency) annually to establish a culture of honesty and integrity.
- ▶ Conduct a corruption risk assessment for each unit at least once a year.
- ▶ Held more than 4 sessions of general education training on cybersecurity and required all employees to obtain at least 3 hours of training. In addition, social engineering drills are conducted every six months to strengthen employees' awareness of information security.
- ▶ The Company's internal control and manufacturer contract terms are revised on a rolling basis in accordance with the amendments of the Personal Data Protection Act.



Medium and Long-term Objectives

- ▶ Respect the interests of stakeholders, and govern the company with integrity management to ensure sustainable development of the company.
- ▶ To protect shareholders' rights, strengthen the functions of the board of directors, bring out the functions of a functional committee, respect the interests of stakeholders, and govern the company with integrity management to ensure sustainable development of TSC.
- ▶ Implement risk assessments, strengthen oversight mechanisms, and achieve the goal of zero corruption.



Be a Green Benchmark Enterprise

1.1.1 Company Overview



VISION

- ▶ To become a benchmark enterprise in health and green industries in Asia-Pacific Region.

MISSION

- ▶ To make contributions to the development of the country and investments in prospective industries in the future to stay in line with central policies.
- ▶ To build a sustainable circulation in Taiwan where people can live and work in peace and contentment.

Overall Goals

- ▶ With the promotion of new agriculture and circular economy as the core to actively develop health and green industries.
- ▶ Promote business performance, revenues and surplus year by year.

TSC has land resources and abundant experience in agricultural farming and processing. We have core technologies and niches in sugar industry, pig farming and Phalaenopsis, and have expanded our business territory to the United States, Canada and Vietnam. We have also expanded our businesses to commodity sales, leisure and accommodation, and other livelihood industries. We have gradually transformed from the traditional agriculture of pure sugar production and marketing into an integrated business of seven business divisions, including Sugar Business Division, Biotechnology Business Division, Agriculture Business Division, Petroleum Business Division, Livestock Business Division, Leisure Business Division and Marketing Business Division. Product sales and services are mainly in Taiwan, while overseas markets include the United States, Canada, mainland China, Hong Kong, Vietnam, Japan, Australia, and Europe.

By making use of TSC's advantages of existing land and the core technology of pig farming, TSC actively converts pig manure and urine into biogas power generation for reuse, installs solar power generation devices on the roofs of our operation bases, unfavorable agricultural land, and detention ponds. In addition, TSC has also obtained the first Renewable Energy Certificate (REC) for biomass energy, we further conducted research on soil carbon sequestration and fixation of flue gas carbon dioxide, keeping abreast of global trends in circular economy, renewable energy, and net-zero emissions, taking a step forward toward sustainable management.

Profile of TSC

Company name Taiwan Sugar Corporation

Equity status State-owned enterprise under the Ministry of Economic Affairs.
Public company, stock code 1237.

market type (The government agency holds 96.51% of shares, private 3.49%; for related shareholding structure.)

Establishment date May 1, 1946

Capital NTD 56,367 million

Chairman Ming-Jou Yang

Number of employees 3,143 (as of December 31, 2023)

Total assets NTD 663,747 million (as of December 31, 2023)

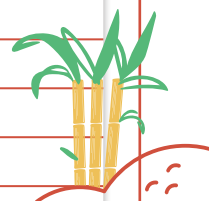
President Li-Jen Chen

TSC Headquarters No. 68, Shengchan Road, East District, Tainan City

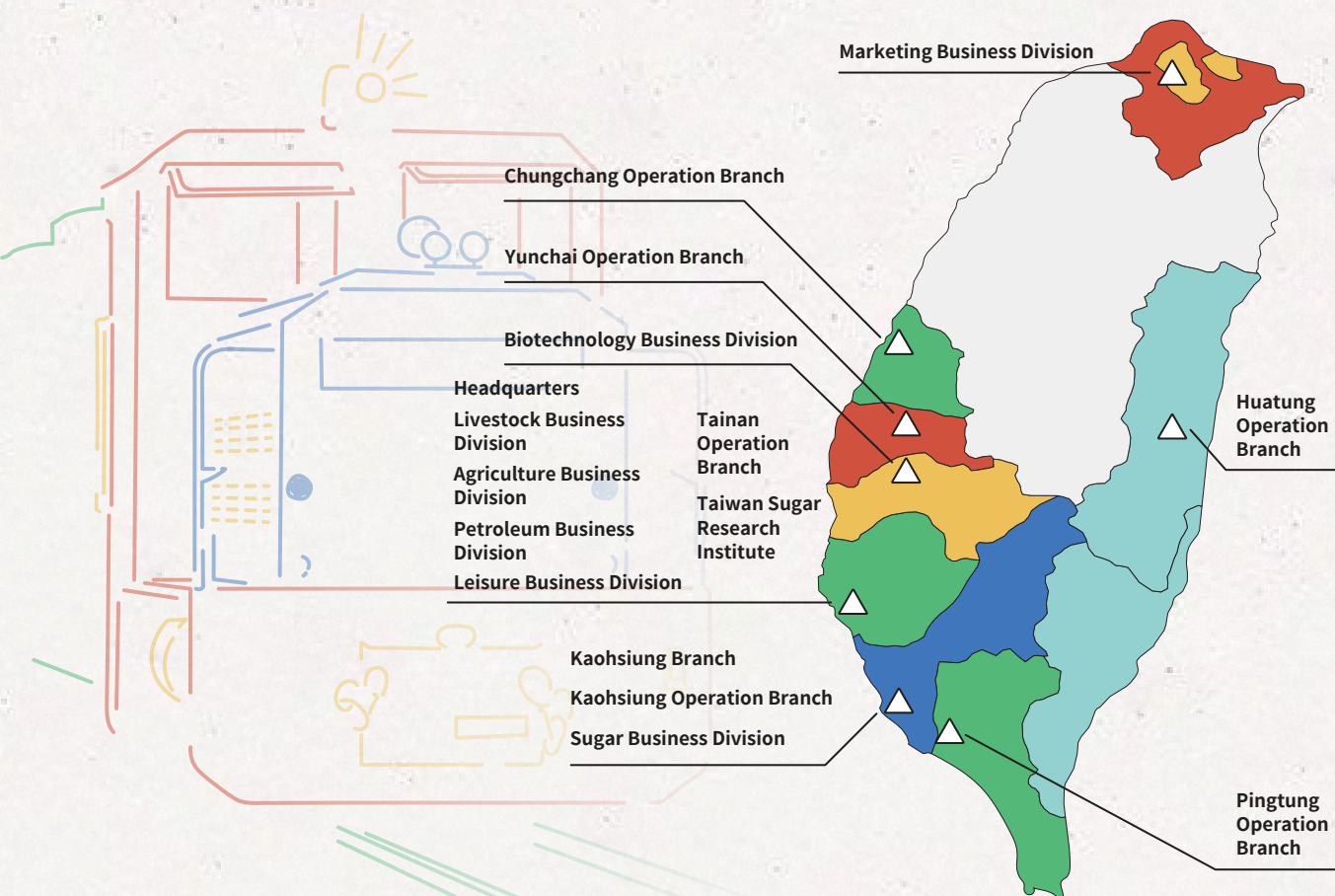


Major business scope

Business	Main business (products, services) items
Sugar Business	Refined white sugar, golden brown sugar, fine granulated sugar, invert sugar syrup, refined liquid sugar, secondary processed sugar, and edible oil
Livestock Business	Hogs, feed, pork and pork products
Biotechnology	Alcohol, health products, beauty and skincare products, contract manufacturing and oyster shell powder
Agriculture Business	Phalaenopsis
Leisure Business	Hotels, resorts, golf course, commercial real estate and so on
Product Marketing	Sale of TSC products, import/ OEM products, bulk grains and channel operation
Petroleum Business	Gas stations and related services
Land Development	Construction, rental housing, development of plant areas, project development, and preservation and reuse of cultural assets
Property Management	Land lease, establishment of superficies
Agricultural Management	Organic rice, landscape seedlings, organic fertilizers, farmland lease, afforestation and tending
Storage and Transport Business	Logistics Center, parking lots
Green Energy	Solar PV power, biogas power generation



Domestic Operation Bases



Investment

According to the transformation strategy planning, under the analysis of the investment evaluation team, we seek partners to establish cooperative relationships with the Company's advantages of land, funds, technologies and other resources and accumulate the experience of professional evaluation and investment management to foster more solid and professional capabilities.

As of 2023, the major fields of business TSC has invested include Biotechnology and pharmaceuticals, health care products, livestock feed, high-speed rail, power generation, overseas sugar production. The total investment in 17 domestic and foreign private-owned enterprises amounted to approximately NTD 5.78 billion as of the end of 2023. In the domestic market, we have invested 15 companies, including Pfizer Biotech and others, with an investment of approximately NTD 5.254 billion, accounting for 90.9%. Investment is made in 2 foreign companies, such as Vietnam-Taiwan Sugar Co., Ltd., with an investment of approximately NTD 526 million, accounting for 9.1%. In 2022, we completed the investment and purchased stocks of TEC BioWorks Co., Ltd.

Key participation in organizations and associations

To facilitate exchanges among domestic and overseas organizations for the establishment of cooperative relationship, improved operating efficiency and industrial technology development, TSC participated in a total of 60 societies (associations) in 2023, 35 of which TSC held management positions in. The list is as follows.

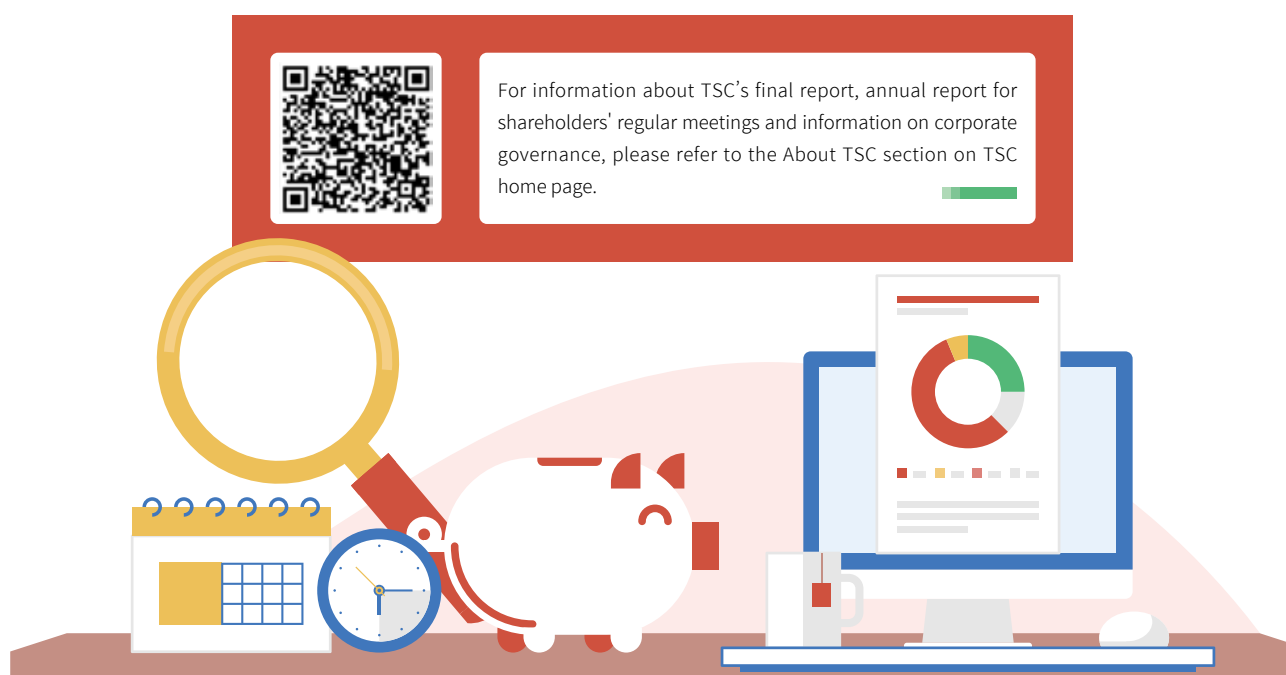
Name of association or professional organization	Title	Name of association or professional organization	Title
Taiwan Federation of Trade Unions in Energy Industry	Supervisor	The Dr. Lee Chong-Dao Foundation	Director
Rural Development Foundation	Supervisor	Harvest Farm Group	Director
Taiwan Agricultural Mechanization Research and Development Center	Director	TSC Federation of Labor Unions	Executive Director
Taiwan Sugar Industry Resources and Circular Economy Technology Society	Managing Director, Executive Director, Director, Supervisor, Convener of the Finance Committee	Kaohsiung City Federation of Trade Unions	Supervisor
Foundation of Taiwan Sugar Association	Director, Supervisor	Kaohsiung Federation of Labor Unions	Member Representative, Convener of the Board of Supervisors
Center for Corporate Sustainability	Director	Taiwan Provincial Cooperative for Sugar Cane Growers	Member Representative
Taiwan Biomass Energy Industry Association	Executive Director, Supervisor, Director	Kaohsiung City Government	Adviser on Municipal Administration
Taiwan Electrical and Mechanical Engineering Services, Inc	Supervisor, Executive Director	Kaohsiung City Industrial Relations Association	Convener of the Board of Supervisors
Tainan City Food Safety Self-Management Alliance	Director	Taiwan Qiaotou District Court Civil Mediation Committee	Committee Member
The Chinese Society for Training and Development	Director	Mediation Committee of Qiaotou District Office, Kaohsiung City	Committee Member

Name of association or professional organization	Title	Name of association or professional organization	Title
Chinese National Federation of Industries	Committee Member of Industries-Employers' Committee	Kaohsiung City Qiaotou Athletics Federation	Director
Taiwan Feed Industry Association	Director, Supervisor	Cultural and Economic and Trade Development Association of Taiwan Sugar Industry	Executive Supervisor
Association of Industrial Relation, R.O.C	Member Representative	Sinotech Engineering Consultants Inc.	Director
TOSHMS Southern District Promotion Society	Planning and External Relations Committee Member	Taiwan Amusement Park Association	Director
Taiwan Frozen Meat Packers Association	Director	Tainan City Tourism Association	Executive Director
Changhua County Industrial Union Federation	Managing Director	Taichung City Gasoline Stations Operators Association	Consultant
Kaohsiung Chamber Of Industry	Director	Tainan City Gasoline Stations Operators Association	Executive Director
Taiwan Vegetable Oil Manufacturers Association	Director, Alternate Director		

1.1.2 Financial Performance

TSC has actively invested in the R&D and application of sugar as its core technology and developed the concept of diversification operations. We use existing resources and advantages to develop new businesses, research and develop new products and provide new services. In addition, internal performance evaluation indicators are set in accordance with Regulations for Performance Evaluation of State-Run Enterprises and Guidelines for Performance Evaluation of State-Run Enterprises for corporate management and performance.

In 2023, with the joint efforts of all units and all employees, the total revenue reached NTD 34.695 billion, the total expenditure was NTD 30.208 billion, the net profit was NTD 4.487 billion; the net profit margin accounted for 14.87%, TSC's business bases are located in Taiwan, Vietnam, the United States, and Canada. We strictly abide by the local laws and regulations of the countries, adhere to integrity management, and pay taxes honestly.



TSC's Condensed Income Statement in Recent Three Years

Unit : NTD thousand

Item/year	2021	2022	2023	The percentage of increase or decrease compared with the previous year (%)
Income				
Operating income	27,122,957	28,823,585	30,187,223	4.73%
Other income	2,502	9,741	-	-100.00%
Non-operating income	4,662,446	3,627,779	4,507,798	24.26%
Total revenue	31,787,905	32,461,105	34,695,021	6.88%
Expenses				
Operating cost	21,643,010	22,854,763	23,578,688	3.17%
Operating expenses	4,127,206	4,227,577	4,329,600	2.41%
Other expenses	-	-	46,261	-
Non-operating expenses	2,226,713	2,922,508	2,244,421	-23.20%
Income tax expense (benefits)	-116,661	28,068	8,567	-69.48%
Total expenses	27,880,268	30,032,916	30,207,537	0.58%
Net income	3,907,637	2,428,189	4,487,484	84.81%
Dividend	3,945,725	2,818,375	3,945,725	40.00%
Net profit margin (%)	14.41%	8.42%	14.87%	6.45%
Earnings per share(NTD)	0.69	0.43	0.80	86.05%

Note :

1. The numbers in this table was certified by CPAs.
2. The 2023 annual income tax cost was NTD 8,567 thousand mainly because the profit-seeking enterprise income tax was NTD 1,299 thousand, and the cost of land value increment tax was NTD 7,268 thousand.
3. The final consolidated statement of profit and loss of the current period for 2023 is NTD -425,508 thousand, mainly because the re-measurements of the defined benefit plans were NTD -122,868 thousand. The re-measurements of associates for using equity method. The unrealized valuation loss from equity investment instruments measured at fair value through other comprehensive income was NTD 295,321 thousand. The conversion difference of the financial statements of the foreign operating organizations of the associated and joint ventures accounted for using equity method was NTD -8,729 thousand, and profit of hedging instrument was NTD 1,410 thousand.
4. The total salary and benefits for employees in 2023 was NTD 4,344,490 thousand.

Taxation and subsidies

TSC adheres to the principle of paying taxes honestly according to law, which contributes to the country's construction and development. In 2023, TSC paid a total of NTD 4,960,804 thousand in taxes and fees to local and central governments in Taiwan, a 4.27% increase compared with 2022. We will continue to focus on the steady development of the Company and create the maximum value for our shareholders.

Details of taxes and fees

Unit : NTD thousand

Year	Central government	Local governments	Contribution to domestic governments		Foreign governments
			Tax payment	% of Operating Income	
2021	1,511,167	2,857,724	4,368,891	16.11%	7,441
2022	1,715,990	3,041,844	4,757,834	16.51%	5,992
2023	1,829,128	3,131,676	4,960,804	16.43%	5,721

Government financial subsidies accepted in 2023

Unit : NTD thousand

Government agency	Amount	Description
Ministry of Agriculture	12	Subsidy for cooperation with the Statistical Survey of the Animal Husbandry Industry .
Tourism Administration, Ministry of Transportation and Communications	1,594.43	Guidelines for Implementing Subsidies for Quality Enhancement for the Tourism and Recreation Industry .
County and City Governments	89,768	Land tax reduction .
Forestry and Nature Conservation Agency, Ministry of Agriculture, Executive Yuan	97,873	Cooperated with the government's afforestation policy and implemented the 2023 flatland afforestation plan.

Note :

Government subsidies received include tax exemption and reduction, subsidies, investment grants, R&D grants, and other relevant types of grants, incentives, royalty waiver period, financial grants from Export Credit Agencies (ECAs), financial incentives, and financial assistance received or available from any agency for any operation.

Assisted the government in stabilizing economic policies for people's livelihood

The Company is a state-owned business and serves as the function of assisting the government in stabilizing the prices of pork, sugar, cooking oil and other large-scale staple merchandise.

	Stabilizing hog prices	In 2023, TSC cooperated with the policy of Ministry of Agriculture, Executive Yuan and regulated pig production and sales. A total of 14,137 pigs were allocated to stabilize the pork prices and supply high-quality and safe domestic port to the public.
	Stabilizing soybean oil prices	TSC works in line with the government policy of stabilizing prices. The salad oil TSC produces maintains the lowest distribution price in the market, effectively taking care of the livelihood of the disadvantaged groups.
	Stabilizing sugar prices	To ensure domestic availability of food with safe and sufficient basic calories and nutrition all year round, TSC fulfills its corporate responsibility and sticks to the remaining two self-produced sugar factories in Taiwan to maintain the minimum safe supply of self-produced sugar domestically. In addition, TSC also works with the government by stabilizing the commodity prices. When the prices of the international sugar market is high, the retail price of sugar remains at NTD 36/kg and lower.
	Freeze on commodity prices	The global commodity prices have surged. To cooperate with the government's price stabilization policy, the retail price of sugar remained at NTD 36/kg. The retail price of the salad oil (3L) remains at NTD 169.
	Provide affordable necessities (food)	TSC Million Convenience Store took the lead in setting up the "Parity Zone" from January, 2023 to February, 2023.

1.1.3 Sustainable Operation and Practices

TSC's Corporate Sustainable Development Committee

TSC has established the "TSC Corporate Sustainable Development Committee," chaired by president, with the chairman serving as the steering member attending committee meetings on behalf of the board of directors. The committee includes members who are vice president and unit managers. Subcommittees under the committee include the "Management Development Promotion Group," "Environmental Sustainability and Net Zero Emission Group," and "Social and Employee Care Group," each led by vice president overseeing responsible for their respective areas of Governance (G), Environment (E), and Social (S) issues. Future business strategies related to sustainable development are submitted to the board of directors for deliberation in November each year.

The committee generally convenes one annual meeting, with additional meetings called by the chairperson when necessary. Its responsibilities include setting sustainable development policies, systems, related management guidelines and procedural documents, and incorporating the corporate sustainable development into the corporate

operations and development directions. The organizers of each working group will set the group's work plan for the following year based on the execution status of the annual business and track the implementation of the plans of the current year. Secretary unit (Department of Planning) will then organize the submitted results and report them to the committee.

Organizational Structure and Task Assignments of TSC's Corporate Sustainable Development Committee



TSC's Sustainable Development Strategies

The scientifically confirmed impacts of climate change have prompted significant international attention, with countries around the world declaring "net-zero emissions by 2030 or 2050" and actively formulating carbon reduction policies. In line with the global net-zero trend, Taiwan announced its goal of achieving "Net Zero by 2050" in 2021.

The trend of net zero transformation has emerged. For enterprises, the problems that will be directly or indirectly brought by extreme weather would impact corporate operations, responses to scenarios such as the low-carbon economy, carbon reduction lifestyle, disaster prevention, and energy shortage should also be made. TSC continued to monitor international climate change adaptation trends, conducted GHG inventories, and developed carbon reduction strategies. Taking into account the volatile international situation and TSC's own strengths and weaknesses, the overall business strategies for the following six years were set up in the face of the challenges and opportunities the Company is facing. Furthermore, the attainment status is reviewed and relevant strategies are adjusted on a yearly basis by applying PDCA. In addition to continuously improving operational performance, we also also plans our business

blueprint based on government policies and changes in the industry environment. Focusing on the core of “Promoting New Agriculture” and “Circular Economy,” and having the major strategies of “Deep Rooting Healthy Products and Leisure Business,” “Introducing Circular Economy Concept for the Development of High-quality Agriculture and Livestock Business,” “Asset Activation and Sugar Industry Cultural Preservation,” “Continuously Promoting Carbon Reduction Cycle Towards the Goal of Net Zero Emissions,” and “Establishing a High-Quality Corporate Image and Enhancing Operational Performance.” These operational strategies align with the aforementioned core pillars of business development, promoting TSC's business upgrade, energy transition, and land resources utilization projects. For relevant content of TCFD disclosure, please refer to 2.1 Task Force on Climate-related Financial Disclosures (TCFD). For the contents of Sustainability Accounting Standards Board (SASB) alignment disclosure, please refer to Appendix VI: Comparison Table of the Sustainability Accounting Standards Board.

TSC's Future Business Strategies

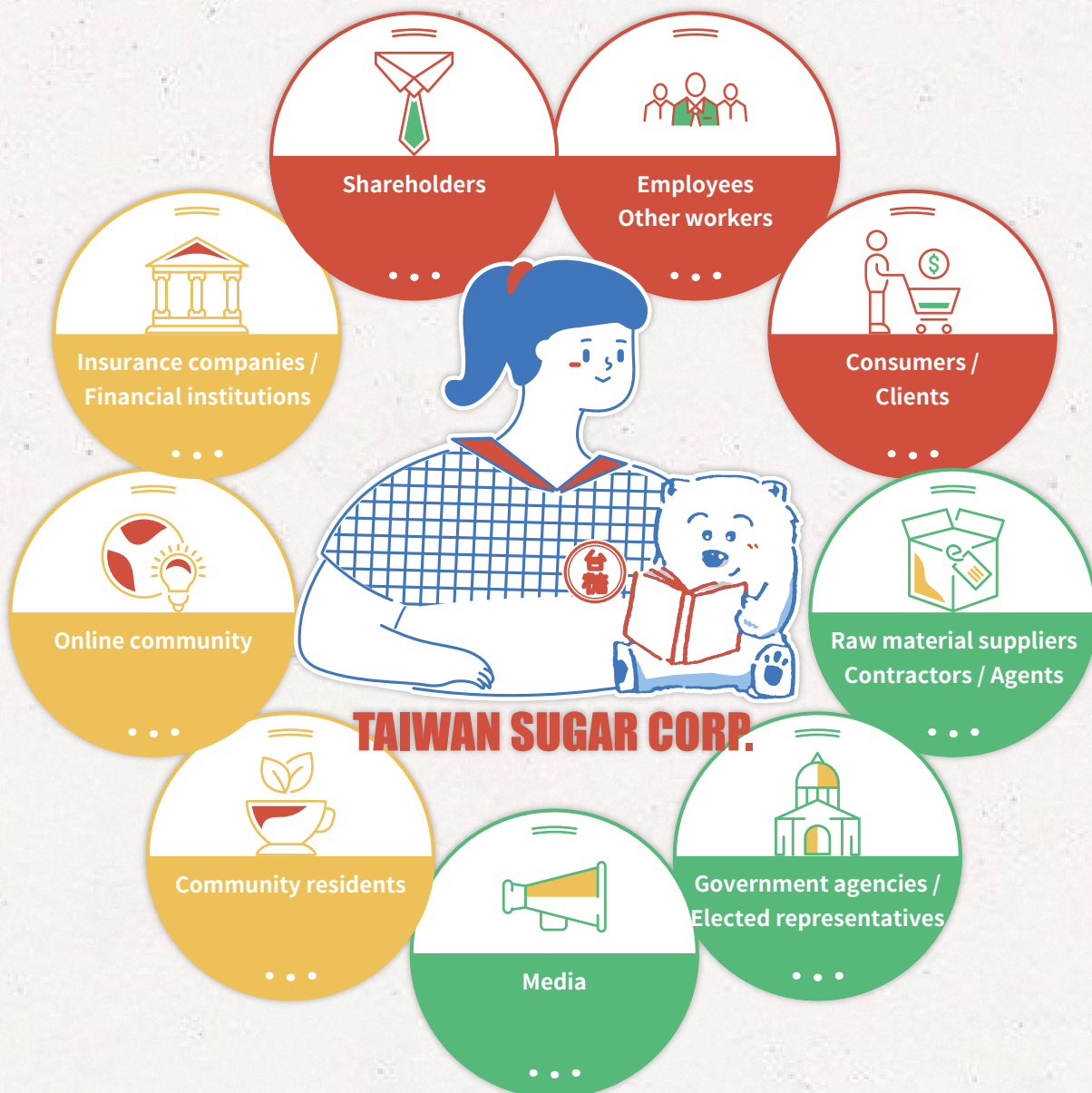


1.1.4 Stakeholder Engagement

The identification of and communication with the stakeholders are the foundation for the implementation of corporate sustainable development. TSC maintains multiple communication channels with our stakeholders and carefully listens to the stakeholders' voice. The stakeholders' needs and expectations of TSC are taken as the reference for decision making. TSC hopes to create and share the maximum possible benefits with its stakeholders in the diversification of business activities.

Identification of Stakeholders



Through meetings and discussions involving the Sustainability Report Editing Group (comprising representatives from various departments, regions, and units), incorporating the opinions of external experts, and referred to the stakeholder groups identified by the same trade. Based on the criteria of AA1000 Stakeholder Engagement Standards (AA1000 SES) for the scoring and prioritization, nine categories of stakeholders were identified, including stakeholders, employees/other workers, consumers/clients, raw material suppliers/contractors/agents, government agencies/elected representatives, media, community residents, online communities, and insurance companies/financial institutions.




Communications with Stakeholders


TSC takes the initiatives to communicate with our stakeholders through our official website, trade union, related meetings, Annual Report, TSC Communication, internal publications, CSR questionnaire, customer services and other channels to understand the stakeholders' issues of concern. In addition, through the coordination and communication among internal departments and units and based on our previous experience cooperating with our stakeholders, we set a SOP of PDCA (Plan-Do-Check-Act) to make prompt responses based on the sensitivity and level of impact of the nature of issues.

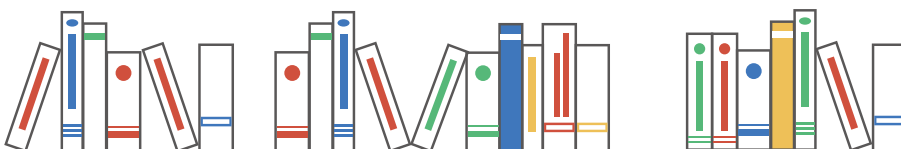
TSC's Communication Channels with its Stakeholders

Stakeholders	Significance of Stakeholders	Issues of Concern	Communication Channels	Frequency	Communication Effectiveness in 2023
 Shareholders / Other workers	In the stakeholder structure, government agencies hold 96.51% of shares. They focus on TSC's operating performance, corporate governance and sustainable development.	Corporate Governance Marketing and Labeling Economic Impacts and Inclusion Anti-corruption Air Pollutant Emissions Water and Effluents	Shareholders' Meeting	Annually	<ul style="list-style-type: none"> ▶ We invite the PCAs to attend the shareholders' meeting to respond to inquiries related to the financial reports. ▶ One shareholders' meeting was held. The shareholders expressed their opinions fully in the meeting and these opinions were included in the meeting minutes. ▶ The remarks made by the shareholders regarding the provisional motion at the general shareholders' meeting were replied to the individual shareholders in letters.
			Annual Report Financial Report	Regularly	
			Official Document Exchanges	Occasionally	
			TSC Official Website	Instantly	
			External Communication Mailbox	Instantly	
 Employees	We regard our employees as the Company's most important assets and the cornerstone of our growth. Therefore, we value our employees' opinions and hope to create a workplace for them to enjoy work and life.	Employment Practices Education and Training Occupational Health and Safety Food Safety Employee Diversity and Equal Opportunity	Taiwan Sugar Communication	Monthly	<ul style="list-style-type: none"> ▶ In order for smooth labor-management communication, all the units held a total of 68 labor-management meetings during 2023 and the labor-management relationship is harmonious. ▶ One general assembly of the Federation of Trade Union Confederation and four meetings of the Board of Directors were held. ▶ The Employee Welfare Association provided a total of 4,057 welfare measures for employees and their dependents, totaling NTD 19,345 thousand.
			Official Document Exchanges	Occasionally	
			TSC Official Website	Instantly	
			Opinion Exchange Platform	Instantly	



TSC's Communication Channels with its Stakeholders (continue)

Stakeholders	Significance of Stakeholders	Issues of Concern	Communication Channels	Frequency	Communication Effectiveness in 2023
 Employees	We regard our employees as the Company's most important assets and the cornerstone of our growth. Therefore, we value our employees' opinions and hope to create a workplace for them to enjoy work and life.	Employment Practices Education and Training Occupational Health and Safety Food Safety Employee Diversity and Equal Opportunity	Trade Union Confederation Congress	Annually	<p>► To provide employees with diverse communication channels, TSC conducts annual employee satisfaction survey using the 5-point Likert Scale, with 5 points as the highest score. The results of the 2023 employee satisfaction survey showed that the satisfaction scored 3.96 points, an increase of 0.17 point compared with the 3.79 points in 2022. Among all the items, "My current job is stable," "I feel satisfied with the way I interact with my co-workers," "My work will not go against my conscience." Scored the highest, indicating the employees' recognition of the Company's efforts in creating a friendly workplace.</p>
			Labor-Management Meeting	Quarterly	
			Employee Welfare Association	Occasionally	
			Employee Satisfaction Survey	Annually	


Stakeholders	Significance of Stakeholders	Issues of Concern	Communication Channels	Frequency	Communication Effectiveness in 2023
 Consumers / Clients	As a state-owned enterprise, the products and services TSC provides should be the model and example for the domestic food industry, and we also play a leading role in food safety in particular. Therefore, the recognition and advice given by our consumers/ clients are the driving force for our continuous efforts and growth.	Customer Privacy Food Safety Marketing and Labeling Air Pollutant Emissions Water and Effluents	Customer Complaint Mailbox	Instantly	<p>► Our 2023 customer satisfaction survey averagely scored 96.69 points, an increase of 0.84 points compared with the 95.85 points in 2022.</p> <p>► The Customer Complaint Mailbox is set up to handle customers' inquiries, suggestions and complaints. In 2023, a total 5,308 inquiries of 847 e-mails, 4,428 phone calls and 33 other were received. All the consumers' opinions were responded appropriately to solve the consumers' problems.</p>
			Customer Service Hotline	Instantly	
			TSC Official Website	Instantly	
			TSC Facebook Fanpage	Instantly	
			Customer Satisfaction Survey	Annually	
			Service Desk at Operation Branches	Instantly	
			External Communication Mailbox	Instantly	




TSC's Communication Channels with its Stakeholders (continue)

Stakeholders	Significance of Stakeholders	Issues of Concern	Communication Channels	Frequency	Communication Effectiveness in 2023
 <p>Raw Material Suppliers / Contractors Agents</p>	<p>We attach great importance raw materials, labor services and the quality of our distribution partners provide. We cooperate with our partners in an impartial, open and fair manner to achieve the goals of benefits sharing and sustainable development.</p>	<p>Marketing and Labeling Food Safety Supplier Environmental Assessment</p>	Symposium / Education and Training	Occasionally	<p>▶ All the purchases were made in accordance with the Government Procurement Act, and there were no incidents of corruption. We conducted irregular audits of contract manufacturers, including 23 domestic and 2 overseas ones.</p>
			Supplier Evaluation Questionnaire	Annually	
			TSC Official Website	Instantly	
			External Communication Mailbox	Instantly	
			Agents Meeting	Quarterly	
			Face to Face Communication	Occasionally	
			Purchase Distribution Contract	Contract Period	
Stakeholders	Significance of Stakeholders	Issues of Concern	Communication Channels	Frequency	Communication Effectiveness in 2023
 <p>Government Agencies / Elected Representatives</p>	<p>As a state-run business, opinions or inquiries expressed by the government agencies/ elected representatives are the driving force for our continuous growth, and they are also the keys to our operating performance and sustainable development.</p>	<p>Anti-corruption Air Pollutant Emissions Water and Effluents Customer Privacy Circular Economy</p>	Corporate Governance Evaluation	Annually	<p>▶ The government agencies or elected representatives care about the major issues of TSC, and in 2023, there were 457 times of official document exchanges, 204 discussion meetings with relevant government agencies, and we responded to the elected representatives' opinions promptly.</p>
			Field Inspection of Work Performance	Annually	
			TSC Official Website	Instantly	
			Official Document Exchanges	Occasionally	
			Discussion Meetings	Occasionally	
			External Communication Mailbox	Instantly	
Stakeholders	Significance of Stakeholders	Issues of Concern	Communication Channels	Frequency	Communication Effectiveness in 2023
 <p>Media</p>	<p>As a state-run business, we attach great importance to the interaction with the media. If there are important events related to the Company, we respond promptly to the media to maintain and enhance the Company's image.</p>	<p>Employment Practices GHG Emissions Local Communities Employee Diversity and Equal Opportunity Air Pollutant Emissions Water and Effluents</p>	TSC Official Website	Instantly	<p>▶ All sectors of the society are concerned about major issues of TSC. We adopt multiple channels to respond to the media immediately so as to strengthen the good interaction with the media. In 2023, we held press conferences and media luncheons 3 times and released press releases 57 times, with a total of 13,925 SMS notifications.</p>
			Press Conferences	Occasionally	
			External Communication Mailbox	Instantly	
			SMS Notifications	Occasionally	
			New Product Presentation	Occasionally	


TSC's Communication Channels with its Stakeholders (continue)

Stakeholders	Significance of Stakeholders	Issues of Concern	Communication Channels	Frequency	Communication Effectiveness in 2023
 Community Residents	We are committed to maintaining community relations. Through communication and interaction with community residents, we can understand the residents' issues of concern and establish a harmonious relationship.	Local Communities Social Participation Air Pollutant Emissions Water and Effluents Customer Privacy Food Preservation (Sustainable Food)	TSC Official Website	Instantly	▶ TSC maintains a harmonious relationship with its neighboring communities and maintains the community environment with its neighbors. In 2023, TSC held a total of 125 neighborly activities.
			External Communication Mailbox	Instantly	
			Visiting the Neighborhood	Occasionally	
			Reaction through Elected Representatives	Occasionally	
			On-site Communication of Person in Charge	Occasionally	

Stakeholders	Significance of Stakeholders	Issues of Concern	Communication Channels	Frequency	Communication Effectiveness in 2023
 Online Community	Due to the advancement of IT and the popularization of the Internet, TSC has to have more intensive contacts with the online community to expand the depth and breadth of information dissemination and make rapid response to various issues. We constantly improve the positive impression of TSC's business operation through listening to the online community and responding in a positive manner.	Social Participation Marketing and Labeling Food Safety Corporate Governance	TSC Official Website	Instantly	▶ TSC listens to the public through the online community. The headquarters and various unit branches have a total of 15 Facebook fanpages and 5 official Instagram accounts. TSC Facebook fan page increased its posting frequency for business promotion in 2023, with a total of 265 posts published. The fan base increased by 8.4% compared to 2022, and the total number of likes increased by 6%.
			TSC Facebook Fanpage	Instantly	
			Line	Instantly	
			YouTube Channel	Instantly	
			Instagram	Instantly	



TSC's Communication Channels with its Stakeholders (continue)

Stakeholders	Significance of Stakeholders	Issues of Concern	Communication Channels	Frequency	Communication Effectiveness in 2023
 Insurance Companies / Financial Institutions	<p>Capitals play an important role in business operations and the promotion of sustainable development. As the international attention gradually shifts towards sustainability issues such as net zero carbon emissions and climate change, the financial institutions will incorporate the guidelines for identifying sustainable economic activities into strategic planning and investment and financing assessment in accordance with the Green Finance Action Plan 3.0.</p> <p>TSC may face ESG performance rating from insurance companies and financial institutions in the future.</p>	<p>Food Safety Marketing and Labeling Energy Social Participation, GHG Emissions, Climate Adaptation and Resilience Natural Ecosystem Conversion</p>	TSC Official Website	Instantly	<ul style="list-style-type: none"> As ESG issues gradually heat up and to cope with the short term capital allocation needs, TSC conducted 3 times of bank credit business in 2023. A credit rating management level meeting was held once a year, in which the company's operating conditions were fully discussed. In March 2024, the corporate rating was upgraded by Taiwan Ratings to long-term "twAA" (compared to "twAA-" in 2023) and short-term "twA-1+", with a "stable" outlook. We will continue to pay attention to the development of ESG.
			External Communication Mailbox	Instantly	
			Face to Face Communication	Occasionally	
			The Company's Annual Report	Annually	
			Sustainability Report	Annually	
			Bank Credit Work	Occasionally	
			Credit Rating Discussion Meeting	Annually	



1.1.5 Material Topics of Sustainable Development

Identification of Material Topics

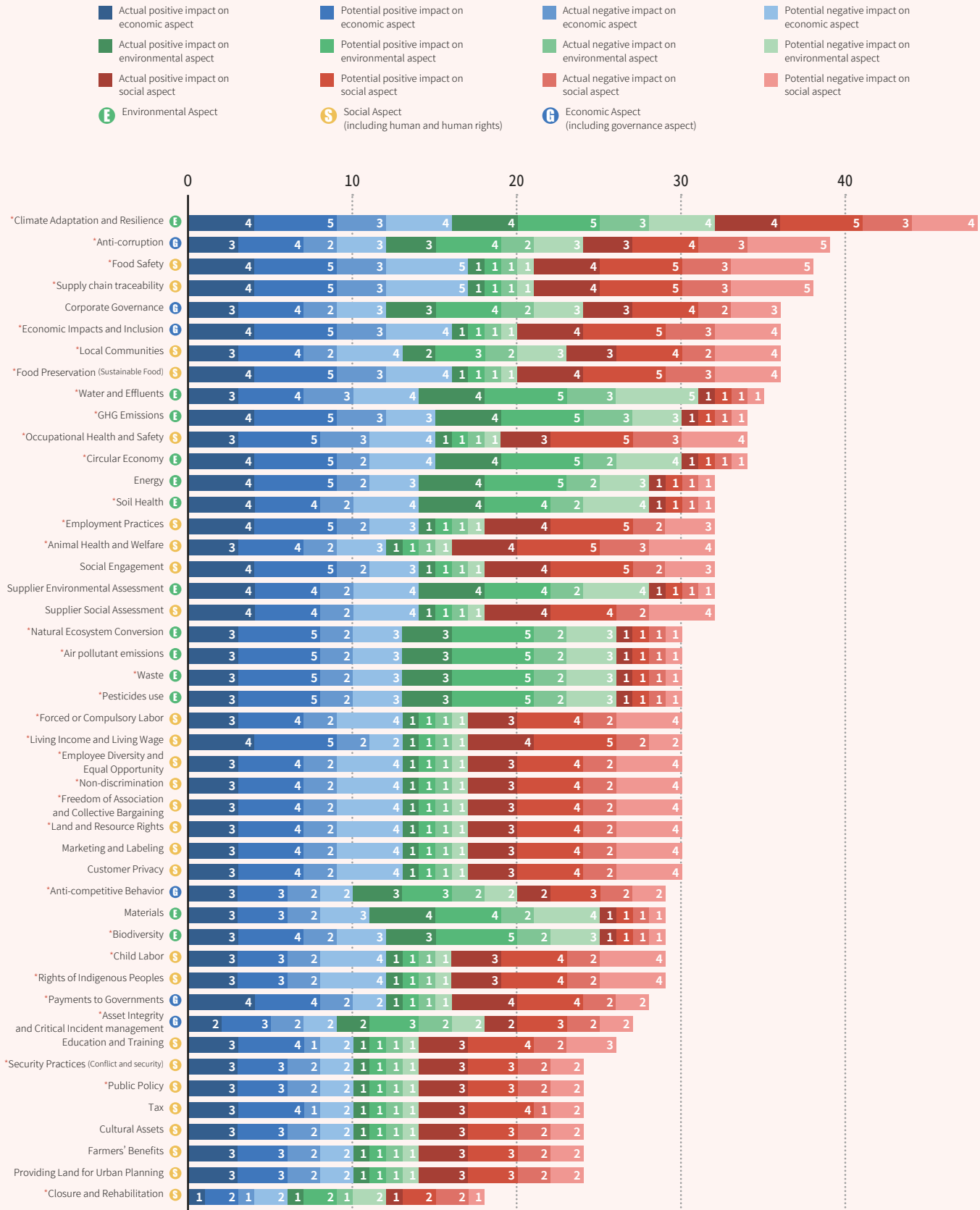
To ensure that the information disclosed in this Sustainability Report aligns better with international sustainable development trends, TSC referred to the materiality identification process of GRI Standards (2021), including Understanding organizational context, Identification of impacts, Significance assessment, Identification of material topics, and Defining the boundaries of material topics, to establish a materiality analysis framework.



The Identification and Value Chain Boundary of Material Topics

Utilization of GRI Standards and incorporation of GRI Industry Standards into sustainability topic references. Through the process of material sustainability topics identification mentioned above, a total of 31 material topics were identified this year

Overlay chart of the impact on TSC's sustainability theme



* Indicates reference to SASB and GRI industry standards

After analysis of the material topics in the 2024 Sustainability Report and with the value chain being used as the element for the boundary analysis, we have summarized the contents in five chapters that include “Stepping Toward Sustainable Governance,” “Mitigating Climate Impact,” “Leveraging Natural Capital,” “Creating Social Value,” and “Taking Care of Taiwan Sugar Corporation Partners,” explaining TSC’s active management in the aspects of economy, product liability, environment, social participation, human rights, and employee care. TSC will continue to strengthen sustainable management and disclose relevant information in the corporate sustainability report.

Sustainability Aspects (Corresponding Chapter and Section)	TSC's Sustainability Topics of 2023 and corresponding GRI topics	Impact Description (The significance of this topic for TSC)	Strategies and Actions	TSC Value Chain Impact Boundary	Page
CHAPTER 1 Stepping Toward Sustainable Governance	Corporate Governance (Custom Topics)	Actual positive impact on social aspect : Respond to government policy directions, enhance information transparency, and safeguard the rights and interests of stakeholders. Potential positive impact on economic aspect : Improve operational performance while assisting the smooth promotion of government policies.	[Management] Setting up the Corporate Governance Best Practice Principles for Taiwan Sugar Corporation in accordance with Corporate Governance Best Practice Principles for TWSE/ TPEX Listed Companies established by TWSE and Taipei Exchange.	TSC(caused)	10
	Anti-corruption (GRI 205)	Potential negative impact on environmental aspect : Unleased idle land in remote areas where land inspectors may collude with manufacturers to steal sand and gravel or for backfill waste.	[Prevention] TSC strengthens the corporate business and the employees' code of conduct through education & training on the basis of compliance. Anti-corruption assessment is conducted through the Department of Ethics on a regular basis to improve the anti-corruption management measures.	TSC(caused) Suppliers / Contractors (directly linked to)	
	Customer Privacy (GRI 418)	Actual negative impact on economic aspect : The fraudulent call was received after signing up for the 2022 TSC Charity Road Race on the website and after placing an order on the online store.	[Remedy] Revised operational regulations related to data protection and required suppliers to sign the Contractual Clauses of Personal Data Protection to protect the rights and interests of individuals and the Company.	TSC(caused)	



Sustainability Aspects (Corresponding Chapter and Section)	TSC's Sustainability Topics of 2023 and corresponding GRI topics	Impact Description (The significance of this topic for TSC)	Strategies and Actions	TSC Value Chain Impact Boundary	Page
CHAPTER 2 Mitigating Climate Impact	Energy (GRI 302)	<p>Actual positive impact on social aspect : Majority consensus on transforming Taiwan into a low-carbon society has been reached, and now there is an urgent need to increase the proportion of renewable energy.</p> <p>Actual positive impact on economic aspect : The renewable energy industry is supported by policies and has high development potential.</p>	<p>[Management] Respond to the government's energy policy and cooperate with solar power plant operators by using the existing land resources to promote the solar PV project.</p>	TSC(cause) Suppliers / Contractors (contributed to)	58
	Climate Adaptation and Resilience (Custom Topics, including GRI 201-2 Economic Performance)	<p>Potential negative impact on environmental aspect : As TSC expands its operations, the energy consumption required may increase.</p> <p>Potential positive impact on environmental aspect : Efficient utilization of biological resources can reduce the generation of greenhouse gases and wastewater.</p> <p>Actual positive impact on social aspect : After the biomass energy technology in the livestock industry accumulates substantial achievements, it can serve as a benchmark for technology emulation by related industries and potential investors.</p>	<p>[Prevention] All business departments promote equipment renewal and energy-saving measures to improve energy usage efficiency.</p> <p>[Management] Through the renovation of the livestock housing to realize the technology application of biogas power generation, and the application is expanded through cooperation on technology transfer with external units to promote economies of scale.</p>	TSC(cause) Suppliers / Contractors (contributed to)	



Sustainability Aspects (Corresponding Chapter and Section)	TSC's Sustainability Topics of 2023 and corresponding GRI topics	Impact Description (The significance of this topic for TSC)	Strategies and Actions	TSC Value Chain Impact Boundary	Page
CHAPTER 2 Mitigating Climate Impact	GHG Emissions (GRI 305)	Actual negative impact on environmental aspect : Emissions of GHGs are causing the global average temperature to rise year by year, exacerbating the extent of climate change.	[Remedy] Adjusting business and energy proportions to minimize greenhouse gas emissions.	TSC(caused) Suppliers / Contractors (contributed to)	58
		Potential positive impact on social aspect : Governments and international corporations have reached a consensus to set a net-zero carbon emissions target for 2050 to control the rate of global warming.	[Management] Cooperating with the MOEA's net-zero transition structure of "Low carbon-Zero carbon" and "Energy-Industry" and uses the circular economy model to divide TSC's net-zero emission development into "Renewable energy," "Agricultural activities," "Investment management," and "Administrative management."		
		Potential negative impact on economic aspect : The implementation of the Renewable Energy Installation Regulations and the carbon fee-related legislation in our country has led to an increase in operational costs for businesses.	[Prevention] Continue to access the feasibility of natural carbon sink and invest in research on biological carbon-negative technology to accelerate the realization of agricultural and animal husbandry circulation model.		
	Water and Effluents (GRI 303)	Potential negative impact on environmental aspect : As TSC expands its operations, the consumption of water resources and the generation of wastewater may increase.	[Management] TSC actively promotes the recycling and reuse of wastewater to improve the effectiveness of water conservation to reduce the consumption of water resources. [Prevention] Implement the livestock housing renovation project that incorporates a biogas center and wastewater treatment facilities to address pig manure issues	TSC(caused)	
	Air Pollutant Emissions (GRI 305)	Potential negative impact on environmental aspect : As TSC expands its operations, the amount of air pollution generated may increase.	[Management] Implementing the ISO 14001 Environmental Management Systems, the exhaust gases are treated by air pollution control equipment to meet the statutory emission standards. [Prevention] The new pig farm is equipped with the closed negative-pressure water curtain system and a scraping system at the bottom of the livestock housing to control the dispersion of odors.	TSC(caused)	

Sustainability Aspects (Corresponding Chapter and Section)	TSC's Sustainability Topics of 2023 and corresponding GRI topics	Impact Description (The significance of this topic for TSC)	Strategies and Actions	TSC Value Chain Impact Boundary	Page
CHAPTER 2 Mitigating Climate Impact	Waste (GRI 306)	Potential negative impact on environmental aspect : As TSC expands its operations, the amount of waste generated may increase.	[Management] Implementing the ISO 14001 Environmental Management Systems to handle waste properly [Prevention] Waste reduction actions are carried out from the process and packaging improvement, promotion of waste recycling, and investment in circular economy-related research.	TSC(caused)	58

Sustainability Aspects (Corresponding Chapter and Section)	TSC's Sustainability Topics of 2023 and corresponding GRI topics	Impact Description (The significance of this topic for TSC)	Strategies and Actions	TSC Value Chain Impact Boundary	Page
CHAPTER 3 Leveraging Natural Capital	Food Preservation (Sustainable Food) (Custom Topics)	Potential negative impact on social aspect : The self-sufficiency rate of some food items has been on a downward trend for a long time, not conducive to market supply during emergency period.	[Prevention] To cooperate with the government's agricultural policy, TSC handles the affairs concerning the lease of land for the cultivation of regulatory crops, and through the development of various young farmers' businesses, the regional agriculture can be developed to stabilize the balance of the production and sales of domestic agricultural products.	TSC(caused) Suppliers / Contractors (contributed to)	90
	Economic Impacts and Inclusion (GRI 203)	Actual positive impact on social aspect : Provide incentives for people to engage in farming and lower the barriers to entry into agriculture, thereby slowing down the occurrence of agricultural labor shortages.	[Management] Establishing animal husbandry training courses, in coordination with the Council of Agriculture to cultivate experts, forming a team of consultants to assist pig farmers in upgrading and transitioning their operations. [Management] TSC provides low interest-rate loans to partner sugarcane farmers and subsidizes for the transportation charges of the raw material of sugarcane, the cane field fire insurance fees, the purchase of bait. And purchasing sugarcane at guaranteed price.	TSC(caused)	

Sustainability Aspects (Corresponding Chapter and Section)	TSC's Sustainability Topics of 2023 and corresponding GRI topics	Impact Description (The significance of this topic for TSC)	Strategies and Actions	TSC Value Chain Impact Boundary	Page
CHAPTER 3 Leveraging Natural Capital	Economic Impacts and Inclusion (GRI 203)	Potential positive impact on social aspect : Assisting allied nations in economic development through non-governmental cooperation models can help enhance Taiwan's diplomatic relations.	[Management] In response to the government's policy toward allied nations, we will promote technical support, guidance, cooperative production and other projects based on the economic type and resource conditions of the countries we have diplomatic ties with.	TSC(caused)	90
	Soil Health (Custom Topics)	Potential positive impact on environmental aspect : Reducing the proportion of traditional farming practices helps improve soil fertility and reduce agricultural pollution. Actual negative impact on environmental aspect : Low-fertility agricultural land has been poorly managed over the long term may be subject to improper use such as dumping or burial	[Management] Encouraging farmers to adopt eco-friendly, organic farming and to release land and equipment [Remedy] Invest in agricultural technology research, apply green manure to improve soil fertility and ecological conditions, and the goal is to use land that was originally not suitable for farming to grow crops with biomass energy potentials, enabling the land resources to be more efficiently utilized.	TSC(caused) TSC's tenants (directly linked to)	
	Pesticides Use (Custom Topics)	Potential negative impact on environmental aspect : Without proper control of pesticide dosages, it will lead to the spread of excessive toxic contamination.	[Prevention] Sugarcane planting introduces the Traceability Certification, with the types and amounts of pesticides used shall comply with relevant regulations concerning the agricultural crops of the Traceability system.	TSC(caused) TSC's tenants (directly linked to)	
	Land and Resource Rights (Custom Topics)	Potential negative impact on social aspect : Depending on the government's public policy requirements, some land uses and scope may have to be changed.	[Prevention] When leasing out the self-owned land, we sign a lease contract with the land lessee, clearly specifying the lease term, scope, rights and obligations and other information to protect the rights and interests of both parties.	TSC(caused)	
	Circular Economy (Custom Topics)	Potential positive impact on environmental aspect : If more circular economy models are proven feasible, it could reduce resource consumption and waste issues.	[Management] We continue to invest in research on animal and plant resources, collaborate with production, academic, and research institutions to develop new materials and applications, promoting the implementation of circular economy technologies and achieving sustainable circulation.	TSC(caused)	

Sustainability Aspects (Corresponding Chapter and Section)	TSC's Sustainability Topics of 2023 and corresponding GRI topics	Impact Description (The significance of this topic for TSC)	Strategies and Actions	TSC Value Chain Impact Boundary	Page
CHAPTER 3 Leveraging Natural Capital	Animal Health and Welfare (Custom Topics)	Potential negative impact on environmental aspect : Poor rearing environments can trigger infectious diseases, leading to widespread dead pigs.	[Prevention] According to EU Animal Welfare Measures and animal-friendly guidelines, the pig house is designed, and an intelligent management system and automatic feeding system are installed to monitor the health of pigs.	TSC(cause)	90
	Natural Ecosystem Conversion (Custom Topics)	Actual positive impact on environmental aspect : Maintaining a stable forest structure and environment contributes to the proliferation of habitat wildlife.	[Management] Maintaining the existing flatland afforestation environment and ecological conservation areas, and cooperating with the National Ecological Conservation Green Network Project of the Forest District Office to connect adjacent ecological habitats to form an eco-friendly ecological corridor for biological habitats.	TSC(cause)	

Sustainability Aspects (Corresponding Chapter and Section)	TSC's Sustainability Topics of 2023 and corresponding GRI topics	Impact Description (The significance of this topic for TSC)	Strategies and Actions	TSC Value Chain Impact Boundary	Page
CHAPTER 4 Creating Social Value	Food safety (GRI 416)	Potential negative impact on social aspect : Improper quality management may potentially impact public health.	[Prevention] Actively implementing Food Safety Traceability Management System, conducting quality inspections on all products to ensure compliance with regulatory standards for ingredients and hygiene, and obtaining various food safety certification labels.	TSC(cause) Suppliers / Contractors (directly linked to)	106
	Marketing and Labeling (GRI 417)	Potential negative impact on social aspect : Incomplete product information labeling may not facilitate consumer purchases or may lead to misinformation.	[Prevention] Each product provides detailed information including raw materials, ingredients, expiration date, country of origin, storage conditions, and usage instructions, along with displaying various certification marks.	TSC(cause)	



Sustainability Aspects (Corresponding Chapter and Section)	TSC's Sustainability Topics of 2023 and corresponding GRI topics	Impact Description (The significance of this topic for TSC)	Strategies and Actions	TSC Value Chain Impact Boundary	Page
CHAPTER 4 Creating Social Value	Supply Chain Traceability (Custom Topics)	Potential negative impact on social aspect : Without establishing a traceability system, when food safety issues occur, it will be impossible to trace and confirm the source.	[Prevention] TSC has independently established Food Safety Traceability Management System (FT) and disclosed it on our official website for consumer inquiries. In addition, we have joined the "TQF-ICT Service Platform" and the "Food and Drug Administration Food Traceability Tracking Management Information System," thereby constructing a food safety protection network.	TSC(caused) Suppliers / Contractors (directly linked to)	106
	Social Participation (Custom Topics)	Actual positive impact on social aspect : The business departments and operation branches are distributed through Taiwan, having certain appeal and influence on the public.	[Management] TSC has formulated the Key points of Good-neighborliness Work of Taiwan Sugar Corporation. A budget is prepared every year to assist local government, student clubs, associations (societies), foundations, and other organizations to handle various activities.	TSC(caused)	
	Local Communities (GRI 413)	Potential negative impact on environmental aspect : Large-scale changes in land use may result in negative environmental or ecological impacts due to related business activities. Actual positive impact on social aspect : The business departments and operation branches are distributed through Taiwan, having certain appeal and influence on the public.	[Prevention] When there are major constructions in the factory area, environmental and ecological assessments are conducted. Coordination meetings are held to communicate effectively with the neighboring residents. [Management] Using the TSC gas stations as a platform for charitable donations, we collect supplies for vulnerable groups and assist in distributing surplus agricultural products.	TSC(caused)	
	Supplier Environmental Assessment (GRI 308)	Actual positive impact on social aspect : Increase the procurement standards/ conditions and guide suppliers to strengthen their ESG behaviors.	[Management] In accordance with the Government Procurement Act, TSC will consider incorporating environmental and social criteria into procurement contract requirements in the future, based on policies.	TSC(caused) Suppliers / Contractors (directly linked to)	
	Supplier Social Assessment (GRI 414)			TSC(caused) Suppliers / Contractors (directly linked to)	



Sustainability Aspects (Corresponding Chapter and Section)	TSC's Sustainability Topics of 2023 and corresponding GRI topics	Impact Description (The significance of this topic for TSC)	Strategies and Actions	TSC Value Chain Impact Boundary	Page
CHAPTER 5 Taking Care of Taiwan Sugar Corporation Partners	Employment Practices (GRI 402)	Actual positive impact on social aspect : The clear promotion and career advancement paths facilitate employees in planning their career development.	[Management] The recruitment is based on the Employment Services Act, Labor Standards Act and "Regulations for the Employment of the Personnel of Business Units Affiliated with the Ministry of Economic Affairs."	TSC(caused)	138
		Actual negative impact on social aspect : The examination system for staff recruitment cannot attract special talents needed for new forms of business.	[Remedy] For specialized or technical personnel with special business nature, it is possible to hire them in an open manner as contract employees.		
	Non-discrimination (GRI 406)	Potential negative impact on social aspect : Some employees may discriminate against others based on subjective judgments, leading to workplace discrimination incidents.	[Prevention] In terms of abiding by various human rights laws and regulations strictly, TSC also recruits, appoints, rewards, and promotes talents based on qualifications, and our employees will not be discriminated or receive differential treatment on the ground of difference in race, class, language, thought, religion, political affiliation, place of ancestry, place of birth, gender, sexual orientation, age, marital status, appearance, facial features, physical and mental disabilities, star sign, blood type, and trade union membership.	TSC(caused) Suppliers / Contractors (contributed to)	
	Employee Diversity and Equal Opportunity (GRI 405)	Actual positive impact on social aspect : Vulnerable or minority groups have ample opportunities to join Taiwan Sugar Corporation's workforce.	[Management] In accordance with the relevant provisions of People with Disabilities Rights Protection Act and Indigenous Peoples Employment Rights Protection Act to protect equal employment opportunities for vulnerable and related ethnic groups.	TSC(caused) Suppliers / Contractors (contributed to)	
	Freedom of Association and Collective Bargaining (GRI 407)	Actual positive impact on social aspect : Integrating employee opinions through the union facilitates smooth labor-management communication and enhances employees' sense of belonging to the company.	[Management] Viewing employees from the perspective of business partners, TSC collaborates with TSC Federation of Labor Unions by signing collective agreements through negotiation meetings, working together to create the development of the corporation.	TSC(caused) Suppliers / Contractors (contributed to)	

Sustainability Aspects (Corresponding Chapter and Section)	TSC's Sustainability Topics of 2023 and corresponding GRI topics	Impact Description (The significance of this topic for TSC)	Strategies and Actions	TSC Value Chain Impact Boundary	Page
CHAPTER 5 Taking Care of Taiwan Sugar Corporation Partners	Living Income and Living Wage (Custom Topics)	Potential negative impact on social aspect : If workers are not provided with a certain level of livelihood assurance, it will be challenging to attract talent and may result in low employee retention rates.	[Prevention] The salary of new recruits is higher than the local (Taiwan) minimum wage; the contracted sugarcane farmers are taken care of through a guaranteed price purchase agreement.	TSC(caused) Suppliers / Contractors (contributed to)	138
	Forced or Compulsory Labor (GRI 409)	Potential negative impact on social aspect : Forced labor may be hidden at supplier sites.	[Prevention] The supplier contracts explicitly stipulate the prohibition of forced labor. Once a supplier is found to the event of any human rights violations, such supplier is immediately required to make improvement within a certain time frame and may also be fined for breach of contract. If no improvement is made or frequent breach of contract is found, TSC can terminate the contract with such supplier.	TSC(caused) Suppliers / Contractors (contributed to)	
	Occupational Health and Safety (GRI 403)	Actual and Potential negative impact on social aspect : Hidden workplace risks in the production process, if left unidentified, can pose a threat to employee safety.	[Prevention] Reviewed regularly by the Occupational Safety and Health Committee, various aspects are examined to prevent accidents and illnesses proactively. [Remedy] Improvement is continuously made through the Plan-Do-Check-Action (P-D-C-A) model so as to achieve zero injuries and diseases.	TSC(caused) Suppliers / Contractors (directly linked to)	

1.2 Corporate Governance

In 2022, the Financial Supervisory Committee (FSC) announced the Corporate Governance 3.0- Sustainable Development Roadmap which centers on the following five major areas, including “Strengthen duties and functions of board to enhance the sustainable value of enterprises,” “Enhance information transparency and promote sustainable operations,” “Strengthen communication with stakeholders and create effective interaction channels,” “Encourage stewardship and align with international norms”, and “Deepen a corporate culture of sustainable governance and provide diversified products.” Although TSC is not a listed company, as a state-owned enterprise, we shoulder the responsibility to align with the government’s policy directions.

TSC board of directors serves as the highest governance body of the Company, supervising the operation of the business of the management department and responsible for the shareholders and stakeholders. To establish a good corporate governance system, we have set up the Corporate Governance Best Practice Principles for Taiwan Sugar Corporation in accordance with Corporate Governance Best Practice Principles for TWSE/ TPEx Listed Companies established by TWSE and Taipei Exchange. In addition to the compliance with laws and regulations and the provisions of the Articles of Association, an effective corporate governance structure has been established in accordance with the following principles:



It is hoped that under the leadership of a competent governance unit that continues to receive education and training for improvement, the operating performance will be improved, bringing good economic performance and corporate development for TSC.

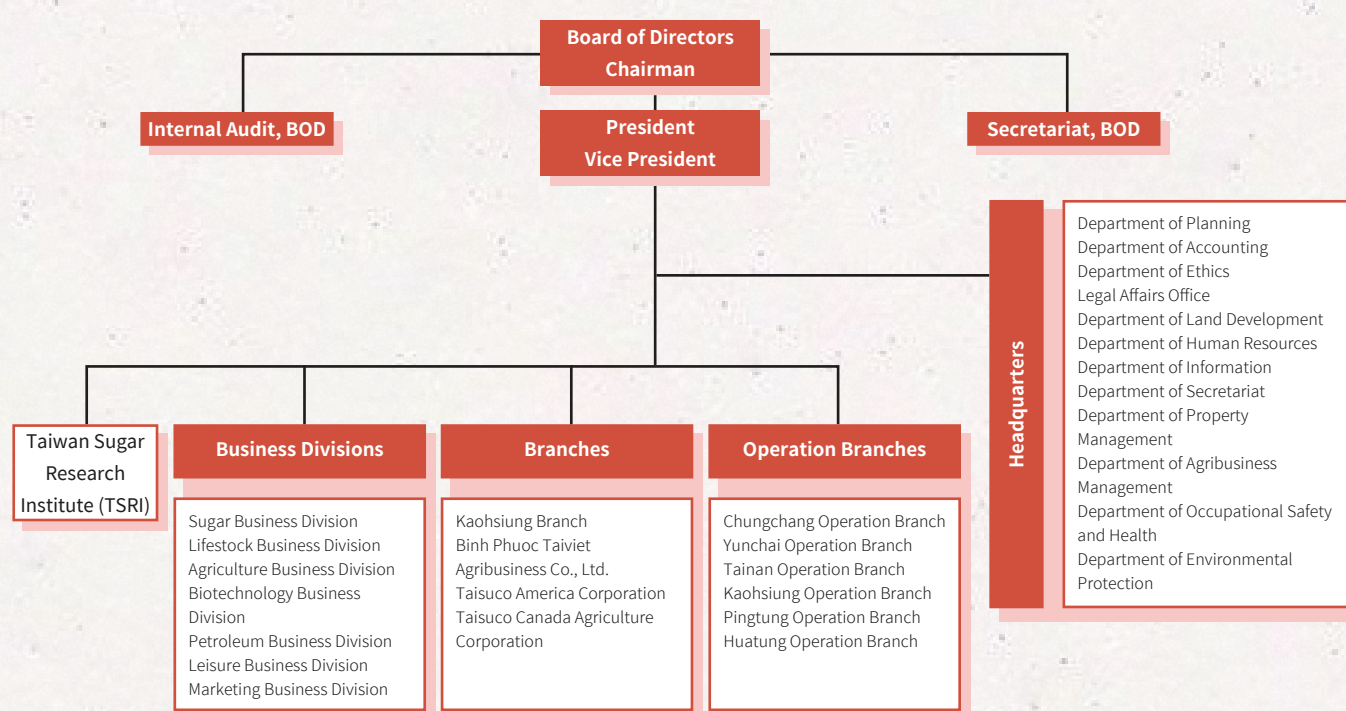


Please visit the Corporate Sustainable Development Page to download TSC Corporate Governance Regulations.

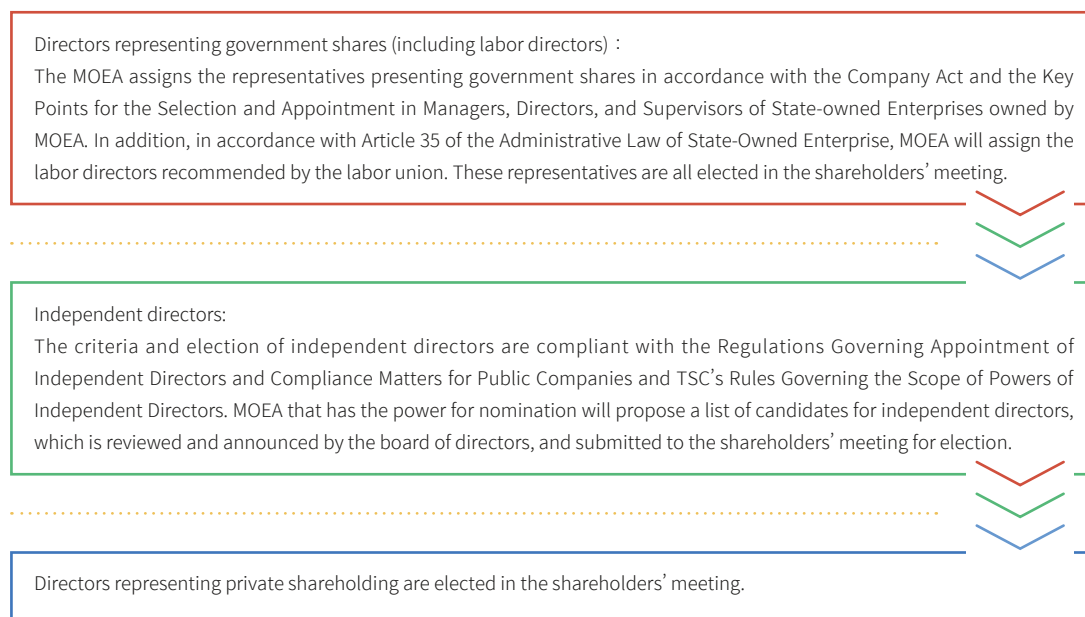
1.2.1 Board of Director Structure

The Board of Directors is the Company's highest governance body. The chairman is also the chairman of the shareholders' meeting and the board of directors and not a member of the management team. The president and the vice presidents assist the chairman. The chairman upholds the resolutions of the board of directors for the overall management of the company's business. The vice presidents assist the president according to the division of business. The concept of corporate governance at TSC is implemented from top to bottom. All the important business decisions are implemented based on the resolutions of the board of directors.

Organizational Structure of TSC



TSC is a state-owned enterprise under MOEA. The Executive Yuan and MOEA reviewed and approved to assign Mr. Ming-Jou Yang to take over the position as the chairman. Mr. Ming-Jou Yang was elected the chairman in the 12th board meeting of the 35th session of BOD on April 20, 2023. The nomination, criteria, and selection process of board members are as follows :



TSC's board of directors comprises 15 directors elected in the shareholders' meeting in accordance with the Taiwan Sugar Corporation Procedures for Election of Directors, and as prescribed in Article 14-2 of Securities and Exchange Act, the Company appoints 3 seats of independent directors among directors and the election of independent directors is conducted in accordance with the candidate nomination system in the shareholders' meeting from the roster of nominees. The term of office of the director is 2 years. TSC convened the shareholders' meeting in June, 2022 for the re-election of the 35th session of board of directors whose term of office is from June 15, 2022 to June 14, 2024, with five female directors among them. All directors shall sign the Written Consent to Act as Director, abide by the provisions of Article 23 of the Company Act, and shall exercise the due care of a good administrator in conducting the business operation of the Company.

The board of directors established the Audit Committee that is composed of all independent directors and convened by one of the independent directors by appointment in 2012 to replace the functions of the supervisors. The audit-related operations are handled in accordance with TSC's Audit Committee Charter that are disclosed in the annual reports. In addition, to complete the supervision functions and strengthen the management functions, the Land Resources Committee and the Business Investment Committee were also established under the board of directors to exercise their powers independently from the Audit Committee. Matters concerning the number of committee members, term of office, powers, rules of procedures, resources the company should provide when exercising their power are all stipulated in the Organization and Key Points for Business Investment Committee of the Board of Director and Organization and Key Points for Land Resources Committee of the Board of Director.

Diversity of Directors

As prescribed in Article 20 of Corporate Governance Best Practice Principles for Taiwan Sugar Corporation, to achieve the ideal goal of corporate governance, the board of directors shall possess the following abilities, including ability to make operational judgments, ability to perform accounting and financial analysis, ability to conduct management administration, ability to conduct crisis management, knowledge of the industry, an international market perspective, ability to lead, and ability to make policy decisions. Furthermore, TSC implements board diversity, including gender, age, cultural and educational background, professional knowledge, skills, and experience. With the diverse composition, we continue to strengthen corporate governance and operational performance.

As of the end of December 2023, TSC's board of directors comprises 14 directors, including 2 independent directors, 1 representing director, 5 female directors, and 3 representative directors assigned by the trade unions. The requirement that each gender shall account for more than one-third of the board seats has been met. The number of board seats did not reach 15 because the independent director Suen-Zone Lee resigned on May 30, 2023, and the Ministry of Economic Affairs (MOEA) responded by letter on June 7, 2023, agreeing to conduct the by-election at the shareholders' meeting in 2024.

Board members possess diverse professional backgrounds in the fields of law, accounting, finance, marketing, agriculture, economic development, urban development, and environmental education. The diversity of expertise complements each other effectively, facilitating the implementation of management and future development strategies.

Basic information of the BOD members (35th session)

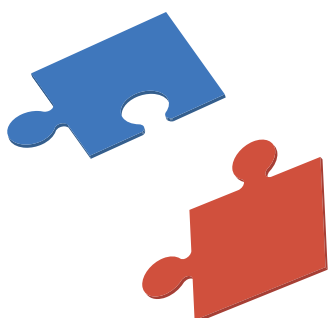
Date of information: December 31, 2023

Title	Name	Current Position	Education	Experience	Attendance rate in 2023
Chairman	Ming-Jou Yang (Male)	Chairman of Taiwan Sugar Corporation	Bachelor's degree, Dept. of Civil Engineering, Master's degree of the Institute of Civil Engineering, National Cheng Kung University	Acting Mayor, Deputy Mayor, Secretary-General, Deputy Secretary-General, Director of the Public Works Bureau of Kaohsiung City Government	100%
Independent Director	Chung-Fern Wu (Female)	Professor of Accounting Department, College of Management, National Taiwan University	Ph.D. in UCLA Anderson Graduate School of Management	Full-time Commissioner of Financial Supervisory Commission, Executive Yuan; Associate Professor of Accounting Department, National Taiwan University	100%
Independent Director	Yuan-Shyang Lin (Male)	Partner attorney of Alliance International Law Offices	LL.B, LL.M, and Ph.D. of Fu Jen Catholic University, School of Law	Attorney and Partner Attorney of Alliance International Law Offices; Adjunct Assistant Professor of Dept. of Law & Dept of Financial and Economic Law, Fu Jen Catholic University; Attorney of Taiwan International Patent & Law Office	100%
Director	Li-Jen Chen (Male)	President of Taiwan Sugar Corporation	Master's Degree, Dept. of Land Affairs, National Chengchi University	Vice President of Taiwan Sugar Corporation; Director of the Property Operation Dept. of Taiwan Sugar Corporation	100%
Director	Junne-Jih Chen (Male)	Deputy Minister, Council of Agriculture, Executive Yuan	Ph.D. in Department of Agronomy, National Chung Hsing University	Deputy Director and Director of Taiwan Agricultural Research Institute, Council of Agriculture, Executive Yuan; Researcher and Head and Researcher and Deputy Director of Taiwan Seed Improvement and Propagation Station, Council of Agriculture	100%
Director	Mao-Xiang Su (Male)	Deputy Director of Agriculture and Food Agency, COA, Executive Yuan	Master's degree of Agricultural Economics Research Institute, National Chung Hsing University	Technical Specialist and Chief of Dept. of Agriculture and Forestry, Taiwan Provincial Government, Section Chief, Deputy Head, Head, Director of the East Branch and Director Secretary of Agriculture and Food Agency, COA, Executive Yuan	100%
Director	Cheng-Hsien Yu (Male)	Chairman of Kao-Yuan Vocational High School of Technology & Commerce, Chairman of Ba Gua Liao Foundation	Master's degree of Dept. of International Trade, Feng Chia University, Institute of Management Science, I-Shou University, PhD candidate of the Institute of Science Education and Environmental Education, National Kaohsiung Normal University	General Convener of the Religious Affairs Committee of the Democratic Progressive Party, Deputy Convener of the Sports Development Committee of the Executive Yuan, Chairman of TSC, Interior Minister, Kaohsiung County Magistrate, Legislator	90%

Basic information of the BOD members (35th session)

Date of information: December 31, 2023

Title	Name	Current Position	Education	Experience	Attendance rate in 2023
Director	Fan-Yi Li (Female)	Deputy Director-General of Dept. of Accounting, Central Bank of the Republic of China	Master of Accounting Institute, University of Illinois	Accountant of Dept. of Accounting, Central Bank of the Republic of China	100%
Director	Pen Fang (Female)	Director of Dept. of Budget, Accounting and Statistics, Tainan City Government	Master of Dept. of Political Science, National Chung Cheng University	Acting Director of Dept. of Budget, Accounting and Statistics, Tainan City Government, Deputy Director of Dept. of Budget, Accounting and Statistics, Tainan City Government (after merger), Director of Dept. of Budget, Accounting and Statistics, Tainan County Government	100%
Director	Feng -Lan Yin (Female)	Director of Information and International Affairs Department, Pingtung County Government	Master of EMBA, National Pingtung University of Science and Technology	Director of Dept. of Administration, Research and Evaluation, Pingtung County Government, Director of Tourism and Broadcasting Department of Pingtung County Government, Director-General of the Industrial Development & Investment Promotion Committee of Pingtung County, staff of Jia-Chyuan Su County Magistrate's Office, Social worker of Pingtung County Government, Reporter of Taiwan Daily, Reporter of the Commons Daily.	100%
Labor Director	Pi-Yu Huang (Female)	Head of Accounting Team of TSC Employee Welfare Committee	Master's of Financial Management, National Kaohsiung University of Science and Technology	Director of TSC Federation of Labor Unions, President of TSC Tainan City Corporate Union	100%
Labor Director	Wen-Lin Luo (Male)	Product Manager, Storage and Sales Unit, Sugar Workshop of Huwei Sugar Factory, TSC	Dept. Of Administration, National Open University	Labor Director and Executive Director of TSC Federation of Labor Unions, President of Yulin Trade Union of TSC, Convenor of Supervisory Committee of Yulin Trade Union of TSC	100%
Labor Director	Yi-Min Hu (Male)	General administrative manager, General Affairs Dept., Tainan Operation Branch	Graduated from the Civil Engineering Dept., Nan Jeon University of Science and Technology	Secretary of Shanhua Enterprise Trade Union, Operation Branch of TSC , Chief of Land Section, Shanhua Assets Division, Operation Branch of TSC	100%
Director (Civilian Shareholder)	Jian -Ting Chen, Representative of Anqun Investment Co., Ltd	Representative of Anqun Investment Co., Ltd	Master of Business Management, University of California	Director of American Chamber of Commerce Southern Taiwan	100%



Please refer to Annual Report to General Meeting for 2024 (the 113th year of the ROC) (data of the year 2023) for relevant personnel changes of the board of directors.



The board meeting minutes are disclosed under the “Information of Board of Directors” in the Corporate Governance Section of TSC’s website. For the powers of each committee of the board of directors, please refer to “Functional Committees” in the Corporate Governance Section.

■ Directors’ Training

In addition to possessing integrity, diligence, and extensive relevant business experience, members of the board of directors are committed to faithfully executing their duties and practicing good governance. Directors choose to participate in continuing education courses related to corporate governance, such as finance, risk management, business, commerce, accounting, law, or corporate social responsibility, to fulfill their obligations as responsible stewards and managers. According to the "Directions for the Implementation of Continuing Education for Directors and Supervisors of TWSE Listed and TPEX Listed Companies", core and professional courses in relation to corporate governance are arranged for directors to participate in so as to improve their professional knowledge for the effective operation of the board of directors. In 2023, TSC directors participated in corporate governance topic related education course in accordance with the Continuing Education Plan for Directors of TSC. New directors are advised to receive 12 hours of training in the year when they take office, and the re-appointed directors are advised to receive 6 hours of training. In 2023, 4 new directors and 10 continuing ones should receive a total of 108 hours of training. All directors have reached the required hours of training this year, with a total of 156 training hours.

To enable the directors to understand and improve their professional knowledge related to TSC’s various industrial environments, the management department is arranged to report to the board of directors on changes in the industrial environment every month.

Furthermore, to obtain real-time information of systematic courses on corporate governance, we have applied for the membership in professional training institutions such as the Taiwan Corporate Governance Association to provide training related information for our directors to refer to. The secretarial unit of the board will assist the directors with the registration of courses. This can help the directors enhance their professional knowledge and improve the operation efficiency of the board.

■ Avoidance of Conflict of Interest

The Article 7.4.15 of “Directions for the Operation and Management of Board Meetings” stipulates that “For any proposal in which a Director or the legal person he or she represents is an interested party, the Director shall explain the important aspects of his/her interest at the Board meeting. When his/her interest is likely to compromise the interest of the Company, the Director shall not participate in the discussion and voting on the proposal and the Director shall abstain himself or herself from discussion and voting on the proposal and cannot exercise the voting right for and on behalf of another Director. Where the spouse, a blood relative within the second degree of kinship of a director, or any company which has a controlling or subordinate relation with a director has interests in the matters under discussion in the meeting of the preceding paragraph, such director shall be deemed to have a personal interest in the matter.” The notices of Board and committee meetings are all added with matters of avoidance of conflict of interest. For 2023 BOD resolutions, directors who have an interest in the matters of the agenda items shall evade themselves in accordance with the company’s regulations governing internal control.

When members of TSC deal with suppliers, investors, creditors, competitors and accountants, a supervision mechanism for the implementation of integrity and ethical values has been established. The Company has an internal control system of “Management of related party transactions” as the supervision mechanism to control the behavior of related parties. Transactions with related parties are all handled in accordance with the main points of the provisions and matters of major transactions are disclosed in the notes in the financial statements.

1.2.2 Performance Evaluation

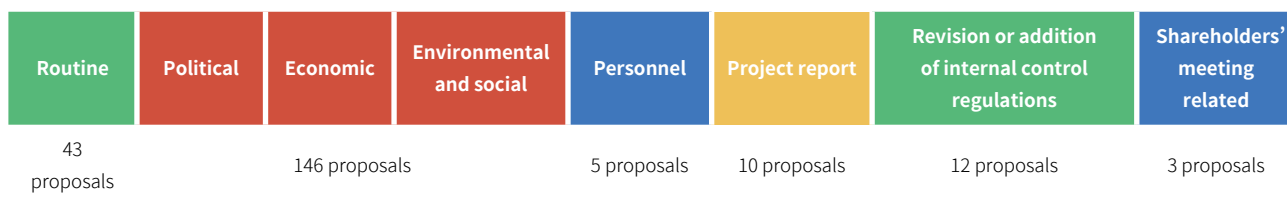
Agenda Review

TSC divides the responsibilities of the board of directors and the management department according to the Detailed Charts of Hierarchical Responsibilities, and in accordance with the Key Points for Management of Operation of Board Meeting, items to be reported or discussed in the board meeting should be signed and then obtain the approval from the chairman of the board before being proposed to the board. When making a proposal, the responsible unit should prepare the TSC Board Meeting Proposal Paper and attach sufficient meeting materials before sending them to the Secretariat of BOD for acceptance. Such proposal shall be approved by the chairman before being included in the agenda of the board meeting. However, for urgent or routine proposals, they are signed and together with the submission of the proposal paper to the chairman. After the approval is obtained from the chairman, if such proposal belongs to the matters within the function or power of the functional committees, they shall be submitted to the committees for deliberation before being submitted to the board of directors for approval.

All the information concerning the proposals reviewed in the committees is available in the Company's electronic meeting system for all directors to refer to at any time. The minutes of each committee meeting are forwarded to the directors participating in the committee meeting, and it is also necessary to put those who do not participate one copy so that all directors can understand relevant information concerning proposals, and the efficiency of board meetings can also be improved.

It is the principle of our company's board of directors to convene a meeting once a month. In 2023, a total of 13 board meetings were held (the average attendance of directors was 99.29%). The personnel of the relevant departments attended the board meetings to make explanatory statements depending on the details of the meeting agenda, enabling sufficient time and opportunities for explanation and communication with the board. In 2023, the Board of Directors reviewed a total of 219 cases, included 146 cases concerning policies, economic, environmental and social issues. For the economic, environmental and social issues aroused from the operating activities, the board of directors authorizes the high-level management to handle related issues, and the handling status shall be reported to the board of directors when necessary. Regarding the board resolutions, the tracking report on the resolutions of the board in the previous month shall be presented in accordance with the Key Points of Operation and Management of Board Meetings. If the case cannot be closed, it shall continue to be followed up and reported to the board of directors on a quarterly basis. In addition, the progress of major events and obstacles encountered shall also be submitted and reported to the Business Investment Committee on a quarterly basis. All major proposals of the Company are communicated with the directors by phone or in person in advance. When necessary, directors are arranged to make inspections and explain in details to the managerial department to facilitate thorough communication among directors, ensuring in-depth understanding of the proposals.

Types of the 219 proposals reviewed in TSC Board in 2023



Directors' Remuneration

TSC is a state-owned enterprise. The remuneration of the directors is paid according to Paragraph 2, Article 15 of the Articles of Incorporation, "Standards for Remuneration of Directors and Managers Determined by the Competent Authority." Therefore, the "Remuneration Committee" is not set up. In addition to the independent director's monthly payment of concurrent serving of NTD 30,000, the remainders are all paid in accordance with the "List of Monthly Payment of the Directors and Supervisors of the Ministry of Economic Affairs." The salary and bonuses of the chairman,

president and vice presidents are paid according to the “Guidelines for the Management of Employment Expenses of the Business Units Affiliated with the MOEA,” and there are no other additional remuneration or bonuses.

Board Assessment

As a state-owned enterprise and not a TWSE/TPEX listed company, the Corporate Governance Evaluation Index announced by Securities & Futures Institute does not apply to the evaluation of governance performance of TSC. However, MOEA has commissioned external impartial entities in recent years to conduct corporate governance system evaluations for its affiliated businesses annually. In 2023, the Department of State-owned Enterprise Affairs of MOEA entrusted Taiwan Association of Board Governance (TABG) to conduct evaluation of the corporate governance system, and the design of the evaluation content referred to the OECD Guidelines on Corporate Governance of State-Owned Enterprises, as well as important domestic corporate governance related norms, such as the Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies, Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies, Key Points of Government Internal Control and Supervision Operations, Regulations Governing Procedure for Board of Directors Meetings of Public Companies, Board self-evaluation or peer evaluation reference examples and so on were referred to and six major aspects were formulated, including the “Purpose of the state-owned enterprises and the role of the government,” “Market competition environment of state-owned enterprises,” “Fair treatment of stakeholders”, “Information disclosure and transparency,” “Responsibilities of the board of directors,” and “Sustainable development,” with a total of 60 evaluation indicators. Additionally, in 2023, five additional open-ended questions were added during interviews, primarily focusing on the actual implementation and effectiveness of carbon reduction and sustainable development initiatives by the company in 2023. The evaluation includes 60% of written documents review and 40% on-site visit, and the evaluation result was “Excellent.” The suggestions in the report are used as reference for the company’s corporate governance system and operational performance evaluation.

Annual self-assessment and evaluation are carried out for the chairman and president according to the “Regulations for Performance Evaluation of State-Run Enterprises” and “Guidelines for the Evaluation of the TSC’s Board of Directors.” The assessment of other independent directors and directors is carried out according to the “Guidelines for Appointment of Directors and Supervisors and Other Important Duties by Ministry of Economic Affairs and its Affiliates”. The results of self-assessment and evaluation of the board members are submitted and reported to the Board of Directors at the beginning of each year to enhance the effectiveness and efficiency of the Board. Assessment of board performance should be carried out at least once a year, and the results should be reported to the board meeting convened. In the first quarter of the following year, and they should also be disclosed on TSC’s official website.

The results of the 2023 board performance evaluation were reported to the board of directors on January 19, 2024. The results of the evaluation of the board of directors: There were a total of 45 evaluation items, and the evaluation results were “Excellent.” For the evaluation results of the board performance: there were 23 evaluation items in total, and the evaluation result showed “Excellent.” The results of the evaluation of the functional committees: Evaluated a total of 24 items, and the evaluation results was “Excellent.” This result will be disclosed on TSC’s official website and the Annual Report.



1.2.3 Risk Management Mechanism

Risk Management Policy

Risk management is an important part of the sustainable management of an enterprise. To manage the risks faced by each unit of our company's operations and reduce losses caused by risks, we have established the "The Key Points for Risk Assessment and Management." Its contents encompass risk management policies, the establishment of Taiwan Sugar Corporation Risk Management Promotion Committee, and the annual evaluation and management of potential risks by each unit based on its operating environment and industry changes. This includes the identification and management mechanisms of various potential risks such as natural disasters and the supply and safety of raw materials for major products like sugar and feed. We will continue to optimize our risk management mechanisms to create a high-quality operational environment, minimize or avoid the occurrence of risks, and achieve our corporate sustainability goals.

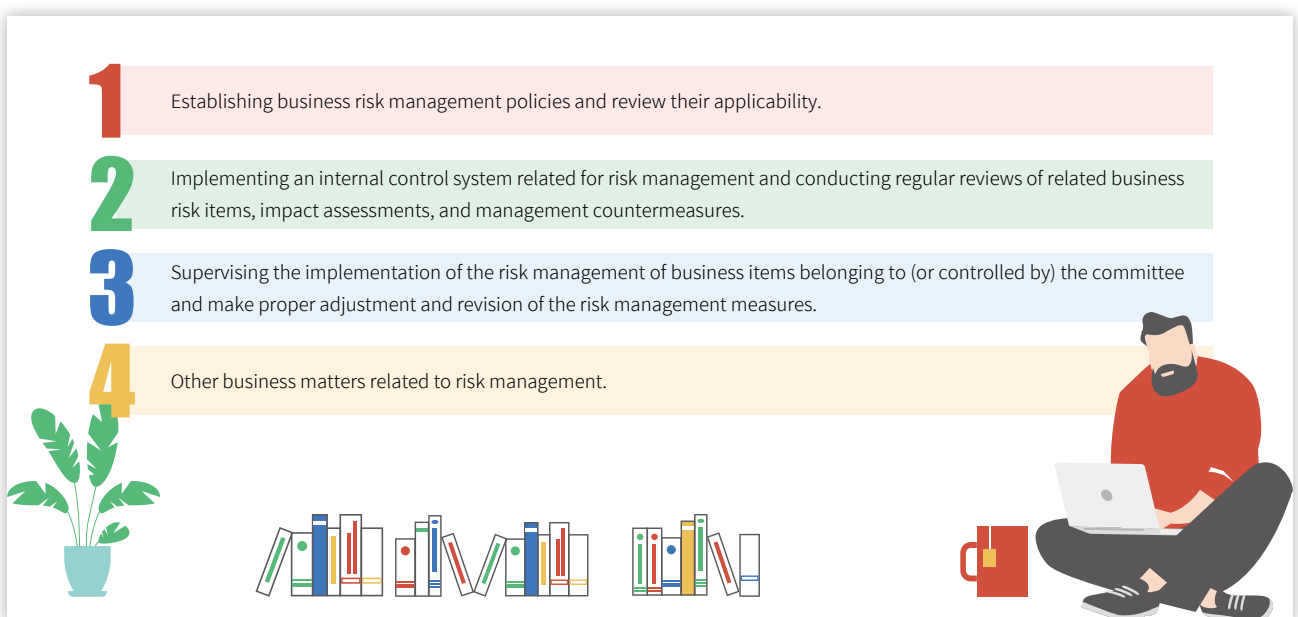
Risk Management Policy



Risk Management Organization

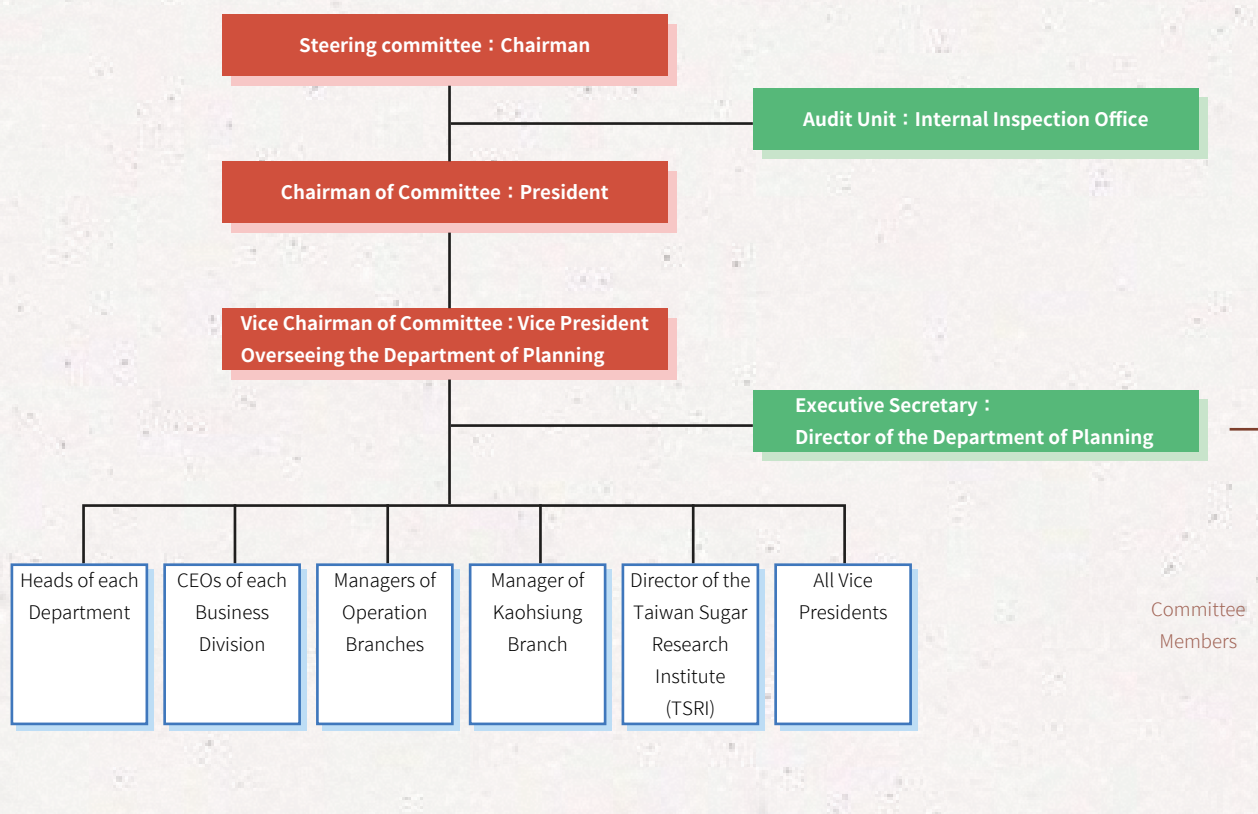
To implement and assist each unit with the promotion of risk management operations, TSC established the Risk Management Promotion Committee, with the chairman serving as the steering committee, the president as the chairman of the committee, the vice president of the Business of the Department of Planning as the vice chairman, and all the vice presidents, the first-level supervisors of all departments (excluding the Internal Inspection Office) as the committee members. Additionally, a certain number of consultants or expert scholars may be hired when necessary.

The missions of the committee include the followings :



In addition, the Director of the Department of Planning concurrently serves as the executive secretary to handle the convening of the committee meetings, recording, and other related business. The Internal Inspection Office is responsible for the on-site inspection for the suitability of the risk management system. When all the units are making routine annual inspections, relevant operations and implementation are included in the scope of inspection. The inspection report of each unit shall be submitted to each independent director for review. Every month, the inspection report is submitted to the board of directors, and the sub-items summarized from each unit are reported to the independent directors and the Audit Committee.

Organizational Structure of Risk Management Promotion Committee



Note :

1. The heads of the departments of the Headquarters do not include the Chief Auditor.
2. The director of the Department of Planning concurrently serves as the executive secretary.
3. After a risk event occurs, depending on the degree of subsequent impact and according to the type of the incident, the unit where the risk occurs should initiate the risk management handling and notification and other relevant corresponding matters.

Risk Management Implementation and the Responsibilities of Departments

Each unit plans and reviews the risk management implementation status on a yearly basis in accordance with the Key Points for Risk Assessment and Management. Every unit should review the risk items of the management business of the current year at the end of every year, and in addition to reviewing the implementation effectiveness of risk management for potential events of losses, business processing analysis (BPA) for the management business in the following year should be carried out, the potential risks shall be listed, the source of events shall be confirmed, and the likelihood of occurrence and the degree of impact of various potential risk items (including common risk events and important risk matters for each department) shall be evaluated as well as set. Cost-effective planning and four risk management strategies should be put into consideration, namely the Risk Aversion, Risk Reduction, Risk Tolerance, and Risk Transfer. Based on the business responsibility of each unit, the risk assessment information identified every year is sent to the Department of Planning, and then to the heads of the departments of the Headquarters for opinions based on the business attributes. After collecting and amending the opinions, they are reported to the president for approval, followed by implementation.

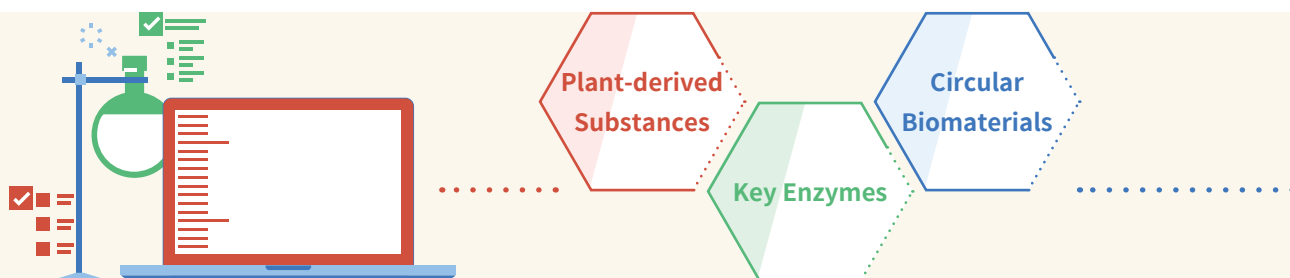
In addition to the risk assessment every year, the heads of the units should conduct simulation drills or tests on a regular basis or occasionally to confirm the effectiveness of relevant control mechanisms when risks occur, and pay close attention to the changes in the risk, make timely assessment and management of the risks. In addition, the competent business units of the Headquarters should make regular or occasional inspection of the handling of risk management of each unit depending on the nature of the business. For matters to be improved, counseling is provided for improvement and tracking is conducted. Furthermore, education and training, organizational learning or on-site drills regarding risk management and crisis handling are organized as needed to establish professional techniques for risk management and crisis handling and improve crisis prevention and handling as well as response capabilities. Continuous review, rolling discussions, and adjustment of the effectiveness and suitability of risk management mechanisms for different business are continuously conducted through the PDCA process.

Other support mechanisms of risk management

The scope of the company business is very extensive, so various select committees have been established for various business attributes, such as the Quality Management Committee, Occupational Safety and Health Committee, Environmental Protection Committee, Information Security Committee, Labor-Management Meeting, and Integrity Report. Regular meetings are convened to eliminate or reduce the occurrence and level of impact of risk events. In addition, high-level “decision-making meeting” and the company-wide monthly “business briefing” are held regularly to solve problems concerning business operations or disputes in a timely manner.

1.2.4 Research and Development Management

In order to pursue sustainable innovation with higher quality and service, TSC has set up a research and development business management and control organization of the Research and Development Committee whose chairman is the president with 1-2 deputy chairmen, 19 to 35 committee members, 1 executive secretary and 2-3 secretaries. Its main tasks include the development of R&D policies, R&D budget management and implementation, research program management, the application and follow-up of R&D results. Through regular R&D business integration meetings, various units involved in R&D can quickly resolve issues and problems they have faced, coordinate R&D resources across units and improve research energy.



Taiwan Sugar Research Institute is divided into the Biological, Chemical and Engineering Groups responsible for technology development, the Testing Center for testing services, and the Carbon Reduction and Industry Information Group for scientific and technological management planning according to the task attributes. The three technical groups are set up in accordance with technical expertise and perform cross-disciplinary and product development tasks through close cooperation among the groups. The Testing Center is responsible for the company's soil and water quality testing services. The Carbon Reduction and Industrial Information Group provides research-related services such as carbon reduction planning, industrial information, intellectual property management, market research and technology transfer. It also acts as the Research Institute's window of contact with internal and external units of TSC. TSC's IPR Management Plan is as follows.

1. Intellectual Property Rights (IPR) Management Plan

TSC respects the intellectual property rights (IPR) of others and also strives to protect the IPR owned by the company. Under this principle, the internal control system of Guidelines for Intellectual Property Rights Management, and businesses related to patent, trademark, copyright, variety rights and trade secrets have to be compliant with this system to exert their effects and ensure the rights and interests of the company. Moreover,

every year, the representatives of TRSI participate in the verification of Taiwan Intellectual Property Management System (TIPS) on behalf of the company to confirm the implementation status and appropriateness of the company's relevant systems. In addition, to enhance our associates' IRP knowledge and strengthen the concept of trade secrets, we will continue to carry out relevant education and training courses in 2024.

2. Implementation Situation

TSC submitted and reported to the board regarding the IPR strategies and management system as well as the possible IRP risk and countermeasures in the 13th board meeting of the 35th session of board of director convened on April 28, 2023.

TSC has introduced the TIPS system for 16 years. Through continuous verification to review the effectiveness of implementation, the TIPS System and the management framework are implemented in accordance with the spirit of PDCA of TIPS, and improvement is constantly reviewed. Through the establishment of the TIPS System, various units of TSC have aquired the IPR protection concept.

There were no cases of infringement of other patents or intellectual property rights at TSC in 2023. The list of intellectual property and results in recent years is as follows.

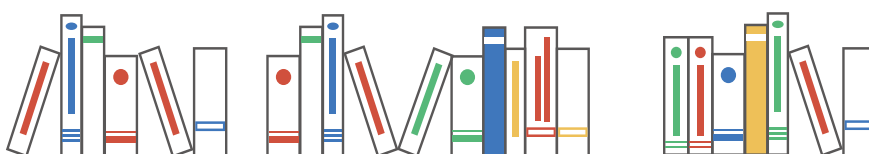
Year \ Item	Invention Patent		SOPs of the Process	Technology Transfer to Business Divisions
	Submitted	Approved		
2021	2	1	12	3
2022	1	0	14	2
2023	0	0	18	1

Note :

This year's process SOP data adjustment is based on TSC's entire data, so there is reorganization of information. However, it has no significant impact on the readers' understanding of the Company's relevant information.

3. Obtaining Verification

In 2022, TSC obtained the Certificate of Taiwan Intellectual Property Management system valid until Dec. 31, 2024, and the verification was completed on Jan. 29, 2024.



1.3 Implementation of Integrity Management

The investors and the industry chain are attaching more importance to issues related to governance, environment, and social sustainability. To have proper communication with the stakeholders, TSC has established multiple communication channels and continuously enhanced the transparency of corporate information disclosure. TSC operates in accordance with all laws and regulations in economic, environmental, and social aspects and strengthen the corporate business and the employees' code of conduct through the internal control system and education & training on the basis of compliance. External donations or sponsorships are handled in accordance with relevant laws and regulations and internal regulations to prevent the incident of offering of accepting a bribe and illegal political contributions. Anti-corruption assessment is conducted through the Department of Ethics on a regular basis to improve the anti-corruption management measures. In 2023, TSC did not engage in any public policy lobbying or political donation and was not involved in any legal actions related to anti-competitive behavior, anti-trust and monopolistic conduct.

1.3.1 Internal Control Management

In order to strengthen corporate governance and promote the Company's sound operations, TSC has designed and implemented internal control systems in accordance with the "Regulations Governing Establishment of Internal Control Systems by Public Companies" and the "Key Points for Implementation of Internal Inspection of Public Institutions Affiliated to the Ministry of Economic Affairs." These measures include the establishment of the "The Internal Control System of TSC," "Guidelines for Internal Audit Practices," and complete documents regarding internal control system for all units to follow. These documents regulate the professional ethics, responsibilities, and operational procedures of internal audit staff. To adapt promptly to changes in the internal and external environment. The Inspection Office of the BOD inspects and reviews deficiencies in the internal control system, as well as evaluating the effectiveness and efficiency of operations, in accordance with the regulations and key points for implementation. It also provides timely improvement suggestions to ensure the continuous effectiveness of the design and implementation of internal control systems.

A new internal control system document was added, 61 were revised, and 9 were abolished in 2023. The implementation of the internal control system is also included in the annual performance assessment to promote the self-management and implement self-monitoring mechanism by all units. In addition, the Inspection Office of the BOD has completed the on-site audit of the 19 internal units in accordance with the 2023 internal audit plan. It has also conducted special audits and ad-hoc audits of related operations. After the audit results are reviewed and approved by the signing chief, they are not only communicated to the audited units for necessary improvements within a specified period but also provided to each independent director for review in accordance with regulations. The Chief Auditor attends monthly board meetings to understand the board's decisions regarding organizational and control matters and to report on audit business. Furthermore, to enhance communication with independent directors, the audit activities are reported annually to the Audit Committee.

Elimination of Malpractice and Whistleblower Protection Policy

All TSC employees abide by the "Ministry of Economics Employee Integrity and Ethics Rules." To guide the behavior of personnel in accordance with ethical standards and ensure that the company's activities are in line with social norms, we have also established the "Codes of Ethical Conduct of TSC," which applies to TSC personnel, including directors (including independent directors) and managers (including the president, vice presidents and directors of various units). The implementation of this code is reported to the board of directors annually in October by Department of Human Resources in collaboration with Department of Ethics, aimed at reducing the likelihood of fraud occurrences.

To maintain employees' integrity and discipline, additional guidelines such as the "Employees Normal-Time and Project Evaluation Guidelines," "Working Rules for Practitioners," "Service Guidelines for Practitioner," and "Practice Guidelines for Corporate Governance" are stipulated. We allow practitioners to understand the company's code of conduct by the internal network, posting propaganda of laws and implementing education and training. Reports of corruption cases are handled by the independent ethics personnel of each unit or designated personnel assigned by the unit. In addition, there are designated phonenumber, mailbox, fax number, and email address set up to provide channels for reporting.

We ensure the confidentiality of reported cases to encourage our employees or the public to report on illegality or violations so as to prevent malpractice and urge relevant units to make improvement in a timely manner. TSC has established the Key Points for the Implementation of Confidentiality of Whistleblowing Cases in the internal control system in accordance with the Personal Information Protection Act, the Anti-Corruption Informant Rewards and Protection Regulation, Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies, and TSC's Code of Ethical Conduct, which serve as the basis for the establishment of an operation process for each unit to handle whistleblowing cases with the principles of confidentiality, legality, rationality, promptness, certainty, and prudence. The aforementioned Key Points were renamed as the "Implementation of Confidentiality of Whistleblowing Cases and Whistleblower Protection" in November 2023, with additional content related to whistleblower protection.

In accordance with the "Act of the Establishment and Management of the Government Employee Ethics Units and Officers," ethics units were established in the headquarters and various units to regularly review integrity risks and fulfill the functions of promoting benefits and eliminating malpractices. In 2023, a total of 16 integrity reports were held. Additionally, various reporting channels have been established, such as dedicated reporting mail box, reporting

hotlines, and fax lines, for the public to report grievances and petitions. This information is made publicly available in bidding notice and the official website of Taiwan Sugar Corporation.



■ Anti-corruption Risk Assessment and Education

To implement the early warning of anti-corruption and corruption risk management behavior, Department of Ethics conducted a corruption-related risk assessment for 17 units under it in 2023, which accounted for 100% of the Company's total number of business locations. The risk profile of the organization is examined one by one (including incidents and personnel), and the risk responses and improvement shall be researched and proposed while the agency integrity risk assessment report shall be written. It is indicated in the risk report that no major corruption cases occurred at TSC in 2023.

In order to publicize anti-corruption policies and related procedures, the Department of Ethics and Ethics Offices of all units involved enabled the Company's employees to understand relevant anti-corruption regulations and make anti-corruption efforts by multi-advocacy methods such as organizing the relevant anti-corruption education and training, holding a workshop of manufacturers, inviting experts and scholars to give special lectures, issuing and disseminating documents and using electronic information equipment for the internet advocacy and questionnaire surveys.

In 2023, a total of 29 sessions of anti-corruption advocacy exercises were organized, including "Reserve personnel for grassroots and mid-level supervisors (the integrity qualities a supervisor should possess)," "Integrity and Rule of Law Training Workshop," "(1) Analysis of key points in property declaration for public officials, (2) Key analysis of conflict of interest avoidance for public officials," and "(Let us learn about unlawful gains and offering convenience to people) Promotion of Laws and Regulations" seminars. These events achieved 4,065 attendances in total (including 87 attendances from senior executives). The contents of the United Nations Convention against Corruption (UNCAC), Integrity Management, Integrity and Ethics Directions, Act on Recusal of Public Servants Due to Conflicts of Interest are advocated to enhance the employees' awareness of integrity and rule of law to prevent the occurrence of corruption.

The monthly anti-corruption e-magazine for Integrity at TSC is sent to all employees via email. The contents include publicity of rule of law, Ethics Guidelines for Employees Belonging to Ministry of Economic Affairs, Maintenance of Official Secrets Advocacy, Consumer Protection Advocacy, and Anti-fraud Advocacy to help the employees establish the correct legal understanding.

In summary, communication on anti-corruption policies has been conducted with 100% of the employees and senior executives, and future plans for continuation are being formulated.

In 2023, there were no anti-corruption training and policy communication for the board members. In the future, such training and communication will be planned and implemented to stay in line with the Company's philosophy of integrity management.



Integrity Law
Advocacy

TSC's Integrity Platform integrates "Corporate Services," "Institutional Procurement," "Administrative Transparency," "Promotion of Anti-corruption Laws and Regulations," "Advocacy Films for Anti-corruption," "Anti-corruption Hotline" and other theme-specific sections to enhance communication between the public and private sectors, strengthen the supervision of major project procurement cases, streamline administration for the convenience of the people, promote anti-corruption and anti-bribery, corporate integrity and regulatory compliance, and provide channels for reporting corruption to firmly reject corruption. Policies against corruption have been communicated to all our business partners.

1.3.2 Compliance and Information Disclosure

Compliance

TSC products must comply with local regulations and customer requirements, including Act Governing Food Safety and Sanitation, Health Food Control Act, Pharmaceutical Affairs Act, Food Administration Act, Organic Agricultural Product and Organic Agricultural Processed Product Certification Management Regulations. In 2023, there were no violations of product health and safety, service information and labeling, marketing communications and voluntary codes^{Note}. However, there were 15 instances of fines ranging from NTD 3,000 to NTD 150,000 for environmental, food labeling, and occupational safety incidents.

Note :

Regarding the definition of material fines related to company operations were given in accordance with Chapter II Material Information, Article 4, Paragraph 1, Subparagraph 26, Item C of Taiwan Stock Exchange Corporation Procedures for Verification and Disclosure of Material Information of Companies with Listed Securities dated on January 3, 2020, where the administrative fines for one single event have accumulated to NTD 1 million or more.

Violations and Description of Improvement Measures in 2023

Type	Explanation of Regulatory Violations	Details of Penalty	Improvement Measures
Environment — Water Pollution	On July 21, 2023, Yunlin County Environmental Protection Bureau sent personnel to First Huwei Livestock Farm of the Livestock Business Division for inspection. TSC's livestock farm had a registration certificate of 12,841 pigs in the farm. According to regulation, the Company should complete the application for approval for the resource treatment rate of livestock manure and urine to be at least 5% of the total wastewater generated before December 27, 2022. However, the approval was not yet obtained on the day of the inspection, which violated the provisions of Article 18 of Water Pollution Control.	<ul style="list-style-type: none"> ▶ A fine of NTD 10,502 ▶ 2-hour Environmental Lecture 	The Company has improved the proportion of livestock wastewater recycling rate as required by the environmental regulations.
Environment — Water Pollution	On March 29, 2023, Yunlin County Environmental Protection Bureau went to Huwei Sugar Factory of TSC's Sugar Business Division for an inspection. A set of water samples was taken from the discharge outlet and sent for testing. The test results did not meet the Effluent Standards (suspended solids: test value 40.6mg/L, standard value 30mg/L), violating Article 7, Paragraph 1 of Water Pollution Control Act.	<ul style="list-style-type: none"> ▶ A fine of NTD 105,000 ▶ 2-hour Environmental Lecture 	A diamond-shape net was added and canvas was laid on the open cleaning hole between the wastewater field and the discharge outlet to prevent foreign matters such as fallen branches and leaves from falling in, and a new baffle was added to the discharge port which will be opened and closed regularly to increase liquid level, making it easier for sampling and avoiding distortion of test results. The Company has improved and strengthened the equipment inspection frequency and strengthened the management of discharge channels and water quality of effluents.

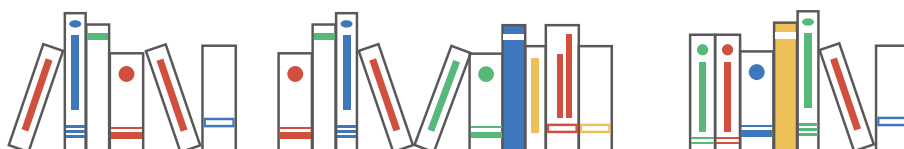


Violations and Description of Improvement Measures in 2023 (continue)

Type	Explanation of Regulatory Violations	Details of Penalty	Improvement Measures
Environment — Business Waste	The Company conducted its own demolition projects. We have a demolition license and paid the air pollution control fee. The Company is an enterprise designated by the Ministry of Environment of the Executive Yuan to have a business waste cleanup plan inspected. On December 28, 2022, Tainan City Government Environmental Protection Bureau personnel went to the site for an inspection and found that the business waste cleanup plan for the demolition project had not been reviewed and approved by the Bureau before the demolition work, violating Article 21, Paragraph 1, Subparagraph 1 of Waste Disposal Act.	<ul style="list-style-type: none"> ▶ A fine of NTD 6,000 ▶ 1-hour Environmental Lecture 	This incident is a lesson for TSC. We will pay more attention when implementing related work in the future.
Environment — Mobile Source Pollution	On March 20, 2023, Chiayi County Government used instrument and measured air pollutants emitted by vehicles in use at the Shanhua Sugar Factory and found that the black smoke (opacity) was 1.6m-1, exceeding the emission standard (1.2m-1), violating Article 36, Paragraph 1 of the Air Pollution Control Act.	<ul style="list-style-type: none"> ▶ A fine of NTD 3,000 	Improvement was completed and equipment was replaced by new ones.
Environment — Construction Project	On July 17, 2023, Yunlin County Environmental Protection Bureau dispatched personnel to inspect the contracted "Agricultural Circulation Pig Farm Renovation Investment Plan Phase I Turnkey Project (Gukeng Construction License) for Douliu Breeding Farm of the Livestock Business Division. There were a total of 34 deficiencies in material stacking, vehicle paths, exposed surfaces, entrances and exits of the construction site and so on, violating Article 23, Paragraph 2 of Air Pollution Control Act.	<ul style="list-style-type: none"> ▶ A fine of NTD 100,000 ▶ 2-hour Environmental Lecture 	The deficiencies were caused by the livestock housing renovation contractor during the construction process. The contractor has paid the fine and improvements have been completed.
Environment — Construction Project	On February 21, 2023, an on-site inspection was made of the First Livestock Farm in Da Xiang Yin of the Livestock Business Division by the Environmental Protection Bureau of Pingtung County Government. It was found that during the construction period, the construction project was not carried out in accordance with the Management Regulations for Construction Project Air Pollution Control Facilities. There were a total of 20 deficiencies in material stacking, vehicle routes, exposed surfaces, entrances and exits of the construction site, dust fugitive operations and so on, violating Article 23, Paragraph 2 of Air Pollution Control Act.	<ul style="list-style-type: none"> ▶ A fine of NTD 330,000 ▶ 4-hour Environmental Lecture 	The deficiencies were caused by the livestock housing renovation contractor during the construction process. The contractor has paid the fine and improvements have been completed.
Environment — Construction Project	On February 21, 2023, an on-site inspection was made of the Second Livestock Farm in Da Xiang Yin of the Livestock Business Division by the Environmental Protection Bureau of Pingtung County Government. It was found that during the construction period, the construction project was not carried out in accordance with the Management Regulations for Construction Project Air Pollution Control Facilities. There were a total of 12 deficiencies in vehicle routes, exposed surfaces, entrances and exits of the construction site and so on, violating Article 23, Paragraph 2 of Air Pollution Control Act.	<ul style="list-style-type: none"> ▶ A fine of NTD 300,000 ▶ 4-hour Environmental Lecture 	The deficiencies were caused by the livestock housing renovation contractor during the construction process. The contractor has paid the fine and improvements have been completed.

Violations and Description of Improvement Measures in 2023 (continue)

Type	Explanation of Regulatory Violations	Details of Penalty	Improvement Measures
Environment — Construction Project	On December 19, 2022, an on-site inspection was made of the First Livestock Farm in Da Xiang Yin of the Livestock Business Division by the Environmental Protection Bureau of Pingtung County Government. It was found that during the construction period, the construction project was not carried out in accordance with the Management Regulations for Construction Project Air Pollution Control Facilities. There were a total of 26 deficiencies, for example, fences were not set up around the construction site, dust-proof cloths or dust-proof nets did not completely cover the stacked materials, the vehicle routes did not comply with regulations, the adjacent roads at the entrance and exit of the construction site were not swept or automatic car washing equipment was not installed, and records and data were not kept in accordance with regulations, violating Article 23, Paragraph 2 of Air Pollution Control Act.	<ul style="list-style-type: none"> ▶ A fine of NTD 150,000 ▶ 2-hour Environmental Lecture 	The deficiencies were caused by the livestock housing renovation contractor during the construction process. The contractor has paid the fine and improvements have been completed.
Environment — Construction Project	On December 19, 2022, an on-site inspection was made of the Second Livestock Farm in Da Xiang Yin of the Livestock Business Division by the Environmental Protection Bureau of Pingtung County Government. It was found that during the construction period, the construction project was not carried out in accordance with the Management Regulations for Construction Project Air Pollution Control Facilities. There were a total of 22 deficiencies, for example, the fence setting did not comply with construction engineering regulations, the vehicle routes did not comply with regulations, the adjacent roads at the entrance and exit of the construction site were not swept or automatic car washing equipment was not installed, and records and data were not kept in accordance with regulations, violating Article 23, Paragraph 2 of Air Pollution Control Act.	<ul style="list-style-type: none"> ▶ A fine of NTD 150,000 ▶ 2-hour Environmental Lecture 	The deficiencies were caused by the livestock housing renovation contractor during the construction process. The contractor has paid the fine and improvements have been completed.
Environment — Construction Project	On December 19, 2022, an on-site inspection was made of the Silin Livestock Farms of the Livestock Business Division by the Environmental Protection Bureau of Pingtung County Government. It was found that during the construction period, the construction project was not carried out in accordance with the Management Regulations for Construction Project Air Pollution Control Facilities. There were a total of 16 deficiencies, for example, fences were not set up around the construction site, the vehicle routes did not comply with regulations, the vehicle bodies and tires were not effectively cleaned when leaving the construction site, affecting the exist and entrance of the construction site, and records and data were not kept in accordance with regulations, violating Article 23, Paragraph 2 of Air Pollution Control Act.	<ul style="list-style-type: none"> ▶ A fine of NTD 150,000 ▶ 2-hour Environmental Lecture 	The deficiencies were caused by the livestock housing renovation contractor during the construction process. The contractor has paid the fine and improvements have been completed.



Violations and Description of Improvement Measures in 2023 (continue)

Type	Explanation of Regulatory Violations	Details of Penalty	Improvement Measures
Social — Food Safety	On March 30, 2023, Public Health Bureau of Tainan City inspected the “Thai Style Lemon-flavored Pork Jerky” and “Honey Sauce Charcoal Pork Jerky” of TSC safety pig series. The food additives with equivalent meaning of nitrogen cylinder filled in its packaging process was unlabeled. This was not compliant with the regulation that nitrogen has been included in the management of food additives taking effect from January 1, 2023, violating Article 18, Paragraph 1 of Act Governing Food Safety and Sanitation, and shall be punished in accordance with the provisions stipulated in Article 47, Paragraph 9 of the same act.	▶ A fine of NTD 30,000	The Company recalled 0.19 metric tonnes of related products and destroyed them all. Relevant recall and destruction procedures were handled as prescribed by law. A meeting was convened to review the current procurement specifications for food additives, inner packaging materials and raw material of food in accordance with Act Governing Food Safety and Sanitation and revised the content to comply with the latest regulations. The current procurement specifications for raw materials and ingredients in livestock processing plants are all compliant with laws and regulations. The procurement specification will be adjusted and updated accordingly if the legal regulations are updated.
Social — Food Safety	On May 24, 2023, Chiayi County Government took action against Biotechnology Business Division’s product “Garlic Essence” because the Nutrition Label on the outer box packaging did not comply with the provisions, violating Article 22, Paragraph 1 and 8 of Act Governing Food Safety and Sanitation.	▶ A fine of NTD 30,000	After correcting the packaging label, the product was once again available and was open for replacement of the previous ones, and the replacement quantity was 2,000 boxes.
Social — Marketing and Labeling	On July 25, 2023, Tainan City Government inspected “Stanlen Salmon Ovary Concentrated Night Cream.” The outer box packaging did not indicate the “batch number” and “all ingredients in Chinese,” violating Article 7, Paragraph 1, 5, and 9 of the Cosmetic Hygiene and Safety Act.	▶ A fine of NTD 10,000	The correct labeling sticker was “covered” on the outer box, and the correction was completed at the end of July of the year and was resold. The number of boxes that “covered stickers” is 1,995.
Social — Occupational Safety and Health	On December 8, 2023, after an inspection by the Occupational Safety and Health Administration of the Ministry of Labor, it was found that when TSC business units and contractors’ employees worked together, TSC did not establish a consultative organization and appoint a person responsible for supervision and coordination of the workplace, conducting inspections of the workplace, and regulating and integrating work, violating Article 27, Paragraph 1 of the Occupational Safety and Health Act.	▶ A fine of NTD 60,000	<ol style="list-style-type: none"> 1. The contractor’s on-site person in charge is required to conduct daily on-site inspections. When the meat steak rolling machine is operated, the foreman or technician should monitor relevant work on site until the end. 2. Reorganize relevant safety education and training to enhance the safety awareness of contractors’ stationed workers. 3. When maintaining or repairing the meat steak rolling machine, the operator should first ask the on-site foreman or technician to “turn off” the equipment, hang the sign saying “under construction, do not feed power” in red, and “lock” the equipment. 4. Add a safety checklist for the feeding of meat steak crusher to ensure that the “emergency shutdown button” (chain power-off device) functions properly.



Violations and Description of Improvement Measures in 2023 (continue)

Type	Explanation of Regulatory Violations	Details of Penalty	Improvement Measures
Social — Occupational Safety and Health	On August 10, 2023, the conveyor belt machinery for transporting sugar cane used by TSC workers was set up in a condition that workers could reach with their hands while working, and there was a risk of pinching and the safety of the workers was endangered. In addition, the transmission belt of this machine was within 2 meters from the ground, posing a risk of contact for workers when they passed by. The Occupational Safety and Health Administration of the Ministry of Labor inspected the site and found that no appropriate fence or net was installed, violating Article 43, Paragraph 1 and Article 49, Paragraph 1, Subparagraph 1 of Regulation of Occupational Safety and Health Facilities, and Article 6, Paragraph 1 of Occupational Safety and Health Act.	▶ A fine of NTD 60,000	<ol style="list-style-type: none"> 1. The content of the punishment letter was announced in the place where the violation took place for 7 days. 2. On May 18, 2023, a safety guarding device was installed on the conveyor belt.

Information Transparency and Stakeholder Participation

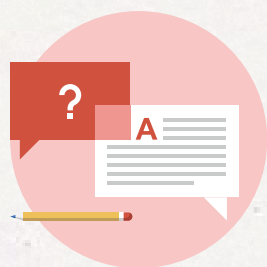
Information disclosure is an important responsibility in a company's operations. To rapidly pass on major information of TSC to the public and the internal organizations within TSC, the company has established a highly efficient communication system, set the "Directions for Online Filing" on the public information, with designated personnel responsible for the collection and disclosure of TSC Information and exposed information on corporate governance on MOPs and the TSC website. There are also response measures for emergencies, such as the setting of "Disasters Emergency Response Guidelines" and "Guidelines for Reporting Matters in Occupational Safety and Health Management Information System Reports". When news is required to be released for major disasters and emergencies, it will be signed by the unit and approved by the president, and the information will be emailed to all directors. The designated spokesperson shall make uniform external explanations and reply or take the initiative to convene a press conference to ensure timely disclosure of information that may affect the decisions of shareholders and stakeholders. In addition, the information including finance, business, corporate governance, public welfare activities and publications is disclosed on TSC's official website for shareholders' and stakeholders' reference and is constantly updated. To faithfully fulfill the obligation of information disclosure.



In addition, all the information concerning the operation status and remunerations of the board of directors and the Audit Committee, environmental protection, social services, public welfare and good neighborliness, safety and health, customer services and other fulfillment of social responsibility, as well as information concerning interest rates, exchange rate changes, and inflation is all disclosed in the Annual Report.

TSC has been making efforts to improve information transparency and enhance communication with stakeholders. Therefore, in March 2024, the corporate rating was upgraded by Taiwan Ratings to long-term "twAA" (compared to "twAA-" in 2023) and short-term "twA-1+," with a "stable" outlook. Furthermore, the rating among global debtors in financial constitution is rated as "extremely robust".

To strengthen the bilateral communication with our stakeholders, and to respect the rights and interests of the stakeholders. TSC has implemented various measures as follows :



Face-to-face meeting

For proposals they are interested in, shareholders can come to the Headquarters to have a face-to-face opinion exchange with the chairman or relevant supervisors on the first Monday of every month.



Regular shareholders' meeting

To ensure the right of participation and power of decision of shareholders, a regular shareholders' meeting is held once a year. In addition to reporting on the operating results of the previous year and future strategies, matters for ratification and discussions on major proposals are also reported. Shareholders' questions are also answered in a timely manner.



Proceedings of Shareholders' Meetings

The proceedings of the shareholders' meetings are recorded as required. Relevant information is uploaded to the MOPs and TSC's official website for shareholders' reference.



Labor Director

Representatives assigned by trade unions appointed by the Ministry of Economic Affairs act as labor directors and participate in corporate governance.



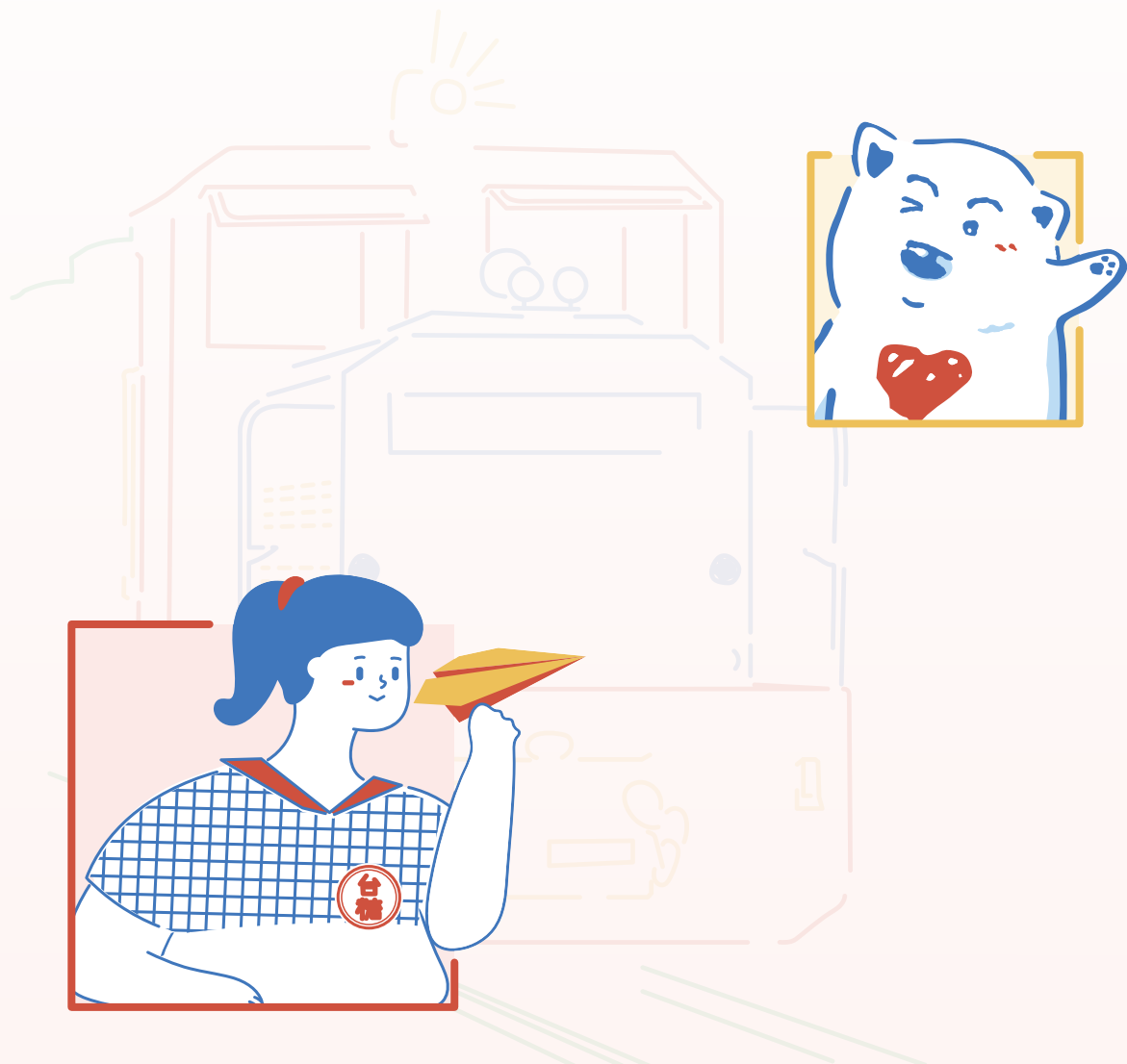
Employee Participation

Labor-management meetings (a total of 68 meetings were held in 2022), Welfare Committee meetings, Occupational Safety and Health Committee, and meetings of the “Employees’ Retirement Funds Management Committee” and “Labor Retirement Reserve Supervisory Committee” are regularly convened.



Director Mailbox

To expand and facilitate the internal communication channels within the company, Director Mailbox was established starting from July 2023. It is managed by the Chairman’s Office and exclusively receives emails from internal company mailboxes, enabling clear identification of the complainant, the department, and the content of the complaint.



Customer Privacy

The "Personal Data Protection Executive Team" was established and the "Guidelines for TSC Personal Data Protection Management" was formulated. The "Personal Data Protection Operation Manual" was compiled based on the "Personal Information Protection Act", "Enforcement Rules of the Personal Information Protection Act" and "Guidelines for TSC Personal Data Protection Management." In 2023, to avoid the leakage of personal data, the provisions in the operation form 9.1, Supervisory Reporting Record Form of the Management Points for Personal Data Protection was revised. Internal and external units were also notified that the notification mechanism for major high-profile personal information leakage cases shall be within 24 hours upon receipt of notification or becoming aware of the leakage.





CHAPTER 2

SUSTAINABILITY ASPECTS

MITIGATING CLIMATE IMPACT

MATERIAL TOPICS

Energy, Climate Adaptation and Resilience, GHG Emissions, Water and Effluents, Air Pollutant Emissions, Waste

- 2.1 TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)
- 2.2 STATISTICS OF ENERGY AND CARBON EMISSION
- 2.3 NET ZERO EMISSIONS PATHWAY PLANNING
- 2.4 GREEN PRODUCTION





SDG 6.3



SDG 7.2



SDG 11.6



SDG 12.6



SDG 13.2

Material Topics — Energy, Climate Adaptation and Resilience, GHG Emissions, Water and Effluents, Air Pollutant Emissions, Waste

☒ achieve
 ☐ unaccomplished

2023 Goals and Achievements

- ☒ The annual water saving target of Dalin Biotechnology Factory is 200 tonnes.
 - ▶ The bottle filling line of the Dalin Biotechnology Factory in 2023 produced 50 batches of bottled drinks. The water used for bottle washing each batch was about 4 tons, which is reclaimed for reuse. Approximately 200 tonnes of wastewater was reclaimed, achieving the goal.
- ☒ To achieve the target of wastewater recovery rate (R2) at 77%.
 - ▶ The wastewater recovery rate of the Dalin Biotechnology Factory was 90.85% in 2023.
 - ▶ The wastewater recovery rate was 80.5% in 2023.
- ☒ Approximately 207 MW of solar PV equipment for rooftops, groundtops, detention ponds and unfavorable farming land is expected to be reached.
 - ▶ In 2023, the installation of 208.63MW was completed. • The cumulative installation of solar photovoltaic facilities has reached 542.39MW, including 15.83MW of rooftop equipment, 99.95MW of floating PV energy generation equipment (detention ponds), 426.61MW of ground-mounted (including low-fertility agricultural land).
- ☒ To replace the more polluting heavy oil with natural gas (NG) to reduce GHG emissions, and it is expected to reduce GHG emissions by 20% annually per year in Xiaogang Refinery.
 - ▶ The total GHG emissions of Scope 1 and Scope 2 in Xiaogang Factory in 2021 amounted to 83,840 tonnes. Since the boiler was changed to natural gas one in March, 2022, the overall GHG emissions of Scope 1 and Scope 2 in 2022 and 2023 decreased by 65,624 tonnes and 61,839 tonnes respectively, a decrease of 22% and 26% compared with 2021 (The 2023 GHG data of Xiaogang Factory was from independent inventory).
- ☒ To continue the promotion of energy conservation movement and the development of renewable energy.
 - ▶ The total power generation of biogas (excluding REC) and agricultural residues was 11.96 million kWh, reducing approximately 5,910.96 tonnes of CO₂e.
 - ▶ As of the end of 2023, 69 battery exchange stations and 7 rapid charging service stations for electric vehicles have been launched at existing gas stations.
- ☒ Continue to study the recycling of agricultural waste and develop recycling businesses in different fields.
 - ▶ As of the end of 2023, 5,533 tonnes of discarded oyster shells were made into oyster shell powder.
 - ▶ The percentage of waste recycling reached 99.31%, a 0.2% increase compared with 2022.
- ☒ Organized a total of 400 sessions of green meetings. ^(Note 1)
 - ▶ Organized a total of 546 sessions of green meetings.
- ☒ To complete the first TCFD (Task Force on Climate-related Financial Disclosures) report and became a TCFD supporter.
 - ▶ In August 2023, TSC responded to the TCFD initiative by signing up as TCFD Supporters. At same year, we completed our first "TSC Climate-Related Financial Disclosure Report" for internal reference, as part of our commitment to taking action to mitigate global warming.
- ☒ To continue the promotion of energy conservation and carbon reduction measures.
 - ▶ Promoting energy conservation and carbon reduction has resulted in approximately 19,751 GJ of energy savings and a reduction of about 1,445 tonnes of CO₂e emissions.
- ☒ To continue the tending of the afforestation land because its location is with ecological and habitat value.
 - ▶ The area for afforestation and tending has amounted to 11,541 hectares in total, absorbing approximately 128,600 tonnes of CO₂e. ^(Note 2)



Note 1 : Green meetings refers to conducting meetings via video conferencing instead of in-person gatherings, thereby reducing carbon emissions from personnel transportation.

Note 2 : In 2019, the Taiwan Forestry Research Institute conducted experiments in TSC's MASADIFOREST in Hualien as the sample area, and the carbon dioxide absorption (benefit) equivalent was 11.14 tonnes per hectare per year. °



SDG 6.3



SDG 7.2



SDG 11.6



SDG 12.6



SDG 13.2

Material Topics — Energy, Climate Adaptation and Resilience, GHG Emissions, Water and Effluents, Air Pollutant Emissions, Waste

2024 Goals

- ▶ The annual water saving target of Dalin Biotechnology Factory is 200 tonnes.
- ▶ The wastewater recovery rate of the Dalin Biotechnology Factory is 90%.
- ▶ To continuously promote the installation of solar PV equipment for rooftops, ground-mounted, detention ponds and unfavorable farming land.
- ▶ To continue the promotion of energy conservation movement and the development of renewable energy.
- ▶ Agriculture Business Division is expected to complete a domestic orchid greenhouse heat pump project covering an area of 15,743m².
- ▶ Diversified energy supply is a concrete action for TSC gas stations to achieve net zero emissions. In 2024, it is planned to launch 18 rapid charging service stations for electric vehicles at the existing gas stations.
- ▶ Continue to study the recycling of agricultural waste and develop recycling businesses in different fields.
- ▶ To organize a total of 400 sessions of green meetings.
- ▶ To continue the promotion of energy conservation and carbon reduction measures.
- ▶ Moderate retention of forest trees will be maintained to continuously create habitat and ecological environments, providing functions of habitat, forage, and ecological corridor for wildlife. In addition to applying for ecological incentives from the Forestry and Nature Conservation Agency, we also applied for the Reforestation and Afforestation Carbon Sequestration Project to obtain reduction credits.
- ▶ Xiaogang Refinery is expected to reduce its greenhouse gas emissions to below 62,000 tonnes of CO₂e in 2024.



Medium and Long-term Objectives

- ▶ To continue to take inventory of the rooftop and ground-mounted solar PV facilities on the roofs of buildings and on low-fertility agricultural land.
- ▶ Agriculture Business Division plans to complete greenhouse heat pump projects in Wushulin Orchid Nursery and Dalin Orchid Nursery 9,484m² by 2025.
- ▶ To continue the upgrading of equipment for efficiency improvement to save energy and reduce carbon emissions.
- ▶ Evaluate the application of emission source greenhouse gas capture (absorption, storage) technology to implement carbon reduction.



Reaching Net Zero Emissions by 2025 has been a global consensus. Enterprises in all countries are all faced with the pressure to conduct energy and industrial upgrading and transformation. As a state-owned enterprise and with the vision of “becoming a benchmark enterprise in health and green industries,” TSC has its indispensable duty to be part of Taiwan net zero actions.

As the international focus has shifted gradually from renewable energy to net-zero carbon emissions, in addition to conducting the Task Force on Climate-related Financial Disclosures (TCFD), TSC also merged the original Energy Sustainability Team and Environmental Sustainability under the Corporate Sustainable Development Council into the Environmental Sustainability and Net Zero Team and established a cross-departmental task force, “Net Zero Working Group,” to formulate the path and goals for achieving net zero emissions by 2050 for the company.

The Department of Planning took inventory of the Company’s business and existing resources, and made the preliminary planning of the path of energy conservation and carbon reduction in early January, 2022, dividing net zero emissions into “Renewable energy,” “Agricultural activities,” “Investment management,” and “Administrative management,” and proposed feasible low-carbon and negative-carbon practices to respond to MOEA’s request for state-owned enterprises to lead by example in the social responsibility of low carbon transition, and further to fulfill TSC’s vision and goal of “becoming a benchmark enterprise in health and green industries.” In May, 2022, the Net Zero Working Group was established to continue to handle the planning of the Company’s net zero emission pathway. Please see 2.3 Planning the Net-Zero Emission Pathway of this Report for details.



2.1 Task Force on Climate-related Financial Disclosures (TCFD)

Overview of Climate Change Adaptation

In the core business of TSC, agriculture and livestock business both belong to biological industries. The company’s main niche, “land,” belongs to an immovable resource. High temperatures, droughts, and floods caused by climate change will directly impact TSC’s biological and land assets. Meanwhile, the threat of extreme weather also facilitated the consensus between the public and the governments. In order to alleviate global warming, relevant laws and regulations have been established, and this change also directly brings risks or opportunities to enterprises.

To work in line with the government’s energy transformation policy of Net Zero by 2050, TSC initiated a research project entitled Strategic Evaluation and Suggestions on the Net-Zero Transformation of Taiwan Sugar Corporation.

TSC has taken the inventories of its resources of net-zero emission pathway from the perspectives of policies, regulations, and technological feasibility. In addition, we also referred to the Task Force on Climate-Related Financial Disclosures (TCFD) announced by Financial Stability Board (FSB) and the four core elements of information disclosure, namely Governance, Strategy, Risk Management, and Metrics and Targets, for the establishment of the climate change governance framework, identification of material risks and opportunities that may be caused to operations, proposals for relevant corresponding strategies, and establishment of climate-related metrics and targets that can be continuously managed. In August 2023, TSC responded to the TCFD initiative by signing up as TCFD Supporters. At same year, we completed our first "TSC Climate-Related Financial Disclosure Report" for internal reference, as part of our commitment to taking action to mitigate global warming.



Governance Structure and Capacity for Climate Change Issues

TSC has established the "Corporate Sustainable Development Committee" and the "Net Zero Working Group" to oversee and promote climate change and carbon reduction net zero related initiatives.

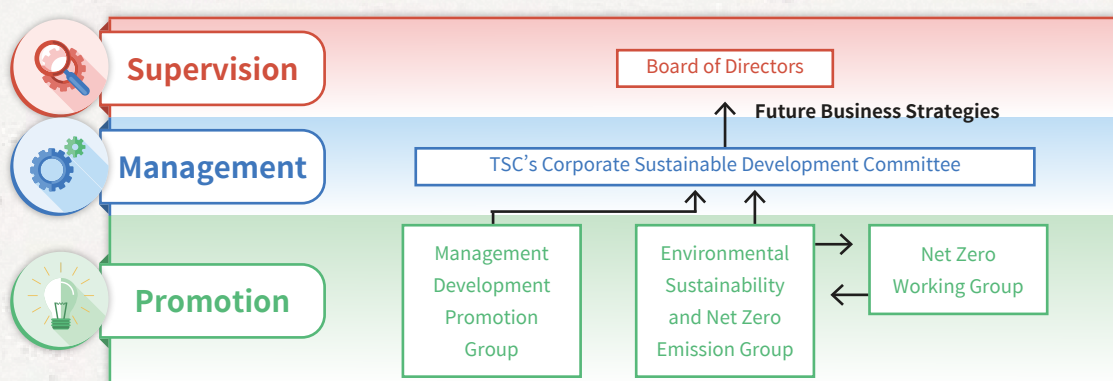
The "TSC Corporate Sustainable Development Committee" has been set up to establish relevant procedural documents, with the president serving as the chairperson and the chairman as the steering member attending committee meetings on behalf of the board of directors. The committee is composed of first-level supervisors, under which establishes the Environmental Sustainability and Net Zero Task Force, whose main tasks include handling the environmental protection policy, GHG control and carbon footprint certification and the promotion and revision of relevant businesses; establishing the environmental accounting system and environmental policies of the Company and be responsible for the revision of the ESG performance indicators; assisting all district offices with the promotion of biodiversity management; assisting all units with the GHG inventory, GHG reduction and carbon footprint certification businesses; assisting all units with the setting of work plans for energy conservation, water conservation and renewable energy utilization; handling the Company's comprehensive educational training in terms of environmental sustainability, energy conservation, renewable energy utilization, and carbon reduction; setting the Company's schedule for net-zero, assisting all units (including district offices) with the formulation of work plans for carbon reduction and carbon sequestration offset, and implementing various execution plans.

"Net Zero Working Group" is a cross-departmental task force, with the president serving as the convener to promote the net zero emission business of the Company, and conducts autonomous carbon inventory and inspection, along with ISO 14064-1 greenhouse gas verification, and sets carbon reduction targets and strategies in accordance with the inventory results.

The assessment of climate-related risks and opportunities and the setting of corresponding strategies discussed among all units in the Corporate Sustainable Development Committee and Net-Zero Task Force are merged into the future business strategy in the future, and will be submitted to the board meeting for review every November.

In 2023, the Company organized the "ISO 14064-1: 2018 GHG Verification Counseling and External Verification Project", which included the education and training for participating personnel. Six business divisions assigned relevant personnel to participate in the entire training process and obtain qualification as internal verifiers. In addition, the Company also held 2 sessions of internal teaching workshops on independent GHG Inventory to ensure the smooth independent Inventory.

TSC's Climate-Related Governance Structure Diagram



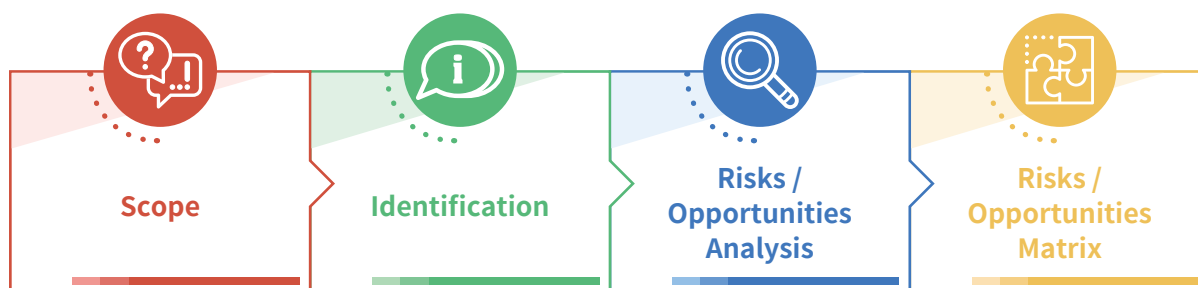
Net zero emissions by 2050 is a key national policy and also a focal point in TSC's training agenda. In 2023, TSC organized two training sessions: the "Net Zero Pathway Strategy Training Program" and the "Keynote speech on carbon rights trading mechanism and enterprise management application." Three directors participated in the training course of "Risk and Opportunities of Climate Change Trends to Corporate Management" and "Distance between Climate Change and Us" held by Taiwan Corporate Governance Association and the "Risks and Opportunities of Climate Change and Net-Zero Emission Policies to Corporate Management" held by Securities & Futures Institute, with a total of 12 hours of training.

Identification and Management of Climate-Related Risks and Opportunities

TSC officially imported the framework of Task Force on Climate-related Financial Disclosures (TCFD) in 2021. In accordance with the four major aspects of governance, strategy, risk management, and indicators and goals, and with reference to the existing risk management measurement standards, the climate-related risk and opportunity assessment scale has been defined, and climate-related risk identification and assessment as well as the climate change response structure have been established.

The Department of Planning, the organizer of Business Development Promotion Group under the Corporate Sustainability Committee is responsible for convening meetings for the identification and assessment of climate-related risks and opportunities. Guidelines for Risk Assessment was referred to for the identification and assessment of the climate-related risk matrix to define risk levels. The annual results are submitted to the Corporate Sustainability Committee and the progress is reported at the meeting of the Net-Zero Task Force.

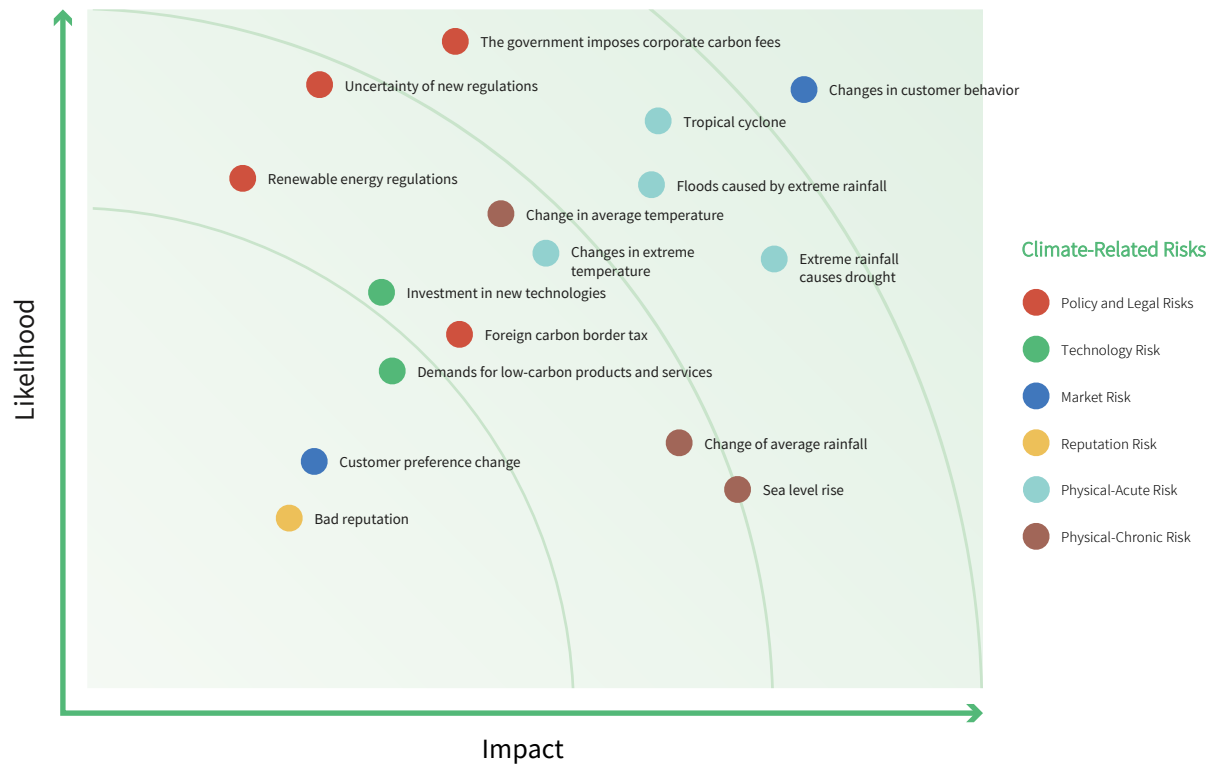
Identification process of climate change risks and opportunities



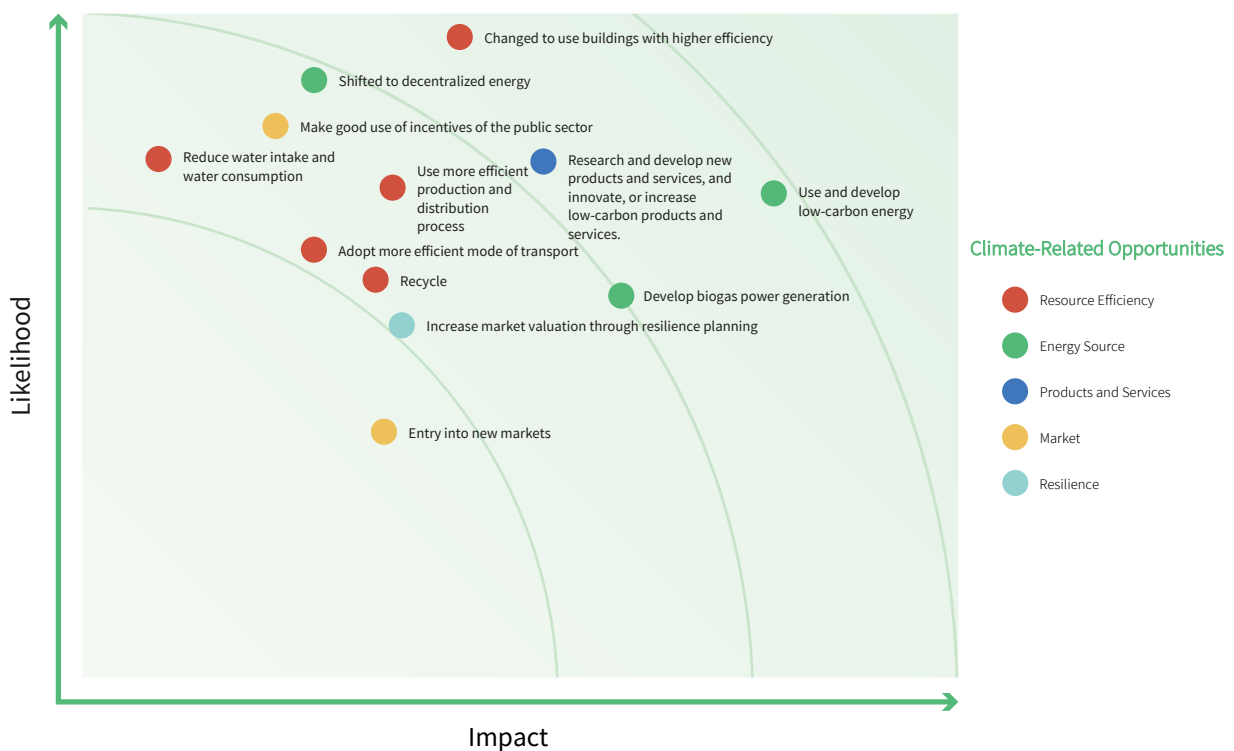
Results of climate change risks and opportunities identification

According to the TCFD recommendations, 16 climate risk issues (including 7 physical risks and 9 transition risks) and 12 opportunity issues the business divisions of TSC have to identify were formulated. After assessing the occurrence probability and level of impact of each topic, a 5-point scale of risk and opportunity matrix was used, and a total of 5 major climate-related risks and 2 major climate-related opportunities were identified.

Climate-related Risks Matrix



Climate-related Opportunities Matrix



Climate-related Scenario

The Company used the transition and physical risks and climate opportunities recommended by TCFD for the scenario setting. Due to the fact that climate-related risks and opportunities will affect the future strategies and financial planning, TSC adopted the Worst-case Scenario to analyze and evaluate its climate strategy resilience.

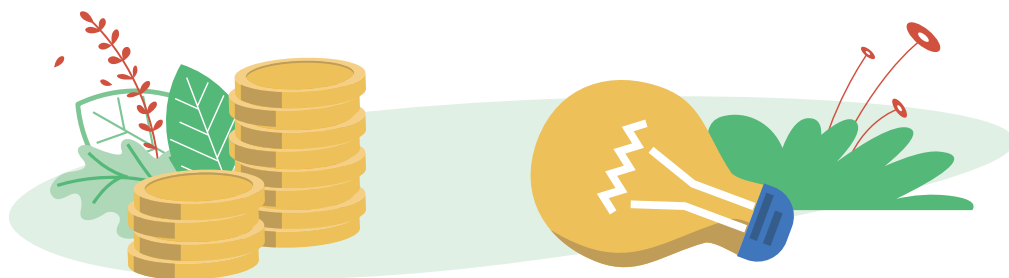
List of Usage Scenarios of TSC's Climate-Related Risk Assessment

Types of climate-related risks and opportunities	The scenario for the Company to assess risks and strategies	Scenarios
<ul style="list-style-type: none"> Transition risks Opportunities 	<ul style="list-style-type: none"> 1.5° C scenario Taiwan's Pathway to Net-Zero Emissions in 2050 Nationally Determined Contributions (NDC) 	<p>Human-induced global warming has already increased by over 1.0° C compared to pre-industrial levels. If the warming continues at its current pace, the Earth's average temperature could rise by 1.5° C between 2030 and 2052. TSC's climate-related risk and opportunity assessment scenario aligns with our country's goal of limiting the temperature increase to no more than 1.5° C compared to pre-industrial levels. Achieving this goal requires global action to halve global carbon emissions by 2030 and achieve net zero carbon emissions by no later than 2050.</p> <p>Under the global trend of stepping toward net-zero emissions by 2050, Taiwan government also released the Taiwan's Pathway to Net-Zero Emissions in 2050 in March, 2022. This 2050 net-zero emissions pathway is based on the four major transition strategies of "Energy Transition," "Industrial Transition," "Lifestyle Transition," and "Social Transition," as well as the two governance foundations of "Technology R&D" and "Climate Legislation" to highly control the GHG emissions. The National Development Council announced the stage targets and key strategies for 2050 Net-Zero transition in December, 2022, proposing the nationally determined contributions (NDCs) of the reduction target of 24% in 2030, which may have possible operational impact on the Company and its value chain.</p>
<ul style="list-style-type: none"> Physical risks 	<ul style="list-style-type: none"> The highest emissions scenario (SSP5-8.5) in IPCC's Sixth Assessment Report 	<p>The assessment scenario adopted by our company aligns with the worst-case global warming scenario outlined in the IPCC AR6. Under the scenario of extremely high GHG emissions (SSP5-8.5), climate change would lead to intensified changes in future average temperature, extremely high temperature, total annual rainfall, annual maximum one day rainfall intensity, annual maximum consecutive dry days, and intensified change in the proportion of strong typhoons, which may have operational impact on the Company and its value chain. This scenario includes :</p> <ol style="list-style-type: none"> 1. The average temperature in mid and late 21st century may rise by over 1.8° C and 3.4° C. It is estimated that the temperatures across Taiwan will continue to increase in the future. 2. In the future extreme high temperature events, the number of days with high temperatures above 36° C will increase in various places. Under the worst scenario (SSP5-8.5), the number of such days will increase by approximately 8.5 days and 48.1 days in the mid and late 21st century respectively. 3. It is estimated that the total annual rainfall in Taiwan will increase in the future. Under the worst scenario (SSP5-8.5), the average annual total rainfall will increase by approximately 15% and 31% in the mid and late 21st century respectively. 4. The maximum one-day heavy rainfall intensity in Taiwan shows an increasing trend. The average annual maximum one-day heavy rainfall intensity will increase approximately by 20% and 41.3% in the mid and late 21st century respectively. 5. The annual maximum number of consecutive rainless days has a trend of increase. The average increase rate is about 5.5% and 12.4% in mid and late 21st century respectively. 6. The number of typhoons affecting Taiwan in mid to late 21st century will decrease by 15% and 55%, the proportion of strong typhoons will increase by 100% and 50%, while the change rate of typhoon rainfall will increase by 20% and 35%, respectively.

Description and Financial Assessment of Climate-Related Risks and Opportunities Response Strategies

Risk 1: [Transition Risks — Regulatory and Policy] The Government Imposes Corporate Carbon Fees

Description of risks and strategies		
Timing of Occurrence	Medium-term	To respond to the increasing stringent carbon fees on enterprises in accordance with the Climate Change Response Act, TSC will adopt strategies such as improvement of the boiler equipment in Xiaogang Refinery of the Sugar Business Division, expansion of the cogeneration scale in Shanhua Sugar Factory and Huwei Sugar Factory, change of the cultivation method (ratooning), renew boiler equipment in the Agriculture Business Division, the renewal of energy conservation equipment in the Leisure Business Division, The Livestock Business Division leases the roofs for solar energy equipment installation, purchase of electric vehicles for the replacement of fuel ones in the Secretariat, the improvement of boilers and renewal of energy conservation equipment in the Biotechnology Business Division, etc. to reduce the financial risks brought by carbon fees.
Likelihood	Extremely High	
Impact	Moderate	
Types of Financial Impact	Period	Description of Financial Impact
Financial Impact of Risks	Short-term	[Cost increase] The carbon fee is estimated at NTD 200 per tonne in 2023 to 2025.
	Medium-term	[Cost increase] The carbon fee is estimated at NTD 500 per tonne in 2026 to 2030.
	Long-term	[Cost increase] The carbon fee is estimated at NTD 750 per tonne in 2031 to 2040. The carbon fee is estimated at NTD 1,000 per tonne in 2041 to 2045. The carbon fee is estimated at NTD 1,500 per tonne in 2046 to 2050.
Financial Impact of Response Strategies	Short-term	[Capital expenditure] Improvement of the boiler equipment, renewal of energy conservation equipment, purchase of electric vehicles for the replacement of fuel ones.
		[Depreciation costs increase] Boiler equipment, energy conservation equipment, depreciation costs of electric vehicles.
		[Maintenance costs increase] Boiler equipment, energy conservation equipment, depreciation costs of electric vehicles.
	Medium-term	[Cost reduction] Offset carbon fees due to the decrease in greenhouse gas emissions, specifically in terms of CO ₂ e, reduce the costs of purchased electricity.
		[Capital expenditure] Improvement of the boiler equipment, expansion of the cogeneration scale in Shanhua Sugar Factory and Huwei Sugar Factory, renewal of energy conservation equipment, purchase of electric vehicles for the replacement of fuel ones.
		[Depreciation costs increase] Boiler equipment, cogeneration, energy conservation equipment, depreciation costs of electric vehicles.
	Long-term	[Maintenance costs increase] Boiler equipment, cogeneration, energy conservation equipment, maintenance costs of electric vehicles.
		[Cost reduction] Offset carbon fees due to the decrease in greenhouse gas emissions, specifically in terms of CO ₂ e, reduce the costs of purchased electricity.



Risk 2: [Transition Risks – Market] Changes in Customer Behavior

Description of Risks and Strategies			
Timing of Occurrence	Long-term	The trend of the global vehicle market will change from traditional fuel vehicles to electric vehicles. Coupled with the plan to ban the sale of fuel vehicles in Taiwan's 2050 Net-zero Emission Strategy, the gasoline market will be significantly changed. The demand for gasoline in the overall market will gradually decrease in the future, leading to decreased annual gasoline consumption, causing decrease in annual gross margin. The Petroleum Business Division will outsource the installation of charging stations in its short- and medium-term plans and install self-operated charging stations and hydrogen refueling stations in the long-term plan as the coping strategies to reduce financial impacts this trend may bring.	
Likelihood	Extremely High		
Impact	Extremely severe		
Types of Financial Impact	Period	Description of financial impact	
Financial Impact of Risks	Short-term	[Revenue decrease]	
	Medium-term	The annual gasoline consumption (of the Petroleum Business Division) is decreasing, leading to decreased annual gross margin.	
	Long-term		
Financial Impact of Response Strategies	Short-term	[Revenue increase]	
	Medium-term	Rents and profit sharing income from the setting of charging stations.	
	Long-term	[Capital expenditure] Install the charging stations and hydrogen refueling stations.	[Raw material costs increase] Costs of purchasing electricity and hydrogen.
		[Depreciation costs increase] Depreciation costs of the charging stations and hydrogen refueling stations.	[Labor cost increase] Expenses for additional personnel. [Revenue increase] Operating income from charging and hydrogenation.

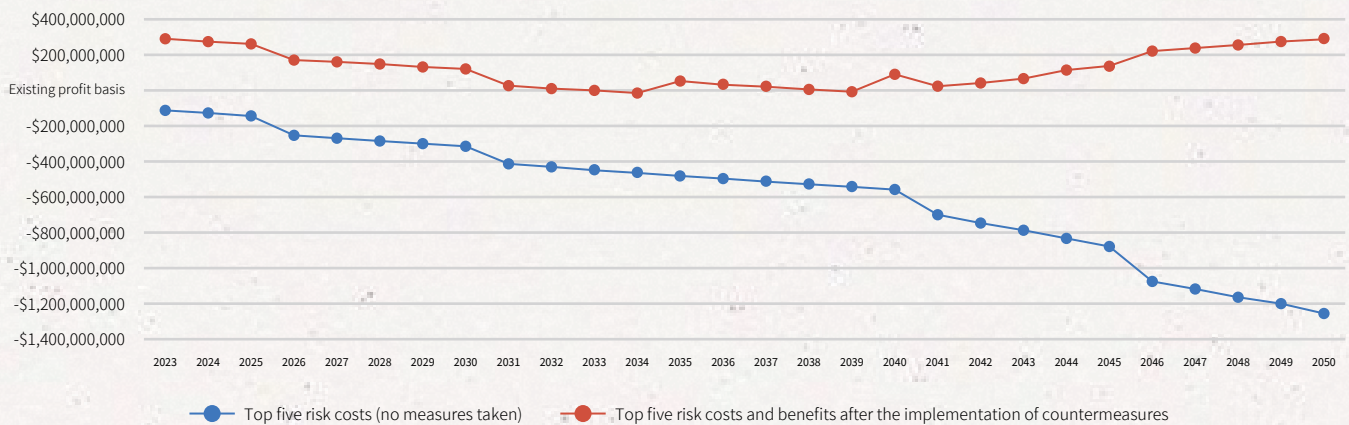
Risk 3+Risk 4: [Physical Risks – Acute] Typhoon [Physical Risks – Acute] Extreme Rainfall Causes Floods

Description of Risks and Strategies			
Timing of Occurrence	Short-term	According to IPCC AR6, Taiwan may encounter larger scale typhoons or more frequent extreme rainfall, which may result in financial losses of the Company. The Department of Agribusiness Management has adopted the corresponding strategies of planting other crops whose growth periods do not overlap the period when tropical cyclones occur often and the implementation of the dredging projects for the irrigation and drainage facilities and the ditches. The Petroleum Business Division, on the other hand, makes use of insurance to transfer the risks to lower the financial losses.	
Likelihood	Extremely High (Typhoon)/ High (Extreme rainfall causes floods)		
Impact	severe		
Types of Financial Impact	Period	Description of financial impact	
Financial Impact of Risks	Short-term	[Revenues and gross profits decrease]	
	Medium-term	The gross profits decrease due to the damage loss caused by typhoons and floods.	
	Long-term	The loss of hardware equipment due to the damage loss caused by typhoons and floods.	
Financial Impact of Response Strategies	Short-term	[Capital expenditure] Implementation of the dredging projects for the irrigation and drainage facilities and ditches.	[Revenue and gross profit decrease] Difference in gross profit between switching to other crops and the original crop.
	Medium-term	[Depreciation costs increase] Depreciation costs of the dredging projects for the irrigation and drainage facilities and ditches.	[Maintain revenues] Reduced gross profit loss after the countermeasures.
	Long-term	[Costs increase] Expenses on buying insurance.	

Risk 5: [Physical Risks – Acute] Extreme Rainfall Causes Drought

Description of Risks and Strategies		
Timing of Occurrence	Short-term	Due to climate change, in the future, the distribution of rainfall may be extreme, and the uneven distribution of rainfall could greatly increase the likelihood of drought, and when Taiwan Water Corporation stops water supply, it could cause disruption of operation of TSC facilities. The Leisure Business Division purchases water resources externally in the face of the risk of water supply suspension to reduce the property losses caused by operational disruption.
Likelihood	High	
Impact	Extremely severe	
Types of Financial Impact	Period	Description of Financial Impact
Financial Impact of Risks	Short-term	[Revenue decrease] The suspension of water supply from Taiwan Water Corporation may cause the losses of revenues and gross profits resulted from the interruption of the operation of facilities for the Leisure Business Division.
	Medium-term	
	Long-term	
Financial Impact of Response Strategies	Short-term	[Cost increase] Cost of purchasing water resources externally. [Maintain revenues] Reduced gross profit loss after the countermeasures.
	Medium-term	
	Long-term	

Consolidated Financial Yearly Shifting Benefits Chart for the Five Major Climate-Related Risks and Response Strategies



Note : In the Financial impact (NTD/year), the mark, “-” means decrease while “+” means increase in operating profits.



Opp 1: [Energy Source] Use and Develop Low-carbon Energy

Description of Opportunities and Strategies		
Timing of Occurrence	Short-term	To respond to the renewable energy strategies of the country's 2050 Net Zero Emission goal, TSC's land and assets cooperate with the development of the solar power generation system and obtain financial opportunities from rents and profit sharing.
Likelihood	High	
Impact	Extremely High	
Types of Financial Impact	Period	Description of Financial Impact
Financial Impact of Response Strategies	Short-term	[Costs increase] Land value tax for land required for the development of solar power generation.
	Medium-term	[Costs increase] Labor costs required for the management of the solar PV equipment. [Revenue increase] Development royalty revenues (rent) collected from land leased to cooperative manufacturers.
	Long-term	[Revenue increase] Operation royalty revenues (profit sharing) obtained from the signing of contracts with manufacturers for the development of solar PV equipment.

Opp 2: [Resource Efficiency] Changed to use Buildings with Higher Efficiency

Description of Opportunities and Strategies		
Timing of Occurrence	Medium-term	To respond to the energy-saving and low-carbon building strategy of the country's 2050 Net Zero Emissions goal, TSC will adopt low-carbon buildings in the future or obtain buildings with green building labels for higher rental returns and lower energy use costs.
Likelihood	Extremely High	
Impact	Moderate	
Types of Financial Impact	Period	Description of Financial Impact
Financial Impact of Response Strategies	Short-term	[Cost increase] Investment in low-carbon buildings or obtain buildings with green building labels.
	Medium-term	[Cost decrease] Reduce costs of carbon fees. [Revenue increase] Increase rental income.
	Long-term	[Cost decrease] Reduce energy costs.

Consolidated Financial Yearly Shifting Benefits Chart for the Two Major Climate-Related Opportunities Strategies



Note : In the Financial impact (NTD/year), the mark, “-” means decrease while “+” means increase in operating profits.

2.2 Statistics of Energy and Carbon Emission

The development of science and technology and human civilization has caused drastic increase in temperature over the past five decades. Global climate change not only causes extreme weather but also directly or indirectly influences the corporate operations and consumer behavior. As a state-owned enterprise, TSC has responded to government policies from changing the early sugar production process into the cogeneration (CHP) of burning bagasse, promotion of large-scale afforestation, to the development of circular economy in the recent years, such as the installation of solar power generation devices, biogas power generation, renovation of new type of pig farms, and under-forest economy, these all show TSC's endeavor in energy conservation and carbon reduction and the commitment to protecting the earth.

Statistics of Energy Consumption

In 2023, the energy consumption within the organization was 1,483,919.99 GJ, and the energy intensity was 0.05 GJ/ thousand of revenue. The primary reason is that the energy consumption of each business operation has increased, along with an increase in revenue, resulting in the energy intensity in 2023 being the same as in 2022.

Annual Energy Consumption within the Organization

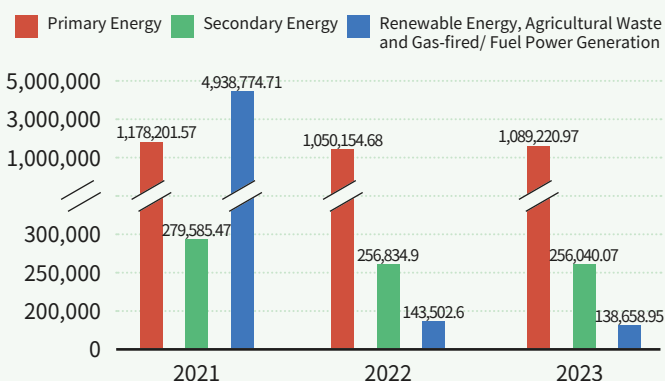
Energy category	2021	Percentage of total energy consumption (%)	2022	Percentage of total energy consumption (%)	2023	Percentage of total energy consumption (%)
Primary energy (GJ)	1,178,201.57	18.42%	1,050,154.68	72.40%	1,089,220.97	73.40%
Secondary energy (GJ)	279,585.47	4.37%	256,834.9	17.71%	256,040.07	17.26%
Renewable energy, agricultural waste and gas-fired / Fuel power generation (GJ)	4,938,774.71	77.21%	143,502.6	9.89%	138,658.95	9.34%
Total energy consumption (GJ)	6,396,561.75	-	1,450,492.18	-	1,483,919.99	-
NTD thousand of revenue	27,122,957	-	28,823,585	-	30,187,223	-
Total energy consumption intensity (GJ/ NTD thousand of revenue)	0.24	-	0.05	-	0.05	-

Note :

1. Primary energy includes gasoline, diesel, heavy oil, natural gas (NG), liquefied petroleum gas (LPG), coal.
2. Secondary energy is purchased electricity.
3. Renewable energy is biogas power generation.
4. Agricultural waste-to-energy refers to biomass power generation from bagasse cogeneration.
5. All the energy consumption was actual measured values.
6. The energy conversion coefficient refers to the calorific value coefficient of various energy sources in the content of 6.0.4 version of MOENV's GHG Emission Coefficient Management Table. Gasoline (7,800kcal/L), Diesel (8,400kcal/L), Heavy oil (9,600kcal/L), Natural gas (NG) (8,000kcal/m³), Liquefied petroleum gas (LPG) (6,635kcal/L), Coal (6,080kcal/kg), Purchased electricity (860kcal/ kWh), 1kcal=4.184KJ.

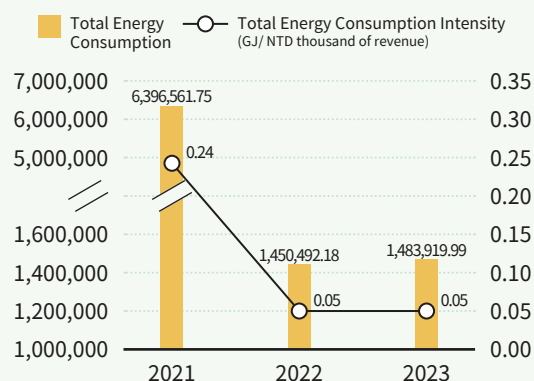
Energy Consumption

unit : GJ



Energy Consumption Intensity

unit : GJ



Greenhouse Gas Inventory

TSC has been dedicated to carbon reduction for years, the GHG emissions were converted from the material input into the environmental accounting system, and are disclosed in this Report. Starting from 2022, TSC has followed the ISO 14064-1 greenhouse gas inventory principles to conduct a company-wide greenhouse gas inventory for the year 2021. (The organizational inventory boundary for the year 2021 did not include the Gangshan Incineration Plant and Kanting Incineration Plant as the contracts for operation by the local government terminated on November 9, 2021, and December 21, 2021, respectively, resulting in the cessation of outsourced operation services.) Provide the disclosure of more accurate emission figures, and the implementation will be conducted annually thereafter. In 2023, the total GHG emissions converted from the input materials in the Company's accounting system was 128,449.8120 tCO₂e, a decrease of 27.12% compared with 2022. The GHG emission intensity is 0.004 tCO₂e/NTD 1,000 of revenue, a decrease of 33.33% compared with 2022. The main reason is that the livestock farms decreased the number of pigs due to the renovation, resulting in a reduction in the Company's overall GHG emissions. The 2023 GHG emissions of the independent inventory will start from 2024, so such data will be disclosed in the subsequent year's Report.

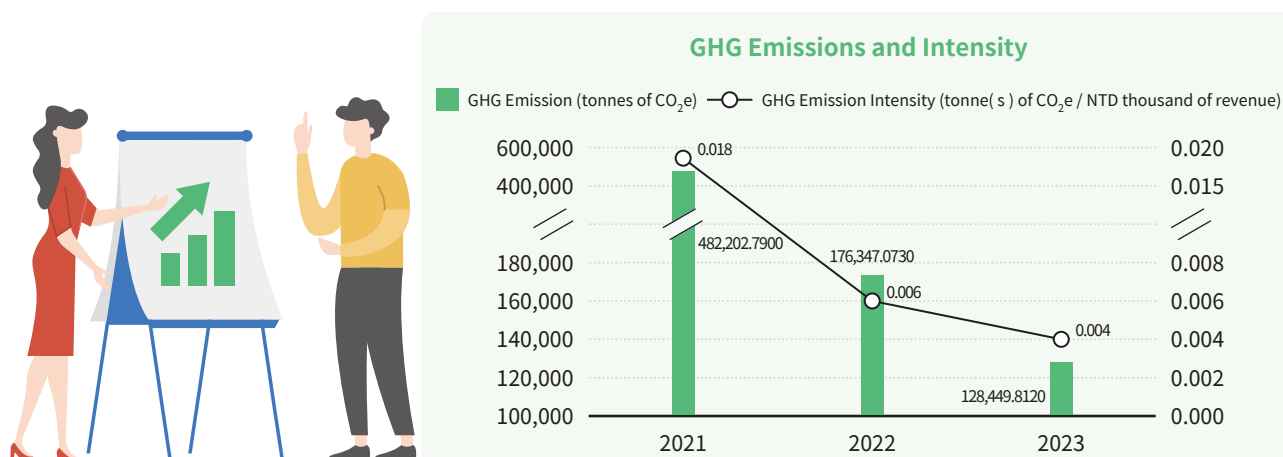
In terms of the verification work of GHG inventory, in addition to the original Xiaogang Factory of Sugar Business Division, the scale was further expanded in 2023. A total of 2022 GHG inventory of 7 sites, including Dong Hai Feng Agriculture Circulation Park of the Livestock Business Division, Wushulin Park of the Agriculture Business Division, Tainan Sales Office of the Marketing Business Division, Xin Jin Station of the Petroleum Business Division, Evergreen Plaza Hotel of the Leisure Business Division, and the Biomaterial Processing Factory of the Biotechnology Business Division was conducted in accordance with ISO 14064-1:2018 GHG inventory standards, and the verification by a third-party impartial unit was passed, and the GHG verification statement was also obtained.

GHG Emissions within the Organization over the years

Calculated based on inputs from the environmental accounting system			
	2021	2022	2023
GHG emissions (tonnes of CO ₂ e) (Category 1+ Category 2)	482,202.7900	176,347.0730	128,449.8120
Revenues of the current year (NTD thousand)	27,122,957	28,823,585	30,187,223
GHG emission intensity (tonnes of CO ₂ e/ NTD thousand of revenue)	0.018	0.006	0.004

Note :

1. GHG emission intensity = GHG emissions/ Revenues of the current year.
2. Scope : Taiwan Sugar Headquarters, 7 Business Divisions, 6 Operation Branches, Taiwan Sugar Research Institute and Kaohsiung Branch, the scope of 2021 included Gangshan Incineration Plant and Kanting Incineration Plant. (The calculation is performed by multiplying the activity data for inputs such as oil, water, electricity, gas, and pigs, which are invested in the environmental accounting system, by the carbon emission coefficients.)
3. The reference parameter description is based on the content of 6.0.4 version of MOENV's GHG Emission Coefficient Management Table. For the CO₂e equivalent conversion GWP value referred to that from the IPCC Fourth Assessment Report published in 2007, where CO₂=1, CH₄=25, N₂O=298 for the year 2021. For the years 2022 and 2023, GWP values from the IPCC Sixth Assessment Report published in 2021 are used, where CO₂=1, CH₄=27.9, N₂O=273.



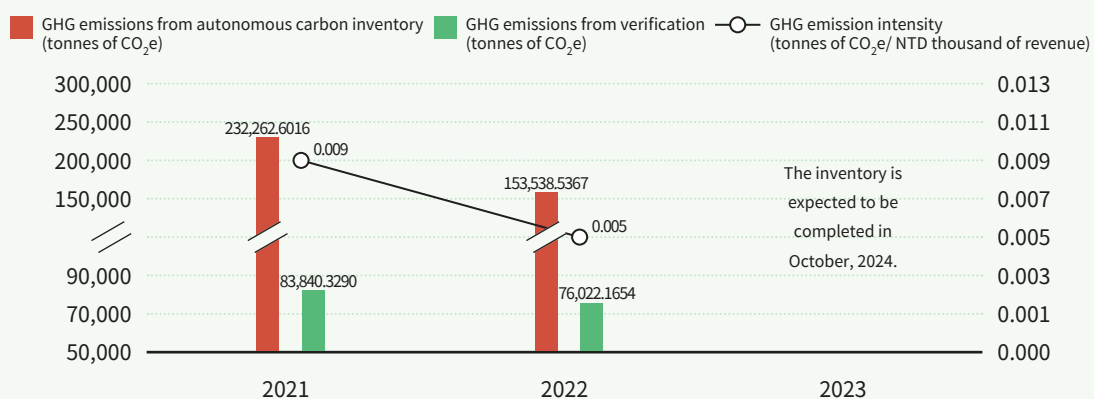
According to the ISO 14064-1 Inventory Standards (continue)

依 ISO 14064-1 盤查標準	2021	2022	2023
GHG emissions from autonomous carbon inventory (tonnes of CO ₂ e) (Category 1+ Category 2) (The emissions of the independent inventory did not include Gangshan and Kanting Incineration Plants)	232,262.6016	153,538.5367	The inventory is expected to be completed in October 2024
GHG emissions from verification (tonnes of CO ₂ e) (Category 1+ Category 2) (The scope of inspection is as indicated in Note 2)	83,840.3290	76,022.1654	
GHG emission intensity (tonnes of CO ₂ e/ NTD thousand of revenue)	0.009	0.005	

Note :

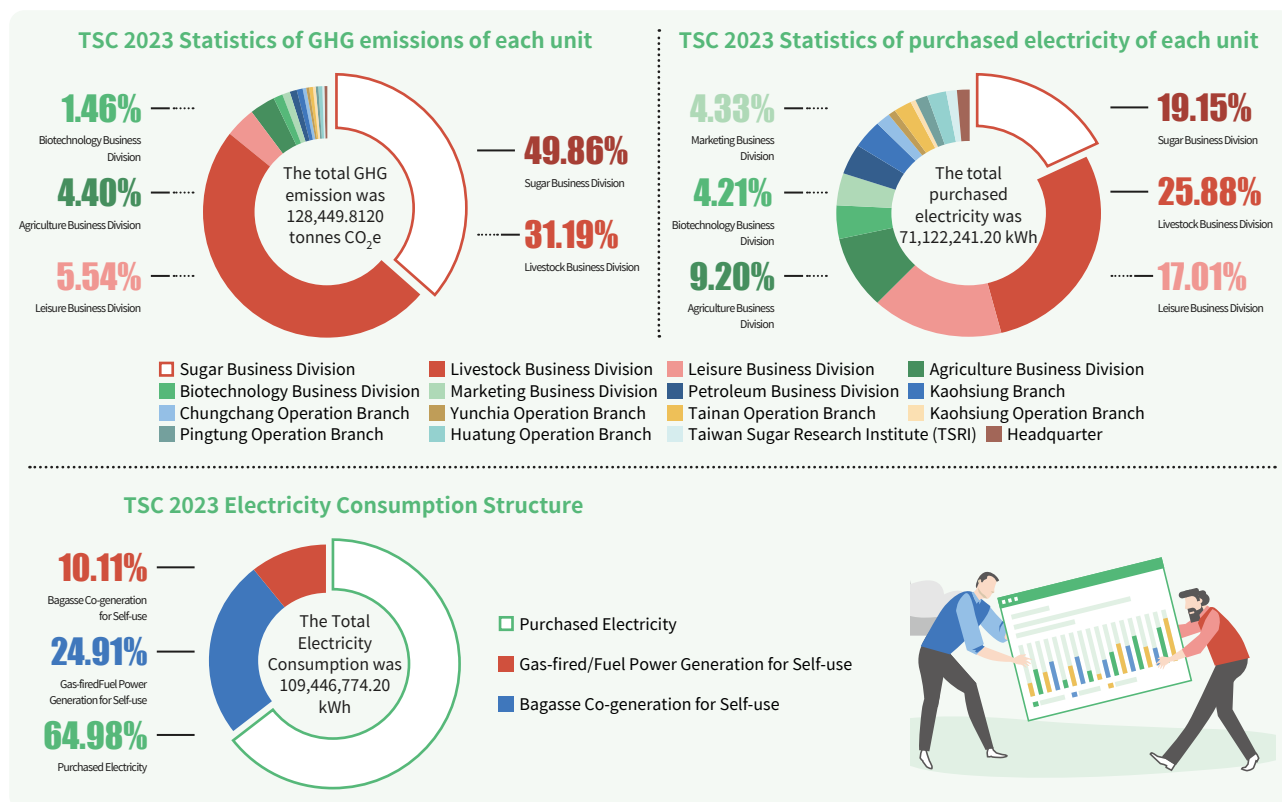
1. Scope of autonomous carbon inventory: Taiwan Sugar Headquarters, 7 Business Divisions, 6 Operation Branches, Taiwan Sugar Research Institute and Kaohsiung Branch.
2. The GHG verification data disclosed were data verified as of 2022. The verification units in 2021 were only Xiaogang Factory of the Sugar Business Division. In 2022, the expansion includes seven sites: Xiaogang Factory of the Sugar Business Division, Dong Hai Feng Agricultural Circulation Park of the Livestock Business Division, Wushulin Park of the Agriculture Business Division, Tainan Sales Office of the Marketing Business Division, Xin Jin Station of the Petroleum Business Division, Evergreen Plaza Hotel of the Leisure Business Division, Biomaterial Processing Factory of the Biotechnology Business Division.
3. In 2022, the GHG verification in Category 1 was 66,180.4088 tonnes of CO₂e, Category 2 was 9,841.7566 tonnes of CO₂e, Category 3 was 74,414.1385 tonnes of CO₂e, Category 4 was 159,910.3947 tonnes of CO₂e, Category 5 was 11,781.4541 tonnes of CO₂e. The greenhouse gases investigated for the GHG inventory were carbon dioxide, methane, nitrous oxide, and HFCs. Among the ozone-depleting substances (ODS), there are the fugitive emissions of R12 (CCl₂F₂) and R22 (CHF₂Cl), whose fugitive emission amounted to 5.1000 tonnes CO₂e and 14.2108 tonnes CO₂e in 2022, respectively.
4. GHG emission intensity = GHG emissions/ Revenues of the current year.
5. The reference parameter description is based on the content of 6.0.4 version of MOENV's GHG Emission Coefficient Management Table. For the CO₂e equivalent conversion GWP value referred to that from the IPCC Fourth Assessment Report published in 2007, where CO₂=1, CH₄=25, N₂O=298 for the year 2021. For the years 2022 and 2023, GWP values from the IPCC Sixth Assessment Report published in 2021 are used, where CO₂=1, CH₄=27.9, N₂O=273.
6. The GHG verification data for 2023 will be disclosed in the 2024 Sustainability Report after verification.
7. The GHG Inventory Survey is mainly based on the emission coefficient method and supplemented by the mass balance method.

GHG Emissions and Intensity



TSC's Carbon Emissions and Power Consumption Structure

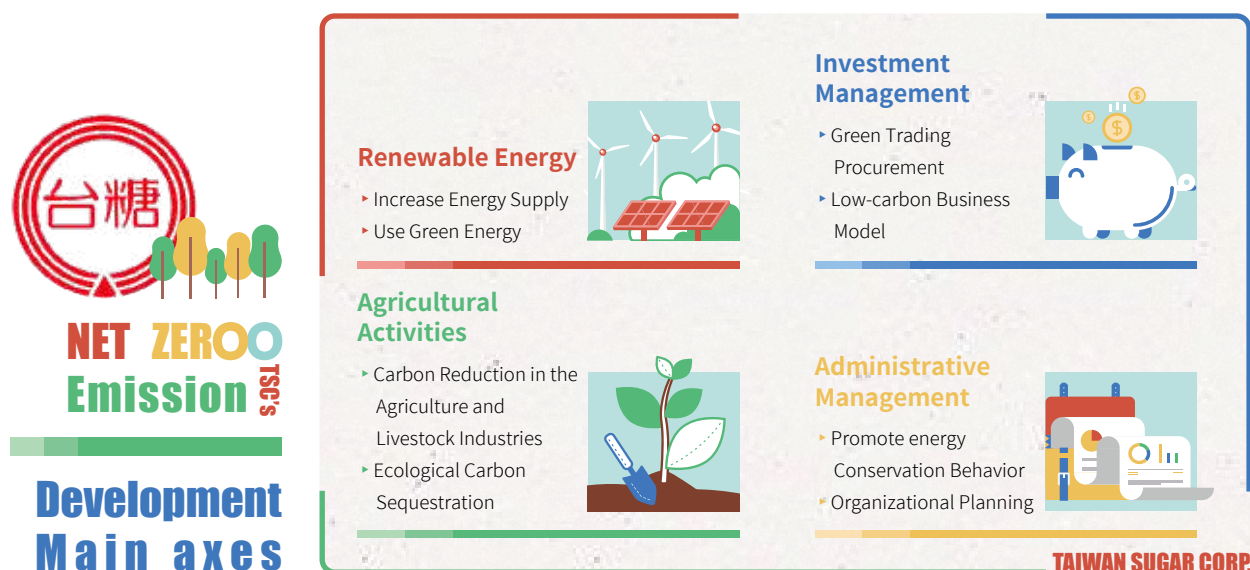
According to the statistics of the environmental accounting system, the GHG emissions of TSC in 2023 (Category 1+ Category 2) was 128,449.8120 tonnes CO₂e, and the main carbon emitters are the Livestock Business Division and the Sugar Business Division, whose emissions accounted for 81% of the Company's total carbon emissions, and therefore, will be prioritized as the targets for carbon reduction and energy conservation improvement. In addition, TSC still uses purchased electricity (from Taiwan Power Company) as the major source of electricity, accounting for 64.98% of the total electricity demands. For the green electricity, approximately 10.11% comes from the cogeneration in Shanhua Sugar factory and Huwei Sugar factory and the biogas power generation of the Livestock Business Division.







2.3 Net Zero Emissions Pathway Planning

After the government announced the 2050 Net Zero Emission Policy Pathway Blueprint, TSC followed the government's lead and established a Net-Zero Task Force in May, 2022 to start the identification of the emission sources of each unit in 2021 and conducted the first independent carbon inventory. In 2023, the second independent inventory (of 2022 GHG emissions) was conducted. Based on the inspection results, the TSC's net-zero carbon emission blueprint was developed. The meetings of the Net-Zero Task Force were regularly held, and each unit reported on the formulation of the carbon reduction strategies and implementation status.

TSC has taken inventories of its own agricultural advantages and biological resources, and also cooperates with the MOEA's net-zero transition structure of "Low carbon-Zero carbon" and "Energy-Industry" and uses the circular economy model to divide TSC's net-zero emission development into "Renewable energy," "Agricultural activities," "Investment management," and "Administrative management."



TSC's Development Direction, Projects, and Specific Actions Toward Net Zero Emission

Main Axes	Purpose	Items	Specific Actions
 Renewable Energy	<p>Strengthen energy efficiency, create a low-carbon operating model, and strive to improve efficiency during the manufacturing process to move toward the goal to expand the use of renewable energy and develop low-carbon industries. The long-term goal is to reduce the proportion of fossil fuels used by means of changing the energy structure and introducing green renewable energy technologies to step ahead toward green energy transition and decoupling from carbon emissions.</p>	Increase Energy Supply	<ul style="list-style-type: none"> ▶ Expand the installation of solar PV system ▶ Increase the production of biogas energy ▶ Develop biomass energy from agricultural waste ▶ Install charging stations at gas stations
		Demands for Green Energy	<ul style="list-style-type: none"> ▶ Improve energy generation system and equipment to increase efficiency ▶ Increase the proportion of green electricity used in the supply chain ▶ Electrification of traffic/ transportation vehicles and agricultural machinery
 Agricultural Activities	<p>Develop low-carbon and diversified value-added utilization of resources, implement net-zero thinking by using the core capabilities and advantages of TSC, make carbon reduction and negative carbon planning and R&D of local biological resources, such as the improvement of the livestock housing and management measures of the Animal Industry Business Division to reduce carbon emissions. The diversified development and value-added utilization of circular economy in agricultural and livestock supply and production chain will help maintain or enhance the energy and economic value in products and materials, contributing to carbon emissions gap.</p>	Carbon Reduction in the Agriculture and Livestock Industries	<ul style="list-style-type: none"> ▶ Reduce the use of chemical fertilizers and make use of bio-organic fertilizers ▶ Research and development of feed enzymes to reduce emissions from pig excrement and urine (suppress the emission of methane) ▶ Intelligent and precise control of the pig houses to reduce water use and waste of feed ▶ Modern farming shortens the time to market hogs
		Ecological Carbon Sequestration	<ul style="list-style-type: none"> ▶ Carbon sequestration through afforestation ▶ Increase carbon sink of soils (application of biochar) ▶ Car fixation of microalgae
 Investment Management	<p>Construct a sound supply chain of the Company and achieve the goal of green production. Each business unit conducts regular inventory of the energy consumed, set energy-saving goals, and makes reviews and improvements. At the same time, the units can also work in line with the carbon trading mechanism in the future and invest in resources. For example, the energy-saving behavior in catering and travel in the leisure business can be promoted, and low-carbon measures and services can be provided.</p>	Green Trading Procurement	<ul style="list-style-type: none"> ▶ Cooperate with the carbon trading mechanism and take inventory of resources invested ▶ The products obtain carbon footprint verification opinion statement and certification of carbon footprint label ▶ Choose low-carbon/ carbon reduction-oriented procurement projects
		Low-carbon Business Model	<ul style="list-style-type: none"> ▶ Rent-to-own/ Sale by lease ▶ Simplify the packaging design and use recyclable and reusable packaging materials ▶ Invest in low-carbon and eco-friendly enterprises
 Administrative Management		Promote Energy Conservation Behavior	<ul style="list-style-type: none"> ▶ Digital transformation in the office environment ▶ Energy saving on electrical equipment and air-conditioning ▶ Use eco-friendly stationery/paper supplies
		Organizational Planning	<ul style="list-style-type: none"> ▶ Integrate cross-departmental carbon management measures ▶ Develop the supply chain carbon performance evaluation standards and apply them to the manufacturing units

2.3.1 Promotion of Renewable Energy

TSC actively works in line with the government's policies for energy transition and circular economy. Under the consideration of the feasibility criteria for technology, economy, and environment protection as well as carbon reduction, the two technologies of solar photovoltaic and biogas power generation were adopted and actively promoted. After the announcement of the government's Taiwan Net-Zero Emissions by 2050, TSC's development of the two technologies are still applicable. The results of the two technologies are as follows.

Solar Power Generation Project

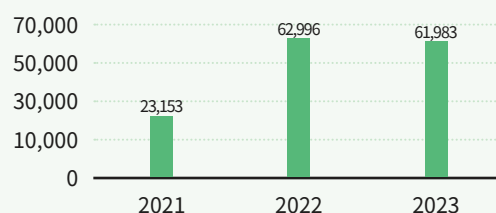
TSC takes inventory of building roofs, low-fertility agricultural land, idle land in closed factories, and detention ponds for the installation of rooftop, ground-mounted and floating solar PV energy generation equipment to make full use of the value of space while reducing fossil fuels and environmental pollution. In addition, the investment operations are handled in a fair, just, and open manner. The manufacturers install, maintain and lease the rooftop solar power generation equipment on small-area land to TSC to speed up the development. In 2023, a total capacity of 542.39 MW of solar photovoltaic facilities have been constructed, including 15.83 MW of rooftop equipment, 99.95 MW of floating PV energy generation equipment (detention ponds) and 426.61 MW of ground-mounted (including low-fertility agricultural land). The power generation benefits in the past three years are as follows. The total capacity of solar PV power generation equipment increased in 2023, yet the total annual power generation decreased compared with 2022. This is mainly because of the completion of the grid connection of 207.57MW in 2023. However, since the manufacturer has not yet obtained an Electricity Business License (EBL), its power generation capacity is not calculated for the time being.

Solar Power Generation Efficiency

	2021	2022	2023
Total equipment capacity (MW)	322.79	334.05	542.39
Total power generation (10,000 kWh)	23,153	62,996	61,983
Increase/decrease ratio	1,885.67%	172.08%	-1.61%

Total solar power generation

Unit : 10,000 kWh



Ground-type solar PV (Gukeng, Yunlin)



Ground-type solar PV (Kouhu, Yunlin)



Roof-type solar PV (Taichung Baowen Residence)



Roof-type solar PV (Yulin Huwei Rice Mill)

TSC currently continues to handle the installation of rooftop, ground-mounted and floating solar PV power generation equipment. It is estimated that new capacity of 21.7 MW will be added in 2024, and the development of renewable energy will continue for the promotion of energy transition.

“

Work in Line with the Government's Energy Transformation Policy of Net Zero by 2050

It is estimated that by the end of 2026



the solar power generation efficiency will be

108,401 GWh/year

the capacity of the solar power generation equipment is

867.21 MW

”

Use the Waste Agricultural Resources to Generate Power to Step Toward Green Independence

TSC uses bagasse, manure and urine from animal husbandry, and agricultural waste resources with biomass potential for renewable energy and power generation. In 2023, the total biogas power generation (excluding REC) and power generation using agricultural waste resources amounted to 11.96 million kWh.

Utilization of Remaining Sugarcane Bagasse for Cogeneration

Huwei and Shanhua Sugar Factories of the Sugar Business Division make use of the remaining bagasse for power generation for their own use, generating 11.0618 million kWh of electricity in 2023.

Use of Pig Manure and Urine for Biogas Power Generation

Livestock Business Division used pig manure and urine for biogas power generation through the anaerobic digestion process. In 2023, 0.9037 million kWh of electricity was produced and sold to Taiwan Power Company. In 2023, the electricity generation decreased compared to 2022 primarily due to the implementation of the agricultural circular pig farm reconstruction investment plan, which involved rebuilding the pig farms adopting the method of simultaneous breeding, dismantling, and construction, leading to a reduction in pig production capacity. Consequently, no additional biomass renewable energy certificates were obtained in 2023.

TSC owns many pig farms. Starting from 2012, TSC has been invested in the development of technologies related to biogas utilization and made use of anaerobic digestion method for the pig manure and urine to generate biogas for power generation. Biogas power generation equipment has been installed in livestock farms in Haipu, Silin, Liukuaicuo, First and Second of Daxiangying Livestock Farm, and Nanjin Livestock Farm. In 2018, our First Livestock Farm in Da Xiang Yin in Pingtung became the first domestic REC certificate provider in the biomass power generation category. As of 2023, our Da Xiang Yin and Silin Livestock Farms have produced 199 certificates of biomass renewable energy for taking advantage of biogas power generation. Since 2016, to respond to circular economy, improve the environment of livestock farms and for sustainable management, TSC has fully promoted the transformation of livestock farms. The renovation of the Dong Hai Feng Livestock Farm was planned with an investment of NTD 688 million to construct the Dong Hai Feng Agricultural Circulation Park with the 460 KW biogas power generation equipment which was completed in 2020. Based on this experience, TSC continued the renovation projects for its other 13 pig farms. The estimated capacity of the biogas power generation equipment upon completion will be 1,200KW.



Dong Hai Feng Agricultural Circulation Park Biogas Center

Currently the bagasse from the sugar factories is sent to direct-fired boilers as a fuel for cogeneration, and the annual power generation reaches approximately 13 million kWh. However, sugar factory bagasse boiler cogeneration system is considered an early installation, fail to comply with the requirement for Renewable Energy Certificates (RECs) stipulated in “Regulations for the Management of Setting up Renewable Energy Power Generation Equipment” where “the equipment shall be certified as a renewable energy power generation equipment before installation,” and “the conversion efficiency of electrical energy must be above 25%.” As a result, the sugar factory cannot obtain the renewable energy certificates (REC), and the electricity generated can only be used for self-use at TSC for sugar production. Private manufacturers proposed the introduction of new technology to replace the agricultural waste power generation model with year-round operation. In addition to the source of bagasse, local agricultural waste and thinning materials are also treated at the same time to provide steam and electricity needed during the sugar factory operation period and otherwise for power generation to achieve the advantages of negative carbon and carbon trading, which has indicative significance for the high-efficiency operation and cost reduction of sugar factories. Currently, the biomass gasification power plant is being actively evaluated on its commercial scale, gasification furnace equipment, construction license application, compliance, and communication with neighbors. These efforts are part of a sustainable decarbonization plan within the domestic sugarcane sugar industry, aiming to achieve a net-zero pathway by 2050.

2.3.2 Agricultural Practices Improvement

Carbon neutrality means that an enterprise or an organization reduces or offsets its own carbon emissions through energy conservation and carbon reduction, afforestation or other natural or man-made ways within a certain period of time (the measurement period is usually one year). Net-zero emissions refers to the balance between GHG emissions and removals. In addition to CO₂, this includes other greenhouse gases such as methane (CH₄) and nitrous oxide (N₂O). To reverse the climate crisis, it is not enough to rely on carbon reduction alone, all the GHG emissions have to be reduced and the carbon-negative technologies also need to be accelerated. For TSC, key long-term strategies for achieving negative carbon emissions in the future include forest carbon fixation, soil carbon fixation, and research and development of carbon capture, utilization, and storage (CCUS) technologies.

With the long-term accumulation of bio-refining technology, TSC continues to invest in research on various biomass materials and actively develops related commercial applications derived. By combining sugar production, pig farming, biogas, green energy, and organic fertilizers, the circular economy in agriculture and livestock industries is promoted. The goal is to turn it into a green and sustainable circulation industry with zero waste and zero pollution.

Low-Carbon Sugarcane Cultivation

We actively cooperate with the government’s promotion of the “Carbon Sinks” among the 12 Key Strategies for 2050 Net-Zero Emission Transition and also follow the three axes of the agriculture net-zero emission strategy, namely “reduction,” “enhancement of carbon sink,” and “circulation.” Relevant strategies are gradually imported into the sugarcane planting process so as to move toward the goal of net-zero emission, which include :

- 1 Evaluation and analysis of CO₂ sequestration potential during the sugarcane growth period.
- 2 Evaluation and analysis of the soil organic matters and carbon sink of soil after using bagasse and filter sludge as the decompaction materials in the sugarcane field.
- 3 Widely plant green manure crops during the fallow period of the sugarcane field to increase the organic matter and soil carbon sink of soil.
- 4 Widen the area of sugarcane ratoons to reduce the frequency of plowing.
- 5 Cooperate with the reasonable application of fertilizers and introduce livestock biogas slurry to replace some chemical fertilizers for the reduction of nitrous oxide (N₂O) emissions.
- 6 Replace petrochemical diesel with renewable diesel^{Note} to reduce carbon emissions from agricultural machinery and truck transportation.
- 7 Replace the existing bagasse direct-fired boilers with gasification burners to increase energy efficiency, and the biochar is returned to the field to increase the carbon sink of the sugarcane soil.



Note : Types of renewable diesel

	Category	Manufacturing Source	Manufacturing Technology	Price
Renewable Diesel	Biodiesel	Animal and Vegetable Oils or Waste Cooking Oil	NaOH is used as the catalyst for reaction, followed by the procedures of neutralization, washing, separation, and drying.	NTD 45/L
	Waste Plastic Oil	Waste Plastics	Waste plastics undergo procedures of catalytic cracking, fractionation, and filtration.	NTD 32/L

Sugarcane is a C4 crop^{Note} with an extremely large biomass unit yield on earth. It has high-efficient carbon sequestration capacity, having significant contributions to mitigate the greenhouse effect. In addition to producing sugar from sugarcane, TSC further makes use of the by-products such as bagasse, molasses, and filter mud. The bagasse, after being crushed, is planned to be made into RDF-5 fuel rods in the future to be burned in a gasifier to provide energy. Relevant research is still on going. Bagasse can also be provided to mushroom farmers for reuse. When mixed with thinning wood chips from flat land afforestation, bagasse can be used to make mushroom grow bags with mushroom cultivation substrates. The biomaterials in the discarded mushroom bags can be mixed with kitchen waste, biogas slurry, sugar filter sludge and molasses and composted to produce organic fertilizer and soil improver of the farmland.

Note : Plants undergo photosynthesis, utilizing sunlight to convert carbon dioxide from the air and water from the soil into carbohydrates. There are generally three types of known photosynthesis in plants: C3, C4, and CAM (Crassulacean Acid Metabolism). Over 90% of plants on Earth are C3 plants, such as rice, wheat, soybeans, and potatoes. These plants produce a three-carbon compound as the initial product after absorbing carbon dioxide. In contrast, C4 plants, such as corn, sugarcane, sorghum, and Bermuda grass, produce a four-carbon compound as the initial product. C4 plants possess an enzyme called phosphoenolpyruvate carboxylase (PEP carboxylase), which enables efficient capture and utilization of carbon dioxide within the plant, facilitating faster carbon dioxide transfer and reducing water loss during transpiration. Consequently, C4 plants exhibit higher photosynthetic efficiency and more efficient water usage compared to C3 plants. Research indicates that C4 plants require only one-third of the water consumed by C3 plants.

Livestock distribution and reuse

Taiwan Sugar Corporation not only sells pork products but also refines internal organs into raw materials for biotechnology, developing products such as placenta extract skincare products and pig bile shampoo. The solid portion of pig waste can be directly and rapidly fermented into fertilizers and can also be co-fermented with agricultural waste and kitchen waste to generate biogas for power generation. The biogas residue left can be quickly fermented into fertilizer while biogas slurry is composted and decomposed using ectopic bio-fermentation bed.

Biomass power generation uses pig manure and urine to generate biogas energy after anaerobic fermentation, and after desulfurization treatment, the GHG such as methane originally existing in the pig manure and urine can be converted into energy to avoid these GHG being emitted into the atmosphere to further aggravate global warming. Therefore, Taisugar is currently implementing a pig farm renovation project, as detailed in 3.1 Renovation Plan of Modern Livestock Housing of this report.

In addition, after fermentation, the biogas slurry and residue can be used as fertilizers. TSC work with the MOENV's promotion of the use of biogas slurry and residues for farmland fertility and the reuse of agricultural business waste, and the biogas residues and slurry from the pig farms are irrigated to TSC's self-owned farmland. As of 2023 the cumulative irrigation amounted to 183,681 tonnes (Nanjin, Xincuo, Shilin Yi, Shilin Er, Da Xiang Yi Chang and Da Xiang Er Chang), and the amount of reused liquid waste irrigated in Douliu Breeding Farm reached 3,502 tonnes. The biogas slurry is used on the farmland to increase soil fertility, reducing wastewater discharged to rivers and thus reduced pollution.

TSC will continue to promote energy conservation, carbon reduction, and actions related to green energy development when conducting pig farming business so that the livestock industry will no longer be an obnoxious

industry that some people or groups claim should be responsible for the rise of global temperature and degradation of environment. We look forward to seeing more people, enterprises and groups to join the efforts for net zero emission to reduce the pace of deterioration of the environment on earth, so as to leave a better environment for ourselves and for the generations to come.

2.3.3 Engaging in Green Operation

TSC is a state-owned agricultural enterprise. Its characteristics are to make contributions to the country and society, or to engage in businesses that the private sectors cannot conduct or beyond their capacity, and that enterprises can benefit from it. Therefore, to work in line with the government's new agricultural and circular economy policies, TSC makes use of its unique resources, such as land, brand, and agricultural management to rethink the direction of the enterprise, aiming at reducing dependence on production and raw materials, identifying the niche for recyclable service items, and combining those with local needs and characteristics of industrial development so as to assist with the industrial revitalization of private and local industries, making good national, regional and industrial linkages that will further boost the economic transformation in Taiwan, so as to fulfill our social responsibilities as a state-owned enterprise.

The most influential implementation method of circular economy is the combination of different industries to generate the mutual benefit and symbiosis of industries. Therefore, TSC makes good use of the advantages of diversified management and the characteristics of the state-owned enterprise that links the government agencies and the private enterprises for the development of innovative business models and construct a symbiotic system. In recent years, TSC has actively planned and implemented projects of agricultural circulation pig farms, Shalun Smart Green Energy Circular Village, TSC's biological material plant for calcium carbonate from oyster shells, etc., showing excellent execution and practice of circular economy.

High-value Utilization of Oyster Shells

TSC invested in the "circular use of oyster shells" as an "innovation pioneer" and built a biomaterial plant. Through the collaboration with the Industrial Technology Research Institute (ITRI), the discarded oyster shells are recovered and calcined into raw materials of calcium carbonate or ground powder, turning the shells into valuable biomass materials, enabling us to not only supply calcium carbonate for self-demands in the feed factories and farms but also provide calcium carbonate sources for domestic manufacturing of feed and fertilizers to replace imported materials.

TSC's oyster shell biomaterial processing factory has been officially operated since 2021. The processing capacity of discarded oyster shells is estimated to be 50,000 tonnes annually, producing 40,000 tonnes of calcium carbonate. In addition to solving the problems of waste and the quality of life of the local residents, it can also replace the traditional sources of the calcium carbonate from scoria obtained from digging the mountain or the imported white scoria, solving the problems of shortage and waste of natural resource while reducing the carbon travel and carbon footprint. As of the end of 2023, a total of 5,533 tonnes of discarded oyster shells have been recycled and processed.

Shalun Smart Green Energy Circular Village

The Shalun Circular Village Development Project was completed and open for use in 2021, providing 351 dwelling units and 17 shops, and is operated in Rent-to-Own mode. It is the first example of introducing the concept of circular economy into residential projects in Taiwan. The installation of the 10 items of equipment in the project, including the elevators, furniture, home appliances, air conditioners, bathrooms, kitchen waste disposal equipment, smart door locks, lighting, mattresses, and public art did not follow the one-time purchase mode like before but is changed to adopt the circular economy business model of renting services from manufacturers with sustainable warranty. For other projects, please refer to 3.4.2 Meeting the Housing Needs of the General Public of this report.

To continue the promotion of the concept of construction in circular economy, this project has been interviewed by the press, and visits from approximately 40 groups including county and city governments, colleges and universities, and construction companies. We hope that we can serve as the locomotive and build a consensus in construction related industries and serve as a strong support for the development of circular housing and circular cities, leading the overall construction industry in Taiwan to step toward circular buildings and reduce construction waste.

2018

✧ Nominee, World Architecture Festival Award (WAF)

2019

- ✧ Honored with FIABCI-Taiwan Real Estate Excellence Awards- Planning & Design Category
- ✧ Honored with the Distinguished Honor Award of Tainan City's 6th Green and Beautiful Award-Public Category

2020

- ✧ Honored with the Distinguished Honor Award of Tainan City's 7th Green and Beautiful Award-Public Category
- ✧ Awarded as Eco-friendly Excellent Construction Site of Tainan City

2022

- ✧ Honored with the 2022 Taiwan Residential Architecture Award (TRAA)- First Place for Best Residential Complex
- ✧ Golden Pin Design Award-Best of Golden Pin Design Award in Spatial Design
- ✧ Taipei Design Award-Taipei City Mayor Award
- ✧ The 15th Intelligent Living Space Design Competition-Bronze Award
- ✧ The 10th TILA Landscape Awards-Residential Living Environment-Outstanding Award



Diamond-level Low Carbon Building Label



Gold Grade Smart Building Label



Green Building (EEWH) Diamond Grade Candidate Certificate



TSC Promotes the Emerging Green Energy Businesses

As a state-owned enterprise, TSC responds to the government's 5+2 Innovative Industries Plan and the global trend based on its corporate social responsibility to actively promote the energy and resource utilization of biomass waste. In addition to the reuse of pig manure and urine from the farm, we even made investment in the establishment of a biogas energy service company to promote the local biogas energy development.

Tung Ho Steel Enterprise Corp. made assessment and intended to introduce biogas technology to develop in Taiwan. After learning that TSC has accumulated quite a lot of experience and performance in the biogas power generation over the years, Tung Ho Steel sought to cooperate with TSC. After assessing the feasibility and careful review, this cooperation project is believed to align with the government policy and the Company's development direction. Furthermore, through the cooperation, the professional technologies, manpower and the funds can be combined in the investment in the biomass energy development to create new green energy business and improve the quality of the environment in Taiwan. In addition, the operation of a private company can be more flexible and efficient, which is beneficial to the implementation and promotion of the industrial development. Therefore, TSC jointly established Tung Sugar Energy Service Co., Ltd with Tung Ho Steel, Katec R&D Corp., and Far East Steel. The investment project was approved by the Executive Yuan in June, 2020, and the construction of the first site was commenced in August, 2021; however, construction progress was delayed due to the impact of the COVID-19. In November, 2023, Tung Sugar Company began planting strains and feeding materials for gas production in the fermentation tank, and from March 2024, we started trial runs for back-end biogas power generation. It is anticipated that upon official operation in the future, the project will achieve zero waste and sustainable management.

Promoting Environmental Footprint Certification

In accordance with the Environmental Protection Administration's Carbon Reduction Label, TSC cooking oil obtained the Certificate for the Use of Product Carbon Footprint Reduction Label in 2021, and expires on December 8, 2026. Additionally, some of the sugar and frozen meat products produced by TSC have obtained the water footprint verification statements over the years to ensure information transparency and corporate social responsibility. For certifications and awards related to TSC's products and management systems, please refer to the "Certifications and Awards" section under the "About TSC" category on TSC's official website.



2.3.4 Lean Operations Management

Net-zero emissions have become an international trend and global consensus, making it an opportunity for enterprises to enhance their competitiveness and seize new business opportunities. Therefore, TSC has proposed a systematic strategy for low-carbon transition and made comprehensive inventory of energy consumption and carbon emissions and identified emission sources. Every department proposes carbon reduction practices, sets carbon reduction targets and implements net-zero emissions in accordance with the development directions and projects of net-zero emissions.

On the other hand, due to the incomplete regulations concerning national reduction targets, total cap emission trading, efficiency standards, carbon fees or carbon tax, etc., TSC actively participates in discussions on the establishment of government carbon management policies and regulations and provides relevant information in advance to serve as a reference for policy and regulation making, and strives for favorable conditions, aiming to turn TSC into a demonstration base for circular economy implementation and net-zero emissions.



Greenhouse Gas Emission Reduction Project

Due to the sugar refining and oil production operation of the Sugar Business Division, which account for more than 30% of the overall carbon emissions at TSC (Scope 1+ Scope 2), and the larger scale and year-round production of Xiaogang Refinery, which contributes over 90% of the Sugar Business Division's emissions, natural gas has been used to replace fuel oil since March 14, 2022, in order to reduce greenhouse gas emissions. As of 2022, Scope 1 and Scope 2 greenhouse gas emissions totaled 65,624 tonnes, a decrease of 18,216 tonnes compared to 83,840 tonnes in 2021, achieving a reduction of 21.7%. The greenhouse gas inventory for the Sugar Business Division for the year 2023 is currently underway and is scheduled to be completed by the end of June. Future efforts will continue to assess the feasibility of mixing natural gas with hydrogen or ammonia to gradually reduce the carbon emissions. TSC also monitors the feasibility of other emerging technologies for process improvements and plans equipment upgrades accordingly, gradually expanding the scope of greenhouse gas inventories to achieve the long-term goal of net zero emissions.

Nox Emission Reduction in the Sugar Factory

Shanhua Sugar Factory tested the use of "ionic environmental energy reactant technology" in 2023 to further reduce the emissions of NOx; Xiaogang Refinery will add denitrification equipment to the exhaust gas treatment section, which is expected to be completed in 2024.

Carbon Reduction of Boilers in the Biotechnology Plant

It is planned to change the heat transfer fluid and cross-flow boiler equipment of the biotechnology plant into natural gas ones. It is estimated that carbon dioxide emissions can be reduced by about 24%.

Expand Organizational GHG Inventory

In addition to Xiaogang Refinery of the Sugar Business Division that conducts annual GHG inventory and third-party impartial verification, TSC is in line with the policy and selected 6 demonstration sites in total for each business division in 2023 to carry out GHG inventory and verification-related counseling operations. To respond to the trend of carbon reduction, TSC will expand the boundaries of GHG inventory and obtain the third-party certification as the medium to long-term goal.

Carbon Reduction Measures of Each Unit

In order to effectively implement energy conservation and carbon reduction policies and to continue to promote energy conservation movement. In 2022, the results in electricity and energy saving (including fixed and mobile sources) in all units were converted to a total of 19,751 GJ, reducing approximately 1,445 tonnes of CO₂e.

Energy Saving Measures and Effectiveness of All Business Units

Business unit	Energy Saving Measures and Effectiveness	Energy Saving (GJ)	Tonne(s) of CO ₂ e
Sugar Business Division	Improving boiler efficiency and waste heat recovery	9,098	511
Petroleum Business Division	1. Saving fuel for automobiles 2. Replacing old electrical appliances 3. Replacing horizontal and vertical signs with LED	544	59
Agriculture Business Division	Greenhouse heat pump system update in domestic orchid nurseries	7,572	582
Tainan Operation Branch	1. Tenants' electricity consumption and business streamlining electricity usage 2. Reducing diesel consumption by dispatching fewer unit diesel trucks and agricultural machinery	1,078	115

Note :

- The data are all from actual calculation.
- The table above only lists business units with better energy saving effects and does not include all business units.
- The calculations in this table were based on the GHG Emission Factor Management Table Version 6.0.4. The CO₂e equivalent conversion GWP value referred to that from the sixth announcement by IPCC in 2021. Calculated by CO₂=1, CH₄=27.9, N₂O=273.

2.4 Green Production

TSC actively implements conservation of energy resources, process waste reduction and pollution prevention to meet the environmental regulations and requirements. In addition, we also strive to reach "no pollution in production, and no damage in growth" through source management, and we also maintain smooth communication channels to listen to different opinions from all sectors of the society so as to continue improving the environmental performance to achieve the goal of sustainable management.

2.4.1 Pollution Control

Water Resources Management

According to the Aqueduct Water Risk Atlas of the World Resources Institute, all areas in Taiwan belong to Low – Medium (1-2). All the TSC operating bases are not set up in national or international protection areas, and the water intake is from the legal water resources authorized by the government, having no significant influence on water resources. In 2023, the amount of water intake was 10,431.54 million liters, a 4.19% decrease compared with 2022, and the water intensity decrease 7.89% compared with the previous year, primarily due to an increase in rainfall of 1,102mm in the Yunlin-Chiayi-Tainan and Kaohsiung-Pingtung regions, resulting in reduced agricultural irrigation water usage.

Water Consumption and Water Intensity

Year	2021		2022		2023	
Water Body	Groundwater Body	Surface Water Body	Groundwater Body	Surface Water Body	Groundwater Body	Surface Water Body
Individual Water Consumption (million liter)	8,030.94	3,121.15	7,035	3,852.18	6,375.44	4,056.09
Total Water Consumption (million liter)	11,152.10		10,887.18		10,431.54	
NTD thousand of Revenue	27,122,957		28,823,585		30,187,223	
Water Intensity	0.00041		0.00038		0.00035	

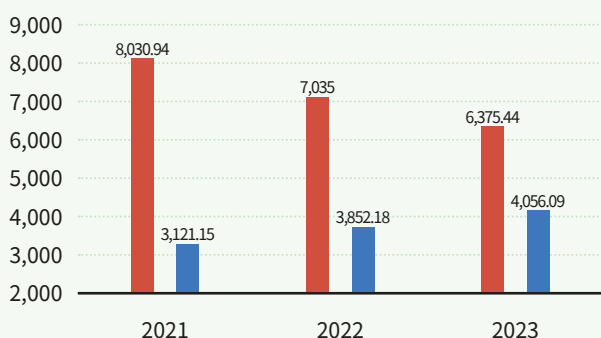
Note :

1. The statistics of water consumption of groundwater body and surface water body were measured values on water meters.
2. Water intensity = Total water consumption in the year (million liter)/ NTD thousand of Revenue.
3. Water consumption = Water intake - Water discharge = 10,431.54 - 1,828.98 = 8,602.56 million liters.

Individual Water Consumption

Unit : million liter

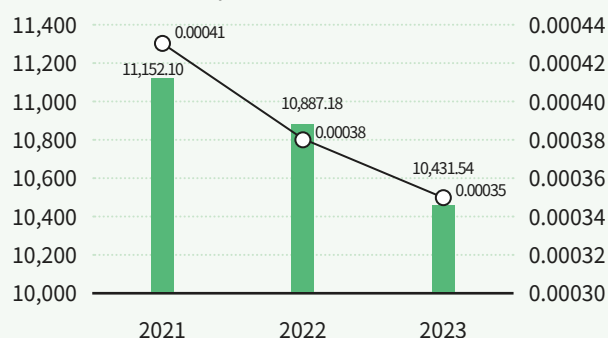
■ Groundwater body ■ Surface water body



Water Consumption and Water Intensity

Unit : million liter

■ Total water consumption (million liter)
○ Water intensity (million liter / NTD thousand of revenue)



TSC is committed to the enhancement of water management and wastewater recycling in order to reduce the impact of wastewater discharged on the environment and to improve the effectiveness of water conservation. The consumption of water of 2023 was 8,602.56 million liters.

To improve the operating efficiency of the pig farming business and lower the environmental impact on the local communities, after the construction of the Dong Hai Feng Agricultural Circulation Park, TSC continues to implement the investment project of Renovation Plan of Agricultural Circulation Pig Farms, turning traditional pig housing into modern livestock park with deodorization system and sewage treatment system. In 2023, the Livestock Business Division has conducted the reuse of wastewater in the pig farms, the recovered and reuse amount of wastewater in the 16 pig farms (Waipu, Wanxing, Huwei, Douliu, Annei, Nanjing, Lucao, Haipu, Shanhua, Nan Shalun, Xincuo, Shilin Yi, Shilin Er, Da Xiang Yi Chang, Da Xiang Er Chang and Dong Hai Feng) totaled 567,094 tonnes.

Wastewater Discharge

TSC's business units that generate waste water all have relevant wastewater treatment procedures and obtain the water pollution prevention and control permits. Qualified testing agencies are entrusted to take samples for analysis on a regular basis, and the declaration of the inspection is also conducted on the website designated by the MOENV. The effluents are discharged to the sewage system or approved water bodies legally, and the quality of discharged water is in compliance with the discharge water standards stipulated in laws and regulations for the industry. Wastewater is finally discharged into the sea and does not have major impacts on the water sources. The amount of discharged wastewater in 2023 was 1,828.98 million liters, a decrease of 4.31% compared with 2022.



Wastewater Discharge over the Past 3 years

Year	Total Wastewater Discharge (million liters)
2021	2,006.78
2022	1,911.32
2023	1,828.98



TSC has a total of 17 pig farms, and all of them adopt the secondary wastewater treatment system, and qualified testing agencies are entrusted to take samples for analysis every 6 months in accordance with the Water Pollution Control Act (Wastewater discharge standards: BOD: 80 mg/L, COD: 600 mg/L, SS: 150 mg/L), and fill out animal husbandry wastewater(sewage) inspection declaration form online on the designated website of MOENV to handle the regular inspection declaration via network transmission. TSC expects that in the future, after the livestock farms are renovated, new transformation opportunities will be brought to Taiwan's livestock industry, so that it can take into account production and environmental sustainability, give the surrounding residents a fresh and green park that is odorless, allowing them to reduce their life and psychological dissatisfaction and embrace new five-sense experience.



Air Pollution Monitoring

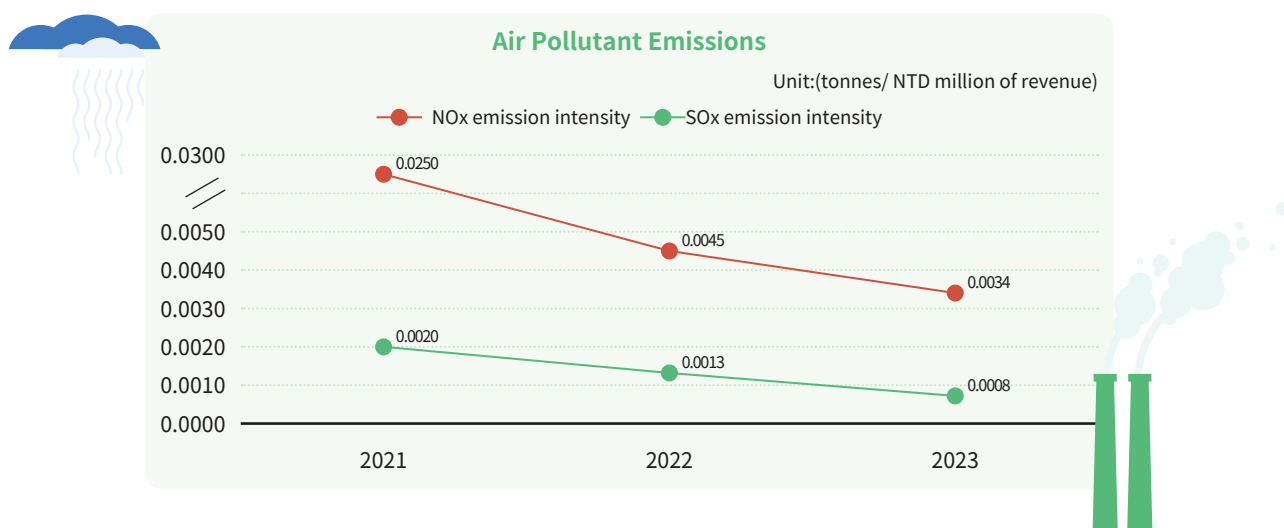
In order to comply with the environmental protection laws and regulations, TSC has formulated Key Points for Environmental Management for the Operations of Air Pollution Prevention, and also included the ISO 14001 Environmental Management Standards to establish operations, inspections and emergency response measures to ensure compliance with laws and regulations related to air pollution. Prevention of air pollution begins with the rational reduction of pollutants in the process before being emitted into the exhaust gas, and air pollution control equipment handles pollutants in the exhaust gas. Currently, the large scale (granular pollutants of pollutants reaching 10 tonnes/ year, or sulfur oxide reaching 5 tonnes/ year, or volatile organic compounds reaching 5 tonnes/ year) stationary pollution sources are the three sugar factories under the Sugar Business Division. The rest relatively small-scale stationary pollution sources include 2 locations of the Biotechnology Business Division, 73 locations of the Petroleum Business Division, 19 locations of Livestock Business Division, 1 location of the TSRI, and 1 location each of the Tainan and Yunchia Operation Branches. The air pollutant emissions of all units are in accordance with the emission standards and are reported regularly. TSC's Department of Environmental Protection also makes on-site inspection from time to time.

The actual test results of the concentration of air pollutants over the years all met the emission standards stipulated by MOENV. The NOx emission intensity in 2023 decreased by 24% compared with 2022, and the SOx emission intensity in 2023 decreased by 38% compared with 2022, mainly because the Xiaogang Refinery of the Sugar Business Division switching to natural gas from heavy oil, leading to the reduced overall air pollutant emissions and the overall revenue of the company increased, resulting in a reduction in emission intensity. The air pollution control situation is shown as follows, and the emission concentrations all met legal standards.

Air Pollutant Emissions

Unit : tonne(s)

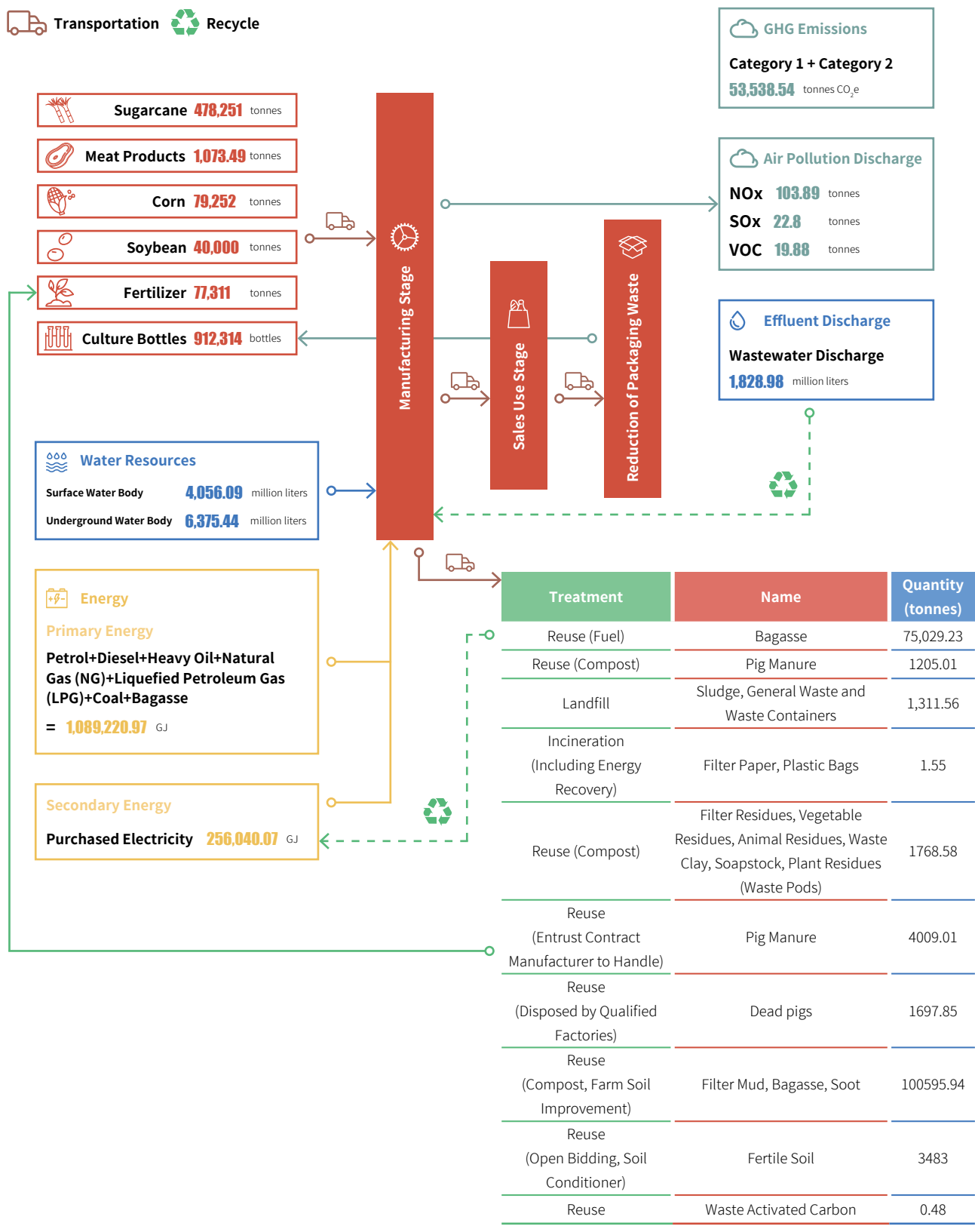
Item	2021	2022	2023
Particulate Matter (PM)	33.81	15.73	13.2
NOx	677.29	129.32	103.89
SOx	54.14	38.11	22.8
VOC	86.32	3.55	19.88
HCL	49.58	0	0
CO	134.2	0	0
Ammonia	8.04	0	0
NTD million of Revenue	27,123	28,824	30,187
NOx Emission Intensity (tonnes/ NTD million of revenue)	0.0250	0.0045	0.0034
SOx Emission Intensity (tonnes/ NTD million of revenue)	0.0020	0.0013	0.0008



2.4.2 Waste Management

Based on the consideration of cherishing natural resources and reducing the environmental impact, TSC actively promotes a green value chain so that the stages of birth, growth, decline and abandonment of a product can be completed under the conditions of consuming the least resources possible in the most eco-friendly way.

TSC's Environmental Footprint in 2023



Reduction of Waste Generation

In 2022, the process waste reduction measures were implemented, and the proportion of waste recycling reached 99.31%, an increase of 0.2% compared with 2022. This was mainly attributed to various operational hotels of TSC offering eco-friendly room incentives and replacing small single-use amenities in hotel rooms with large refillable ones. Additionally, personal care products are no longer provided actively, leading to a significant reduction in non-resource waste, thus increasing the resource utilization rate. These efforts demonstrate TSC's determination to reach the recycling, stabilization, detoxification, and economization of waste.

2023 Achievements of the Promotion of Green Products and Services of Each Units

Marketing Business Division and Biotechnology Business Division

The new product packaging design of the Marketing Business Division is in line with the policy of limiting over-packaging of products announced by the Ministry of Environment (MOENV), Executive Yuan, to reduce the use of packaging materials and generation of waste, easing off the environmental load. For example, the lined frame of Taisugar's Clam Essence is folded on four edges to strengthen the structure and texture of the carton, and the size of the gift box is reduced to comply with the regulations on restricting excessive packaging of products; In 2023, the Biotechnology Business Division continued to use 2,565,815 glass bottles with reduced weight for the Clam Essence Products, a 7.6% decrease in weight compared with the old glass bottles, which is converted to a 20,526.5 kg reduction in glass use, reducing the impact of glass to the environment.

Sugar Business Division

Sugar Business Division changed business waste of bagasse and filter mud into recycled materials as the soil amendment, reaching the purpose of circular economy. In 2023, the recycled and reused bagasse was 38,688 tonnes; the official product name of the filter sludge is "fertile soil," and 38,623 tonnes of the fertile soil is used to improve the soil of TSC's farmland, and sold 3,483 tonnes externally, achieving the reuse of resources and reducing the use of chemical fertilizers.

In 2022, the egg cards of *Trichogramma chilonis* were provided to both our self-operated farms and external farmers for controlling pests in crops such as sugarcane and corn. Additionally, TSC also provided the eggs of *Corcyra cephalonica* as the materials to feed Chrysopidae to function as a pest control for fruits and vegetables. The Bureau of Animal and Plant Health Inspection and Quarantine announced on August 18, 2022, that the sheet with *Trichogramma chilonis* in Huadong District is listed in the natural enemy subsidy object, a status that has remained unchanged until 2023, which can encourage farmers to reduce the amount of pesticide use.

Livestock Business Division

The processing capacity of pig manure in 2023 was 5,214.02 tonnes, of which 1,205.01 tonnes (23.11%) of pig manure produced in livestock farms is recycled (composted) and fermented into organic fertilizers for farmers to use to meet the government's goal of green environmental protection. The organic fertilizers used on the farmland can improve the physical properties of soil, increase yields of crops, and also the farmers' income. In addition, 4,009.01 tonnes (76.89%) of the pig manure was entrusted to contract manufacturers for treatment.

In accordance with the Statute for Prevention and Control of Infectious Animal Diseases and the Waste Disposal Act, pig carcasses and discarded afterbirths in all pig farms shall be destroyed, chemically processed or otherwise disposed of as necessary, and shall not be cut, processed, transported, stored or sold for human consumption. Therefore, the Livestock Business Division strictly abides by the government regulations. All the pig carcasses and afterbirths from TSC livestock farms are entrusted to qualified manufacturers for chemical processing to avoid being embezzled by unscrupulous operators and entering the meat supply market that will engender the health of the public and also damage the reputation of the Company. In 2023, the processing volume of dead pigs was 1697.85 tonnes.

Agriculture Business Division

The tissue culture bottles used for the production of *Phalaenopsis* seedlings are reusable glass culture bottles instead of non-reusable plastic cases. In 2023, a total of 912,314 glass culture bottles were used, and all of them were recycled for reuse, with the reuse rate of 100%.

Leisure Business Division

The 467.73 tonnes of general business waste and 4.66 tonnes of waste cooking oil generated by the Leisure Business Division were centrally collected and recycled as well as reused by legal operators, producing 185,882 m³ of wastewater. Among this, the wastewater generated by Liuying Jianshanpi Resort, amounting to 35,051 m³, underwent treatment through equipment and was reclaimed for irrigation purposes within the park area.

Waste Management

In 2023, the amount of waste handled included 1,311.56 tonnes for landfill, 1.88 tonnes for incineration, 187,789.31 tonnes for recycled waste. In 2023, the waste disposal amount decreased by 2.39% compared with 2022.

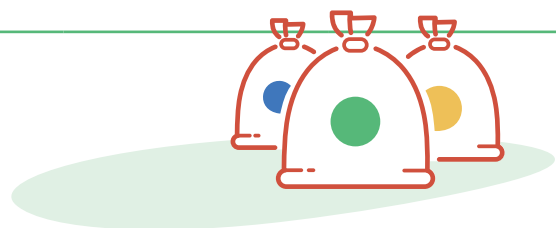
Waste Treatment Capacity

Unit : tonnes

Non-hazardous Waste			
Treatment Method		Composition of Waste	Waste Generation
On-site Treatment Method	Reuse (Fuel)	Bagasse	75,029.23
	Reuse (Compost)	Pig Manure	1,205.01
Off-site Treatment Method	Landfill	Sludge	5.96
		General Waste and Waste Containers	1,305.6
	Incinerated (Including Energy Recovery)	Filter Paper	0.22
		Plastic Bags	1.33
	Reuse (Compost)	Filter Residue	0
		Plant Residue	3.45
		Animal Residue	21.8
		Waste Clay	204.99
		Soapstock	1,499.29
		Plant Residues (Waste Pods)	39.05
	Reuse (Entrust Contract Manufacturer to Handle)	Pig Manure	4,009.01
	Reuse (Disposed by Qualified Factories)	Died Pigs	1,697.85
	Reuse (Compost, Farm Soil Improvement)	Filter Mud	38,623.54
		Bagasse	48,018.39
		Soot	13,954.01
	Reuse	Waste Activated Carbon	0.48
	Reuse (Open Bidding, Soil Conditioner)	Fertile Soil	3,483
Hazardous Waste			
Treatment Method		Composition of Waste	Waste Generation
Off-site Treatment Method	Incinerated (Excluding Energy Recovery)	Waste Liquid	0.33

Note :

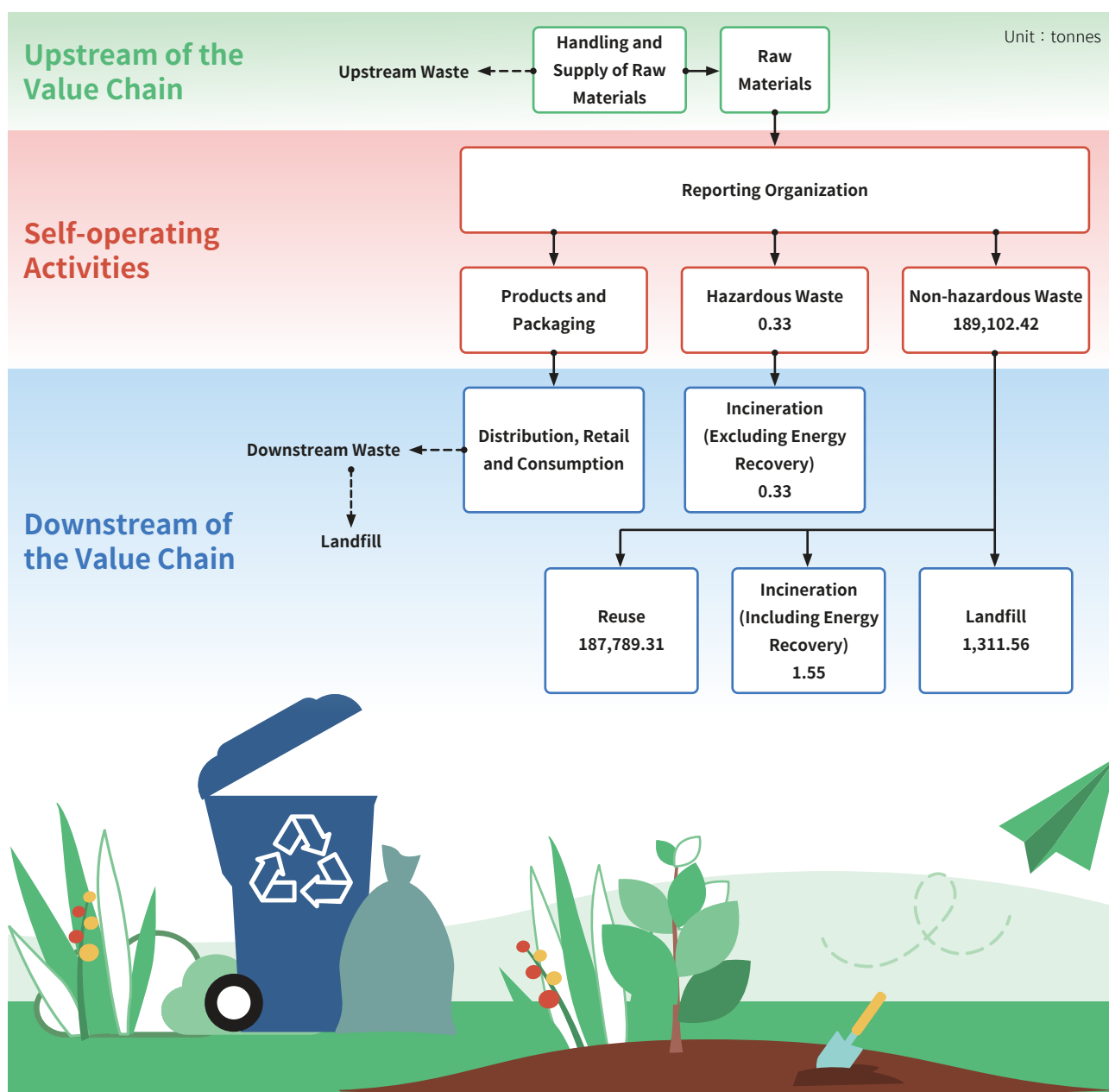
"On-site" refers to the scope within the physical boundary or administrative control of TSC; "off-site" refers to the scope outside the physical boundary or administration control of TSC.



Composition of Waste	Hazardous Waste		Non-hazardous Waste		Total
Treatment Method	On-site	Off-site	On-site	Off-site	
Transfer During Disposal	0	0	76,234.24	111,555.07	187,789.31
	0		187,789.31		
Direct Disposal	0	0.33	0	1,313.11	1,313.44
	0.33		1,313.11		
Total	0.33		189,102.42		189,102.75
Total Waste					189,102.75
Recycle Ratio					99.31%

Note :

1. Transfer during disposal: Recycling for Reuse.
Direct Disposal: Incineration (Including Energy Recovery), Incineration (Excluding Energy Recovery), Landfill.
2. The calculation of Recycle ratio = (Recyclable waste treatment volume/ Total waste volume) x 100%.





CHAPTER 3

SUSTAINABILITY ASPECTS

LEVERAGING NATURAL CAPITAL

MATERIAL TOPICS

Food Preservation(Sustainable Food), Economic Impacts and Inclusion, Soil Health, Pesticides Use, Land and Resource Rights, Circular Economy, Animal Health and Welfare, Natural Ecosystem Conversion

3.1 RENOVATION PLAN OF MODERN LIVESTOCK HOUSING

3.2 SUSTAINABLE AGRICULTURE

3.3 MAINTENANCE OF NATURAL RESOURCES

3.4 LAND ACTIVATION AND UTILIZATION

【SPECIAL COLUMN】 TAINAN CHONGXIAN CIRCULAR

HOUSING FOR INTERGENERATIONAL CO-RESIDENCE HONORED WITH THE BRONZE MEDAL AWARD IN THE NET-ZERO BUILDING DESIGN COMPETITION

2 ZERO HUNGER



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



15 LIFE ON LAND





SDG 2.4



SDG 12.6

SDG 12.a



SDG 15.5

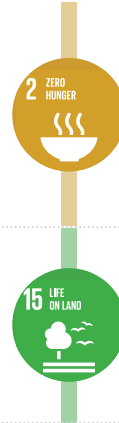
SDG 15.9

Material Topics — Food Preservation(Sustainable Food), Economic Impacts and Inclusion, Soil Health, Pesticides Use, Land and Resource Rights, Circular Economy, Animal Health and Welfare, Natural Ecosystem Conversion

☒ achieve ☐ unaccomplished

2023 Goals and Achievements

- ☐ The Sugar Business Division will reduce 5% of pesticides use in the planting of sugarcane compared to the previous year.
 - ▶ To respond to the impact of climate conditions such as increased rainfall on the occurrence of pests, in 2023, the Sugar Business Division consumed 59,200 kilograms of “Terbufos,” a decrease of 3.8% compared to the 61,540 kilograms in the previous year. Considering the multiple variables in pesticide use in practice, the target of reduction will be adjusted to 3% starting from 2024 to balance pesticide reduction and sugarcane growth.
- ☒ To carry out actions in relation to firefly restoration and organized at least one session of “releasing firefly larvae back into the wild.”
 - ▶ In June, 2023, Jianshanpi Resort organized two sessions of firefly education and promotion activities of ecological night tour combining firefly habitat environment improvement and releasing firefly larvae of *Aquatica ficta* into the wild. The learning activities totaled 10 hours (5 hours per session), and 116 primary school teachers, students (including parents) participated in these activities.



2024 Goals

- ▶ The Sugar Business Division will reduce 3% of the unit area pesticide usage in the planting of sugarcane compared to the previous year%.
- ▶ To promote land health and reduce the use of chemical fertilizers, green manure is planted during sugarcane rotation and fallow period of TSC’s self-operated farms. The planned planting area for 2024 is 570 hectares.
- ▶ The residual bagasse was all used for sugar factory boiler combustion for power generation and for the production of organic compost or feed.
- ▶ To carry out actions in relation to firefly restoration and organized at least one session of “releasing firefly larvae back into the wild.”



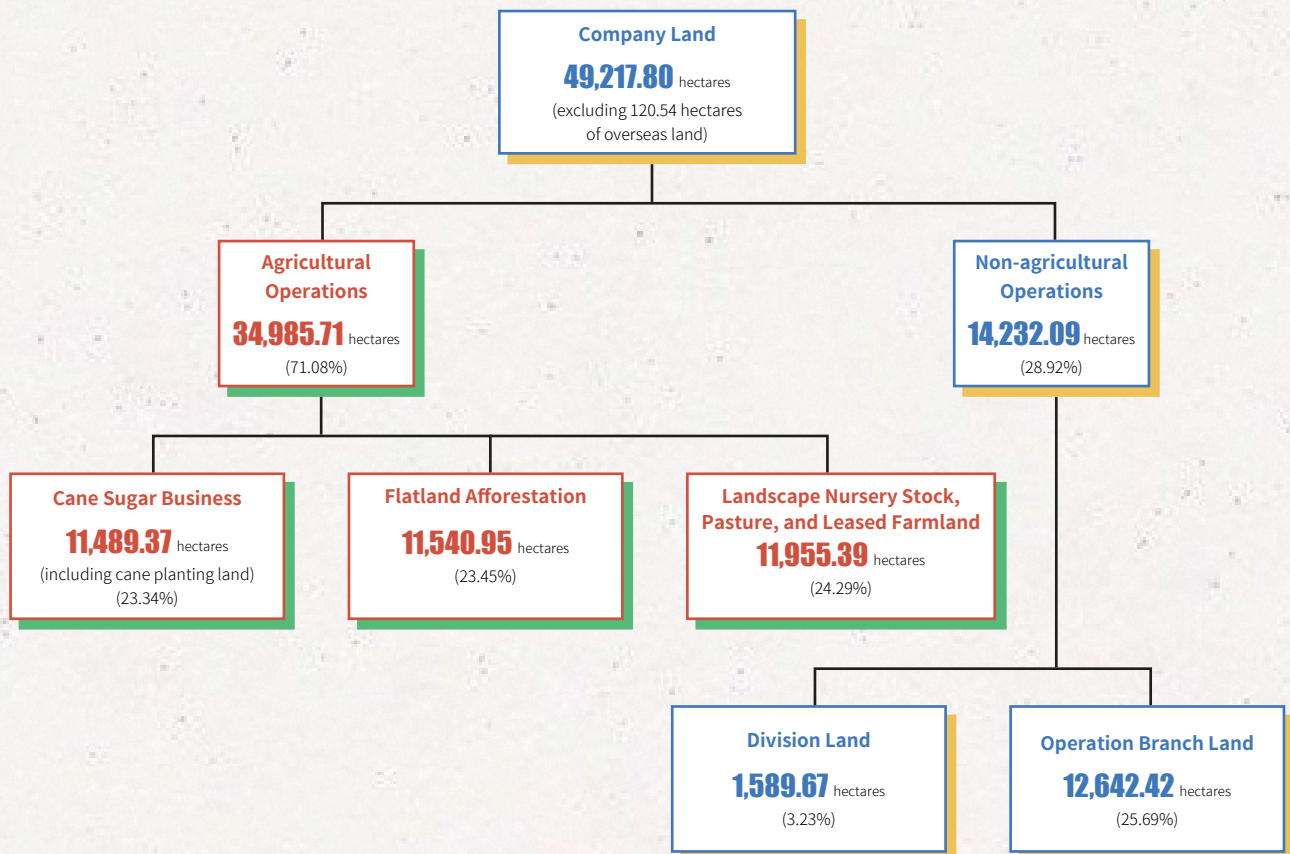
Medium and Long-term Objectives

- ▶ We continuously collaborate with the conclusions drawn in the meetings of Ministry of Agriculture dated on August 4, 2020, and August 23, 2021 to provide flat land for afforestation suitable for agricultural production locations to Ministry of Agriculture for the overall planning of organic agriculture zones, livestock zones, the special zone for the cultivation of medicinal plants used in traditional Chinese medicine that the Ministry of Health and Welfare is planning, and the land required for the demonstration of irrigation of biogas residue and biogas slurry planned by the Ministry of Environment.
- ▶ To promote land health and reduce the use of chemical fertilizers, our self-operated farms plant green manure during sugarcane rotation and fallow periods, and after the annual promotion, the area has increased to 800 hectares.
- ▶ “Agricultural Circulation Pig Farm Renovation and Investment Project” involving the reconstruction of all 13 livestock farms aims to be completed by the end of June 2025, with production expected to commence gradually in the same year.
- ▶ Obtain the Animal Welfare Label Certification (if there is animal welfare certification related to pig breeding in the future).
- ▶ Change the stereotypical image of pig farms among the public, promote sustainable animal husbandry industry, and enhance our corporate image.
- ▶ To continue to organize actions and promotional activities in relation to nature and ecological conservation
- ▶ The self-operated farms utilize biological pest control methods such as the use of *Trichogramma chilonis* to reduce the use of insecticides and control rodent damage in sugarcane fields, thereby preserving the ecological balance of the farmland.



As of 2023, the total land area of the existing land resources possessed by TSC is 49,217.80 hectares (120.54 hectares of overseas land not included). TSC owns a total area of 34,985.71 hectares of agricultural land resources, of which 23.34% (11,489.37 hectares) is for sugarcane business (including land for sugarcane cultivation), 24.29% (11,955.39 hectares) is for seedlings for landscape, pasture, and leased farmland while the rest 23.45% (11,540.95 hectares) belongs to forest land. In accordance with the concept of business development and the sustainable management of land resources, TSC continues to cooperate with the government's needs for public policies to maximize the value of land.

Usage of land resources



3.1 Renovation Plan of Modern Livestock Housing

TSC is a pioneer in pig farming with enterprise management in Taiwan. It has been more than 7 decades since TSC started the livestock breeding business in 1952. To completely solve the environmental issues of pig farming, respond to the government's 5+2 Innovative Industries Plan, and introduce ecological balance, environmental protection, and green concepts into pig farming industry, in 2016, TSC first started the Dong Hai Feng Negative Pressure Water Curtain and Green Energy Design Pig Farm Renovation Project. In 2018, TSC further launched the Agricultural Circulation Pig Farm Renovation and Investment Project for 13 pig farms to comprehensively accelerate the modernization of livestock farms. Through the renovation, the inspection and control of wastewater and waste treatment processes on-site are strengthened, and review and improvement of operational procedures are carried out. The collected pig manure and urine from the pig farms are treated in the following four paths.



1 Biomass Energy

Biogas produced through fermentation is used for power generation to increase revenue (green energy resources).

2 Biogas Residue Compost

After solid-liquid separation, the biogas residues are turned over and matured to make compost, which not only is neighbor-friendly but also increases fertilizer income.

3 Biogas Slurry Recovery

After sewage treatment, part of the biogas slurry is recycled to the site for reuse (water resources), and the odor is controlled to allowable range that is acceptable and compliant with regulations. It takes into account the pig farm configuration and production capacity, biological epidemic prevention, and proper treatment of sewage and odor, changing people's stereotype, and enabling the public to gradually recognize the livestock and renewable energy circulation industry.

4 The Biogas Slurry and Residue are Used as Fertilizer in the Farmland

We cooperate with EPA's policy to use biogas slurry and residue to fertilize the farmland and for the reuse of agro-industrial waste, and the biogas slurry and residue are used on the farmland to increase the soil fertility reducing the discharge of wastewater to the river and thereby reduce pollution.



The first modernized green pig farm in Taiwan, the Dong Hai Feng Agricultural Circulation Park, commenced operations in 2021. It has achieved goals typical of the livestock industry, including automation, zero pollution, zero waste, zero emissions, and environmental friendliness, where the business model of "secondary raw material recycling/by-products" is carried out. After the verification by British Standards Institution (BSI), the model complies with the BS 8001:2017: Framework for implementing the six principles of the circular economy, making it the very first livestock farmer in Taiwan and even in the world to obtain a standard verification statement, and the overall cycle maturity reaches the highest level- the optimization of the business model.

organisations are open about decisions and activities that affect their ability to transition to a more sustainable and circular mode of operation and are willing to communicate these in a clear, accurate, timely, honest and complete manner.



Transparency



System thinking

organisations take a holistic approach to understand how individual decisions and activities interact within the wider system.

organisations keep all products, components and materials at their highest value and utility at all times.



Value optimization



Innovation

organisations continually innovate to create business value through the sustainable management of resources in products/services and business model.

organisations collaborate internally and externally through formal and/or informal arrangements to create mutual business value.

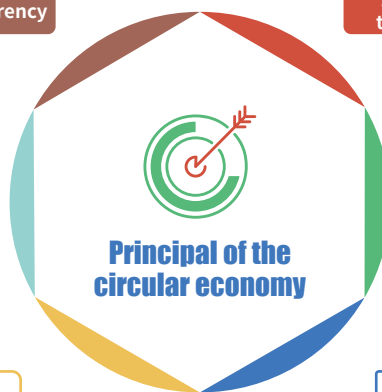


Collaboration



Stewardship

organisations manage the direct and indirect impacts of their decisions and activities across their system.



Through the Dong Hai Feng Agricultural Circulation Park, TSC has established the best example of a circular economy model in the pig farming industry. In 2023, we received a total of 1,665 visits from government units, schools, research institutions, and corporate groups for visits and exchanges. Moreover, this circulation park also obtained the Environmental Education Certification, making it the first environmental education site with the background of green energy pig farming in Taiwan. In 2023, a total of 10 sessions were held, attended by 277 people, guiding the public to

understand the pig farming industry from the pig breeds, the physiological structure, habits, animal welfare feeding methods to the back-end processing. The reduction of odor, the treatment and utilization of the manure and urine produced are also introduced.

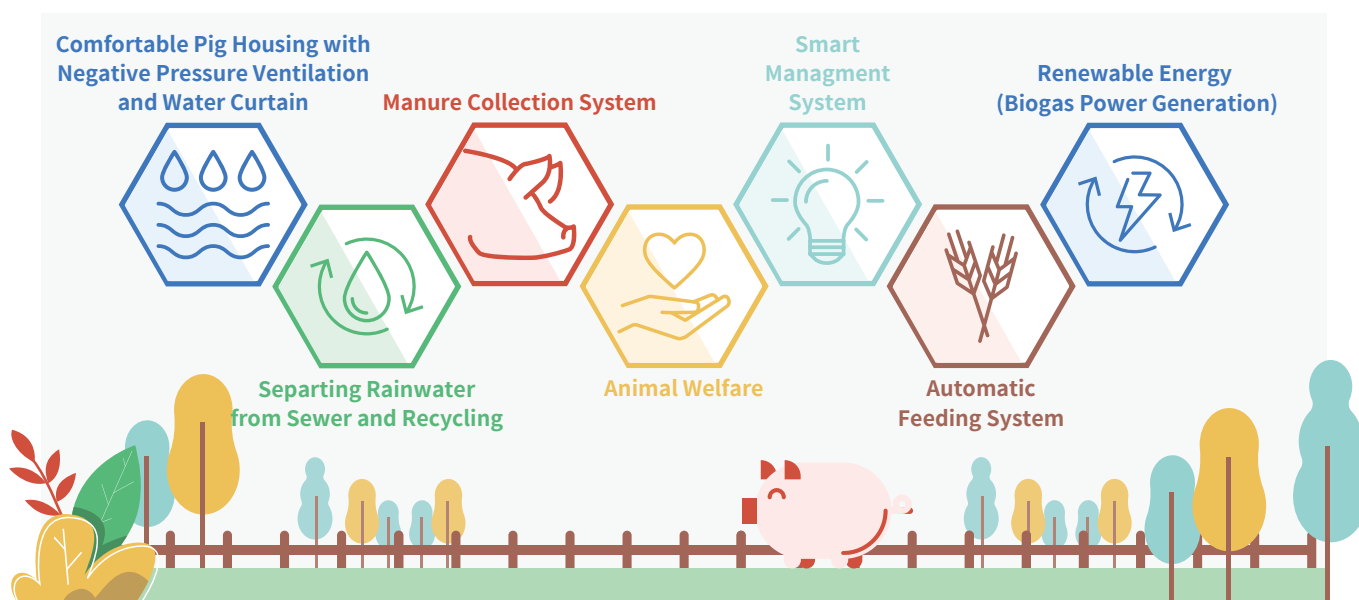
Investment Project for the Renovation of Agricultural Circulation Pig Farms

To further apply the successful experience in Dong Hai Feng Agricultural Circulation Park to the other pig farms, TSC further launched the Agricultural Circulation Pig Farm Renovation and Investment Project, which is TSC's largest-scale investment project since the establishment of the livestock business. The purpose is to allow all sectors to redefine the pig farming industry and to lead the development, improvement, and upgrading of the domestic pig farming industry, reversing the stereotype of pig farms as NIMBY facilities.

Investment Project for the Renovation of Agricultural Circulation Pig Farms

Plan to invest NTD 12.45 billion	The biogas power generation target 788 GWh/year	Expected annual sales of hogs about 500,000
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Note : If including the biogas power generation of Dong Hai Feng, the total biogas power generation target of C is 8.92 GWh/year.



TSC is still the largest single pig farmer in Taiwan, and as a pig farming company, TSC is already the leader in domestic animal husbandry industry. However, the pig farm renovation project involves in many professional fields, including livestock housing, civil engineering, construction, electromechanical, information, environmental engineering, wastewater treatment, etc. In addition, the modernization of the animal husbandry industry is still in the transformation and development stage. There are very few professional teams that can be in charge of entire husbandry engineering design and also the integrated construction. Therefore, the user (TSC) is in charge of the design, and when the design is completed, the engineering construction is then put out to contract.

This project involves as many as 13 pig farms and also the needs of different feeding stages, and the entire project is huge and complicated. Therefore, is divided into two phases of construction. Phase I construction of six livestock farms, with five of them completed by the end of December, 2023 and undergoing pig trial feeding. All the 13 livestock farms are scheduled to be completed by June, 2025, with full production expected by 2026.

Project Phase	Site	Implementation Status
Phase 1	6 Livestock Farms (Yuemei 1, Yuemei 2, Douliu, Huwei, Shanhua, NanShalun)	The Huwei Livestock Farm has been completed, and the other five farms are nearing completion.
Phase 2	7 Livestock Farms (Nanjing, Lucao, Da Xiang1, Da Xiang2, Silin1, Silin2, Xincuo)	Construction started successively from December, 2021.

Pig-friendly Rearing

Good animal welfare is closely related to food safety and epidemic risks. The Renovation Project of Agricultural Circulation Pig Farms is not only a good solution to turn pig farming industry into an eco-friendly one, but also a global trend to improve animal welfare. The temperature control and deodorization of the comfortable negative pressure water curtain in the pig housing can greatly improve the living environment of pigs. TSC manages the pig breeding in accordance with the MOA's Animal Industry Act and Key Points of Pig Farms Production Management. It is compliant with animal and aquatic animal transportation, loading and unloading, and slaughter regulations. In 2022, there were no violations of laws and regulations, and TSC complied with the voluntary standards. In addition, TSC continues to improve and research and develop new feed formulas. Currently, the pigs are fed "green feeds" (antibiotics-free) and the selection and breeding is carried out to produce high-quality hogs with low drug use, no pollution, and no drug residues. In addition, we also introduce the Traceability Certification for the hogs to implement food safety regulations.

Animal friendly production operations and equipment are planned in TSC's livestock farms. For example, the pigs are castrated within 7 days of birth. There are toys in the pig house for the pigs to play with. In the planning of new pig house in the future, the sows will only be kept in a narrow pen for one month from artificial mating for the observation of whether they are pregnant. The size of the narrow pen is designed in accordance with the EU Animal Welfare Measures or animal-friendly guidelines (1.64~2.48 m² of activity space per sow). If the pregnancy is confirmed, during the pregnancy period of 114 days, the sows will be raised in a group breeding pen with sufficient space for activities (up to 10 sows) to wait for delivery. The farrowing pen (not a narrow pen) is also designed to be compliant with the EU Animal Welfare Measures or animal-friendly guidelines (6~6.24 m² of activity space per sow) for the sows to have sufficient space for movement, creating a friendly environment for delivery and lactation. The design of the hog house is compliant with the EU regulations with the activity space of 1 m² per head, providing a comfortable and pollution-free breeding environment for hogs. In the future, after the renovation of the livestock house is completed, the intelligent management system and the automated feeding system installed can further improve the breeding efficiency and enable real-time monitoring of the pigs' health, creating a 3-win situation for the pigs, TSC, and consumers.

3.2 Sustainable Agriculture

TSC has been upholding the vision of "becoming a benchmark enterprise in health and green industries." At the same time, as a state-run enterprise, TSC shoulders the task to support positive cycle of the society. In addition to the introduction of traceability system, we also took the lead in investing in the research on low-carbon agricultural technology and applied green manure to our self-operated sugarcane fields to improve the soil fertility and ecological conditions, and even enable the planting of crops with biomass energy potentials on land that was originally unsuitable for farming, aiming at more efficient utilization of other land resources.

TSC shoulders the mission of stabilizing domestic sugar prices. In addition to purchasing sugar from contracted sugarcane farmers at guaranteed sugar prices, there are also various measures to assist contracted sugarcane farmers with production. In addition, some self-operated farms are also open to cooperation with young farmers with sugarcane production to guarantee their economic income. TSC also encourages farmers to invest in eco-friendly and organic farming and actively offers them with production technology and distribution and marketing channels in an attempt to play a leading role to boost the transformation of agriculture in Taiwan. In 2023, there was no protest related to land resource rights.

Shanhua Sugar Factory and Huwei Sugar Factory of the Sugar Business Division started to introduce the Traceability Certification for sugarcane in 2020 and 2021 respectively, and the types and amounts of pesticides used shall comply with relevant regulations concerning the agricultural crops of the Traceability system. Currently, the pesticide used is 10% Terbufos (10% GR) that is commonly used to prevent and control underground pests (less than 30kg/hectare). In addition, the self-operated crop pesticide management plans of the Department of Agribusiness Management are conducted in accordance with the current laws and regulations. For example, the Paraqua is banned for non-GMO soybeans. In addition to the production process, it cannot be detected in the final products, either. Drugs that are legal and in the Positive List can be reasonably applied to crops. However, there are no relevant statistics of the amount consumed currently. In 2023, the Department of Agribusiness Management spent a total of NTD 1,090.9 thousand on pesticide purchases, primarily for landscaping crops.

The Number of Pesticides Used by the Sugar Business Division in 2023

Category	Product Name	Amount Consumed
Highly Hazardous	10% Terbufos	59,200 kg

Note :

According to the domestic Regulations for the Labeling of Agro-pesticide, the acute toxicity of agro-pesticide is divided into Extremely hazardous, Highly hazardous, Moderately hazardous, Slightly hazardous, and Lowly hazardous in accordance based on oral LD50 and dermal LD50.

3.2.1 Eco-friendly Farming

Carbon Sequestration of Green Manure

The main sources of GHG emissions of the Food and Agriculture Industry are from the “rice planting” and “crop residue burning” on the farmland, and the “agricultural soil,” “lime treatment,” and “urea application” for soil fertilization. Among them, the “agricultural soil” in soil fertilization accounts for the highest proportion of emissions.

In common agricultural practices, chemical fertilizers with fast effectiveness are widely used. However, it is just because of the variety of elements in chemical fertilizers that the remaining components may change the soil physicochemical properties after long-term accumulation. These remaining components can even go into the aquaculture fishery or domestic water from the irrigation and drainage systems, causing water pollution. The so-called green manure crops refer to any plant that can be directly or indirectly used as fertilizers or soil improvement for having the functions of increasing soil nutrients, organic matter, improving soil physicochemical properties, and reducing soil erosion. The specific effect of green manure is detailed in the following.

Efficacy	Content
Improve Soil Physiochemical Nature	The green manure crops are cultivated to be incorporated into the soil while still green, and when their cellulose, lignin, and other substances that are difficult to compose are combined with the soil clay particles to form soil colloidal composites after humi-fication, the soil temperature and soil buffer capacity are improved.
Promote the Activity of Beneficial Microorganisms in the Soil	Green manure residues (organic substances) can provide microorganisms with nutrients and energy, balance soil microbial populations, reduce and avoid the reproduction of pathogenic bacteria, and increase crop disease resistance.
Covering Soil	The main roots of leguminous green manure crops go deep into the soil layer, and the organic matter in the roots and plant residues have the function of cementing soil that can consolidate the soil and accumulate water and nutrient in the soil.
Reduce the Occurrence of Pests and Diseases	Green manure crops can change the composition of organic matter in the rhizosphere soil to maintain a stable ecosystem and increase the activity of soil microorganism, reducing the pathogenic bacteria or pests population in soil, and the problem of soil sickness can be improved, the toxic substances can be decomposed, and the accumulation of toxic substances in the soil can be reduced.
Enhance the Water Contention Capacity of Soil and Improve the Drought Resistance of Crops	Humus is loose and porous hydrophilic colloid that can absorb a large amount of water and improve soil permeability so as to provide crops with more effective water.
Reduce Pollution From Pesticide and Heavy Metal	Brown humic acid enables the increased solubility of some pesticides remained in soil, such as DDT, triazine, etc., and it can accelerate their leaching. In addition, it can also produce water-soluble complexes with certain metal ions to allow toxic metal ions to be discharged from the soil with water, reducing the harm to the crops and pollution to the soil.

TSC has a vast planting area of sugarcane, making it an indispensable carbon pool. The Sugar Business Division also plants leguminous crops such as Sesbania and Sun Hemp after the harvest of sugarcane and before the planting period. The nitrogen fixation characteristics of legumes can reduce the use of nitrogen fertilizers afterwards, beneficial to the reduction of GHG emissions. During 2022/2023, the total planting area of green manure crops totals 444.28 hectares (241.96 hectares in Shanhua Plant and 202.32 hectares in Huwei Plant).

Supplementary Information :

1. Green manure crops are mainly planted on fallow land where perennial roots no longer stay after the harvest of sugarcane (4-6 months). However, part of the land will be released for lease (provided to melon farmers to grow melons or other short-term crops), as the weeding area, for the sugar factories to put scraps (filter mud, bagasse, soot), and for the application of alkaline materials like oyster shell powder to improve the acidic soil. Therefore, green manure plants are not planted on every piece of fallow land. In addition, due to the influence of climate change, the rainfall in spring decreases. Therefore, the fallow land that lacks a fixed source of water for irrigation is not suitable for the planting of green manure crops. To respond to the demand for energy conservation and carbon reduction, the Sugar Business Division plans to properly increase the planting area of green manure crops so as to reduce the application of chemical fertilizers and increase the organic matter and soil carbon storage of the soil on sugarcane farms.
2. In regard to the quantitative benefits of planting green manure crops for carbon storage, according to the data of the agricultural research and extension station, based on the condition of fresh weight at 25,000kg/hectare on the land where Sun Hemp is planted and the nitrogen mineralization rate at 80%, the Sun Hemp is planted followed by the nitrogen fertilization management, about 1/3 or 1/2 of the amount of fertilizers can be reduced compared with soil without green manure application. Furthermore, in accordance with foreign literature, rotation planting of green manure crops with corn for 12 years can averagely fix 1.3 tonnes/hectare of carbon into soil every year. It was originally estimated that the rotation of green manure crops and sugarcane on an area of 444.28 hectare, 577.54 tonnes of carbon can be stored in the soil of the sugarcane field. However, the actual data often require the inventory of data of overall land with green manure crops over the years to obtain objective and quantitative data. Therefore, Sugar Business Division and the Taiwan Sugar Research Institute (TSRI) proposed the research plan, and the academic community was commissioned to establish the methodology and benefits of soil carbon sinks.

Promotion of Organic Cultivation

Organic farming is an environmentally friendly and sustainable model for agricultural production. Starting from 2000, TSC has strictly selected high-quality farms as organic rice cultivation bases. In addition to actively develop our own organic crop cultivation zones, we also continue the trial planting and mass production of economic crops. In 2023, the self-operated organic rice certification area reached 88.79 hectares. The main market includes schools & group meals, convenience stores and chain channels. Furthermore, in line with the government's promotion of the new agricultural policy to advocate organic farming, as of the end of December 2023, the Company has provided the government 312 hectares (12 cases) of leased land for the establishment of a special zone for organic agriculture. Additionally, the Company continues to support the promotion and cultivation of organic agriculture through leasing arrangements, offering organic farmland, greenhouse facilities, packaging rooms, and refrigeration equipment for lease to professional farmers or agricultural enterprise groups. As of the end of December 2023, the leased area amounted to 1,302.29 hectares, encompassing a total of 196 cases.

3.2.2 Support the Development of Agriculture

Taking Care of Sugarcane Farmers

TSC selects suitable farmers to sign contract as partner sugarcane farmers based on the factors such as whether the transportation distance between the farmland and the sugar factory is reasonable, and whether it is convenient for harvesting and transportation. The partner sugarcane farmers send the standard contract to the sugar factory after filling it out. The content in the contract includes the sugarcane farmer's basic personal information, the location of the sugarcane farmers' land, the lot number, plantation area, date of planting, and sugarcane varieties. 55% of the sugar produced by the partner sugarcane farmers belongs to "sugarcane farmer's share of sugar," and TSC will purchase it at a guaranteed price NTD 24,878/tonne. There is no labor contract or employment relationship between the partner sugarcane farmers and TSC, and the land is also owned by the sugarcane farmers.

In addition to shouldering the task of taking care of sugarcane farmers by purchasing sugarcane at guaranteed price and stabilizing the supply and demand of the domestic sugar market, TSC subsidizes for the transportation charges of the raw material of sugarcanes, the cane field fire insurance fees, the purchase of bait. In addition, TSC also provides low interest-rate loans with a monthly interest rate of 0.25% (simple interest method) to assist sugarcane farmers in financing for funds needed in the production process.

Agricultural Land Leases and Value-added Service

To cooperate with the government's agricultural policy to stabilize the balance of the production and sales of domestic agricultural products, TSC handles the affairs concerning the lease of land for the cultivation of regulatory crops in accordance with the "Coordination between Council of Agriculture of Executive Yuan and Ministry of Economic Affairs for the Lease of TSC-owned Land." In 2023, the area of farmland leased in cooperation with the policy to balance production and sales was 4,778 hectares.

TSC transforms the land tenants into partners, providing tenants with more services such as information of production technology, marketing and channel characteristics. Increase interactions with young farmers for mutual understanding and cooperation opportunities. TSC will also expand the service targets from the tenants of the land of TSC to the entire Hualien area in eastern Taiwan to expand its influence on agriculture. It is hoped that through the development of various young farmers' businesses, the regional agriculture can be developed, which can further encourage young people to return to their hometowns to market the agricultural products produced by local young farmers.

The Opening of the Academy of Agriculture and Animal Husbandry

The Academy of Agriculture and Animal Husbandry designed standardized and advanced animal husbandry training courses and cultivated students with common ideals for the future with heuristic teaching to collectively gather pig farming and related industries to work for the sustainable development of the industrial environment that suits Taiwan's pig farming industry most.

Since the opening of the courses in 2018, a total of 344 trainees have been trained in the animal husbandry courses as of 2023, among them, 232 were young farmers, and 221 young farmers completed the training program successfully. After the completion of the overall renovation of the pig farms a brand new field is expected to be provided for trainees for hand-on courses. We also expect to cooperate with Council of Agriculture to cultivate experts in the industry and establish a team of consultants. With the diversified courses and training sessions, the learning content will further be enriched.



3.3 Maintenance of Natural Resources

TSC has a vast area of land resources and has cooperated with the government's afforestation policy for the greening of idle land since 1997. As of December in 2023, the area for afforestation and tending has amounted to 11,541 hectares in total, including afforestation for all (396 hectares), environmentally friendly forests(363 hectares), self-funded afforestation(418 hectares) and flatland afforestation(10,364 hectares). The afforestation land is mowed manually or mechanically, and the herbicides are not applied.

Among them, the afforestation of flat land originated from the adjustment of afforestation policy and also as the corresponding measure for the large amount of fallow land caused by the great impact of international price competition on our agricultural products after Taiwan's entry into World Trade Organization (WTO). According to the Fourth National Forest Resources Survey and Land Utilization Survey conducted by the Forestry and Nature Conservation Agency, the forest coverage rate of Taiwan increased from 58.5% to 60.7% in 20 years, which is double the number of the global average, ranked 7th in Asia. This shows that the implementation of the flat land afforestation policy has indeed achieved significant effect on the increase of the area of afforestation in Taiwan.

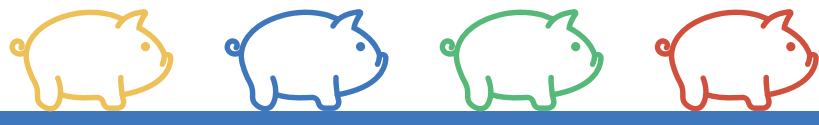
Despite the fact that the 20-year flat land afforestation subsidy is about to expire, TSC will still adheres to the initial vision of the development of the flat land afforestation plan- to improve the quality of people's living environment and to serve recreational and education functions. To respond to the FANCA's goals of "agricultural and forestry eco-tourism," "increased habitat environment of wild animals," "biodiversity," etc., we combine forest recreation with forest management to create the best choice for environmental education and domestic in-depth tourism in the Aogu Wetland in Chiayi County, the Linhousihlin Forest Park in Pingtung County, and the MASADIFOREST in Hualien, connecting adjacent ecological habitats to form an eco-friendly ecological corridor for biological habitats.

On the other hand, TSC also develop various under-forest economic models based on the tree species and growth conditions of the afforestation land, such as the multiple uses of beekeeping, grazing, and coffee planting.

3.3.1 Multiple Uses of Forest Land

TSC implements proper thinning on the existing forest land that can improve the growth and shape and quality of trees, gain benefits such as increasing vegetation, increasing forest stock, promoting tree growth and maintaining tree health. Therefore, the operation branches of TSC will continue forest tending and management and will actively implement thinning in accordance with the growth status and stand density of the plantation land to achieve the goal of revitalizing the forests. Planning is also conducted based on the soil conditions and growth of tree species to increase the area of forests, strengthen forest management, and create the most favorable conditions for the development of carbon sinks for the future in advance.

TSC expects to align with the current economic, environmental, and social development for the planning of the flat land afforestation and its successive implementation. To enable continuous contribution of the afforestation land to the country's sustainable development, we will make multiple uses such as timber production, under-forest economy, and sustainable management, while maintaining the ecological, landscape and recreational functions and recreation of the cultural value. We also take the inventory of the afforestation land resources again as an opportunity for forest policy transformation, so as to further respond to the expectation of the general public and assume the social responsibility of a state-owned enterprise.



Combining the flat afforestation land with under-forest beekeeping



3.3.2 Natural Ecological Resources

Danongdafa (Masadi) Forest Park in Hualien



The park is located in Guangfu Township, Hualien County, in the Huadong Rift Valley between the Central Mountain Range and the Coastal Mountain Range. It is within the jurisdiction of TSC's MASADIFOREST. Since 2002, in cooperation with the Forestry and Nature Conservation Agency, Council of Agriculture, to promote the Landscape Afforestation and Greening of the Flatland Project, more than 1.65 million saplings have been planted on an area of about 1,200 hectares in the park area. With the success of afforestation and tending, FANCA started the overall planning and design of the MASADIFOREST in 2009, and has successively carried out the construction, repair and maintenance of facilities. The park has rich natural ecology and beautiful scenery in four seasons, and it breeds more than a hundred of animals and insects. Under the dedicated management of TSC Huatung Operation Branch and FANCA, the park has become Taiwan's first flatland forest park. Every spring, fireflies, a species requiring the cleanest and pollution-free environment, are seen everywhere in the park, making viewing fireflies at night one of the most popular activities of visitors in recent years.

Linhousilin Forest Park in Pingtung



Linhousilin Forest Park was selected as one of the three international level large-scale forest parks in Taiwan in 2009 by the Ministry of Agriculture. Located on the western side of the Dawu Mountain foothills, along the right bank of the Linbian River, the majority of the land belongs to TSC's Linhou, Silin, and Nan'an Farms. Since 2002, in alignment with the Company's policy to close sugarcane mills and the government's promotion of flatland afforestation policy, large-scale afforestation in the park started, with an area of about 700 hectares. The main tree species planted include Soap nut tree, Evergreen Ash, Comphor Tree, Taiwan Zelkova, Beadtree, Mahogany, etc. These efforts fully showcase Taiwan's ecological diversity, providing the public with high-quality green recreational spaces, opportunities for environmental education, and a glimpse into the multifaceted forest ecosystems.

Aogu Wetland Forest Park in Chiayi



Aogu Wetland Forest Park is located in Dongshi Township, Chiayi County, the entire park area includes wild animal habitats announced by MOA and national important wetland announced by Ministry of Interior, and is under the management of Chiayi affiliated Branche, Forestry and Nature Conservation Agency.

Aogu Wetland has a large number of migratory birds and waterfowls and is adjacent to Gangkou Temple, Dongshi Fishing Port, and other attractions, full of the value for environmental education, TSC has planned to develop it into a wetland park. Additionally, the Company have designated the Dongshi Farm under our ownership as a wildlife protection area. Subsequently, following evaluation by the FANCA, the Dongshi Farm and the surrounding wetlands, which belong to TSC for the planning of a flat forest park.

Pheasant-tailed Jacana Ecological Education Park in Guantien



In 1980, due to the development of Taiwan's highspeed railway, the route planned happened to pass through this important habitat of pheasant-tailed jacana, Hulupi in Guantian Township. After coordination, Tainan City Government rented TSC's property at Guantian District to establish the Pheasant-tailed Jacana Ecological Education Park in Guantian for the implementation of the breeding plan, creating a pond-based breeding area for pheasant-tailed jacana. The Jacana Ecological Education Park in Guantian has been established for the implementation of the breeding plan to conduct the habitat restoration by planting water chestnut, lotus, prickly water lily, water lily and other plants.

On December 3, 2023, the annual "Jacana Census" in Tainan was conducted at the Guantian Pheasant-tailed Jacana Ecological Education Park. A total of 102 volunteers were mobilized to survey 52 sampling areas for pheasant-tailed jacana populations. The survey recorded a total of 2,882 pheasant-tailed jacanas, showing an increase of 279 compared to the previous year. It is noteworthy that over 90% of the pheasant-tailed jacanas were found concentrated in the Guantian District.

Source : Guantian Pheasant-tailed Jacana Ecological Education Park

Haifeng Wetland and Zunliao Wetland



Haifeng Wetland and Zunliao Wetland are both part of the Wannina Wetland, located near the Chonglan Jiuzhen (canal) in Haifeng area. These wetlands are leased by the Pingtung County Government from TSC and planned primary sedimentation tanks, natural purification channels and ecological ponds as the means of purifying the water quality of Chonglan Jiuzhen (canal), replenishing the Wannian River with fresh water. These wetlands possess biodiversity, ecological functions, and scientific research value. Various species of waterfowl, insects, terrestrial plants, mammals, birds (including rare and valuable wild animals such as the Black Kite, Water Pheasant, and Oriole, as well as wildlife requiring conservation such as the Red-tailed Shrike), reptiles, amphibians, dragonflies, fish, and other vertebrates, benthic organisms, plankton, attached algae, and planktonic animals coexist and thrive here.

Source: Environmental Protection Bureau, Pingtung County Government

Habitat rehabilitation for Unicorn beetles and fireflies in Jianshanpi



Jianshanpi Reservoir is located in Liuying District, Tainan City. It was originally used to provide water for the sugar refining in Xinying Sugar Factory. Due to the closure of the sugar factory, it was transformed into tourist attractions for recreational purposes, and a resort was established in 2003. The resort has rich natural landscapes of shallow mountains and pond water resources. It obtained the certification of environmental education facility in 2017. Inside the resort, an ecological restoration habitat for Unicorn beetles and fireflies is planned. The resort adopts eco-friendly management and does not spray pesticides. Every June, hundreds of adult Unicorn beetles can be seen and faint glows of fireflies can be observed at night between July and September. In addition to the endemic *Pyrocoelia analis*, efforts are currently underway to rehabilitate the *Aquatica ficta*. In addition, natural circulation and artificial management methods are applied in the park. Inside the resort park, animal-friendly facilities, such as animal nest boxes, insect hotels, and earthworm towers are installed to provide more diverse ecological environment within the park.

3.4 Land Activation and Utilization

3.4.1 Land for Major Economic Construction

As of the end of 2023, in response to government public policy needs, TSC has provided significant land for major infrastructure development projects :

Serial Number	Description of Use	The Company's Land Area Planned to be Used
1	Government agencies at all levels have planned 11 locations to develop industrial parks, and in response to the return of Taiwanese businessmen, MOEA's Industrial Development Bureau were given priority for the development of 5 industrial parks.	872.41 hectares
2	For the purpose of flood control needs, 13 detention ponds are planned.	303.93 hectares
3	The Southern Taiwan Science Park (STSP) of the of Ministry of Science and Technology, including the Kaohsiung Science Park (KSP), Tainan Science Park (TSP), Chiayi Science Park, and Pingtung Science Park.	480.52 hectares
4	Cases of expropriation and transfer to government agencies, including Linyuan High value-added Industrial Park Phase II and other public construction land.	7.37 hectares
5	Provide 4 sites for long-term care facilities.	3.26 hectares

3.4.2 Meeting the Housing Needs of the General Public

Assist In the Promotion of Social Housing

From 2017 to the end of June, 2024, TSC cooperated with the government's policy of "social housing" and took inventory of 77 sites and 82.11 hectares of land for the Ministry of Interior to evaluate and plan the construction of social housing. After the evaluation, TSC provided the land on a lease basis, and the National Housing and Urban Regeneration Center or the local governments will carry out the construction work. Among them, 17 sites with an area of 16.01 hectares have been approved for leasing, and it is estimated that 9,152 social housing units can be planned for construction. In the future, if there is still demand for social housing, we will re-evaluate suitable locations and provide land for the governments to plan and use. In addition, according to the Ministry of Interior's "Transforming Existing Hotels and Public and Private Housing into Social Housing" Project, , we started to take inventory of our student dormitories, and a total of 1,598 units of TSC's 6 self-owned student dormitories in northern, central and southern Taiwan (Miaoli, Gongying, Douliu, Guiren, Nanzi, and Yehlin Dormitories) were converted into social housing in August, 2023. By leasing land and converting the existing housing, TSC can provide a total of 10,750 social housing units.

Lease of Self-built Housing

TSC used to build TaiSugar Dormitories to work in line with the College Accommodation Environment Project. Nowadays, due to the promotion of sustainable development issues, we aim for economic growth while at the same time taking into account the ecological environment. Therefore, in 2019, TSC started the planning for the construction of Shalun Smart Green Energy Circular Residence, which was officially put into operation in 2022. This is the first example for TSC to introduce the concept of circular economy into a residential project. To promote the sustainable development and reuse of land, TSC also selects appropriate sites to build rental housing in northern, central and southern Taiwan, and the Green Building design is also incorporated in the buildings while smart technology is also applied, creating a better-quality living environment. The rental housing construction projects in recent years include the followings :

Project schedule	Location
The projects will be completed in mid-2021, and operation will start in the 2 nd half of 2021	Wudong Section of Guiren District in Tainan City (351 units)
The projects will be completed in mid-2022, and operation will start in the 2 nd half of 2022	Xinduxin Section of East District in Tainan City (161 units)
The projects will be completed by the end of 2022, and operation will start in the 1 st half of 2023	Baowen Section of Nantun District in Taichung City (136 units)
	Guanghua Section of Quanzhen District in Kaohsiung City (145 units)
The projects will be completed in mid-2023, and operation will start in the 2 nd half of 2023	Huajiang Section of Wanhua District in Taipei City (130 units)
The projects will be completed in early 2024, and operation will start in the 2 nd half of 2024	Xinduxin Section of East District in Tainan City (elderly) (103 units)
The projects will be completed in early 2024, and operation will start in the mid 2024	Gaosong Section of Xiaogang District in Kaohsiung City (240 units)
The projects will be completed by the end of 2026, and operation will start in the 1 st half of 2027	Qiaozhong Sections of Qiaotou District in Kaohsiung City (159 units)

In the rental housing construction plan, to address the needs of Taiwan's super-aged society by 2025, TSC has been planning of the elderly residence since 2018 and has visited various elderly housing and long-term care institutions as references for development and operation. The first elderly residence has been completed in the East District of Tainan City in early 2024, with operations expected to begin in the second half of 2024. The residential space is designed with 103 units and 7 ground-floor shops, allowing for the introduction of related industries such as retirement facilities, clinics, convenience stores, restaurants, and more. The design includes classrooms, multipurpose activity spaces, a gym, a lounge, and a rooftop garden, providing open spaces for residents. In addition to creating a comfortable residential environment, we aim to establish lifelong learning and promote a sense of well-being, in line with the goals of “ageing together,” “learning together,” and “staying well together.”



TaiSugar Chongxian Circular Housing



Tainan Chongxian Circular Housing for Intergenerational Co-residence honored with the Bronze Medal Award in the Net-Zero Building Design Competition

TSC's Tainan Operation Branch proposed "Introducing Net-zero Energy-saving Design in the Smart and Circular Building- Take the Tainan Chongxian Circular Housing for Intergenerational Co-residence for Example" and won the Bronze Medal Award in the "Net Zero Building N Squared" Net Zero Building Design Competition. This competition aims to encourage talents from all walks of life to pay attention to the transition and development of net-zero buildings. The competition focuses on ideas related to the application of innovative energy-saving technology to net-zero buildings to improve building efficiency and energy-saving benefits.

TSC promotes the state-owned enterprise's first circular housing project for intergenerational co-residence to cope with the needs of the current ageing society. In addition, TSC's emphasis on corporate social and environmental responsibility is demonstrated through the design of energy conservation and circular economy. This intergenerational co-residence is located in downtown Tainan, with a park, junior high schools, elementary schools, a municipal hospital, and long-term care facilities in the neighborhood, facilitating the lives of elderly residents. The design of this residence incorporates universal design and offers accessible rooms to accommodate residents with special needs.

In terms of the implementation of net-zero concept, intergenerational co-residence follows the concept of circular economy and promote rent-to-purchase, integrates the building design with smart systems to enhance energy efficiency of building envelopes, and selects high-efficient equipment. In addition, the building has passed the Building Energy-Efficiency Rating System (BERS) Level 1 energy efficiency certification. TSC was in charge of leading this project, overseeing the development and commissioning architects for building planning and energy-efficient design, with technical support provided by academic institutions. Professional entities were also engaged to conduct third-party verification to verify the rationality of energy-saving design. According to this design and planning, an estimated NT\$1.52 million in electricity bills can be saved annually, equivalent to an energy saving rate of 43% of the same type of building in 2000.

In terms of carbon reduction rate, compared to buildings of the same type, the carbon reduction rate can reach 25%, reducing 99,564 kgCO₂e annually, which is equivalent to the annual carbon dioxide absorption of 0.3 Daan Parks. Based on the intergenerational co-residence model and combined with the nearby medical institutions, regional medical service integration can be achieved.





CHAPTER

4

SUSTAINABILITY ASPECTS

Creating Social Value

MATERIAL TOPICS

Food Safety, Marketing and Labeling, Supply Chain Traceability, Social Engagement, Local Communities, Supplier Environmental Assessment, Supplier Social Assessment

4.1 FOOD SAFETY MANAGEMENT

4.2 DEVELOPING HIGH-QUALITY AND HEALTHY FOODS

[SPECIAL COLUMN] FOOD SAFETY GUARANTEED AT TSC- TWO MORE FOOD ITEMS CERTIFIED WITH CLEAN LABEL 100% ADDITIVE FREE

[SPECIAL COLUMN] FROM FISH SCALES TO COLLAGEN — “BEAUTY COLLAGEN JELLY” HONORED WITH 2023 HAIYAN AQUATIC PRODUCT QUALITY AWARD BY THE FISHERIES AGENCY OF MINISTRY OF AGRICULTURE

4.3 SUSTAINABLE MANAGEMENT OF THE VALUE CHAIN

4.4 SOCIAL CARE AND COLLABORATION WITH ALLIES

4.5 ACTIVATION OF SUGAR FACTORY LOCATIONS

[SPECIAL COLUMN] EXTENDED ROUTE TO THE SOUTHERN BRANCH OF NATIONAL PALACE MUSEUM — YUNCHAI

OPERATION BRANCH

[SPECIAL COLUMN] GOVERNMENT AND INDUSTRY COLLABORATE TO PROMOTE SECURE PARENTING — HUALIEN’S “GUANFU PARENT-CHILD CENTER” LAUNCHED IN OCTOBER 2023





SDG 1.4



SDG 2.1

SDG 2.c



SDG 3.9



SDG 8.2

SDG 8.3



SDG 12.6

SDG 12.a

Material Topics — Food Safety, Marketing and Labeling, Supply Chain Traceability, Social Engagement, Local Communities, Supplier Environmental Assessment, Supplier Social Assessment

☒ achieve ☐ unaccomplished

2023 Goals and Achievements

- ☒ To subsidize NTD 7 million for the public welfare activities for local groups.
 - ▶ In 2023, the total amount of subsidies for public welfare activities amounted to about NTD 7.123 million.
- ☒ To organize a total of 120 public welfare activities and other community-related activities.
 - ▶ In 2023, a total of 125 public welfare activities were organized.
- ☐ To have "zero" hazard incident of our own-manufactured food.
 - ▶ There were 2 food-related regulatory violations in 2023.
- ☒ To continue the organization of health food promotion activities.
 - ▶ Organized 5 sessions of health food promotion activities in 2023.
- ☒ To continue the R&D of health food.
 - ▶ As of 2023, we have obtained cumulative 10 (12 health claims) health food certifications.
 - ▶ The "Beauty Collagen Jelly," launched in 2022, recorded sales of NTD 5.91 million by the end of 2023.
 - ▶ Taisugar's Roasted Eel with Black Garlic and Taisugar Tuna with Sweet Corn passed the Clean Label and 100% additive-free verification.
- ☒ To cooperate with the government's policy of stabilizing commodity prices and adjust retail prices.
 - ▶ The retail price of sugar remained at NTD 36/kg; to stabilize pig prices, 14,137 pigs were allocated for supply and demands in 2023.
- ☒ To continue the investment in food safety testing equipment in the laboratory.
 - ▶ The related expenditure of all business units totaled NTD 93,863 thousand.
- ☒ To implement the feeding of green feed.
 - ▶ 100% of feeding of green feed.
- ☒ To implement the policy of no sulfonamides, no clenbuterol, no hormones and no growth hormones.
 - ▶ 100% compliant of no sulfonamides, no clenbuterol, no hormones and no growth hormones.
- ☒ To organize 2 sessions of quality management education and training, with estimated participants of 70.
 - ▶ Organized 2 sessions of quality management education and training, with an estimated participants of 74.
- ☐ To invest NTD 35,000 thousand for R&D.
 - ▶ The amount of R&D expenses invested reached NTD 26,342 thousand, which was due to the suspension of some research plans to stay in line with market trends.
- ☒ Management of patent (patent application and maintenance).
 - ▶ Continuously maintaining 11 patents.
- ☒ The products continue to pass relevant international certifications.
 - ▶ The Sugar Business Division's sugar and oil products have obtained Halal Certification, and the certification for the year 2023 remains valid. The certification was issued by the Taiwan Halal Integrity Development Association.
- ☒ To continue the implementation of customer satisfaction policy.
 - ▶ Had a dedicated person in charge of customer service for timely response. The 2023 customer satisfaction survey scored 96.69 points, 0.84 points increase compared with 2022.
- ☒ To continue the organization of health food promotion activities.
 - ▶ The total marketing and advertising expenditure for the company in 2023 was NTD 52.09 million, with the Biotechnology Business Division spending NTD 1.512 million on advertising for health food products.
- ☒ To continue the R&D of health food.
 - ▶ As of 2023, we have obtained cumulative 10 (12 health claims) health food certifications.
 - ▶ The "Beauty Collagen Jelly," launched in 2022, recorded sales of NTD 5.91 million by the end of 2023.
 - ▶ Taisugar's Roasted Eel with Black Garlic and Taisugar Tuna with Sweet Corn passed the Clean Label and 100% additive-free verification.





SDG 1.4



SDG 2.1

SDG 2.c



SDG 3.9



SDG 8.2

SDG 8.3



SDG 12.6

SDG 12.a

Material Topics — Food Safety, Marketing and Labeling, Supply Chain Traceability, Social Engagement, Local Communities, Supplier Environmental Assessment, Supplier Social Assessment

2024 Goals

- ▶ To subsidize NTD 7.2 million for the public welfare activities for local groups.
- ▶ To organize a total of 130 public welfare activities and other community-related activities.
- ▶ To have "zero" hazard incident of our own-manufactured food.
- ▶ To continue the organization of health food promotion activities.
- ▶ To continue the R&D of health food that meet the needs of the Taiwanese people.
- ▶ To cooperate with the government's policy of stabilizing commodity prices and adjust retail prices.
- ▶ To continue the investment in food safety testing equipment in the laboratory.
- ▶ To implement the feeding of green feed.
- ▶ To implement the policy of no sulfonamides, no clenbuterol, no hormones and no growth hormones.
- ▶ To organize 1 sessions of quality management education and training, with estimated participants of 40.
- ▶ To invest NTD 35,000 thousand for R&D.
- ▶ To continue the implementation of customer satisfaction policy.
- ▶ To continue the organization of health food. promotion activities.
- ▶ To continue the R&D of health food.



Medium and Long-term Objectives

- ▶ To contribute to economic development and improve the quality of life of the local communities and society.
- ▶ To have "zero" hazard incident of our own-manufactured food.
- ▶ To continue the organization of health food promotion activities.
- ▶ To continue the R&D of health food that meet the needs of the Taiwanese people.
- ▶ To develop health care products and continue to increase number of items.
- ▶ To cooperate with the government's policy of stabilizing commodity prices and adjust retail prices.
- ▶ To carry out the commitment of "Food safety guaranteed at TSC."
- ▶ To combine new agriculture and the use of biotechnology for the R&D of non-toxic, nonpolluting, high value-added, and healthy product.
- ▶ To combine new agriculture, circular economy, and biotechnology techniques to research sustainable net-zero technologies and develop eco-friendly healthy products.
- ▶ To carry out the commitment of "Food safety guaranteed at TSC."
- ▶ To pass the ISO 14067 carbon footprint.
- ▶ To continue the organization of health food promotion activities.
- ▶ To develop health care products and continue to increase number of items.



4.1 Food Safety Management

The government proposed the Five-point Food Safety Policy, working on the five aspects of “Strengthen source control management,” “Re-establish the food production-management system,” “Strengthen inspection capabilities,” “Increase liability for producers and vendors,” and “Encourage and enable citizen oversight” to strengthen food safety and sanitation guarantees and improve the management capabilities of food businesses. As the only food company among the state-run enterprises, it has become our mission to cooperate with national policies and provide the public with safe and reliable food.

To perfect the entire farm-to-table safety system, TSC works together with the government to jointly create a trustworthy food safety and consumption environment. TSC conducts quality testing of about 350 items of products it produces every year, including granulated sugar, pork, organic fruits, processed foods, and beauty and health products and abides by all marketing and labelling regulations to ensure food safety for consumers.

Statistics by Laboratories under Business Divisions in 2022

Business Division	Detection Instrument	Test Item	Inspection Pass Rate (%)	Related Expenses
Taiwan Sugar Research Institute	Constant temperature incubators, stirrers, scales, sterile consoles, electrical driers, autoclaves, RO water maker, pure water maker, pipette, stainless steel filter and vacuum pump	Colonies number, E. coli, Coliform group, Salmonella, and Enterobacteriaceae	100% compliance	NTD 1,349 thousand (Expense center)
Sugar Business Division	Constant temperature incubators, water bath, colony meters, stirrers, pharmaceutical scales, sterile consoles, electrical driers, autoclaves, distilled water machines, and atomic absorption spectrometers, brix meter refractometer, laboratory oven, conductivity meter, spectrophotometer	Microorganisms, E. coli, coliform group, sulfur dioxide, heavy metals (arsenic, lead, copper), and pesticide residues, brix, moisture, ash, color value, acid value, peroxide value	100% compliance	NTD 76,834 thousand (0.81% of revenue)
Biotechnology Business Division	Sterile consoles, moisture balance, precision electronic balance, oscillators, electric hot plates, autoclaves, electrical driers, constant temperature incubators, constant temperature ovens, colony counting, pH meters, magnetic stirrers & heaters, HPLC, water activity meters, digital Brix spindle, Chemical Hood, and Biological Safety Cabinet	<ul style="list-style-type: none"> • Microorganisms: 16 items • Can test: 2 items • Environmental monitoring: 1 item • General nature: 31 items • Residual analysis: 18 items • Others: 2 items 	100% compliance	NTD 12,596 thousand (2.50% of revenue)
Livestock Business Division (Fresh meat and processed meat)	Multimode microplate readers, muffle (furnace), autoclaves, concentrated sulphuric acid decomposition systems, water activity meters, pH meters, moisture ovens, bacterial incubators, mold incubators, salinity meters, fat extraction instruments, Kjeldahl nitrogen analyzers, sterile consoles and bacterial testing platforms	<ul style="list-style-type: none"> • Microorganisms: 7 items • Chemical examination: 8 items • Sulfonamide ELISA: 2 items • Beta receptor ELISA test: 3 items • Bacterial susceptibility test: 8 items 	100% compliance	NTD 3,084 thousand (0.14% of revenue)









Note :

1. Research institute testing department expenditure = personnel costs for testing items + material costs.
2. The ratio of laboratory expenditures to the revenue = the business division's lab spending in 2023/ the revenue for the business division in 2023.

Product Safety Certification

To enable consumers to feel confident about the purchase of TSC products and services, TSC has disclosed the necessary information for each product and service it provides, detailed information regarding various raw materials, ingredients, expiry dates, country of origin, storage conditions and instructions for use is listed on each product produced and on the packaging and description label of the product. In addition, consumer service hotlines are provided for questions and answers. All products and services that we provide to consumers comply with the relevant laws and regulations in their labeling and description. In addition, we also actively introduce Food Safety Management System and certification. For every product and service, we have set management indicators in relation to health and safety, and even ensure that the supply chain, manufacturing, and customer service processes meet the safety and health regulations through the suppliers and distributors management system and review it at any time based on business needs. The complete process from R&D, manufacturing, to sales are incorporated into the scope of evaluation, improvement, and quality management.

The Proportion Overview Table of Each Food Category that Has Passed Food Safety Certification or Obtained Food Safety Certification

Food Category	Certification							
		TQF	CAS	IFS	BRC	Health Food Label	ISO 22000	Others
Sugar (including processed sugar)		87.60%	-	-	-	-	100%	100% (Halal certification) 12.31% (TAP) 84.44% (FSSC 22000) 100% (HACCP)
Edible Oil		100%	-	-	-	-	100%	100% (Halal certification) 100% (HACCP)
Organic Rice		-	-	-	-	-	100%	100% (Taiwan Organic Agricultural Products Mark) 
Edible Oil Products (imported)		-	-	72.24%	72.24%	-	-	-
Brewed & Reconstituted Food		-	-	-	-	-	-	9.04% (TOC)
Canned Food		-	43.70%	39.90%	20.64%	-	-	19.26% (GHP) 17.13% (ProFishlove Ecolabel) 39.90% (Halal certification) 4.49% (Dual Clean Label)
Mineral Water and Beverages		27.95%	-	-	-	-	-	-
Prepared Frozen Food		-	44.49%	-	-	-	-	1.58 % (TAF)
Snack Foods		-	-	-	-	-	-	-
Health Foods		92.96%	-	-	-	58.66%	-	-
Functional Drinks		99.61%	-	-	-	75.59%	-	-
Fresh Meat		-	94.34%	-	-	-	100%	100% (HACCP)
Processed Meat		-	72.23%	-	-	-	72.23%	72.23% (HACCP)

Note :

1. The percentage in the above table indicates the proportion of food categories that have passed food safety certification or obtained food safety certification. For example, the percentage of products in the category of edible oil having obtained TQF (Taiwan Quality Food Association) label is 100%, that is, all edible oil products have obtained the TQF label. The calculation formula is: the purchase amount of the food category that has passed the food safety certification or obtained the food safety certification in 2023/ the total purchase amount of all products of the food category in 2023.
2. Instant beverages and snacks are OEM products. Although there is no product-related label, the OEMs are compliant with ISO 9001, ISO 22000 or the food safety system standard, HACCP. TSC also conducts on-site inspections from time to time (see 4.3.2 Supplier Management).

Traceability Management of Foods

To enable the public to eat healthy and safe food at ease, as a state-owned enterprise, TSC's unshirkable responsibility is to include 100% of TSC's food products in our own Food Safety Traceability Management System (FT). The system not only reveals all the food information for TSC management personnel to check and compare, food inspection reports, but also disclosed the Food inspection report on TSC's official website, allowing consumers to check complete information of the products online to carry out the commitment of "Food safety guaranteed at TSC."

In addition to our own Food Safety Traceability Management System (FT), TSC has joined the "TQF-ICT Service Platform" and "Food Traceability Management Information System" to establish a food safety protection network and enhance the safety and quality of TCS products for consumers.



Food Traceability
Report

TSC's Food Safety Traceability Management System is disclosed on TSC's official website for consumers to inquire at any time.



Fadenbook



Ftracebook

Fadenbook/Ftracebook

TSC has registered on the Registration Platform of Food Businesses (Fadenbook) in accordance with the schedule stipulated by Food and Drug Administration. The business units at TSC in the announced category completed the reporting operation on Food Traceability Management Information System (Ftracebook) and the OEMs of business units in the announcement category also completed the reporting as prescribed.

Quality Control

Due to the impact of COVID-19 pandemic in 2023, TSC still organized 2 sessions of quality management education and training in accordance with the epidemic prevention requirements, with a total of 74 participants. TSC holds quality control meetings quarterly or product quality meetings from time to time to discuss quality control issues and related improvement measures. Each business division has a "Quality Control Plan" every year. The planning, support, operation, performance evaluation, improvement and other requirements of the ISO 9001 Quality Management System are used as the basis for each business division to implement quality management. Performance is reviewed on a quarterly basis. At the end of the year, the implementation results of quality control plans are reported. In addition, the Taiwan Sugar Headquarters randomly checks the execution status of quality control activities.



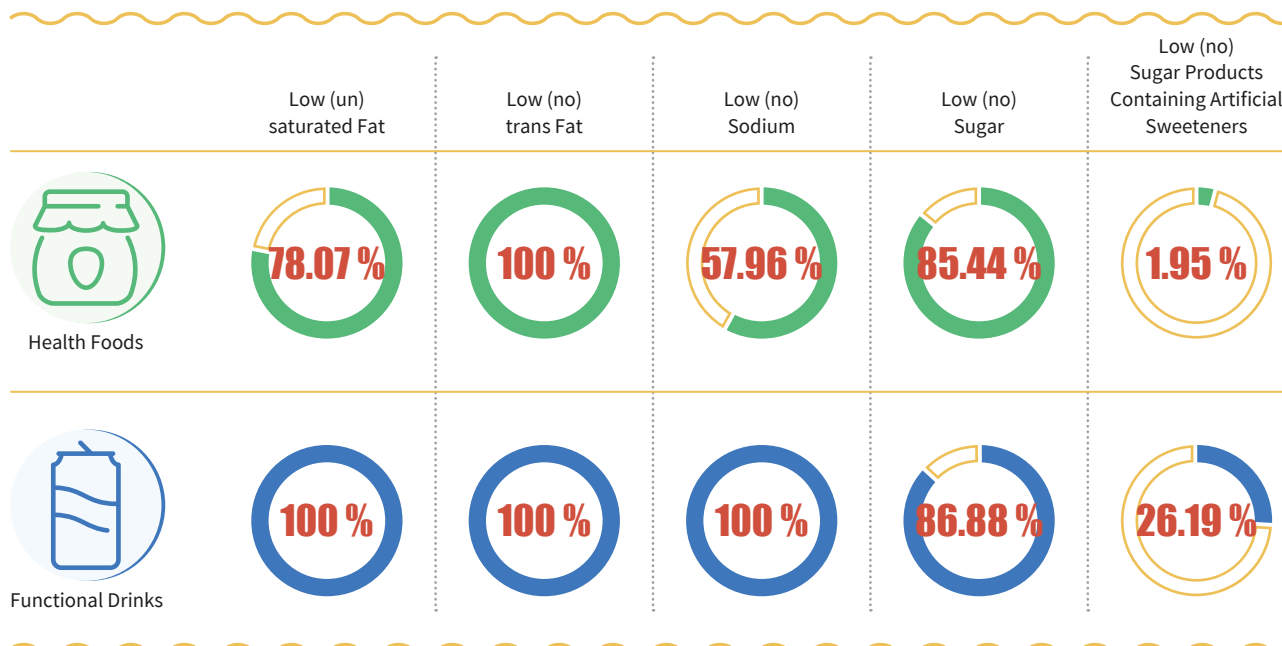
4.2 Developing High-quality and Healthy Foods

"Deep Rooting Health and Green Related Industries" is one of TSC's development strategies. We aim to continuously develop health-beneficial foods and incorporate the concept of a circular economy into food development, including health supplements, epidemic prevention products, research on immunity-strengthening nutrition foods, and high-quality livestock products.

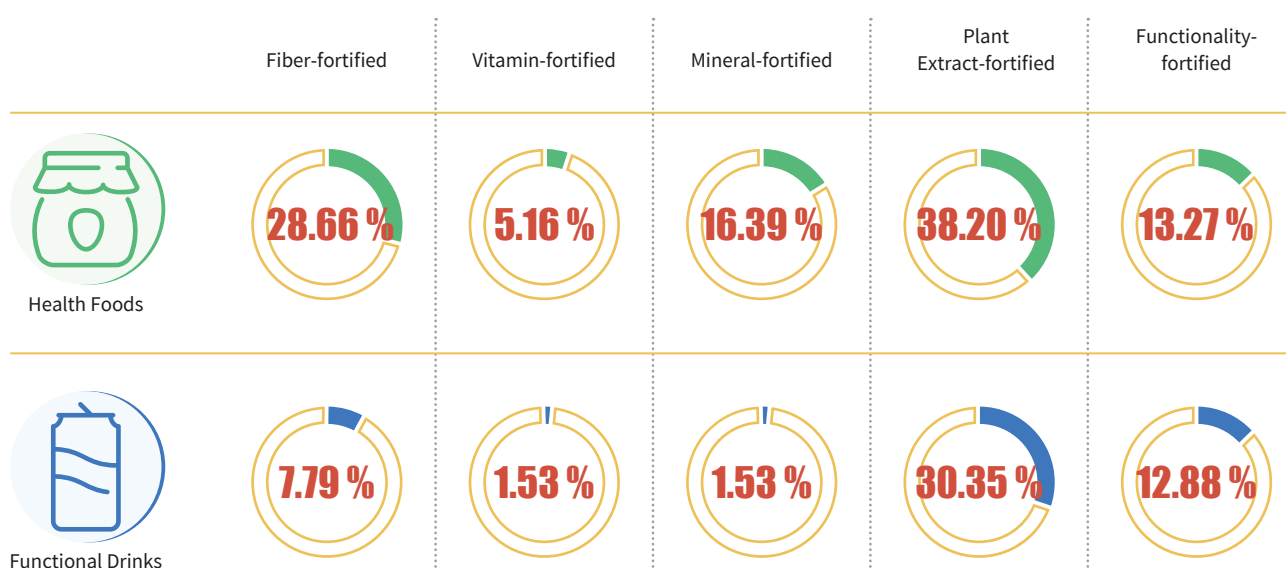
Our products not only meet consumer needs but also have been highly recognized in the market. Three of our health drinks, "adzuki bean with black glutinous rice and quinoa instant cereals," "mung bean with brown job's tears and tremella instant cereals," and "soybean milk & oats powder instant cereals," made their debut in the Japanese market in 2022 and immediately won the "2022 Food and Health Award (食と健康アワード 2022)" with the "Outstanding Award." These drinks use a unique steaming and cooking method that preserves the natural flavor and nutrients of the ingredients. They have a smooth and delicate texture, are convenient to consume, and are rich in dietary fiber, which helps to increase satiety. For calorie-conscious consumers, these drinks are the best choice for a healthy and delicious option, and they also make for a tasty and easy breakfast for morning rush.



Ratio of Low-burden and Nutrition-fortified Products



Nutrition-fortified Products



Note : The calculation formula: The sales amount of low-burden and nutrition-fortified products in the food category in 2023/ the total sales amount of all products in the food category in 2023.

TSC hopes that consumers not only eat healthily but also that upstream ecosystem resources can be sustainably managed. In addition to using an existing traceability management system to control raw material sources, the company has further strengthened cooperation with the supply chain. "Taisugar Canned Mackerel," manufactured by Long Yuh Enterprise Co., Ltd., including products such as Taisugar Mackerel in Tomato Sauce (Yellow can), Taisugar Mackerel in Tomato Sauce (Red can), Taiwan Sugar Mackerel in Tomato Sauce (Nan Fang Ao Mackerel), and Taisugar Tuna in Brine, have all obtained the ProFishlove Ecolabel Chain of Custody certification. This certification ensures that while enjoying fresh aquatic products while taking into account the vision of maintaining marine ecology. This also shows TSC's support and attention to marine conservation and protection of local fishery resources.



Special Column

Food safety guaranteed at TSC- Two more food items certified with Clean Label 100% Additive Free

Taisugar's Roasted Eel with Black Garlic and Taisugar Tuna with Sweet Corn passed the Clean Label and 100% additive-free verification. Over the years, TSC has spared no efforts in establishing a strong TSC food safety network to carry out our commitment of "Food safety guaranteed at TSC." Food produced under the Clean Label standards allows the public to not only taste delicious food but also avoid the burden of food additives.



Clean Label and 100% additive-free verification is a set of standards provided by the China Grain Products Research & Development Institute for processors to follow when producing products. Products can be classified into "100% Additive-Free," "Clean" (Double Clean), and "Clean," with the "100% Additive-Free" specification being the most stringent. Clean Label and 100% additive-free verification aims to reduce the information asymmetry between the consumers and the manufacturers through a strict certification process, allowing manufacturers to participate in the certification process to optimize their products to improve food safety and quality. Therefore, products with the "100% Additive-Free" certification must contain no food additives announced by the Food and Drug Administration, Ministry of Health and Welfare.

Roasted Eel with Black Garlic is guaranteed to be free of preservatives and any food additives. In terms of the ingredient selection, TSC insists on using raw material of black garlic made from local fresh garlic in Taiwan, which has high health and nutritional value. The raw material of eels has been inspected by SGS Taiwan as the third-party notary unit to ensure that there are no radioactive residues (iodine 131, cesium 134, cesium 137). Taisugar Tuna with Sweet Corn has also become the first corn tuna product in Taiwan meeting the Clean Label (Double Clean) and 100% additive-free verification. We use non-genetically modified Taiwanese sugar corn kernels as raw materials, and insist on using 100% tuna and bonito fish meat, without adding any non-tuna and bonito fish meat. These two products were launched on the Ghost Festival in 2023, hoping to provide our consumers with a variety of choices while ensuring that they can eat with peace of mind.



From fish scales to collagen- “Beauty Collagen Jelly” honored with 2023 Haiyan Aquatic Product Quality Award by the Fisheries Agency of Ministry of Agriculture

TSC reuses milkfish and extracts collagen from discarded milkfish scales and has developed the beauty and health food “Beauty Collagen Jelly,” which was honored with the 2023 Haiyan Aquatic Product Quality Award by the Fisheries Agency of Ministry of Agriculture with the concept of “from fish scales to collagen.” The 2023 Haiyan Aquatic Products are launched by Fisheries Agency of Ministry of Agriculture, Executive Yuan, to select high-quality domestic aquatic products, aiming to continue to promote domestic aquatic products in terms of quality, added value, fashion, sophistication, and food safety. This time, 20 healthy, safe, innovative, and diverse products were selected from more than 100 products. The selected 20 items have passed at least one verification of CAS, HACCP, TQF, TAP, ISO 22000, etc. and used seafood from marine fisheries and domestic aquaculture. As the market has matured for processing and conditioning applications, the competition for the selection of processed aquatic products has become more intense. Judges considered market demands and innovative processes when selecting the three products for the Innovative Excellence Award.

We not only use exclusive technology to retain complete nutrition and extract 100% collagen extract, but also strictly control the sources of fish scales and select milkfish from eco-friendly farming. It is also because that our products have passed food inspections and are from domestically produced aquatic products that has won the acclaims from judges among the multiple products in the competition. Turning unused things into high-value products with the circular economy concept is one of the businesses TSC Biotechnology has been developing in recent years. “Beauty Collagen Jelly” is an embodiment of value-added resource recycling and reuse in practice.

The manufacturing process of “Beauty Collagen Jelly” does not add a single drop of water. The high-efficiency and precise NAG moisturizing factor (hyaluronic acid precursor) and Vitamin C are added in the formulas for beauty. After a three-stage testing (raw-materials, semi-finished products, and finished products), this high-quality product without plasticizers and aflatoxin residues is developed. The product is in jelly form, making it convenient to eat, easy to store at room temperature, and easily portable for consumption. It is suitable for those who are beauty enthusiasts, anti-ageing advocates, and seniors alike.

In 2023, TSC food products can be available through channels such as TSC Million Convenience Stores, ego 888 website, Carrefour, RT-Mart, FamilyMart, and Funcom Supermarket. TSC has always been a domestic leader in promoting agriculture circulation from the full utilization of by-products of sugar refining to the construction of green energy circular pig farms. In recent years, we have even expanded into fishery waste recycling, recycling oyster shells to extract calcium carbonate that is used in agricultural and industrial fields. Now TSC uses the milkfish scales to extract collagen as the raw material and launched the product “Beauty Collagen Jelly.” The achievements are fruitful and evident for all to see. TSC works in line with government policies and aligns with the international net-zero standards, implementing the circular economy into the business strategies, technical innovation, and product R&D, and has set a new model for waste recycling, value-added reuse, and industrial upgrading.



4.3 Sustainable Management of the Value Chain

Stable and robust operation of an enterprise relies on proper management of the value chain. The suppliers, distributors, corporate customers, consumers and the communities where we operate are all important partners that assist TSC in the value chain. Therefore, from the suppliers in the upstream to the end consumers, every part of the value chain is the important key for us to strive for perfection. Through the Government Procurement Act and the Green Procurement Policy, TSC makes proper supplier and customer relationships to create sustainability of TSC's value chain.



4.3.1 Procurement Policies

The selection of suppliers follows the prescriptions of the Government Procurement Act. In addition, it is clearly stated in all relevant bidding documents that new suppliers shall comply with the principles of fair trade, environmental protection regulations, Labor Standards Act, and Occupational Safety and Health Act. Due to the complexity of human rights assessment mechanism, TSC currently screens the suppliers based on the self assessment of the human rights compliance prescribed in the procurement agreement by the suppliers before signing. In 2023, the percentage of new suppliers meeting the selection criteria reached 100%. To work in line with the implementation of green procurement promotion plan approved by the Executive Yuan, TSC purchases ecofriendly and green products. The green procurement ratio in 2023 was 98.50%.

Moreover, to support domestic industries, priority is given to the sources of goods manufactured or services provided by domestic suppliers. At present, apart from the 86.5% of bulk grain raw materials in the Livestock Business and sugar raw materials in the Sugar Business that are imported from abroad, domestic suppliers are prioritized for the supply of the remaining raw materials.

Procurement Overview

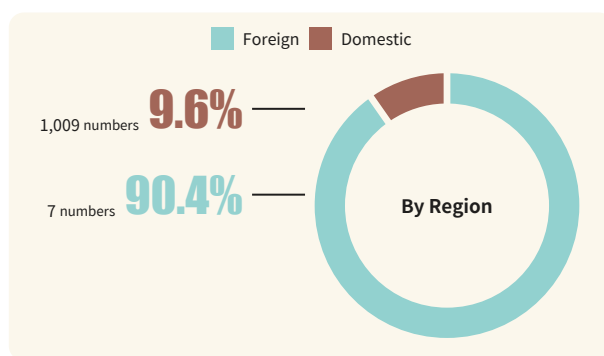
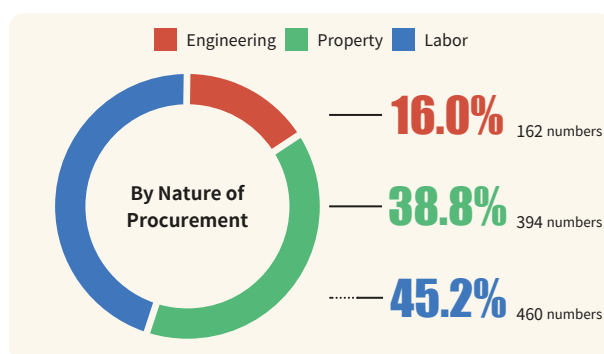
All the procurement of TSC must comply with the relevant provisions of the Government Procurement Act in order to achieve justice, openness and fairness, and the results have been good. The internal control system set up the Key Points for Financial and Labor Procurement Operations, Key Points for Bulk Grain Purchase, Operating Points of Project Purchase and Performance Management, and Operating Points of Public Selection of Technical Service and Labor Procurement. TSC has set up an outsourcing center as a dedicated unit in charge of purchasing and organizes doubts, objections, complaints and consulting related to the Government Procurement Act so as to complete the procurement

system and increase procurement efficiency. New suppliers and existing suppliers should all meet the requirements of the Procurement Act.

In 2023, the total purchase amount (based on the contract amount) was NTD 7,062.5 million. Among this, the purchase amount of bulk grain purchase was NTD 935.9 million, and for raw sugar, it was NTD 5,448.5 million. The amount of foreign purchases accounted for approximately 90.4% of the total purchase and the domestic purchases accounted for 9.6% of the total purchase.







Supplier Profiles in 2023

	Categories	Numbers	Percentage
Nature of Procurement	Engineering	162	16.0%
	Property	394	38.8%
	Labor	460	45.2%
Region	Foreign (Including Japan and the United States)	7	90.4%
	Domestic	1,009	9.6%
Total		1,016	100.0%



Usage of Raw Materials

The main raw materials imported in 2023 include raw sugar, corn and soybeans. No recycled raw materials were used as the raw materials for the production of food products. TSC's new product packaging design is in line with the MOENV's regulations on the restriction against excessive packaging of products to reduce both the amount of packaging materials used and the generation of waste as well as the environmental load.

Items	Usage Amount in 2023	Country of Origin	Renewable Raw Materials / Non-renewable Raw Materials	Usage of Recycled RawMaterials
 Sugarcane	478,251 tonnes	Taiwan 100%	Renewable materials	None
 Imported Cane Sugar	253,000 tonnes	Thailand 27.67% Honduras/ Guatemala 13.83% Guatemala 15.02% Brazil 28.46% Australia 15.02%	Renewable materials	None
 Corn	79,252 tonnes	U.S. 33.93% Brazil 49.11% South Africa 3.46% Taiwan 13.50%	Renewable materials	None
 Soybeans	40,000 tonnes	U.S. 100%	Renewable materials	None
 Meat	1,073.49 tonnes	Taiwan 100%	Renewable materials	None
 Oil Products	289,564 kiloliter	Taiwan 100%	Non-renewable raw materials	None

Note : The calculation method for the percentage of origin = (Quantity of raw material from origin/ Total quantity of the raw material used in the year) x 100%

4.3.2 Supplier Management

Having trustworthy and reliable supplier partners in the value chain is an important key to enterprise operation. Through management measures such as the supplier contract performance management and regular audits can enable effective and systemic exchanges and communication with suppliers, connecting the suppliers and TSC to create a better and sustainable industrial environment.

Supplier Contract Performance Management

TSC signs contracts with all of its suppliers. During the compliance period, the manufacturer acceptance examination is conducted before entering the factory. If quality and quantity do not comply with the purchase contract after acceptance, the supplier will be notified of a deadline for improvement. The terms of each contract require the suppliers to provide labor and health insurance to their employees. Once suppliers are found to be in violation of environmental protection, labor or human rights, they will be immediately requested for improvement within a limited time and may be fined for breach of the contract. If they do not listen to advice or repeatedly violate the terms, the contract with such supplier may be terminated.

We also strengthen the safety and health management of contract operations, and all units shall inform contractors the work environment, hazard factors and safety and health related regulations of the units in advance when the project is delivered. In addition, TSC's "Precautions for Occupational Safety and Health of Engineering and Labor Services" shall be specified in the contract and obligate the contractors to implement safety and health management and conduct automatic inspections to prevent accidents during construction operations in accordance with Occupational Safety and Health Act and relevant regulations. To ensure that when occupational accidents occur, the contractors' workers can obtain reasonable claims and reduce the risk the company has to take, all units handling contracted projects with the contract amount exceeding the announced amount (contracting projects of engineering, labor, and property procurement including installation), employer's accident liability insurance (or third-party accident insurance) with the coverage of NTD 8 million or more should be insured (the claim amount from social insurance can be deducted). For any contracted project whose amount does not reach the announced amount, employer's accident liability insurance with the coverage of NTD 6 million should be insured (the claim amount from social insurance can be deducted). For labor services or construction contracts below NTD 100,000, it is required to establish a simple contract and handle the prescribed safety and health management issues.

In 2023, the suppliers did not have significant or potential negative economic, environmental, and social (including human rights) or termination of the cooperative relationship with TSC due to poor execution during the contract performance period.

Human Rights and Security Personnel Management

Except for the office building of Marketing Business Division that adopts Security Alarm System, the access control and security of all units of Taiwan Sugar Corporation is entrusted to the security company. Security personnel all received professional courses and firstaid personnel training, and they also have to receive an 2-hour human rights related education every year. According to statistics, there are a total of 136 security personnel in Headquarters, Operation Branches, Divisions and Branches in 2023, and 136 of them received human right education training, with the training rate reaching 100%.



Food Supplier Assessment

TSC conducts assessment of its partner suppliers in terms of the technical capacity, production performance, corporate image and responsibility and contract performance reliability so as to maintain its market sensitivity and keep abreast of the dynamics of supplier and if necessary, TSC will perform or entrust a third impartial inspection agency to conduct on-site inspection of the factory and the assessment results will be included in the score. Related defects will be asked to improve to ensure all the products and services the suppliers provide meet the needs of TSC. The assessment results are also used as reference for contract renewal.

List of the Ratio of Food Suppliers Meeting the Food Safety System Standards

Compliant Standards	Sugar Business Division	Livestock Business Division	Marketing Business Division	Biotechnology Business Division
ISO 9001	88.89%	-	13.64%	11.67%
ISO 22000	88.89%	96.22%	81.82%	20.00%
FSSC 22000	88.89%	-	27.27%	5.00%
HACCP	88.89%	96.22%	95.45%	18.33%

Note :

- Ratio of food suppliers meeting the food safety system standards = (the 2023 purchase amount of the food suppliers meeting the food safety system standards of the business division/ the 2023 purchase amount of the business division) *100%
- Definition of supplier: A manufacturer that provides raw materials (packaging materials, equipment, and labor services excluded). Definition of OEM: For products not showing TSC as the manufacturer on the packaging.

Assessment Results of Food Industry Suppliers

Business Division	Number of Suppliers	Number of Suppliers Assessed	Percentage	Assessment Items	Assessment Results
Sugar Business Division	37	37	100%	Raw material control, Process control, Finished products and warehouse management, Self-management and so on	Pass rate : 100%
Livestock Business Division	80	80	100%	Quality, price, and comprehensive assessment	Pass rate : 100%
Biotechnology Business Division	60	60	100%	Quality, price, and delivery situation	Pass rate : 100%
Marketing Business Division	41	41	100%	Specification quality, amount, and compliance deadline	Pass rate : 100%



Audit of OEM Factories

To ensure the quality and safety of TSC branded foods, TSC conducts strict quality, safety, and hygiene management of the outsourced foods. In addition to sending non-scheduled staff from various units to station in the factories to supervise the manufacturing, the Quality Management Committee also organizes inspection teams irregularly to conduct on-site inspections without prior notice to thoroughly check and inspect the OEM factories. The inspection content shall follow the 69 items of inspection record of OEM factory listed in the “Key Points for the Quality Management Operations of the Manufacturing Companies” and the audit results shall be included in the reference for assessment scores for annual contract renewal. The manufacturers with the total assessment score reaching 80 points are entitled to renew the contract.

Assessment Results of OEM Factories in 2023

Product Category		Number of Entrusted Manufacturers	Number of Manufacturers Audited	Percentage	Audit Results
Domestic	Edible Oil	1	1	100%	Excellent, acceptable OEM factory.
	Brewed & Reconstituted Food	5	5	100%	5 ranked good, acceptable OEM factory.
	Mineral Water and Beverages	4	4	100%	2 ranked excellent, 2 ranked good, acceptable OEM factory.
	Prepared Frozen Food	5	5	100%	2 ranked excellent, 3 ranked good, acceptable OEM factory.
	Snack Foods	1	1	100%	1 ranked excellent, acceptable OEM factory.
	Canned Food	3	3	100%	2 ranked excellent, 1 ranked good, acceptable OEM factory.
	Health Food	3	3	100%	3 ranked excellent, acceptable OEM factory.
	Fresh Meat	1	1	100%	Good, acceptable OEM factory.
Imported	Edible Oil	1	0	0%	TSC's internal control is to conduct the audit every three years. This item was audited in 2019, the auditing from 2020 to 2022 was suspended due to COVID-19. The audit operation was gradually resumed in 2023, and the budget for conducting these foreign audits in 2024 has already been allocated.
	Canned Food	2	2	100%	1 ranked excellent, 1 ranked good, acceptable OEM factory.
Total		26	25	96.15%	

Note : On-site audits for foreign OEM factories are conducted every three years.

Project Contractor Management

For TSC's project contractors, the principle of inspection scope of the construction quality inspection is no less than 10% of the ongoing construction projects exceeding the announced construction costs of the year, as prescribed in the Key Points for the Establishment of TSC's Construction Quality Inspection Team. For projects with the purchase amount of NTD 20 million or more, at least 1 inspection should be conducted. The selection of contractors is based on the prescriptions of the Government Procurement Act in an open, just and fair manner. Domestic companies are given priority, and the “Precautions for Occupational Safety and Health of Engineering and Labor Services” is formulated as part of the contract, and with the strategies of counseling, auditing and advocacy, TSC is actively engaged in the counseling of contractors' safety management, strengthening the industrial safety counseling and reinforcing the safety awareness of the laborers in the workplace to safeguard the labor safety. There were no violations of relevant provisions of the contract in 2023.

Dealer Management

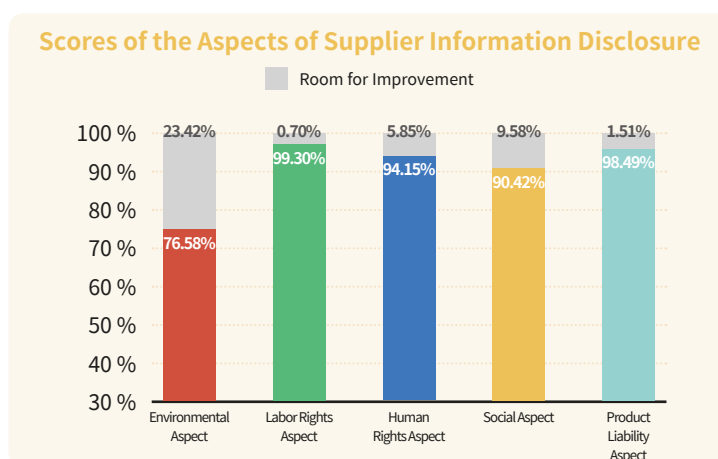
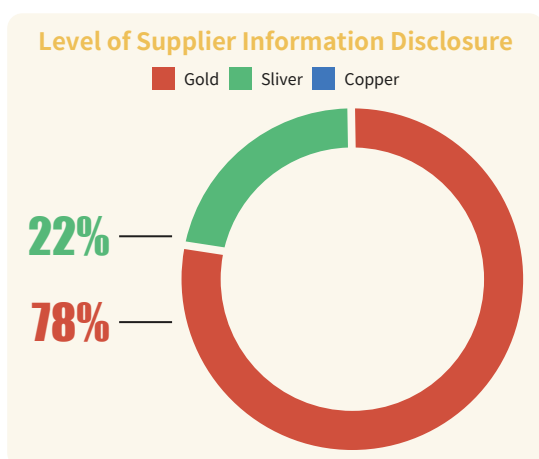
The dealership is concerned with the service quality of TSC products to consumers. We plan the dealership based on the overall marketing strategy and merchandise access strategies (access coverage, number of access levels, single access or multiple access, vertical marketing systems or horizontal marketing systems) and follow the Dealer Selection Criteria and the Government Procurement Act when selecting and auditing dealers. The performance management of dealers is handled in accordance with the principles of the management of suppliers and contractors.

Supplier ESG Evaluation

TSC conducts ESG evaluations annually for suppliers with procurement amounts exceeding NTD 5 million to complete an ESG self-assessment questionnaire, whose content would be adjusted each year based on the current situation of TSC, the international trends and reference to GRI Standards. In addition to the introduction of GRI Standard Topics, specifications and regulations of RBA, Ecovadis and ISO 20400 were also referred in the revision of the questionnaire, which is divided into five aspects, including environmental, labor rights, human rights, social and product liability aspects. A total of 119 suppliers completed the self-evaluation in 2023.

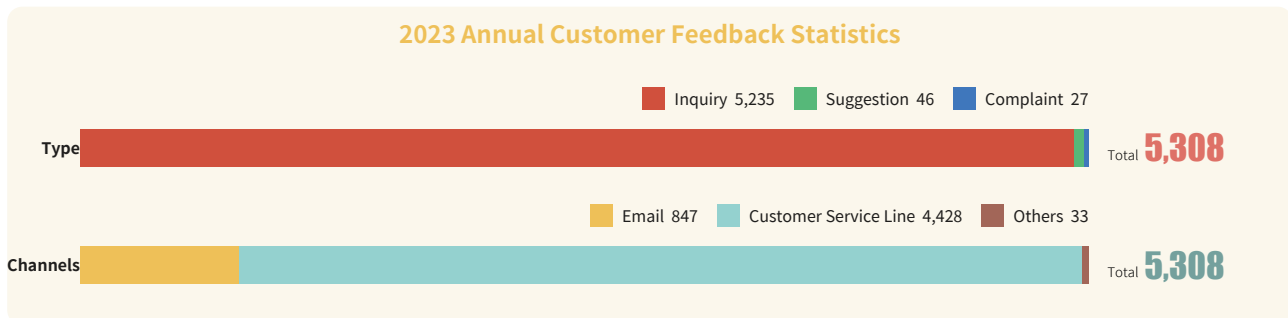
According to the self-evaluation results, the suppliers are divided into three levels, gold, silver and copper based on the scores. All the suppliers in this evaluation scored more than 60 points, with 100% of passing rate. Among them, 93 suppliers achieved a Gold rating with scores above 85, accounting for 78% of the total. In 2023, all our suppliers did not use child labor or restrict their employees' freedom of association. In addition, further analysis of the five major aspects was conducted, and each aspect scored more than 60 points averagely. The scores were lower only in the environmental aspect because TSC sets higher requirements in environmental management, leading to the lower scores among the suppliers. However, all the suppliers comply with relevant laws and regulations. We will refer to the results of the suppliers' self-assessment and adjust the contents of the questionnaire. TSC will strengthen the management of suppliers with lower assessment scores to improve the procurement system and enhance the efficiency of procurement. In the future, we will also continue to promote the assessment of the five major aspects of corporate social responsibility in our suppliers of all categories to enhance our partners' implementation and management of ESG.

Analysis of Supplier ESG Evaluation



Customer Relationship Management

TSC has established multiple communication channels such as the customer service line (0800-026-168), the website customer service mailbox (tsc01@taisugar.com.tw), and the FB TSC Fanpage and assign designated personnel to handle and respond to public and consumer opinions (including inquiries, suggestions, and complaints). The Company has issued the “Customer Compliant Handling Guidelines” in accordance with the Executive Yuan’s Consumer Protection Act. In addition, we also implement the duty of confidentiality of customer information and provide a transparent and effective consumer complaint procedure to handle consumers’ or customers’ complaints fairly and immediately. In addition, through the Customer Opinion Management System, the competent business units are immediately informed of the opinions and a response is required to be given within 3 days. The principle is to handle complaints fast, professionally, and satisfactorily. In 2023, a total of 5,308 inquiries and opinions were received, and all of them were handled properly. In 2023, there were no major consumer disputes at TSC.



To continue the improvement of the Company’s products and services, TSC cooperates with the Customer Satisfaction Survey conducted by an external survey company entrusted by Department of State-owned Enterprise Affairs, Ministry of Economic Affairs (MOEA) every year. The survey results are summarized, and the review meetings are held. Analysis report and meeting minutes are sent to relevant units for consideration and as a reference for the direction of future operation and improvement for all units. The score for customer satisfaction survey in 2023 was 96.69 points, a increase of 0.84 points compared with 2022 (95.85 points).

Customer Communication Channels



4.4 Social Care and Collaboration with Allies

In accordance with regulations stipulated in Key points of Good-neighborliness Work of Institutions Affiliated to the Ministry of Economic Affairs and Matters Needing Attention in the Implementation of Budgetary Subsidies (Donations) of Central Government Agencies to Non-governmental Organizations and Individuals, TSC has formulated the Key points of Good-neighborliness Work of Taiwan Sugar Corporation. A budget is prepared every year to assist local government, student clubs, associations (societies), foundations, and other organizations to handle various

activities. TSC and its affiliated units not only implement the promotion of the good neighborly relations to provide help and assistance to the communities but also continue to invest in the public welfare to care for the society and the disadvantaged groups so as to fulfill our corporate social responsibility. In 2023, we organized educational and cultural activities and public welfare activities for the elderly, the weak, and the physically and mentally disabled, with a total of 125 public welfare activities, donating NTD 7.123 million in total.

In addition to allocating neighborhood funds to assist disadvantaged groups in accordance with the Key points of Good-neighborliness Work, each division also implements social welfare through marketing campaigns involving their own products and locations. For instance, events such as charity concerts combined with product promotions, charity marathons held at operational sites, charity academies, animal conservation workshops, and local vendor marketplace are organized to promote beneficial actions and ideas to the public, contributing to local revitalization efforts. In the future, TSC will continue to strengthen its actions in combining business practices with social responsibility to fulfill its corporate social responsibility.

4.4.1 Gas Stations as Channels for Public Welfare

The Petroleum Business Division continues to uphold the original intention by not only providing convenient energy supply services for the surrounding communities and travelers at each station but also engaging in social welfare activities through our 73 gas stations. Through the procurement, sale, and donation of agricultural products, it aims to expand its positive impact on local communities.

Charity Platform in the Communities

TSC gas stations have made long-term investment in public welfare activities, and we use the gas stations as a channel for people to do good deeds and provide a charity platform in the communities. Consumers with membership can get points after filling gas. The points gathered can either be used to exchange TSC merchandise or donate to charity groups to provide long-term and stable source of materials for the disadvantaged groups and encourage the public to join public welfare activities and form a virtuous circle in the society.

When filling gas, consumers can donate their accumulated love points in the Village Warm Points Collect Card or the Love Point Collecting Card to remote villages or public welfare organizations, or just donate their digital points in the Taisugar Gas Station Cloud Membership App to designated organizations for them to exchange materials. In 2022, the points in the two point collecting cards have been used to exchange materials with the market price of over NTD 389,767, benefiting 7 villages and 10 social welfare organizations to exchange livelihood materials that can be used to take care of the disadvantaged.



Pucunug in Laiyi Township, Pingtung County (Laiyi Station) exchanged for materials with the Village Warm Points Collect Card on June 29th, 2023.



Dazhu Village in Xihu Township, Changhua County (Tangyou Station) exchanged for materials with the Village Warm Points Collect Card on July 10th, 2023.





Taiwan Fund for Children and Families exchanged for materials with the Love Point Collecting Card on July 11th, 2023.



The Garden of Hope Foundation exchanged for materials with the Love Point Collecting Card on December 6th, 2023.

Support Local Farmers

TSC supports farmers and local high-quality agricultural products by purchasing produce from agricultural associations or units. With over a certain amount of money, high-quality mangoes are offered to consumers at a discounted price as a gesture of appreciation. By offering consumers differentiated value-added items, not only does it enhance the sales volume through training station staff in face-to-face sales skills, but it also assists farmers in promoting high-quality mangoes. This mutually beneficial approach creates a beneficial operating model to the farmers, consumers and TSC gas stations.

In 2023, TSC purchased 375 boxes of Irwin mangoes, totaling NTD 300,000, to hold the "TSC Cares, Supporting Farmers" event, taking action to support local farmers. It is hoped that this event can inspire other enterprises and companies to support the high-quality agricultural products in Taiwan.

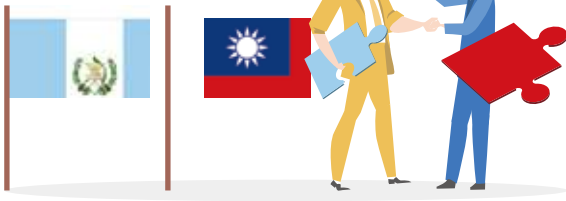


The Event of "TSC Cares, Supporting Farmers"

4.4.2 Collaboration with Allies – High Lands Small Farms of Guatemala

Taiwan has maintained friendly interactions with its allies in Central and South America. With the assistance of the government, TSC has been importing coffee beans from Central and South America to Taiwan for sales since 2017. By the end of 2023, approximately 310 tonnes of coffee beans had been imported. One of our allied nations, Guatemala, boasts naturally fertile soil conducive to coffee cultivation, particularly in areas with elevations ranging from 1300 to 2000 meters. The high-altitude climate and volcanic ash soil contribute to the production of high-quality coffee beans in Guatemala. Furthermore, Guatemala has enjoyed a longstanding diplomatic relationship with Taiwan since the 1930s. Building on this foundation, TSC, in alignment with national policies, procured 18 tonnes of Rainforest Alliance-certified coffee beans from Guatemala in 2023. It is estimated that we will import approximately 25 tonnes of Guatemalan coffee beans annually in the future. We will continue to assess the feasibility of purchasing coffee beans from other regions of Guatemala.





Since 2018, TSC has been allocating a portion of its coffee product's revenue (approximately 3%) to build three schools in rural areas of Honduras where the coffee is originally sourced. To continue the spirit of philanthropy in coffee: "One cup of coffee, one blessing, one hope," we are currently in contact with local non-profit organizations in Guatemala to identify the needs for school construction in rural areas and assess the feasibility of donating to build schools there.

"High Lands Small Farms Coffee - Guatemala Antigua" focuses on coffee grounds, drip coffee bags, and coffee beans. This selection is sourced from a single high-altitude region, benefiting 61 small-scale farmers in the highlands of Antigua. In 2023, our company procured Guatemalan Rainforest Alliance certified coffee beans, which accounted for 0.9% of the total annual food procurement budget of the Marketing Business Division. The High Lands Small Farms Coffee underwent roasting degree testing and product tasting evaluations, and it was launched in December 2023. From January 1st to 7th each month in 2024, passengers on HSR can also enjoy this coffee. The distribution channels include TSC's own stores and major retail outlets (Carrefour, RT-Mart, and A-Mart). We are also in talks with large corporations to use TSC's coffee beans and offering complimentary coffee machines as an incentive. Through the affordable pricing of premium coffee, TSC aims to increase sales volume and ensure that Guatemalan small farmers can directly profit from their labor, avoiding exploitation by middlemen.



4.5 Activation of Sugar Factory Locations

4.5.1 Preservation of Sugar Industry Culture

Repair of Japanese Style Houses and Industrial Facilities

During the Japanese Colonial Period, wooden structures and the industrial facilities in sugar factories had their own styles. These structures not only witnessed the process and transformation of the sugar industry but are also unique historical landscape and a symbol of memories, and is a rare and precious cultural asset. TSC continues to cooperate with the cultural institutions of the government, applies for subsidy projects for the preservation, restoration, management, and maintenance of cultural assets to accelerate the restoration and reuse of idle factory areas so as to achieve sustainable development of industrial heritage. In 2023, the ongoing projects include :

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- ◎ The restoration and reuse planning and design of Yuemei Factory's historical building "Sugar Workshop of Yuemei Sugar Factory."
- ◎ The restoration project for 6 cultural landscape structures in Douliu Sugar Factory – Completed.
- ◎ The restoration and reuse planning and design of the Restoration Sugar-Making Workshop in Beigang Sugar Factory.
- ◎ The restoration project for the dormitory #2 and #4 on Minzu 9th Rd. in Huwei Sugar Factory.
- ◎ The renovation project of 4 sugar warehouses in Yuemei Sugar Factory – Completed.
- ◎ The restoration and reuse planning and design of the restoration of the depot of steam locomotive in Beigang Sugar Factory.
- ◎ The restoration project for the 1st guest house and the factory director's dormitory in Huwei Sugar Factory.
- ◎ The restoration and reuse planning and design of 11 dormitory buildings in Huwei Sugar Factory.

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- ⦿ The restoration project of the old clinic and barbershop in Huwei Sugar Factory – Completed.
- ⦿ Wooden dormitory area in Suantou Sugar Factory- the restoration project of Western style dormitory (Gantang).
- ⦿ The restoration project of the headquarters office of Ensuiiko Sugar Factory Co., Ltd. in Xinying.
- ⦿ Restoration and reutilization project of the original plastic factory office and staff canteen in Xinying Sugar Factory.
- ⦿ The restoration and reuse planning and design of the original Wumayuan Station of Sugar Railways.
- ⦿ The restoration and reuse planning and design of “Shuishang Nanjing Sugar Factory” and “Nanjing Sugar Factory warehouse complex.”
- ⦿ Taiwan Sugar Liuying Yeast and Feed Plant Restoration and Reuse Project.
- ⦿ The restoration project of the Qiaotou Security Unit in Kaohsiung Sugar Factory.

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After the facilities are restored, investment promotion will be planned for art and cultural, commercial, accommodation experience, cultural relics exhibitions and film shooting activities, turning the facilities into elements for cultural and creative industry and enhancing the value of the sugar industry’s cultural assets.



Heritage Preservation and Activation of Sugar Railways

Sugar Train Culture has been regarded as an important cultural asset by the government. It witnessed the live history of the development of local industries and is also a resource for future tourism development. Therefore, there is a need to repair it for good preservation. Promotion of relevant plans as of 2023 :

Project	Project Content	Execution Status
Repair and Restore Sugar Trains with Characteristics	In 2020, the SL370 steam locomotive was restored at the Wushulin Sugar Railway Cultural Park. In 2023, the No. 538 'Victory' locomotive was restored at the Xinying Railway Cultural Park. These restorations aim to revive and showcase the cultural heritage of the sugar railways.	In 2022, the restoration of the SL370 steam locomotive was completed. It now serves as a charter experience and is used for cultural festival dynamic display activities, as well as for film and television shooting purposes. In 2023, after the completion of the restoration of Locomotive No. 538 'Victory', it is put into operation on the route from Zhongxing Station to Huoshadiao Station.
Training for Driving and Maintenance Techniques for Internal Combustion and Steam Locomotives	In 2023, the Department of Land Development of the Headquarters organized the training courses for driving internal combustion engine train for new drivers, practical class for mechanical affairs and maintenance and engineering works of railway dedicated for sugar train, and on-the-job training course for railway operators.	The training courses have been completed in 2023, and the professional knowledge and practical experience of the sugar train conductor was also increased.

Project	Project Content	Execution Status
Cooperation with the Policy for Survey on Sugar Railway Routes and National Greenway	Take inventory of sugar railway routes and national greenway.	Suitable sections were chosen from Cultural Heritage's sugar railway routes, and it was decided by the National Development Council in Jan. 2021 that the Changhua Section (Xihu Sugar Refinery to Mingdao University) and the Tainan Section (Annei Sugar Factory to Xinying Sugar Factory to Wushulin Sugar Factory) are the National Greenway of Sugar Railway. This project is outsourced by the county and city governments and both of two greenway were completed by the end of 2023.
Sugar Train Extension to HSR Chiayi Station and the Southern Branch of National Palace Museum	To connect the surrounding attractions and boost local tourism development, the first phase of the project is to extend the sugar train to east southwards by 1.4 km from Suantou Sugar Factory to HSR Chiayi Station; At Phase 1.5, the sugar train will be extended to west southwards by 1.42 km from Suantou Sugar Factory to the Southern Branch of National Palace Museum.	To cooperate with the policy and boost local tourism industry, the Phase 1 sugar train extension project is expected to be completed and commence in Oct. 2022, and Phase 1.5 project is expected to be completed for commence in Oct. 2023. The locomotive and vintage passenger carriages have been optimized to support the extended operations.

4.5.2 Cultural Tourism and Promotional Activities

To revitalize the sugar industry culture, TSC organizes a series of events at different sugar factories from time to time. The events are combined with local agricultural specialties & cultural and environmental characteristic to promote art and cultural tourism. Events held in 2023 include the followings.

Wushulin Sugar Factory



2023/12/12

On December 12th, 2023, Mandarin Vision Co., Ltd went to the Wushulin Recreational Park to shoot scenes for the movie "A Foggy Tale", which tells the story of the joys and sorrows of ordinary people in Taiwan in the 1950s. The crew rented the SL370 steam train and the "Success" passenger car from the Wushulin Recreational Park, and filmed near the Xin-Dong-Xian-Chi Station.



2023/1/8 、 3/5 、 4/3 、 5/13 、 7/15 、 8/19 、 9/16

In 2023, a total of seven featured events, "Little Sugar Railway Heroes Experience Camp," were held at the Wushulin Recreational Park on 1/8, 3/5, 4/3, 5/13, 7/15, 8/19, and 9/16 to promote sugar industry culture.



August, 2023

In August, 2023, the editorial department of TLife, the monthly Taiwan High Speed Rail Magazine, sent personnel to Taisugar Wushulin Recreational Park to take photos of Wushulin Wufeng Station and the dynamic movement of the sugar train. A feature article was published in 2023 September Issue introducing the Wushulin sugar train. The photo is scanned from the magazine (the photo shows the sugar train departing from the Platform A of Wushulin Wufen Station), and the cover photo of this September Issue (the cover photo is an aerial shot of the Wushulin sugar train passing through Fenci Station of the Xingang East Line).

Xinying Sugar Factory



2023/01/23~24

"New Year Celebration, Bustling Market, Experience X Change"

Street performer magic balloon show, gourmet mini market, play small games and win balloon modeling, get a portable fan with a ticket and by liking and sharing.



2023/4/3~4

Children's Fun Party Celebration"

Street performer magic balloon show, like and share to play poking lottery, and set up a wishing wall for kids to draw and leave messages.

Qiaotou Sugar Refinery



2023/8/19~27

From August 19th to 27th, 2023, the "Qiaotou History- Taiwan Sugar Museum's Local Highlights Project " was held, including the following four activities :

1. Cultural and Creative Festival of Sugar Industry 8/19-20 Creative market, reality puzzle game.
2. The Centennial Sacred Guanyin Blessing Festival 8/26-27
3. Bomb Shelter Art Festival 8/26-27
4. Qiaotou History Guide 8/19-20 、 8/26-27



2023/9/15-2024/12/10

From September 15th, 2023, to December 10th, 2024, in collaboration with the MOENV, we launched the reality puzzle game "Owl's Universe RPG - Net Zero Town." Through this puzzle game, the public can learn about sugar industry culture and green living environment knowledge.

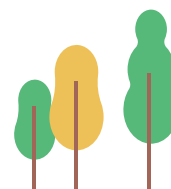
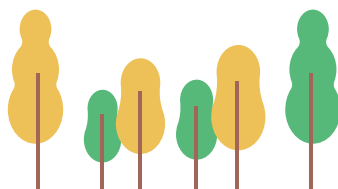
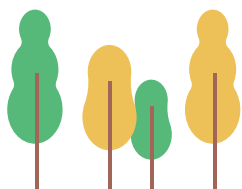
(photo/ Kaohsiung Municipal Nanzih Senior High School)



2023/10/4~11/6

From October 4th to November 6th, 2023, we held the Qiaotou Sugar Refinery's "Sugar Culture Education Promotion and Sustainable Management Plan," which included three promotional activities:

1. Sugar's Gorgeous Transformation Workshop 11/6 、 8 、 10 、 13
2. Suzuki Tozaburo Special Exhibition and Exchange Workshop 11/16
3. Promotion and exchange of sugar culture education: 10/4 、 13 、 11/6 、 7 、 8 、 13 、 15



Xihu Sugar Railway Cultural Park

2023/6/8~11、9/6~8



From June 8th to 11th and September 6th to 8th, 2023, the "Xihu Sugar Refinery Industry Knowledge Co-Learning and Educational Promotion Project" was held, including the following 5 activities :

1. One-day ice cream shop staff experience.
2. Picture Book: Entering the Adventure of Xihu Sugar Refinery - the Walking and Reading Event in Xihu Sugar Refinery.
3. Art Classroom in the Morning Light: Sugarcane Bagasse Potted Plant DIY.
4. Visit in search of the sacred in Xihu Sugar Refinery/ Adventurous Puzzle Game Experience in Xihu Sugar Refinery.
5. Book launch and sharing session of the new book "Adventure of Xihu Sugar Refinery."

Yuehmei Tourism Sugar Refinery

2023/5/8、8/19~9/1、10/7



On May 8th, August 19th to September 1st, and October 7th, 2023, the "Yuehmei Tourism Sugar Refinery Sustainable Education Program Series" was held, including the following 3 activities :

1. Getting to Know Hometown: Yuehmei Co-Learning Course Through Maps.
2. Sugar Detective game-style tour
3. Sugar Industry Science Party- Small Experiments in Large Factory - Theme Achievement Activities.

Hualien Tourism Sugar Factory

2023/7/29



On July 29, 2023, the "2023 Little Shop Manager & Little Manager Experience Activity" was held. The activity included experiencing the roles of a retail center manager and a Japanese-style hotel manager, allowing children to get closer to the sugar factory through work experience.

Extended operation of the sugar train in Suantou Sugar Factory

2023/10/7



On October 7, 2023, the sugar train in Suantou Sugar Factory extended its route to the Southern Branch of National Palace Museum. It is the only railway in Taiwan that directly enters a national repository of important cultural artifacts. By replicating the appearance of the old passenger sugar train's "blue carriages" and the unique sugar train "the Sugar Seeker" with air conditioning, the train takes passengers from modern railway facilities through rural fields into a century-old sugar factory, and then slowly enters the cultural heritage of the National Palace Museum, allowing them to experience a cultural journey in pursuit of sweetness.

Wandan Sugarcane Festival



2023/11/25~26

The annual grand event in Pingtung, the "Wandan Sugarcane Festival," was held on November 25th and 26th, 2023, at the Wandan Sugarcane Breeding Farm. Co-organized by the Wandan Harvest Society and the Sugar Business Division of TSC, this event featured a walkathon along the old sugar train tracks with participation from thousands of local residents. There were also fun activities such as riding on traditional ox carts, bamboo arrow shooting, and sugarcane peeling, allowing people to experience the rural life of early times.

Huwei Sugar Factory start sugar refining



2023/12/15

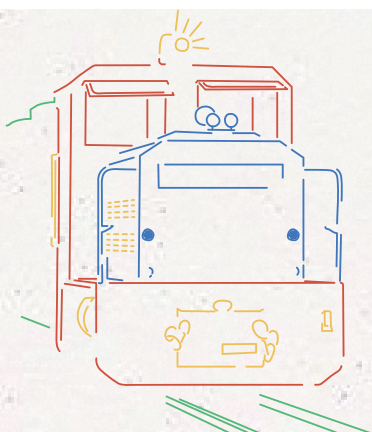
The sugar production commencement ceremony for the Huwei Sugar Factory for the 2023/2024 season was held on December 15th, 2023. It was attended by Ming-Jou Yang, Chairman of TSC, and Shu-Ya Xie, Deputy Magistrate of Yunlin County, among others. During the ceremony, they offered incense and prayers, and threw sugarcane tied with red ribbons into the cane conveyor, symbolizing the official start of operations and praying for a successful sugar production season. As the Huwei Sugar Factory's chimney emitted billows of smoke and the sound of train whistles filled the air, it signaled the commencement of sugar production. Throughout the sugar-making period, the air around the refinery was filled with the sweet fragrance of sugarcane, creating a unique atmosphere and cherished memories for the residents of Huwei Town.

Shanhua Sugar Factory start sugar refining



2023/12 /19

The sugar production commencement ceremony for the Shanhua Sugar Factory for the 2023/2024 season was held on December 19th, 2023, led by Chairman Ming-Jou Yang and his team. The ceremony followed the traditional "sugar mill starts operation" blessing ritual, during which sugarcane was thrown into the cane conveyor, officially marking the start of the sugar production season. On that day, trucks transported freshly harvested sugarcane from various farms, and residents and visitors strolled through the Shan-Hua Sugar Refinery grounds. They gazed at the towering chimney emitting billows of white smoke and faintly heard the rhythmic sound of the old sugar-making machinery, signaling the commencement of sugar production at the century-old Shanhua Sugar Factory, an iconic landmark in southern Taiwan.



In the past, except for the use of transporting sugar during sugar production period, part of the routes ran through areas with dense population and rich products, contributing to the social economy prosperity of the local areas. At that time, most people made use of the sugar railway to commute to work or school. The "North-South Parallel Preparatory Line" connecting the various sugar train routes has its special nature of national defense. Although the sugar railway is not as busy as it used to be, its historical, industrial and cultural value remains unchanged.

To combine sugar industry culture with leisure and tourism industry, TSC has chosen 5 old sugar factories and turned them into tourism sugar train parks.



The Xihu Sugar Railway Cultural Park retains the complete factory buildings, sugar making machines, locomotives carrying sugarcanes, sugar train station and the railway track textures. Currently the sugar train tourism route is from Xihu Station to Caopu Station, with a round trip of 4.26 km and the whole route takes 35 minutes.

The sugar train in Suantou Sugar Factory departs from the century-old sugar train station in the factory and runs toward Taibao and Nanjing. It can be connected to the HSR Chiayi Station from October 8th, 2022, and can be connected to Southern Branch of the NPM from October 7th, 2023.



The sugar train in Wushulin Recreational Park has resumed its operation since 2001. The park still keeps the original style of the sugar railway. Inside the antique sugar railway construction, a dynamic space for sugar production is created and the locomotives and train cars of different times are also stored here.

The first sugar railway business line is inside the Xinying Sugar Railway Cultural Park. Many sugar train cars and locomotives for business use are reserved in the factory area. A variety of small diesel locomotives are stored in the internal combustion engine depot. Currently, the Sugar Train route is between Chongshin Station and Xinying Station, and the distance is about 1 km, and the whole journey takes 10 minutes. The route between Chongshin Station and Huoshaodian Station covers a distance of approximately 2.5 km, with a travel time of 18 minutes, and was opened for traffic on February 3rd, 2024.



The tourism sugar train route that runs within the Taiwan Sugar Museum (Qiaotou Sugar Refinery) departs from the TSC Kaohsiung Flower Farm Garden Center and the terminal station is the Kaohsiung MRT No.3 Exit Qiaotou Sugar Refinery Station, a small railway station combined with the MRT.

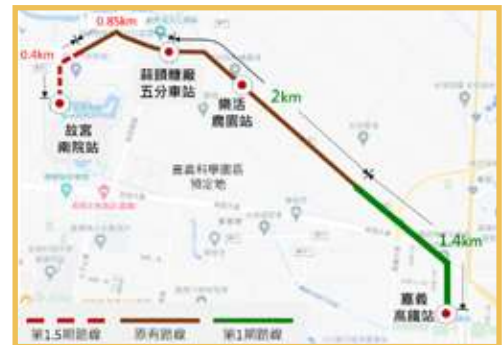
Special Column

Taiwan Sugar Railways: A Century of Sugar History - Extension of the Sugar Train Service to the Southern Branch of the National Palace Museum

TSC Railway carries a hundred years of Taiwan's sugar industry development history and holds cherished sweet childhood memories for many people. In 2022, TSC implemented the Sugar Train Extension Project to HSR Chiayi Station in alignment with government policies. This marked the first sugar train in Taiwan to connect with a key domestic transportation facility. Furthermore, in 2023, the Suantou Sugar Factory Sugar Train extended its route further to the Southern Branch of National Palace Museum.

The extension project will pass through Rural Highway Jia 57 and Jia 58, with the Sugar Train route entering the northern courtyard of the Southern Branch of NPM and reaching the scenic bridge. Not only is this the only railway directly entering a nationally significant cultural heritage institution in Taiwan, but passengers can also enjoy the scenery of the Southern Branch of the National Palace Museum from the train windows. The newly extended route is approximately 1.2 km long, and a Sugar Train station platform will be set up at the northern parking lot of the Southern Branch of NPM. This railway offers a unique and unparalleled tourist experience.

The extension project to the Southern Branch of NPM was completed on August 31st, 2023, and officially commenced operations on October 7th, 2023. Additionally, TSC has recreated the "vintage blue cars" reminiscent of the early agricultural era in Taiwan. Originally constructed with wooden exteriors during the Japanese colonial period, these cars were later refurbished by TSC with blue-painted metal exteriors. The refurbished cars are designed with three main principles: "vintage, safety, and comfort," demonstrating TSC's commitment to preserving and improving the cultural significance of the Sugar Train.



Separated by half a century, this train will lead elder passengers to relive their childhood commuting memories, while younger individuals can personally experience the nostalgia of bygone times, offering all passengers an unparalleled riding experience.

Since the opening of the Sugar Train's Southern Branch Line to NPM, TSC has continued to collaborate with the museum to promote special offers, attracting tourism traffic. Through this cross-industry alliance, we hope to integrate transportation hubs with tourism, leisure, cultural education, and connect the tourism industry in Chiayi.

4.5.3 Environmental Education Field

TSC attaches great importance to environmental education, and diversified courses are actively planned in its environmental education centers. It is hoped that all the people living on this land can make rediscovery of the environment through the power of education.

| Xihu Sugar Railway Cultural Park |



Established in 1919, Xihu Sugar Refinery was originally named "Xihu Sugar Factory" and was renamed its current name after WW II and was taken over by the National Government. With the assistance of the Ministry of Culture, the Changhua County Government, and local cultural and historical workers, the restoration of the sugar factory buildings, landscape cultural relics and trains have been successively completed.

The important characteristics of Xihu Sugar Refinery is its dynamic preservation of sugar railway. Currently the vehicles that can run dynamically include No. 346 Steam Locomotive, No. 827 and No. 837 Diesel Locomotives, Railway Car No. 524, No. 152 Patrol Car, and passenger carrying cars transformed from sugarcane carts. The No. 346 Steam Locomotive that runs routinely weekly is the steam train that runs most frequently in Taiwan. It not only attracts domestic and overseas visitors but also serves as a spiritual indicator of the heritage and continuation of the Sugar Railway technology.

The Xihu Sugar Refinery currently offers three teaching modules: "The Sweet Secrets of Sugar", "Memories of the Sugar Train", and "Challenges from the Sugar Factory". In 2023, Xihu Sugar Refinery conducted 16 sessions of environmental education activities with a total participation of 857 individuals. Furthermore, the refinery received "Excellent" in the Evaluation of 2023 Environmental Education Institutions and Facilities.

| Jianshanpi Environmental Learning Center |



Established in 2003, the Jianshanpi Resort began transitioning to an ecological resort in 2015 and established the Jianshanpi Environmental Learning Center to promote environmental education and eco-friendly initiatives. In 2017, it obtained Environmental Education Facility Accreditation and Eco-friendly Hotel (Bronze Level) Certification, offering eco-tourism experiences in the shallow mountains while integrating eco-friendly accommodation and low-carbon dining. In 2020, it was honored with Excellence Award of the Organization Group in the National Environmental Education Award, and in 2021, it received Taiwan Sustainability Action Award (TSAA) for its firefly conservation efforts. In 2023, the resort further received National Enterprise Environmental Protection Award (Bronze).

The Jianshanpi Environmental Learning Center utilizes the resources within its park to develop various activities. Currently, it offers two sets of courses focusing on sugar industry and ecological themes, as well as experiences as ecological artisans. Visitors can participate in activities such as soil animal observation, firefly conservation, insect hotels, animal nest boxes, and various DIY projects including orchid transplantation for eco-living, owl seed DIY, butterfly hats, animal grilling painting, and coffee bean roasting. Additionally, the resort offers nighttime ecological observation experiences for overnight guests. In 2023, a total of 193 environmental education activities were conducted, with 5,369 participants.

Qiaotou Sugar Factory Cultural Park



Qiaotou Sugar Refinery was established by Japanese in 1901. It was the first new-style sugar factory, and the first sugar factory in Taiwan to transform sugar crushing with animal power to modern machinery, and also served as the locomotive for Taiwan to step toward industrialization. The first sugar factory built in Qiaotou was the mechanized laboratory of Taiwan's sugar industry. Its unique architecture, equipment, landscape, history, and other resources of sugar culture are worthy of complete preservation as a proof of the rise and fall of the sugar industry in Taiwan.

The development of sugar industry is now declining, the former sites of sugar factories are closely integrated with the community development, forming a special cultural background. Qiaotou Sugar Refinery is the first old-fashioned factory transformed into a modern factory, it is even the birthplace of Taiwan's industrialization and has its important cultural, historical, and symbolic significance.

1. In 2023, a total of 103 sessions were held for environmental education courses, with 3,655 participants.
2. In collaboration with the MOENV, the "Owl's Universe RPG - Net Zero Town" reality puzzle game was held at the Qiaotou Sugar Refinery, attracting approximately 1,760 participants from 22 counties and cities across Taiwan.
3. In 2023, in collaboration with the Kaohsiung City Environmental Protection Bureau and the MOENV, the "Green Life Expert, Taking the Sugar Train together" event was held, with 1,812 participants.
4. In 2023, in collaboration with the Ministry of Environment, the "Sugar Factory Green Life, Happy Handmade Musical Ideas" event was held, with 200 participants.
5. For its efforts in promoting environmental education, the Qiaotou Sugar Factory was awarded the "Kaohsiung City Social Education Contribution Award" in 2023.

Hualien Sugar Factory Environmental Education Center



The sugar industry used to play a crucial role in the development of Taiwan's economy and society. The Japanese-style settlement culture generated from the Japanese colonial period with many touching stories behind the colonial history to the period of the Republic of China period. When the sugar factory started to work, the surrounding area was filled with sugar fragrance, and the sugar trains were busy shuttling through the sugarcane fields.

In Guangfu Township, Hualien Sugar Factory is the main source of income for the residents, the community structure, and even the key to local development and environmental change.

To enable the older generation to have something to remember by and to enable the younger generation to understand the historical value and significance of the sugar industry in Taiwan, and be more aware of the cultural significance of the sugar industry to the local environment, to shoulder the responsibility of environmental education, and to realize the mission of inheriting the culture of sugar industry in Taiwan, the Hualien Factory has been transformed into a tourism factory and environmental education center.

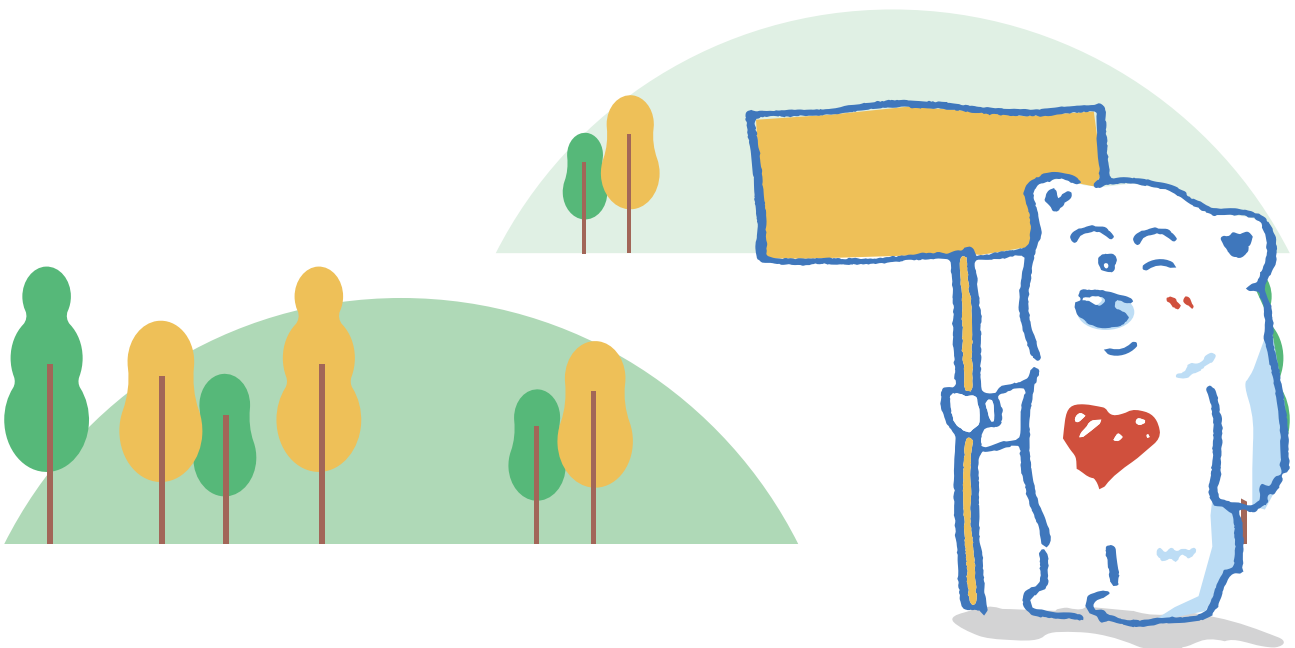
In 2023, there were a total of 11 environmental education sessions with 174 participants.

Dong Hai Feng Agricultural Circulation Park



Dong Hai Feng Livestock Farm was established in 1957. It was originally an old-fashioned pig farms with old equipment and poor efficiency and faced with problems such as protests for environmental protection. In recent years, to respond to the government's New Agriculture and Circular Economy policies in the government's 5+2 Policy, TSC has invested NTD 680 million in the renovation of this livestock farm into the Dong Hai Feng Agricultural Circulation Park, the very first agricultural and animal husbandry circulation park that combines green energy, water circulation, and biological circulation, forming a diversified environment with the integration of production, life, and ecology with the surrounding environment. The water curtain style pig house observation corridor is one of the important highlights in the park. It can enable close observation of the activities of pigs in the pig house. Historical buildings such as offices, farrowing sheds, boar pens, sow pens, and fan-shaped pig pens outdoors are preserved, and video/audio introduction of these places are made with historical stories. Visitors can better understand the stepwise development of the pig farming industry in Taiwan and the necessity for its transformation. This place is used for environmental education and recreation.

The Dong Hai Feng Agricultural Circulation Park is Taiwan's first environmental education site focused on "green energy pig farming." In 2023, it hosted visits and exchanges from government agencies, schools, research institutions, and corporate groups, totaling 1,665 participants. There were 10 environmental education events held, with a total of 277 participants. Among these, "Unveiling the Secrets of the Circular Pig Farm - Biogas Edition" was conducted 9 times, with 253 participants (for general adult courses), and "The World of Pigs" was held once, with 24 participants (for upper primary school students). These activities aimed to introduce participants to the pig farming industry, covering topics such as pig breeds, physiology, habits, animal welfare, farming methods, processing, as well as odor reduction during pig farming, and the harmless and resourceful utilization of pig manure and urine.



Special Column

Government and Industry Collaborate to Promote Secure Parenting – Hualien's "Guanfu Parent-Child Center" Launched in October 2023

The Hualien County Government, considering the needs of families with children under the age of 3 who primarily rely on parents for caregiving at home, has initiated the "One Township, One Parent-Child Center" policy to provide a secure parenting space for parents. In collaboration with the Hualien County Government, TSC's Huatung Operation Branch has offered unused space within its Hualien Tourism Sugar Factory premises to help establish the "Guanfu Parent-Child Center."

The "Guanfu Parent-Child Center" is built upon the core principles of "parent-child learning, play, and integration." It is entrusted to the Department of Child Development and Family Studies at Tzu Chi University. The interior space of the center is designed with different areas tailored to children of various ages. There's a dedicated area for infants aged 0 to 2 for exploration and another area for children aged 2 to 6 for hands-on experiences. Additionally, there are spaces for cognitive development, reading, building blocks, and role-playing activities, integrating elements of local indigenous culture and traditional agricultural products into the design of the games and teaching materials. Moreover, the center has a parenting outreach vehicle, equipped with picture books and play equipment from the center, to visit Guangfu Township in Hualien and surrounding areas. This outreach program brings services directly into the community, creating a parent-child learning environment that reflects the unique characteristics of the locality.

The "Guanfu Parent-Child Center" in Hualien was officially opened on October 24, 2023. The center's operating hours are from 9:00 AM to 11:30 AM and from 2:00 PM to 4:30 PM every Tuesday to Saturday. In addition to providing a nurturing space for children, the center also has professional social workers and educators available to offer consultations on parenting and childcare, assist in childcare arrangements, provide parenting courses, and organize parent-child activities. These services aim to alleviate the stress of childcare for parents.







CHAPTER 5

SUSTAINABILITY ASPECTS

TAKING CARE OF TAIWAN SUGAR CORPORATION PARTNERS

MATERIAL TOPICS

Employment Practices, Non-discrimination,
Employee Diversity and Equal Opportunity, Freedom
of Association and Collective Bargaining, Living
Income and Living Wage, Forced or Compulsory
Labor, Occupational Health and Safety

5.1 TALENTS AND ORGANIZATION OPTIMIZATION

5.2 HUMAN RIGHTS PROTECTION AND LABOR/
MANAGEMENT RELATIONS

5.3 REINFORCED OCCUPATIONAL SAFETY

5 GENDER
EQUALITY



8 DECENT WORK AND
ECONOMIC GROWTH





SDG 5.1



SDG 8.2 SDG 8.8

Material Topics — Employment Practices, Non-discrimination, Employee Diversity and Equal Opportunity, Freedom of Association and Collective Bargaining, Living Income and Living Wage, Forced or Compulsory Labor, Occupational Health and Safety

☒ achieve ☐ unaccomplished

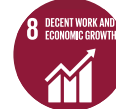
2023 Goals and Achievements

- ☒ Regular conduct human rights-related courses, including the implementation of gender mainstreaming, sexual harassment prevention and control, the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) and gender equality seminars or courses.
 - ▶ In 2023, a total of 50 physical courses (including supplementary training), and 68 digital learning courses were offered, with a total of 3,109 trainees.
- ☒ To carry out welfare measures to take care of employees.
 - ▶ In 2023, a collective agreement was officially signed with TSC Federation of Labor Unions.
- ☒ To facilitate effective communication between labor and management and establish a good mechanism for interaction.
 - ▶ A total of 68 labor conferences were held in 2023, and all proposals were immediately responded for smooth and good labor-management communication.
- ☐ No occupational diseases and major work-related deaths.
 - ▶ 1 incident of death of a contract labor. For information regarding the incident and subsequent improvement measures, please refer to the explanation in Statistics of Occupational Injury under 5.3.1 Occupational Safety and Health Management System.
- ☒ To promote industrial safety and environmental protection month, disaster prevention education & training and emergency response drills with full participation.
 - ▶ Organized a total of 141 sessions of disaster prevention education and emergency response drills, with a total of 2,635 participants.
 - ▶ Organized a total of 12 sessions of occupational safety and health-related education and training were conducted, with 718 people were trained.
- ☒ To introduce health examination service plans.
 - ▶ Planned the “Execution of Abnormal Workload-trigger Disorders Management Plans.” In 2023, all the units completed 83 consultation sessions, with a total of 233 people.
 - ▶ The employees informed of major abnormalities in the health checkups would receive re-inspection notice for the return visit within 10 working days, and a total of 128 people paid return visits.



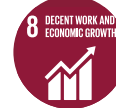
2024 Goals

- ▶ Assist each unit in enhancing the concept of equality, and every year each person is provided with 2 hours of gender equality training.
- ▶ To assist various units in implementing employee assistance programs.
- ▶ To carry out welfare measures to take care of employees.
- ▶ Regularly hold labor conference with representatives appointed by both employers and employees.
- ▶ No occupational diseases and major work-related deaths.
- ▶ To promote industrial safety and environmental protection month, disaster prevention education & training and emergency response drills with full participation.
- ▶ To introduce health examination service plans.



Medium and Long-term Objectives

- ▶ Safeguard gender rights, eliminate gender discrimination, and promote gender equality.
- ▶ Foster a unified and harmonious labor-management relationship, and promote employee benefits and welfare
- ▶ To have all the business units at TSC be verified by ISO 45001 and TOSHMS.
- ▶ To achieve the highest occupational safety and health goals of “zero disaster,” “zero accident,” and “zero injury.”



5.1 Talents and Organization Optimization

Employees are the root of an enterprise. Stepping toward sustainable development, cultivating talents and improving organizational efficiency are the focuses of the management innovation. The labor-employment relations and employee management at TSC are all compliant with relevant laws and regulations. Coupled with the Company's measures of internal human resources development training and employee benefits, TSC can create diverse channels for its employees' career development while working on corporate development, providing competitive benefits to attract and retain talents, creating a good working environment that can achieve a win-win situation for both the employer and the employees for mutual prosperity.

5.1.1 Talent Acquisition and Turnover

Talent Acquisition

The recruitment is based on the Employment Services Act, Labor Standards Act and "Regulations for the Employment of the Personnel of Business Units Affiliated with the Ministry of Economic Affairs." In addition, for specialized or technical personnel with special business nature, it is possible to hire them in an open manner as contract employees. Recruitment of talents complies with legal regulations that require the protection of employee human rights, personal privacy, and the prohibition of improper discrimination. In the recruitment of talents, the Company upholds the principles of fairness, justice and integrity. Recruitment, selection, and hiring of employees are all in compliance with government regulations. There will be no discrimination and differential remuneration.

Talent Retention

In order to retain competitive talents, TSC strives to establish a friendly working environment, pay attention to the balance between work and life, provide employees with training and development opportunities and encourage employees to continuously improve themselves to achieve the development of individual careers. In recent years, new blood has been activated and most new employees recruited are under 30 years old. The number of employees entering and leaving TSC in the last three years was as follows.

The Number of New Employees in the Last Three Years

Year Gender Age	2021				2022				2023			
	No. of Male Employees	New Hires Male (%)	No. of Female Employees	New Hires Female (%)	No. of Male Employees	New Hires Male (%)	No. of Female Employees	New Hires Female (%)	No. of Male Employees	New Hires Male (%)	No. of Female Employees	New Hires Female (%)
Under 30 Years Old	44	15.1%	32	18.0%	54	18.9%	32	17.6%	69	27.8%	28	18.3%
31-50 Years Old	23	2.9%	7	2.5%	23	3.3%	21	6.7%	45	5.7%	20	5.4%
51 Years Old and Above	1	0.1%	0	0%	1	0.1%	2	2.2%	3	0.2%	0	0%
Total Number of New Employees	107				133				165			
Total Number of Employees	3,241				3,171				3,143			
New Hire Rate (%)	3.3%				4.2%				5.2%			

Note :

1. New employee numbers include those retired/left within the recruiting year.
2. New hire rate (%): Number of new employees in the category for the current year/ Total number of employees in the category at the end of the year.
3. The total number of employees does not include the number of those on leave without pay for the current year.

The Number of Retired/Resigned Employees in the Last Three Years

Year	2021				2022				2023			
Age \ Gender	No. of Male Employees	Turnover Rate of male Employees (%)	No. of Female Employees	Turnover Rate of Female Employees (%)	No. of Male Employees	Turnover Rate of Male Employees (%)	No. of Female Employees	Turnover Rate of Female Employees (%)	No. of Male Employees	Turnover Rate of Male Employees (%)	No. of Female Employees	Turnover Rate of Female Employees (%)
Under 30 Years Old	13	4.5%	3	1.7%	21	7.3%	7	3.8%	23	9.3%	4	2.6%
31-50 Years Old	16	2.0%	3	1.1%	16	2.2%	8	2.5%	20	2.6%	8	2.2%
51 Years Old and Above	221	13.8%	15	17.0%	133	8.3%	7	7.8%	179	12%	12	13.3%
Total Number of Retired/Resigned Employees	271				192				246			
Total Number of Employees	3,241				3,171				3,143			
Turnover Rate (%)	8.4%				6.1%				7.8%			

Note :

1. Turnover rate (%) = the number of retired/resigned employees in that category for the current year/the total number of employees in that category at the end of the year.
2. The number of retired/resigned employees includes employees who volunteer to resign or are fired, retire, or who die while on duty.
3. The total number of employees does not include the number of those on leave without salary for the current year.

5.1.2 Labor Structure

TSC has no foreign employees and part-time employees. We hire (employ) employees based on professional competence and experience, and all the employees are protected by the Labor Standards Act. The ratio of male to female employees is approximately 4.11:1. However, there is no differential treatment or discrimination in terms of employment, salary, performance appraisal and promotion due to gender or marriage status. The proportion of female managers in TSC increased from 6.2% to 6.9% over the three years (having reached the target set by MOEA). Job promotions or job transfers in each unit are subject to change. However, due to the unique nature of the Company's industry, the ratio of female employees in early days was rather low. As the Company diversifies its operations toward the service sector, the proportion of female employees has gradually increased. Nevertheless, adequate work experience and training are still required to qualify for managerial positions.

TSC primarily operates in the agriculture and animal husbandry industry, with a majority of employees being males. Male employees account for 80.43% while female employees account for 19.57% of all employees. A joint examination is established based on medium and long-term manpower planning and the manpower needs of the respective units to recruit new employees, those who are enrolled will be assigned to the units in need of manpower for adequate jobs. The distribution and composition of TSC's staff in recent three years are as follows.

Total Number of Employees

Unit : people

Year	2021		2022		2023	
Gender	Male	Female	Male	Female	Male	Female
Total Number of Employees	3,241		3,171		3,143	
Dispatched Personnel	1,314	364	1,313	379	1,307	393
Employed Personnel	1,371	141	1,264	168	1,213	188
Contract-based Personnel	6	1	5	1	5	1
Contracted Personnel	3	41	3	38	3	33

Note :

1. 「According to Article 5 of the "Regulations for the Employment of the Personnel of Business Units Affiliated with the Ministry of Economic Affairs," personnel dispatched with rank 6 or above are called dispatched personnel; those who are employed with rank 5 or below are called employed personnel. In addition, for the needs of the business, for specialized or technical personnel with special business nature, it is possible to hire them in an open manner. Employees with rank 6 or above are contract-based personnel, the ones with rank 5 or below are contracted personnel.
2. Employed personnel and contract workers are workers, while dispatched personnel and contracted personnel are staff.

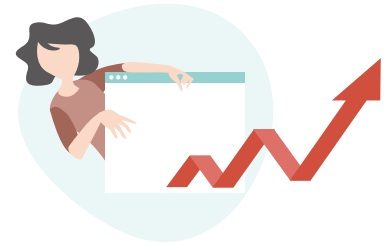
Age and Gender Distribution of Employees

Year	2021		2022		2023	
Gender	Male	Female	Male	Female	Male	Female
Age Group						
Under 30 Years Old	291	178	286	182	248	153
31-40 Years Old	329	185	334	207	392	239
41-50 Years Old	478	96	372	107	391	133
51 Years Old and Above	1,596	88	1,593	90	1,497	90
Total	2,694	547	2,585	586	2,528	615

Looking at the distribution of age and gender among the employees, the total number of females have increased by 4.95% compared to 2022, showing that the manpower structure in the Company is now being adjusted. In 2023, the non-employee workers were all contracted labor (including laborers stationed overseas), and the total number amounted to 2,204, which showed no significant fluctuation compared to the previous year (2,938 people).

The Company's Non-Employee Worker Information

Type of Worker	Contractual Relationship with the Company	Number of Workers
Cleaning Staff	Contracted	324
Security Personnel	Contracted	76
Pig Breeder	Contracted	371
Gas Station Attendant	Contracted	757
Others	Contracted	676
Total		2,204



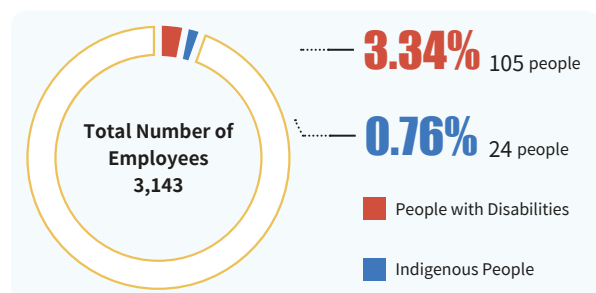
Hiring and Caring for Disadvantaged Groups

In order to protect equal employment opportunities for disadvantaged and related ethnic groups, we have complied with the relevant provisions of People with Disabilities Rights Protection Act and Indigenous Peoples Employment Rights Protection Act in the employment of physically and mentally disabled persons and indigenous peoples. As of the end of 2023, the company employed 24 indigenous people and 105 people with disabilities in compliance with the employment regulations. There was no report of infringement of the aborigines' right in the Company in 2023.

The Company's actions related to indigenous people's rights are carried out in accordance with the provisions of the "Indigenous Peoples Employment Rights Protection Act." We have also established the "TSC's Key Points for Handling Complaints by Employees," which targets at all employees (including aboriginal employees). Those who believe that the Company's system, methods, or administrative measures have not addressed matters that have harmed their legitimate rights and interests, the personnel regulations have not been implemented properly and have affected their personal work morale or rights, or other matters related to official duties that make it necessary to file a complaint, may file a complaint to safeguard their legitimate rights and interests.

Employment Rate of Disadvantaged Workers in 2023

Total Number of Employees	People with Disabilities	Indigenous People
3,143	105	24
100%	3.34%	0.76%



5.1.3 Employee Empowerment

TSC attaches great importance to the development of each employee's work function and lifelong learning. By the end of November each year, we ask the various departments and units to organize curriculum that enhance the operation and management performance of each unit, and sent to the HR Department of the Company for the annual educational and training schedules and to serve as the basis for allocating education and training expenses. To cultivate employees' knowledge and professional skills for the improvement of the work performance and quality, TSC has formulated the Key Points of Implementation of Human Resources Cultivation and Development. The minimum number of training hours per person per year is set according to the positions and ranks of employees. The promotion system and education and training are implemented to improve the knowledge and skills of employees and cultivate correct working attitudes.



Training Hours and Costs

TSC will immediately carry out relevant education and training on employee benefits, safety and health and internal control of the Company after the employment. We constantly explore the needs of organizations and individuals, review them at all times and gradually carry out all necessary trainings to enhance their knowledge and skills required for career development.

In 2023, the number of trainees was 3,166 (average number from January to December), with 154,333 training hours in total, and the average training hours per person (including physical and online) were 48.75 hours, an increase of 6.94 hours compared with 2022 (average 41.81 hours), and the staff training expenses totaled NTD 41,558 thousand.

The Category and Gender of the Trainees and Average Number of Training Hours

Year		2021			2022			2023		
Item	Gender	Total no.	Total Training Hours	Average training hours	Total no.	Total Training Hours	Average training hours	Total no.	Total Training Hours	Average training hours
Management	Male	1,075	39,835	37.06	1,048	43,184	41.21	1,115	47,990	43.04
	Female	146	5,839	39.99	153	7,575	49.51	187	11,333	60.60
Permanent Employees	Male	1,685	43,560	25.85	1,587	62,031	39.09	1,398	67,641	48.38
	Female	359	20,717	57.71	383	20,872	54.50	425	25,817	60.75
Temporary Employees	Male	9	224	24.89	8	120	15	7	321	45.86
	Female	45	1,296	28.80	39	750	19.23	34	1,231	36.21

Note :

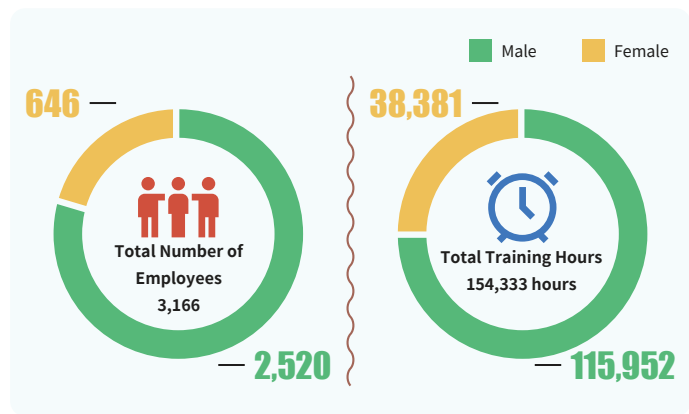
1. Formula: Average training hours of male employees in 2023 = Total training hours of male employees in 2023/Total number of male employees in 2023.
2. Management includes the personnel with rank 7 (inclusive) or above; formal employees include the personnel with rank 6 or below and the evaluators; permanent employees include assigned and employed ones; temporary employees include contract-based personnel and contract personnel.
3. The Company was in sugar manufacturing industry in early days. Due to the business model, the proportion of male and female employees was very different. In recent years, the proportion of newly recruited female employees has increased significantly. The Company has arranged intensive training courses so that new recruits can get familiar with the business earlier, resulting in their higher average training hours than male employees.

Average Hours for Employee Learning and Development in 2023 (By Gender)

	Total Number of Employees	Male	Female
Total Training Hours	154,333	115,952	38,381
Total Number of Employees	3,166	2,520	646
Average Training Hours per Person	48.75	46.01	59.41

Note :

The total number of employees was the statistical data as of December 2023.



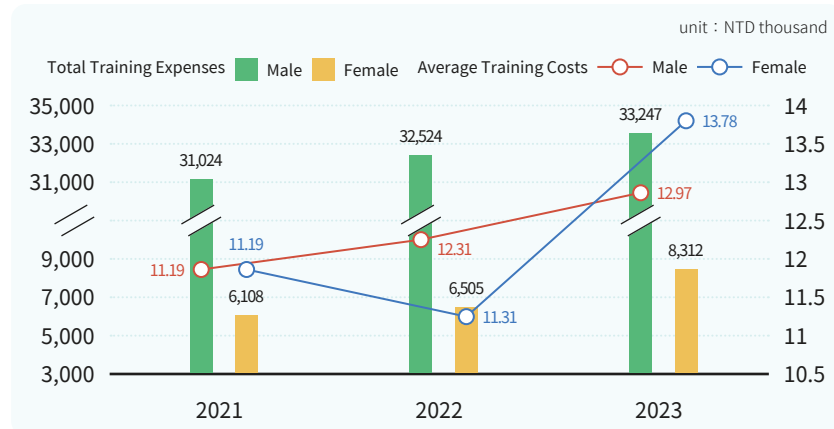
Average Employee Training Costs (By Gender)

unit : NTD thousand

Year	2021		2022		2023	
Gender \ Item	Total Training Expenses (NTD thousand)	Average Training Costs (NTD thousand)	Total Training Expenses (NTD thousand)	Average Training Costs (NTD thousand)	Total Training Expenses (NTD thousand)	Average Training Costs (NTD thousand)
Male	31,024	11.19	32,524	12.31	33,247	12.97
Female	6,108	11.19	6,505	11.31	8,312	13.78

Note :

Calculation formula: Average training costs= 2023 total training costs/ average trainees from January to December in 2023; the total training costs= 2023 average training costs* average trainees from January to December in 2023.



All-around Development

The employee training is based on the sustainable development of the enterprise, with the indicators of promoting and activating the development of talent function. TSC attaches importance to the all-round learning of employees and provides diversified and innovative training channels to implement life-long learning to create a learning-type organization and cultivate professional manpower meeting the company's business needs.

The Company has formulated the "TSC Education and Training Operation Guidelines" and provides regular and comprehensive training resources and learning environment, including coordinating the general training by the Company, independent training organized by each unit in accordance with the individual business needs, supervisor training, practitioner expertise, participation in training outside the company, on-the-job training, knowledge sharing activities, digital learning courses. We enable more efficient growth and learning of our employees with a solid education and training system, creating a company brand with value and competitiveness.

In addition, we also promote the Implementation Guidelines for Management Associate (MA) and select new employees with good performance and development potential as the management associates to receive systematic learning courses, rotations, project assignments, combined with the mentorship and coaching guidance and other development activities for the three-stage internship and cross-departmental rotation training to accelerate the cultivation of future grassroots supervisors. As of 2023, a total of 106 employees have been listed as qualified MA, and among them, 25 have been promoted to grassroots supervisors.

Number of Employees in Various Courses in 2023

Course Type	No. of trainees	Male	Female
New Staff Training	161	110	51
Primary Supervisor Training	78	45	33
Mid-level Supervisor Training	38	27	11
Expertise and Technology Training	33,090	26,827	6,263
Total	33,367	27,009	6,358

Note :
The number of new employees trained was 161, which is a difference of 4 people compared to the number of 165 as written on p.140.
This discrepancy arises from the inclusion of reserve candidates who were selected after the completion of the new staff training program. These reserve candidates will be scheduled to participate in the training program for the next year, in 2024.

Education and Training

The Performance and Results in 2023

Promotion of Digital Education

To promote diversified learning channels and enhance training effectiveness, TSC implemented a hybrid course format comprising digital and in-person sessions. In 2023, we organized one class each of "New Employee Training Camp," "New Factory Worker Training Camp," and "Middle-level Supervisor Training Course," as well as two classes of "Grassroots Supervisors Training Course."

Promoting digital learning education and training, the total reading certification hours for the entire company in 2023 amounted to 12,672 hours, estimated to save approximately NTD 2.5344 million in training costs.

In-service Education Advancement Subsidies

Encouraging colleagues to pursue further education while on the job, enriching their skills and knowledge, in accordance with the "TSC Education and Training Operation Guidelines." For those pursuing master's degrees or credit courses related to their duties during their free time, we offer subsidies for on-the-job education. In 2023, a total of 114 applications were submitted, with subsidies amounting to NTD 1,988,795, contributing to the improvement of colleagues' quality and performance.

Tuition Subsidies for Foreign Language studies

Encouraging colleagues to actively learn foreign languages, we provide subsidies for language learning tuition fees and assistance with registration fees for language proficiency tests. Bonuses are awarded to those who pass the tests. In 2023, a total of 37 applications were submitted, with subsidies totaling NTD 269,236, effectively enhancing colleagues' foreign language skills.

5.2 Human Rights Protection and Labor/Management Relations

TSC has been upholding the concept that the employees are the Company's most important assets, and it also attaches great importance to the employees' working environment, development and care. Continue to promote various employee care measures in an attempt to establish the working environment of enjoying work and life, warm and caring to create an organizational culture of good interaction.

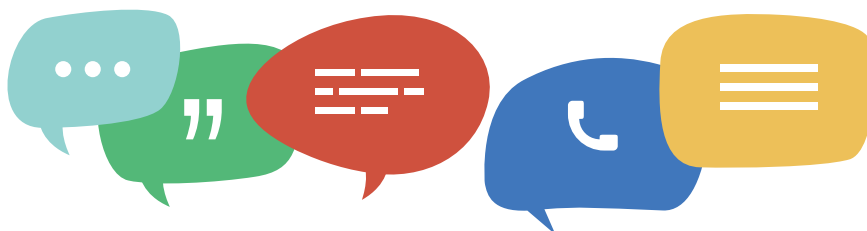
In terms of the human rights protection, in addition to abiding by various human rights laws and regulations strictly, TSC also recruits, appoints, rewards, and promotes talents based on qualifications, and our employees will not be discriminated or receive differential treatment on the ground of difference in race, class, language, thought, religion, political affiliation, place of ancestry, place of birth, gender, sexual orientation, age, marital status, appearance, facial features, physical and mental disabilities, star sign, blood type, and trade union membership.

TSC protects human rights in every contract with suppliers in accordance with national human rights laws and the Labor Standards Act, requiring our suppliers to provide health and labor insurance for their employees, and not to perform forced labor, not to use child labor (15 years of age but under 16), and to implement gender equality in Employment. Once a supplier is found to violate regulations of gender equality in employment, freedom of association, prevention of sexual harassment, normal vacations, or no payment of overtime pay, such supplier is immediately required to make improvement within a certain time frame and may also be fined for breach of contract. If no improvement is made or frequent breach of contract is found, TSC can terminate the contract with such supplier. The human rights protection and requirements for manufacturers of major investment projects are the same as those for our suppliers. Suppliers who have cooperated with TSC for a long time also gradually attach importance to human rights.

In terms of labor relations management, TSC has provided multiple communication channels and signed collective agreement with TSC Federation of Labor Unions for both the employer and the employees to follow. It is hoped that a happy enterprise aiming for a win-win partnership with its employees can be established. During the reporting period in 2023, there were no human rights violations or discrimination incidents for the employees(contractured) personnel, nor were there any labor complaints. In case of a labor complaint, it will be immediately responded, and assistance will be provided to help solve problems.

Performance Assessment and Rewards & Punishments

The purpose of employee appraisal not only focuses on the annual performance assessment of the employees but also on the stimulation of the development of their potentials. The personnel appraisal is carried out in accordance with the Key Points of Practitioner's General and Project Evaluation and Key Points of Annual Evaluation of Practitioners, and the appraisal methods are divided into annual evaluation, general and project evaluation, and evaluation for performance bonus. All the employees at TSC are subject to annual performance assessment. The direct supervisors conduct initial appraisal of the performance and submitted it to the indirect supervisor of the department for reassessment, and the performance is verified in accordance with their responsibilities. Starting from 2015, the Company formulated the procedures and matters regarding the annual assessment of employees in order to promote the spirit of performance appraisal, awarding superior and eliminating the inferior and encourage performance of the employees. In addition, in order to make the system prudent and careful, we enhanced the audit level and established a review team to enforce the controversial administrative power based on the harmony of the employer-employee relationship. In 2023, a total of 91.87% of employees of the Company received performance appraisal.



Statistical Table of Performance Evaluation

Item	Dispatched Personnel	Employed Personnel	Contract-based Personnel	Contracted Personnel	Total
Proportion of Male Employees Receiving Appraisals	93.90%	90.72%	100%	100%	92.36%
Proportion of Female Employees Receiving Appraisals	91.42%	86.32%	100%	89.47%	89.80%
Total Number of Employees in the Category	1,768	1,543	6	41	3,358
The Total Proportion of those Receiving Appraisals in the Category	94.23%	89.17%	100%	90.24%	91.87%

Note :

1. Calculation method: (The number of people receiving appraisal in the category in the current year/ the number of total employees in the category in the current year) x100%.
2. In 2023, 3,085 people received the appraisal and 273 did not, with the assessment rate of 91.87%. Among them, those who did not participate in the performance appraisal included (1) Those who have been formally employed for less than half a year in the appraisal year; (2) Those who have been in continuous employment for at least 6 months but have not completed 1 year of formal service in the appraisal year, and after excluding gender equality leave and official leave, the number of leave days exceeded half of their employee days; and (3) Those who have completed 1 year of formal service, and after excluding gender equality leave and official leave, the number of leave days exceeded half of the total days in the year.

The operational performance bonus is divided into “assessment bonus” and “performance bonus” as prescribed in the “Key Points for the Implementation of Performance Bonus Plan of the State-owned Enterprises Affiliated to the Ministry of Economic Affairs.” Assessment bonus has to be granted in accordance with the results of work assessment; performance bonus is distributed when there is surplus in the company. The total allocated amount of the bonuses was amended in 2012 by MOEA to the limit of no more than 4.4 months’ salary.

Collective Agreement

TSC and the TSC Federation of Labor Unions started to sign annual agreement from 2010 to protect the rights and interests of both the employer and the employees, increase work efficiency, and respect each other’s exercise of management rights and labor rights to jointly create business development. There were a total of 6 consultation meetings convened by both parties between 2012 and 2016, and a consensus was reached in the Collective Agreement Draft. Later, in response to the announcement of some changes in labor conditions of the Labor Standards Act, both parties continued to negotiate on matters related to the collective agreement, and a consensus was finally reached in the 7th consultation meeting in 2020. The signing of the collective agreement was completed on August 10, 2020, for both sides to abide by and work for; The ratio of employees being protected by the collective agreement reaches 100%.

To protect labor rights and interests, TSC further signed a collective agreement with TSC Federation of Labor Unions. Before signing the agreement, the Company and the Unions reviewed and discussed the contents of the 42 proposed contractual terms. In the negotiation meeting held on August 24, 2023, both parties reached a consensus in a harmonious atmosphere after communication, coordination, and explanation of relevant provisions. The Company immediately submitted the consensus version of the contract to the Ministry of Economic Affairs, and after approval, a collective agreement signing ceremony was held at 4pm on October 24. TSC Federation of Labor Unions also sent a letter to the Ministry of Labor to be documented for reference.

The contents of this agreement include employees’ working hours, leave, appraisal, retirement and pension, etc. It also includes many rights and benefits superior to the current labor laws to implement a win-win situation for the Union’s rights and interests and the Company’s sustainable operation with the caring for the employees. It is hoped that the labor and management can move forward towards the Company’s vision of sustainable development based on existing integrity and harmonious communication.

Human Rights Training to Protect the Employees’ labor Right and Communication Channels

In order to strengthen and implement human rights, regular human rights-related courses are held, including the implementation of gender mainstreaming, sexual harassment prevention and control, the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) and seminars or courses related to gender equality, labor laws and Labor Standards Act. In 2023, a total of 50 physical courses (including supplementary training), and 68 digital learning courses were offered, with a total of 3,109 trainees.

In terms of labor rights, TSC strictly abides by various labor laws. We have established employee opinion mailboxes and held employee seminars which allow the employees to offer open and unimpeded advice and appeals. TSC also commits itself to prevention and control measures for sexual harassment. Apart from advocating in orientation training, it also sets up special hotlines, faxes or e-mail boxes to handle sexual harassment complaints. If a complaint is received, the privacy of the parties should be protected during the investigation process in order to provide employees with a work environment free from sexual harassment. Education and training programs such as gender mainstreaming, sexual harassment prevention and gender impact assessment are continuously arranged from time to time to enhance employees' awareness of gender sensitivity and gender mainstreaming. In 2023, there were no human rights violations or discrimination incidents for the employees(contractured) personnel, nor were there any labor complaints. In case of a labor complaint, it will be immediately responded, and assistance will be provided to help solve problems.

Labor Conference

The Labor Conference aims to dissolve differences and seek consensus. It consists of representatives of both employers and employees and discusses and effectively communicates relevant issues such as labor rights and working conditions. The proposals of the labor conference are all documented, tracked and understood at any time. All employees are provided with timely information on the meeting and an interactive mechanism is established. In addition, it also strengthens the relationship between the Company and its employees through multiple practices such as timely communication with labor representatives, issuing company publications and setting up mailboxes to enhance employee satisfaction. Both employers and employees timely exchange opinions or negotiate with each other in terms of the issues of common concern between them. In 2023, all units held a total of 68 labor conferences. The proposals are all immediately responded, and the communication channel between labor and management is smooth, and no labor dispute or loss was caused by it.

Advance Notice of Operation Change

Where TSC terminates a labor contract pursuant to Article 11 or the provisions of Article 13, the provisions set forth below shall govern the minimum period of advance notice :

- ▶ Where a worker has worked continuously for more than three months but less than one year, the notice shall be given ten days in advance
- ▶ Where a worker has worked continuously for more than one year but less than three years, the notice shall be given twenty days in advance
- ▶ Where a worker has worked continuously for more than three years, the notice shall be given thirty days in advance

After receiving the advance notice referred to in the preceding paragraph, a worker may during working hours, ask for leave of absence for the purpose of finding a new job. Such leave of absence may not exceed two work days per week. Wages shall be paid during such leave of absence. Where an employer terminates the contract without serving an advance notice within the time limit prescribed in the first paragraph of this article, he/she shall pay the worker wages for the advance notice period.

Remuneration System

The overall employee remuneration includes the monthly salary and variable pay (including bonuses). The monthly salary is based on the employee's professional functions and job title, and the variable pay is distributed in accordance with the company's operating performance and individual work performance regardless of gender or region. The salary was not adjusted in 2023. The employed personnel through TSC's independent exams was NTD 28,408. The salary of new recruits is higher than the local (Taiwan) minimum wage, and the ratio of standard salary of female and male entry-level employees to the local minimum salary (the minimum salary in 2023 is NTD 26,400) was 1.08. The ratio of basic salary and remuneration of women and men in the same department, seniority, position and rank is 1:1. The median ratio of TSC's highest annual personal income to the annual income of all employees was 246%. The percentage of the Company's highest annual total salary increase is consistent with the median percentage of other employees' average annual total salary increase.

Welfare

In addition to providing the remuneration protection for employees, TSC has also established the “TSC Employee Welfare Committee” in accordance with the “Employee Welfare Fund Act” and “Organization Regulations on Employee Welfare Committee” in order to strengthen the implementation of employee welfare programs in the affiliated units. Handle the planning and implementation of employee welfare issues. A harmonious working environment is therefore created by the perfect welfare system.

Welfare Items		
Employee and children education loans	Condolatory supplement for natural disasters	Employees' maternity allowance
Subsidies for kindergarten education for employees' children	Emergency loans for employees and dependents	Wedding gift money
Employees' and their Children's Award and Scholarship	Condolatory supplement for employees suffering from cancer	Employee health examination subsidy
Employees' and the dependents' medical benefits	Employee Welfare Committee Group Insurance	Mutual aid fund for on-duty deaths of TSC Federation of Labor Unions member (including sponsoring members)
Loans for natural disasters	Employees' subsidy of consultation fee	Subsidy for employees receiving self-paid vaccination
Retired personnel gathering	Condolatory supplement for major illness/injury	
Condolatory supplement for death of employees' parents and spouses	Accommodation subsidy in TSC's own tourist attraction	

Nursery Benefits

There is no difference regarding parental leave without pay due to gender, job titles and work areas. Both male and female employees can apply for parental leave without pay. To retain outstanding employees, if an employee needs to provide care for infant, or for immediate blood relatives of oneself or one's spouse who are over 65 years old or suffering from severe illnesses or injuries, he or she can apply for unpaid leave with job retention, and the months of employment within the year may be aggregated while continuity is not a prerequisite. Participation in another appraisal will be rewarded with performance bonuses based on the appraisal results. Additionally, employees who shorten their working hours by one hour due to childcare are provided with one hour of paid time off daily.

Year	2021			2022			2023		
Item	Male	Female	Total	Male	Female	Total	Male	Female	Total
The Number of Employees Eligible to Apply for Parental Leave without Pay (A)	32	24	56	24	23	47	27	23	50
The Number of Employees who Actually Applied for Parental Leave without Pay in the Current year (B)	4	9	13	7	16	23	3	15	18
The Number of Employees who were Expected to be Reinstated after Parental Leave without Pay in the Current year (C)	4	5	9	3	10	13	7	14	21
The Number of employees who were actually Reinstated in the Current year (D)	4	5	9	3	10	13	7	14	21
The Number of Employees who were Actually Reinstated in the Previous Year (E)	2	5	7	4	5	9	3	10	13
The Number of Employees who were Actually Reinstated in the Previous Year and has been Reinstated for 12 Months (F)	2	5	7	4	5	9	3	10	13
Reinstatement Rate in the Current Year % (D/C)	100%	100%	100%	100%	100%	100%	100%	100%	100%
Retention Rate in the Current Year % (F/E)	100%	100%	100%	100%	100%	100%	100%	100%	100%

Note :

In 2023, a total of 18 employees (3 males and 15 females) applied for parental leave without pay. Additionally, 21 employees (7 males and 14 females) returned from leave and all have continued to work since their reinstatement in 2023.

A Sound and Complete Retirement System

TSC handles retirement, compensation and severance in accordance with the “Regulations Governing the Pension, Severance and Survivor Payments for Employees of State-owned Enterprises Administered by the Ministry of Economic Affairs.” Pensions were allocated in accordance with the ratio of the total salary paid in 2023 (staff: 4.85%; worker: 2%). The pensions contributed are deposited in the special accounts of the trust department of the Bank of Taiwan. The Employee Pension Management Committee and the Supervisory Committee of Business Entities’ Labor Retirement Reserve are responsible for management and supervision. For workers choosing new pension system, 6% of their monthly salary is set aside as their retirement pension.

Other Welfare Systems

To strengthen the connection between employee performance and rewards, various business-related measures and standards have been formulated to issue bonuses, such as the Principles for awarding key performance bonuses to each unit, TSC quality business evaluation plan, The standard table of principles for awarding bonuses for external evaluation of each unit, The key points of foreign language training subsidies and rewards for employees, Key points for implementing knowledge sharing activities, etc. Bonuses are then allocated based on the level of contribution of the units and personnel to reward talents and improve the overall operating performance.

5.3 Reinforced Occupational Safety

To maintain occupational safety and health for employees, preemptive prevention is the core concept we uphold to construct a safe and healthy working environment and implement the anticipation of danger and prevention of accidents and diseases before they happen. Through the occupational health and safety related regulations and the implementation of education and training, the correct concept of occupational accident prevention of all employees is enhanced, and the corporate occupational health and safety culture will be deep rooted. In addition, we also promote the participation of workers so that the employer and the employees can jointly formulate the occupational health and safety management system and measures of the Company to give full play to the function of teamwork to jointly reduce the occurrence of disasters. Finally, the internal control is used for the safety and health inspection system on a regular basis to review every part of occupational health and safety, the needs and expectation of stakeholders, occupational health and safety opportunities, and the revisions are made in accordance with the current condition and laws and regulations. Improvement is continuously made through the Plan-Do-Check-Action (P-D-C-A) model so as to achieve zero injuries and diseases.

The Head Office, the units and their subordinate units meeting the conditions prescribed in Article 10 of the “Regulations for Management of Occupational Safety and Health” all established the Occupational Safety and Health Committees. Members of the committee include safety and health managers, full-time nurses and members in different areas within the organization. Through regular meetings, the policy of TSC Labor Safety is communicated and the opinions between representatives of labor and management are exchanged through the Health and Safety Committee to prevent occupational disasters and to protect occupational safety and health. The Occupational Safety and Health Committee reports, coordinates and makes suggestions on the quarterly results of the occupational safety work, the external environmental changes, the occupational safety and health policy, and autonomous management plans. In addition, improvement measures for the environmental conditions, equipment, and operating conditions are discussed.

In the collective agreement signed on October 24th, 2023, the Company and the TSC Federation of Labor Unions agreed that the Company should handle matters concerning occupational safety and health in accordance with the Occupational Safety and Health Act and other relevant regulations, and actively prevent the occurrence of occupational accidents and diseases in accordance with the government regulations. In the collective agreement, the percentage of health and safety related topics is about 7%.

5.3.1 Occupational Safety and Health Management System

A total of 15 units of TSC, including the Headquarter, Shanhua Sugar Factory, Huwei Sugar Factory, Biotechnology Business Division, Petroleum Business Division, Chungchang Operation Branch, Yunchia Operation Branch, Tainan Operation Branch, Kaohsiung Operation Branch, Pingtung Operation Branch, Livestock Business Division, Agriculture Business Division, Marketing Business Division and Jianshanpi Resort (Leisure Business Division) implement ISO 45001 and CNS 45001 Occupational Safety and Health Management System and passed the verification and obtained certificate in accordance with Article 23 of the Occupational Safety and Health Act where the scale of business entities in the preceding paragraph reaches or exceeds a certain level or have workplaces as stipulated in Article 15 Paragraph 1. Additionally, the Xiaogang Refinery of the Sugar Business Division and the Kaohsiung Branch are undergoing re-certification.

In order to integrate matters regarding occupational safety and health management and improve performance in occupational safety management, the “TSC Occupational Safety and Health Management Information System” was established to manage occupational safety online. In addition to sharing information and saving data online, it also accelerates data transmission and simplifies the procedures. Furthermore, it aims to reduce paper usage for environmental conservation and establishes a communication channel with employees to improve workplace safety and health.

Items of Occupational Safety Risk Assessment

Description

	Hazard Identification and Risk Assessment	Establish a platform for risk assessment based on projects or accidents and routine work for each department.
	Contractor Management	The projects contracted by all units and documents for contracting management are required to register online for the daily management.
	Industrial Safety Reporting and Management	For emergency and incidents (including natural disasters), all levels of units can be immediately notified through this system.
	Occupational Disaster Management	Industrial safety pollution or false alarms in all units can be notified through the system.
	The System of Occupational Disaster Statistics	The occupational disaster statistics regarding employee workplaces, traffic accidents, contractors and industrial safety environmental performance indicators are input online by each unit and are calculated and output automatically.
	License Management System	Employees with licenses for industrial safety in all units and the number of HS licenses required will be managed online and the licensees will be notified of on-duty training period by email beforehand.
	Health Management	The employees' general health checkups and special health checkups will be managed online. The employees who do not undergo the checkups will be notified by email before the next inspection time expires.
	Industrial Safety Inspection	The platform is for sharing the supervisor's management by wandering around and content of inspection for industrial safety and improvement measures of each unit.
	Database Management	A platform for sharing industrial safety information, industrial safety reporting, regulations regarding industrial safety and documents about industrial safety.

Hazard Identification and Risk Assessment

The head of each unit assigns personnel for “hazard identification and risk/opportunity assessment operations” for the relevant education and training organized by Occupational Safety and Health Department for 3 hours and more, and such personnel will be responsible for hazard identification and risk/opportunity assessment operations within the unit. Every September, it is necessary for them to confirm the hazard identification and risk/opportunity assessment operations online at the “TSC Occupational Safety and Health Management Information System” and publicize the hazards in the workplace and preventive measures. Hazard identification and risk/opportunity assessment are conducted using a matrix analysis based on the formula: Operational Exposure Frequency × Probability of Occurrence = Risk Possibility. The risks are then categorized into six levels of control. Moreover, when any of the following situations occurs, hazard identification and hazard evaluation of relevant operations have to be re-implemented.

- 1** When the standard provisions of Taiwan Occupational Safety and Health Management System (TOSHMS) are revised
- 2** When the new processes, change of processes, new equipment, change of raw materials, or changes of operating environment conditions (including the development of target plans before taking the non-conforming corrective measures) will obviously affect the case of the risk, hazard identification and risk/opportunity assessment shall be conducted before the changes start.
- 3** When an unexpected incident happens
- 4** When a regulatory change is sufficient to affect the risk scores
- 5** When there are more than 3 false alarms of the same nature or in the same area
- 6** When it is strongly requested by the stakeholders
- 7** When major deficiencies are found in the inspection or audit

The head of each department should also establish corresponding control measures based on the results of the hazard identification and risk assessment (risk level). Occupational Safety and Health Department also visits the workplace from time to time to discover potential hazards, make suggestions, propose improvement measures, and organize the List of Unacceptable Risks.

Guidance and Inspection of Industrial Safety

In order to implement the management of industrial safety and strengthen the inspection of industrial safety, the annual "Industrial Safety Inspection Plan" is established according to the nature of business. Items to be improved are proposed and tracked until they are improved to ensure the safety of factory sites, business sites and workplaces and prevent disasters from happening so as to improve occupational safety and health management performance. In addition, through the walking management of high-level executives, high-level executives at all levels will be sent to each unit for guidance and inspections from time to time.

Year/Item	2021	2022	2023
No. of Annual Industrial Safety Audits	853	770	767
No. of the Walking Management of High-level Executives	2,931	3,221	3,285
No. of Industrial Safety Audits for Contractors	780	907	1,054



Occupational Safety Performance Indicators

TSC attaches great importance to the safety of the working environment of employees and contractors; and is committed to creating a safe operating environment. In 2023, there have not been any occupational disease related cases among our employees and contractors.

Statistics of Occupational Injury

Category		2021	2022	2023
Employees	Working Hours	6,962,470	6,755,555	6,519,468
	The Number of Fatalities as a Result of Work-related Injury	0	0	0
	Number of Serious Occupational Injury	1	0	0
	Recordable occupational injury	4	4	5
	The rate of fatalities as a result of work-related injury	0	0	0
	Serious Occupational Injury Rate	0.14	0	0
	Recordable Occupational Injury Rate	0.57	0.59	0.76
Nonemployee Workers (contractors)	Working Hours	6,853,250	6,300,618	6,309,255
	The Number of Fatalities as a Result of Work-related Injury	0	1	1
	Number of Serious Occupational Injury	1	1	1
	Recordable Occupational injury	4	5	7
	The Rate of Fatalities as a Result of Work-related Injury	0	0.16	0.15
	Serious Occupational Injury Rate	0.15	0.16	0.15
	Recordable Occupational Injury Rate	0.58	0.79	1.11

Note :

1. A total of 5 work-related injuries occurred in 2023, including 3 case of tumbling and 2 case of traffic accidents during work.
2. For non-employee workers (contractors), a total of 7 occupational accidents occurred in 2023, including 1 case of fatal falling, 1 case of falling, 2 case of tumbling, 1 case of collision, 1 case of being clamped and 1 case of cutting injury. Among them, there was one major occupational accident involving falling and death. This case occurred in the renovation construction in First Yuemei Livestock Farm of the Livestock Business Division. A worker named Gui (female) of the subcontractor Universe Circular Technology under the general conductor Forest Water Environmental ENG'G Co., Ltd. accidentally slipped and fell to the ground from a 11.4-meter scaffolding at 15:10 on October 11, 2023 when measuring insulation cotton in an anaerobic fermentation tank. She was later sent to Kuang Tien General Hospital, Dajia by ambulance and died after resuscitation failed. Later, the Livestock Business Division issued a letter requesting the manufacturing supervision unit and the general contractor to carry out a comprehensive and parallel inspection to see if the construction scaffolding on site comply with CNS4750 national standard and Construction Safety and Health Standards. The gap between the permanent platform and the scaffolding interface must be equipped with safety measures. All renovation projects will be concurrently inspected for the adequacy of CCTV surveillance, particularly in high-risk areas. Unsafe behavior by construction personnel will be corrected immediately upon detection. Repeated offenders will be required to undergo re-education by the contractor or will be prohibited from entering the construction site. The supervision units and general contractors for each renovation project will concurrently inspect the integrity of scaffolding safety measures. Construction workers must wear backpack-type double hook safety belts and implement safety standards for working at heights with double hooks hooked and released when moving to maintain the safety of contractors' workers.
3. After the accident, every unit has to file the report to the Occupational Safety and Health Management Information System in accordance with the guidelines of injury filing and statistical analysis operation standards.
4. Severe occupational injuries (SOI) refer to cases taking 6-month work-related injury leave or longer. (excluding deaths)
5. Recordable occupational injuries include fatalities, severe occupational injuries, and number of those asking for leave of more than 1 day but less than 6 months. Injuries sustained during commuting to and from work are not included.
6. Related calculation formulas :
 - Serious Occupational Injury Rate = (Number of serious occupational injuries (excluding deaths)/ working hours)* 1,000,000
 - Recordable occupational injury rate = (Number of recordable occupational injuries (including deaths and number of serious occupational injury)/ working hours)* 1,000,000
 - The fatal injury rate from occupational injuries = (Number of fatalities from occupational injuries / working hours)* 1,000,000

5.3.2 Safe Working Environment

To reduce occupational safety risks, the company has formulated corresponding operation management process, adopted appropriate preventative measures and implemented necessary control methods for various business. In addition, through training, advocacy, drills and inspections, hazard identification continues to be carried out to control risks within an acceptable level and positively creates a safe working environment.

Equipment Safety Management

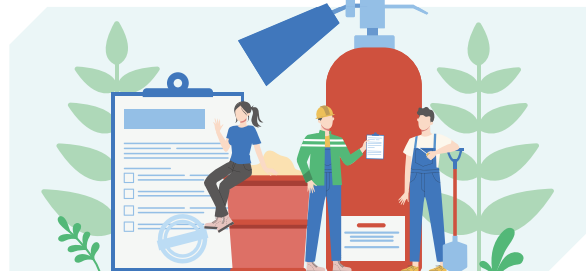
TSC classifies risks based on the contents of the equipment and operating conditions, formulates the procedures of equipment safety management and plans a plant maintenance and service system based on critical levels. Detailed inspections are planned for dangerous equipment to ensure safe operation of the equipment. During the use of dangerous equipment, automatic inspections, key inspections, operating inspections shall be carried out according to laws. In addition, regular inspections shall be carried out by labor inspection agencies within the statutory period.

For hazardous gas and chemical supply systems, toxic gas monitoring systems, process exhaust gas treatment systems, there are regular inspections and maintenance procedures in place. In the area of equipment, safety management methods are proposed in response to the safety needs of people, incidents, places and objects and they are controlled by standard operating procedures.

Emergency Response Management

The Key Points for Maintenance and Reporting of Fire Safety Equipment” was formulated, and all fire-fighting equipment is regularly inspected to ensure it remains in a standby state at all times. Each unit follows Article 13 of the Fire Service Act and develops a fire protection plan to prevent fire, earthquake and other disasters to ensure the safety of human lives. In addition, we also established the self-defense fire brigades, organize the education and training on disaster preparedness (including reporting, putting out fire, evacuation guidance, safety protection, and first aid courses), implement earthquake preparedness measures, manage fire prevention during construction, establish emergency contact numbers, and plan evacuation routes.

For various situations such as natural disasters, chemical spills and hypoxia operations, TSC has also developed various types of emergency response plans and established an emergency reporting system based on the internal control system of Disasters Handling Guidelines, Guidelines for Disasters Emergency Response and TSC Operation Guidelines for Various Disasters and Emergency Incident Reporting. Each unit conducts earthquake preparedness drills tailored to their jurisdiction or department, promotes earthquake disaster prevention education and publicity, and fosters correct earthquake prevention concepts among all employees. This aims to enhance employees' early earthquake evacuation and response capabilities to achieve the goal of earthquake disaster prevention. In 2023, we cooperated with the National Disaster Prevention Day and organized earthquake disaster prevention education and emergency evacuation drills. We organized 141 sessions in total and 2,635 participants attended the training and drills.



Education and Training of Occupational Safety and Zero Accident

TSC has developed the annual training program to ensure the industrial safety of the laborers based on the "Occupational Safety and Health Education and Training Rules". Besides, to increase the knowledge and management ability of the persons in charge of workplaces in occupational safety and health, letters are sent to the persons in charge who have not yet received the training to require them to participate in the "Occupational Safety and Health Training" they need.

Before the newly employed or transferred personnel commence their work, each unit must provide training to them based on the nature of their business and work requirements and keep records of the training for review. In 2023, the company conducted a total of 61 sessions for occupational safety and health-related education and training, with 4,081 participants. Among them, 12 sessions were organized, and 718 people were trained.

To deepen the employees' occupational safety awareness and strengthen their hazard identification before work, the company organized a total of 9 classes for "Danger Prediction Training for Zero Disaster" in 2023. These training sessions were attended by 458 employees. The performance in conducting these sessions was included in the annual assessment to encourage implementation across all units.



Industrial Safety and Environmental Protection Month and Occupational Safety Promotion Assembly

To promote employees' awareness of industrial safety and environmental protection, prevent incidents of occupational hazards and pollution, promote employee safety and health, protect the environment and show good will, the "Industrial Safety and Environmental Protection Month" was introduced in November 2023 to promote content in industrial safety and environmental protection. The content of promotion includes the gate layout, greening, beautification, disaster prevention, earthquake resistance, safety and health, and environmental education of each unit. Safety training is organized, and various promotional activities are carried out. We also implement industrial safety management and inspection of our contractors, 5S activities in area under control, industrial safety inspection, disaster prevention and rescue, various emergency response drills, management of dangerous machinery or equipment and the licenses of the operators, reduction of industrial waste, recycling of waste, and classification of garbage.

To cooperate with the Ministry of Labor, TSC organized the 2023 National Occupational Safety Health Promotion Assembly, focusing on the enhancement of the employees' knowledge and skills of workplace disaster prevention, promoting occupational safety, reinforcing autonomous management and health promoting activities to reduce the occurrence of occupational accidents. This year, each unit organizes the related activity separately based on the characteristics of the business unit. In the Headquarters, the President will lead the employees to make a declaration

of labor safety in the meeting of the Occupational Safety and Health Management Committee in the third quarter this year. The number of participants to the 2023 Workplace Safety and Health Week Advocacy Conference Activities amounted to 1,145 (including participants via video conferencing).

Establishment of Safety and Health Family

TSC's Jianshanpi Resort in Liuying is the first Safety and Health Family ("All for You Safety and Health Family") in Tainan and the whole country focusing on the service industry, sparing no efforts in the promotion of the occupational safety and health in the workplace. For every project and repair operation and various daily operations of all departments, the hazard assessment shall be conducted in advance to find out the hazard point to plan safety maintenance equipment. The responsible persons of the contractors are gathered to be notified of the hazards and required to implement the requirements, and penalties or suspension of work will be imposed if relevant regulations are violated. In 2023, it was awarded the "Occupational Safety and Health Promotion Unit Award in 2023" by the Labor Affairs Bureau, this was the sixth consecutive year. And it was also honored with the Five-star Award for Excellent Unit. The Ministry of Labor has enacted the Labor Occupational Accident Insurance and Protection Act on May 1, 2022. Business units receiving the Five-star Award for Excellent Unit are entitled to a 20% discount in premiums from industry-specific disaster rates to encourage them to actively strengthen occupational safety and health performance.



TSC's Xiaogang Refinery of the Sugar Business Division established the TSC Xiaogang Safety and Health Family in 2021 with the factory as the core enterprise, and the whole family is composed of 20 members. To enable the member suppliers and contractors to effectively understand the safety and health related laws and regulations and the responsibility the supervisors at every level shall take, we worked with Labor Standards Inspection Office, Labor Affairs Bureau of Kaohsiung City Government and the Southern District Labor Health Service Center to organize safety and health related education and training as well as publicity activities on September 16, 2021, and invited all family members to participate.

In 2022, the factory organized 3 sessions of occupational safety and health education training inviting family members to participate. In 2023, 2 sessions of occupational safety and health education training were organized with invitations extended to family members.

To assist business units to promote occupational safety, the Yunlin County Government invited TSC's Huwei Sugar Factory to call on more than 20 cooperating manufacturers to jointly establish the Huwei Sugar Factory Safety and Health Family to work together for safety in the workplace. The inaugural ceremony was held on December 6, 2022 in conjunction with the annual sugar production commencement ceremony of Huwei Sugar Factory, which has hundred-year sugar production history. The Deputy Magistrate of Yunlin County Government, Ms. Xie, Shu-ya and the Factory Director of Huwei Sugar Factory, Mr. Kin, Ming-feng, jointly sang the safety and health agreement. Deputy Magistrate Xie also awarded the signature banner and certificate of core enterprise to jointly declare the promotion of safety in the workplace. Through the communication platform, the Safety and Health family shared industrial safety experience, and knowledge of group safety and health is also provided to assist other factories to improve their management of safety and health. With the professional safety and health guidance, the safety and health lectures for operators, hazard identification and assessment, mutual inspection and observations of factories, preparation of project planning documents, risk evaluation and training and so on are provided to increase the safety awareness, hazard identification, and independent safety management capabilities of small and medium-sized business units, thereby reducing the occurrence of occupational accidents and improving a safe and health working environment. In 2023, 2 sessions of occupational safety and health education training were organized with invitations extended to family members.



5.3.3 Employee Health Management

We attach great importance to the health and safety of our employees. In accordance with the Regulations of the Labor Health Protection, we have employed 10 full-time nurses and 7 contract nurses in the Headquarters, the Sugar Business Division and Xiaogang Refinery, Yunchia Operation Branch and Huewei Sugar Factory, Tainan Operation Branch and Shanhwa Sugar Factory, Agriculture Business Division, Petroleum Business Division, Livestock Business Division, Leisure Business Division, Kaohsiung Operation Branch and Pingtung Operation Branch respectively, which is superior to the regulations. The total number of employed or contracted nursing staff service covers 100% of the total number of employees.

In addition, based on the needs of each unit, we invited a contract doctor to provide on-site service once every month or quarter to jointly promote the four comprehensive health management programs of special protection, health care, health promotion and employee assistance. We hope to comply with the regulations and meet the practical needs and focus on risk management and employee care. In addition, we strive to prevent occupational injuries and diseases and promote the physical and mental health of our employees.

Occupational Hazard Prevention

In order to prevent employees from diseases caused by shift work, night work, long hours of work and other abnormal workloads, we planned a "Implementation of Management Project of Disease Associated with Abnormal Workload." We arranged for doctors to predict the risk of brain and cardiovascular disease associated with workload. Employees with high risks need to consult with the doctors for specific guidance and follow-up. In 2023, 83 events and 233 employees were arranged for this management plan. For employees taking long-term sick leave and public injury leave, injury management and recovery tracking was carried, and the evaluation report of a total of 70 people returning to work was completed.

Health Promotion Activities

We held relevant health education lectures to promote employees' self-health management ability and professional growth. There were 66 sessions with 2,703 participants in total. In order to encourage the employees for the follow-up and early treatment, we provide the official leave for self-paid health examination and the Employee Welfare Committee subsidizes up to NTD 10,000 of self-paid health examination fee per person per year. The employees informed of major abnormalities in the health checkups would receive re-inspection notice for the return visit within 10 working days, and a total of 128 people paid return visits.

In addition, free cancer screening services and Maternal Health Protection Plan are provided. In 2023, 937 employees received colorectal cancer screening; For the Maternal Health Protection Plan, the regular birth inspection rate among the 36 pregnant female workers was 100%, and the rate of health instruction and promotion of the 17

female workers during lactation also reached 100%. To take care of the physical and mental health of employees, in addition to requiring all units to actively promote employee assistance programs, there are also chat rooms to help our employees relieve their mental pressure.

By upholding the concept that the talent is the most important asset of the Company, TSC has been committed to the development of a healthy and friendly workplace, planning complete physical and mental balance measures. In addition to requiring all units to actively promote the employee assistance programs, the Heart to Heart Consulting Room has also been set up to help the employees to relieve their mental stress. Furthermore, in 2023, we signed preferential contracts with various psychological counseling centers across Taipei, Yunlin, Chiayi, Tainan, Kaohsiung, and Pingtung (a total of nine centers), allowing employees to conveniently access counseling services nearby. We have also extended various parent-child activities and ecological education activities to employees' families. Apart from ensuring basic safety and health protection (conducting employee health checks every two years), TSC has established basketball courts, badminton courts, tennis courts, and walking trails within the company premises to promote physical fitness among employees. We also encourage our employees to establish sports associations to set autonomous training. Company Cup badminton, table tennis, 3 on 3 basketball games and participate in sports competitions held by local governments are also held to allow our employees to show the results of their usual training and to condense the team spirit.



Health Examination





2023 TSC Cup Badminton Games



2023 TSC Cup 3 on 3 Basketball Games



2023 TSC Cup Table Tennis Games



2023 Ecological Education and Hiking Activities for Employees of the Headquarters



2023 Employee Fun Competition and Hiking Event



2023 Participated in Tainan City Sports Competition between Labor and Management



2023 Company Cup Karaoke Singing Contest



2023 Employee Singles Gathering





CHAPTER 6

APPENDIX

APPENDIX I : BRITISH STANDARDS INSTITUTION (BSI)
VERIFICATION STATEMENT

APPENDIX II : GRI SUSTAINABILITY REPORTING STANDARDS
(GRI STANDARDS) REFERENCE TABLE

APPENDIX III : TAIWAN STOCK EXCHANGE CORPORATION
RULES GOVERNING THE PREPARATION AND
FILING OF SUSTAINABILITY REPORTS BY
TWSE LISTED COMPANIES — SUSTAINABILITY
DISCLOSURE INDICATORS- COMPARISON TABLE
FOR THOSE WHOSE REVENUE FROM FOOD
INDUSTRY AND CATERING ACCOUNTS FOR MORE
THAN 50% OF THE TOTAL OPERATING REVENUE

APPENDIX IV : TAIWAN STOCK EXCHANGE CORPORATION
RULES GOVERNING THE PREPARATION AND
FILING OF SUSTAINABILITY REPORTS BY
TWSE LISTED COMPANIES — CLIMATE —
RELATED INFORMATION OF TWSE/TPEX LISTED
COMPANIES

APPENDIX V : SUSTAINABLE DEVELOPMENT GOALS (SDGs)
INDEX

APPENDIX VI : SUSTAINABILITY ACCOUNTING STANDARDS
BOARD (SASB) INDEX



INDEPENDENT ASSURANCE OPINION STATEMENT

Taiwan Sugar Corporation 2024 Sustainability Report

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

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

Scope

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

1. The assurance scope is consistent with the description of Taiwan Sugar Corporation 2024 Sustainability Report.
2. The evaluation of the nature and extent of the TSC's adherence to AA1000 AccountAbility Principles (2018) in this report as conducted in accordance with type 1 / type 2 of AA1000AS v3 sustainability assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process expect for data relating food industry sustainability disclosure metric.

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

Opinion Statement

We conclude that the Taiwan Sugar Corporation 2024 Sustainability Report provides a fair view of the TSC sustainability programmes and performances during 2023. The sustainability report subject to assurance is free from material misstatement based upon testing within the limitations of the scope of the assurance, the information and data provided by the TSC and the sample taken. We believe that the performance information of Environment, Social and Governance (ESG) are fairly represented. The sustainability performance information disclosed in the report demonstrate TSC's efforts recognized by its stakeholders.

Our work was carried out by a team of sustainability report assurers in accordance with the AA1000AS v3. We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that TSC's description of their approach to AA1000AS v3 and their self-declaration in accordance with GRI Standards were fairly stated.

Methodology

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

- a review of issues raised by external parties that could be relevant to TSC'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.
- 22 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 TSC has continually sought the engagement of its stakeholders and established material sustainability topics, as the participation of stakeholders has been conducted in developing and achieving an accountable and strategic response to sustainability. There are fair reporting and disclosures for the information of Environment, Social and Governance (ESG) in this report, so that appropriate planning and target-setting can be supported. In our professional opinion the report covers the TSC's inclusivity issues.

Materiality

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

Responsiveness

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

Impact

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

Performance information

Based on our work described in this statement, specified sustainability performance information such as GRI Standards disclosures disclosed in this report, TSC and BSI have agreed upon to include in the scope. In our view, the data and information contained within Taiwan Sugar Corporation 2024 Sustainability Report are reliable.

GRI Sustainability Reporting Standards (GRI Standards)

TSC provided us with their self-declaration of in accordance with GRI Standards 2021 (For each material topic covered in the applicable GRI Sector Standard and relevant GRI Topic Standard, comply with all reporting requirements for disclosures). Based on our review, we confirm that sustainable development disclosures with reference to GRI Standards' disclosures are reported, partially reported, or omitted. In our professional opinion the self-declaration covers the TSC's sustainability topics.

Assurance level

The moderate and partial high level assurance provided is in accordance with AA1000AS v3 in our review, as defined by the scope and methodology described in this statement.

Responsibility

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

For and on behalf of BSI:


Peter Pu, Managing Director BSI Taiwan



Statement No: SRA-TW-805753
2024-05-23

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Appendix II: GRI Sustainability Reporting Standards (GRI Standards) Reference Table

The following content has been verified by an independent third-party and the result is published in the independent assurance report in Appendix I. " * " indicates major aspects while, " ● " indicates external verification.

The statement of use	Taiwan Sugar Corp. has reported in accordance with the GRI Standards for the of January 1,2023 to December 31,2023 with reference to the GRI Standards					
GRI 1 used	GRI 1: Foundation 2021					
Applicable GRI Sector Standard(S)	N/A					

Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ Remark
General Disclosures						
1. The organization and its reporting practices						
GRI 2 General Disclosures 2021	2-1	Organizational details	●	1.1.1 Company Overview	12	
	2-2	Entities included in the organization’s sustainability reporting	●	About this Report	2	
	2-3	Reporting period, frequency and contact point	●	About this Report	2	
				Publishing Schedule of the Report	180	
				Contact Information	180	
	2-4	Restatements of information	●	About this Report	2	
2-5	External assurance	●	About this Report	2		
2. Activities and workers						
GRI 2 General Disclosures 2021	2-6	Activities, value chain and other business relationships	●	1.1.1 Company Overview	12	
				1.1.2 Financial Performance	15	
				4.3.1 Procurement Policies	116	
	2-7	Employees	●	1.1.1 Company Overview	12	
2-8	Workers who are not employees	●	5.1.2 Labor Structure	135		
			5.1.2 Labor Structure	141		
3. Governance						
GRI 2 General Disclosures 2021	2-9	Governance structure and composition	●	1.2.1 Board of Director Structure	37	
	2-10	Nomination and selection of the highest governance body	●	1.2.1 Board of Director Structure	37	
	2-11	Chair of the highest governance body	●	1.2.1 Board of Director Structure	37	
	2-12	Role of the highest governance body in overseeing the management of impacts	●	1.1.3 Sustainable Operation and Practices	17	
				1.2 Corporate Governance	36	
				1.2.2 Performance Evaluation	42	
				1.3.1 Internal Control Management	48	
	2-13	Delegation of responsibility for managing impacts	●	1.1.3 Sustainable Operation and Practices	17	
	2-14	Role of the highest governance body in sustainability reporting	●	About this Report	2	
	2-15	Conflicts of interest	●	1.2.1 Board of Director Structure	37	
	2-16	Communication of critical concerns	●	1.1.3 Sustainable Operation and Practices	17	
				1.2.2 Performance Evaluation	42	
	2-17	Collective knowledge of the highest governance body	●	1.2.1 Board of Director Structure	37	
	2-18	Evaluation of the performance of the highest governance body	●	1.2.2 Performance Evaluation	42	
	2-19	Remuneration policies	●	1.2.2 Performance Evaluation	42	
	2-20	Process to determine remuneration	●	1.2.2 Performance Evaluation	42	
2-21	Annual total compensation ratio	●	5.2 Human Rights Protection and Labor/Management Relations	146		

Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ Remark
4. Strategy, policies and practices						
GRI 2 General Disclosures 2021	2-22	Statement on sustainable development strategy	●	Message from the Top Management	3	
				1.1.3 Sustainable Operation and Practices	17	
	2-23	Policy commitments	●	4.3.2 Supplier Management	118	
				5.2 Human Rights Protection and Labor/Management Relations	146	
				5.3 Reinforced Occupational Safety	150	
				5.3.1 Occupational Safety and Health Management System	151	
	2-24	Embedding policy commitments	●	4.3.2 Supplier Management	118	
				5.2 Human Rights Protection and Labor/Management Relations	146	
				5.3 Reinforced Occupational Safety	150	
				5.3.1 Occupational Safety and Health Management System	151	
	2-25	Processes to remediate negative impacts	●	1.3.2 Compliance and Information Disclosure	50	
				4.3.2 Supplier Management	118	
2-26	Mechanisms for seeking advice and raising concerns	●	1.3.1 Internal Control Management	48		
			4.3.3 Customer Relationship Management	122		
2-27	Compliance with laws and regulations	●	1.3.2 Compliance and Information Disclosure	50		
2-28	Membership associations	●	1.1.1 Company Overview	12		
5. Stakeholder engagement						
GRI 2 General Disclosures 2021	2-29	Approach to stakeholder engagement	●	1.1.4 Stakeholder Engagement	20	
				1.3.2 Compliance and Information Disclosure	50	
	2-30	Collective bargaining agreements	●	5.2 Human Rights Protection and Labor/Management Relations	146	
Material Topics						
GRI 3 Material Topics 2021	3-1	Process to determine material topics	●	1.1.5 Material Topics of Sustainable Development	26	
	3-2	List of material topics	●	1.1.5 Material Topics of Sustainable Development	26	
Topic-specific disclosure: 200 series (Economic topics)						
Economic Performance						
GRI 201 Economic Performance 2016	201-1	Direct economic value generated and distributed		1.1.2 Financial Performance	15	
	*201-2	Financial implications and other risks and opportunities due to climate change	●	1.1.5 Material Topics of Sustainable Development	26	
				2.1 Task Force on Climate-related Financial Disclosures (TCFD)	61	
				2.3 Net Zero Emissions Pathway Planning	73	
	201-3	Defined benefit plan obligations and other retirement plans		5.2 Human Rights Protection and Labor/Management Relations	146	
	201-4	Financial assistance received from government		1.1.2 Financial Performance	15	
Market Presence						
GRI 202 Market Presence 2016	202-1	Ratios of standard entry level wage by gender compared to local minimum wage		5.2 Human Rights Protection and Labor/Management Relations	146	
	202-2	Proportion of senior management hired from the local community		5.1.2 Labor Structure	141	
* Indirect Economic Impacts						
GRI 3 Indirect Economic Impacts Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development	26	
				3. Leveraging Natural Capital	90	

Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ Remark
Topic-specific disclosure: 200 series (Economic topics)						
* Indirect Economic Impacts						
GRI 203 Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	●	3.1 Renovation Plan of Modern Livestock Housing	92	
				4.4 Social Care and Collaboration with Allies	112	
				4.5.1 Preservation of Sugar Industry Culture	125	
				4.5.3 Environmental Education Field	133	
				1.1.2 Financial Performance	15	
	203-2	Significant indirect economic impacts	●	3. Leveraging Natural Capital	90	
				3.2.1 Eco-friendly Farming	96	
				3.2.2 Support the Development of Agriculture	97	
				3.4.1 Land for Major Economic Construction	103	
				3.4.2 Meeting the Housing Needs of the General Public	103	
Procurement Practices						
GRI 204 Procurement Practices 2016	204-1	Proportion of spending on local suppliers		4.3.1 Procurement Policies	116	
* Anti-corruption						
GRI 3 Anti-corruption Material Topics 2021	3-3	Management of material topics	●	1. Stepping Toward Sustainable Governance	10	
				1.1.5 Material Topics of Sustainable Development	26	
GRI 205 Anti-corruption 2016	205-1	Operations assessed for risks related to corruption	●	1.3.1 Internal Control Management	48	
	205-2	Communication and training about anti-corruption policies and procedures	●	1.3.1 Internal Control Management	48	
	205-3	Confirmed incidents of corruption and actions taken	●	1.3.1 Internal Control Management	48	
Anti-competitive Behavior						
GRI 206 Anti-competitive Behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices		1.3.1 Internal Control Management	48	
Tax						
GRI 207 Tax 2019	207-1	Approach to tax		—	—	
	207-2	Tax governance, control, and risk management		—	—	
	207-3	Stakeholder engagement and management of concerns related to tax		—	—	
	207-4	Country-by-country reporting		1.1.2 Financial Performance	15	
Topic-specific disclosure: 300 series (Environmental topics)						
Materials						
GRI 301 Materials 2016	301-1	Materials used by weight or volume		4.3.1 Procurement Policies	116	
	301-2	Recycled input materials used		4.3.1 Procurement Policies	116	
	301-3	Reclaimed products and their packaging materials		4.3.1 Procurement Policies	116	
* Energy						
GRI 3 Energy Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development	26	
				2. Mitigating Climate Impact	58	
GRI 302 Energy 2016	302-1	Energy consumption within the organization	●	2.2 Statistics of Energy and Carbon Emission	70	
	302-2	Energy consumption outside of the organization		—		
	302-3	Energy intensity	●	2.2 Statistics of Energy and Carbon Emission	70	
	302-4	Reduction of energy consumption	●	2.2 Statistics of Energy and Carbon Emission	70	
				2.3.4 Lean Operations Management	81	
	302-5	Reductions in energy requirements of products and services		—		

Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ Remark
Topic-specific disclosure: 300 series (Environmental topics)						
* Water and Effluents						
GRI 3 Water and Effluents Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development	26	
				2. Mitigating Climate Impact	58	
GRI 303 Water and Effluents 2018	303-1	Interactions with water as a shared resource	●	2.3.3 Engaging in Green Operation	79	
				2.4.1 Pollution Control	83	
				3.1 Renovation Plan of Modern Livestock Housing	92	
				2.4.1 Pollution Control	83	
	303-2	Management of water discharge related impacts	●	2.4.1 Pollution Control	83	
	303-3	Water withdrawal	●	2.4.1 Pollution Control	83	
	303-4	Water discharge	●	2.4.1 Pollution Control	83	
	303-5	Water consumption	●	2.4.1 Pollution Control	83	
Biodiversity						
GRI 304 Biodiversity 2016	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas		3.3 Maintenance of Natural Resources	98	
	304-2	Significant impacts of activities, products and services on biodiversity		3.3.2 Natural Ecological Resources	100	
	304-3	Habitats protected or restored		3.3.2 Natural Ecological Resources	100	
	304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations		3.3.2 Natural Ecological Resources	100	
* Emissions						
GRI 3 Emissions Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development	26	
				2. Mitigating Climate Impact	58	
GRI 305 Emissions 2016	305-1	Direct (Scope 1) GHG emissions	●	2.2 Statistics of Energy and Carbon Emission	70	
				2.3.2 Agricultural Practices Improvement	77	
	305-2	Energy indirect (Scope 2) GHG emissions	●	2.2 Statistics of Energy and Carbon Emission	70	
				2.3.2 Agricultural Practices Improvement	77	
	305-3	Other indirect (Scope 3) GHG emissions	●	2.2 Statistics of Energy and Carbon Emission	70	
				2.3.2 Agricultural Practices Improvement	77	
	305-4	GHG emissions intensity	●	2.2 Statistics of Energy and Carbon Emission	70	
				2.2 Statistics of Energy and Carbon Emission	70	
	305-5	Reduction of GHG emissions	●	2.3 Net Zero Emissions Pathway Planning	73	
				2.3.1 Promotion of Renewable Energy	74	
				2.3.2 Agricultural Practices Improvement	77	
				2.3.3 Engaging in Green Operation	79	
				2.3.4 Lean Operations Management	81	
	305-6	Emissions of ozone-depleting substances (ODS)	●	2.2 Statistics of Energy and Carbon Emission	70	
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	●	2.4.1 Pollution Control	83	
* Waste						
GRI 3 Waste Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development	26	
				2. Mitigating Climate Impact	58	

Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ Remark
Topic-specific disclosure: 300 series (Environmental topics)						
* Waste						
GRI 306 Waste 2020	306-1	Waste generation and significant waste-related impacts	●	2.3.2 Agricultural Practices Improvement	77	
				2.4.2 Waste Management	86	
				3.1 Renovation Plan of Modern Livestock Housing	92	
	306-2	Management of significant wasterelated impacts	●	2.4.2 Waste Management	86	
	306-3	Waste generated	●	3.1 Renovation Plan of Modern Livestock Housing	92	
				2.4.2 Waste Management	92	
	306-4	Waste diverted from disposal	●	2.3.2 Agricultural Practices Improvement	77	
	306-5	Waste directed to disposal	●	2.4.2 Waste Management	92	
				2.4.1 Pollution Control	83	
				3.1 Renovation Plan of Modern Livestock Housing	92	
* Supplier Environmental Assessment						
GRI 3 Supplier Environmental Assessment Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development	26	
				4. Creating Social Value	106	
GRI 308 Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	●	4.3.1 Procurement Policies	116	
	308-2	Negative environmental impacts in the supply chain and actions taken	●	4.3.2 Supplier Management	118	
Topic-specific disclosure: 400 series (Social topics)						
Employment						
GRI 401 Employment 2016	401-1	New employee hires and employee turnover		5.1.1 Talent Acquisition and Turnover	140	
	401-2	Benefits provided to full-time employees that are not provided to temporary or parttime employees		5.2 Human Rights Protection and Labor/Management Relations	146	
	401-3	Parental leave		5.2 Human Rights Protection and Labor/Management Relations	146	
* Labor/Management Relations						
GRI 3 Labor/Management Relations Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development	26	
				5. Taking Care of Taiwan Sugar Corporation Partners	138	
GRI 402 Labor/Management Relations 2016	402-1	Minimum notice periods regarding operational changes	●	5.2 Human Rights Protection and Labor/Management Relations	146	
* Occupational Health and Safety 2018						
GRI 3 Occupational Health and Safety 2018 Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development	26	
				5. Taking Care of Taiwan Sugar Corporation Partners	138	
GRI 403 Occupational Health and Safety 2018	403-1	Occupational health and safety management system	●	5.3.1 Occupational Safety and Health Management System	151	
	403-2	Hazard identification, risk assessment, and incident investigation	●	5.3.1 Occupational Safety and Health Management System	151	
	403-3	Occupational health services	●	5.3.3 Employee Health Management	157	
	403-4	Worker participation, consultation, and communication on occupational health and safety	●	5.3 Reinforced Occupational Safety	150	
	403-5	Worker training on occupational health and safety	●	5.3.1 Occupational Safety and Health Management System	151	
				5.3.2 Safe Working Environment	153	
	403-6	Promotion of worker health	●	5.3.3 Employee Health Management	153	

Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ Remark
Topic-specific disclosure: 400 series (Social topics)						
* Occupational Health and Safety 2018						
GRI 403 Occupational Health and Safety 2018	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	●	5.3.2 Safe Working Environment	153	
	403-8	Workers covered by an occupational health and safety management system	●	5.3.1 Occupational Safety and Health Management System	151	
	403-9	Work-related injuries	●	5.3.1 Occupational Safety and Health Management System	151	
	403-10	Work-related ill health	●	5.3.1 Occupational Safety and Health Management System	151	
Training and Education						
GRI 404 Training and Education 2016	404-1	Average hours of training per year per employee		5.1.3 Employee Empowerment	143	
	404-2	Programs for upgrading employee skills and transition assistance programs		5.1.3 Employee Empowerment 5.2 Human Rights Protection and Labor/Management Relations	143 146	
	404-3	Percentage of employees receiving regular performance and career development reviews		5.2 Human Rights Protection and Labor/Management Relations	146	
* Diversity and Equal Opportunity						
GRI 3 Diversity and Equal Opportunity Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 5. Taking Care of Taiwan Sugar Corporation Partners	26 138	
* Diversity and Equal Opportunity						
GRI 405 Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	●	1.2.1 Board of Director Structure 5.1.2 Labor Structure	37 141	
	405-2	Ratio of basic salary and remuneration of women to men	●	5.2 Human Rights Protection and Labor/Management Relations	146	
* Non-discrimination						
GRI 3 Non-discrimination Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 5. Taking Care of Taiwan Sugar Corporation Partners	26 138	
GRI 406 Non-discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	●	5.2 Human Rights Protection and Labor/Management Relations	146	
* Freedom of Association and Collective Bargaining						
GRI 3 Freedom of Association and Collective Bargaining Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 5. Taking Care of Taiwan Sugar Corporation Partners	26 138	
GRI 407 Freedom of Association and Collective Bargaining 2016	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	●	4.3.2 Supplier Management 5.2 Human Rights Protection and Labor/Management Relations	118 146	
Child Labor						
GRI 408 Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor		4.3.2 Supplier Management 5.2 Human Rights Protection and Labor/Management Relations	118 146	
* Forced or Compulsory Labor						
GRI 3 Forced or Compulsory Labor Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 5. Taking Care of Taiwan Sugar Corporation Partners	26 138	
GRI 409 Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	●	5.1.1 Talent Acquisition and Turnover	140	
Security Practices						
GRI 410 Security Practices 2016	410-1	Security personnel trained in human rights policies or procedures		4.3.2 Supplier Management	118	
Rights of Indigenous Peoples						
GRI 411 Rights of Indigenous Peoples 2016	411-1	Incidents of violations involving rights of indigenous peoples		5.1.2 Labor Structure	141	

Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ Remark
Topic-specific disclosure: 400 series (Social topics)						
* Local Communities						
GRI 3 Local Communities Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 4. Creating Social Value	26 106	
GRI 413 Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	●	4.4 Social Care and Collaboration with Allies 4.5.1 Preservation of Sugar Industry Culture	112 125	
	413-2	Operations with significant actual and potential negative impacts on local communities	●	2.4.1 Pollution Control 3.1 Renovation Plan of Modern Livestock Housing	83 92	
* Supplier Social Assessment						
GRI 3 Supplier Social Assessment Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 4. Creating Social Value	26 106	
GRI 414 Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	●	4.3.1 Procurement Policies	116	
	414-2	Negative social impacts in the supply chain and actions taken	●	4.3.2 Supplier Management	118	
Public Policy						
GRI 415 Public Policy 2016	415-1	Political contributions		1.3 Implementation of Integrity Management	47	
* Customer Health and Safety						
GRI 3 Customer Health and Safety Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 4. Creating Social Value	26 106	
GRI 416 Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	●	4.1 Food Safety Management	109	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	●	1.3.2 Compliance and Information Disclosure	50	
* Marketing and Labeling						
GRI 3 Marketing and Labeling Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 4. Creating Social Value	26 106	
GRI 417 Marketing and Labeling 2016	417-1	Requirements for product and service information and labeling	●	4.1 Food Safety Management	109	
	417-2	Incidents of non-compliance concerning product and service information and labeling	●	1.3.2 Compliance and Information Disclosure	50	
	417-3	Incidents of non-compliance concerning marketing communications	●	1.3.2 Compliance and Information Disclosure	50	
* Customer Privacy						
GRI 3 Customer Privacy Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 1. Stepping Toward Sustainable Governance	26 10	
GRI 418 Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	●	1.3.2 Compliance and Information Disclosure	50	
Custom Theme						
* Climate Adaptation and Resilience						
GRI 3 Climate Adaptation and Resilience Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 2. Mitigating Climate Impact	26 58	
* Corporate Governance						
GRI 3 Corporate Governance Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 1. Stepping Toward Sustainable Governance	26 10	

Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ Remark
Custom Theme						
* Economic Impacts and Inclusion						
GRI 3 Economic Impacts and Inclusion Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 3. Leveraging Natural Capital	26 90	
* GHG Emissions						
GRI 3 GHG Emissions Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 2. Mitigating Climate Impact	26 58	
* Food Safety						
GRI 3 Food Safety Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 4. Creating Social Value	26 109	
* Food Preservation (Sustainable Food)						
GRI 3 Sustainable Food Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 3. Leveraging Natural Capital	26 90	
* Supply Chain Traceability						
GRI 3 Supply Chain Traceability Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 4. Creating Social Value	26 109	
* Circular Economy						
GRI 3 Circular Economy Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 3. Leveraging Natural Capital	26 90	
* Soil Health						
GRI 3 Soil Health Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 3. Leveraging Natural Capital	26 90	
* Employment Practices						
GRI 3 Employment practices Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 5. Taking Care of Taiwan Sugar Corporation Partners	26 138	
* Animal Health and Welfare						
GRI 3 Animal Health and Welfare Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 3. Leveraging Natural Capital	26 90	
* Social Participation						
GRI 3 Social Participation Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 4. Creating Social Value	26 109	
* Natural Ecosystem Conversion						
GRI 3 Natural Ecosystem Conversion Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 3. Leveraging Natural Capital	26 90	
* Air Pollutant Emissions						
GRI 3 Air pollutant emissions Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 2. Mitigating Climate Impact	26 58	
* Pesticides Use						
GRI 3 Pesticides Use Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 3. Leveraging Natural Capital	26 90	
* Living Income and Living Wage						
GRI 3 Living Income and Living Wage Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 5. Taking Care of Taiwan Sugar Corporation Partners	26 138	
* Land and Resource Rights						
GRI 3 Land and Resource Rights Material Topics 2021	3-3	Management of material topics	●	1.1.5 Material Topics of Sustainable Development 3. Leveraging Natural Capital	26 90	

Appendix III : Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies- Sustainability Disclosure Indicators- Comparison table for those whose revenue from food industry and catering accounts for more than 50% of the total operating revenue

Number	Content of Indicator	Chapter and Section	Page
1	The evaluation and improvement regarding the company's personnel, work environment, hygiene management of facilities and quality control system to improve food sanitation, safety and quality, as well as the significant product and service categories and the percentage affected.	4.1 Food Safety Management	109
2	Types and times of incidents of violations of health and safety regulations related to products and services and non-compliance with product and service information and labeling regulations, times of product removal, and the total weight of products removed.	1.3.2 Compliance and Information Disclosure	50
3	Purchase a certain percentage that meets the ratio of internationally recognized product liability standard to overall procurement, and it is divided by standards.	4.3.2 Supplier Management 4.4.2 Collaboration with Allies — High Lands Small Farms of Guatemala	118 124
4	The percentage of the production volume manufactured in sites certified by an independent third party according to internationally recognized food safety management system standards.	4.1 Food Safety Management	109
5	The number and percentage of suppliers audited by the company, and the audit items and results.	4.3.2 Supplier Management	118
6	The product trace and track management conducted by the company voluntarily or according to the applicable laws, and the percentage of such relevant products to the whole products.	4.1 Food Safety Management	109
7	The food safety laboratories established by the company voluntarily or according to the applicable laws, testing items, testing results, relevant expenses and the percentage of such expenses to the net revenue.	4.1 Food Safety Management	109
8	Total energy consumption, percentage of purchased electricity, utilization rate of renewable energy.	2.2 Statistics of Energy and Carbon Emission	70
9	Total water intake and total water consumption.	Total water intake of the entire company in 2023: 10,431.54 thousand cubic meters Total water consumption of the entire company in 2023: 8,602.56 thousand cubic meters	—
10	Weight of products sold, number of production facilities (tonnes, quantity).	Sales of 322,999.644 tonnes of food products; there are a total of 8 production facilities, including 4 of the Sugar Business Division (Xiaogang Refinery, Huwei Sugar Factory, Huwei Sugar Factory - Dalin Factory, and Shanhua Sugar Factory), 1 of the Livestock Business Division (Xinying By-product Processing Food Factory), 1 of the Biotechnology Business Division (Dalin Biotechnology Factory Food Plant), and 2 of the Department of Agribusiness Management (Huwei Organic Rice Mill, Pingtung soybean packaging)	—

Appendix IV : Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies- Climate-related Information of TWSE/TPEX Listed Companies

Risks and opportunities brought by climate change and the relevant corresponding measures the Company takes	Chapter and section	Page
1. Describe the board of directors' and the management's supervision and governance of climate-related risks and opportunities.	2.1 Task Force on Climate-related Financial Disclosures (TCFD)	61
2. Describe how the climate risks and opportunities identified will affect the Company's business, strategies, and finances (short-, medium-, and long-term).	2.1 Task Force on Climate-related Financial Disclosures (TCFD)	61
3. Describe the impact of extreme climate events and transition actions on finances.	2.1 Task Force on Climate-related Financial Disclosures (TCFD)	61
4. Describe how the climate risks identification, assessment, and management process are integrated into the overall risk management system.	2.1 Task Force on Climate-related Financial Disclosures (TCFD)	61
5. GHG inventory and assurance status, reduction targets, strategies, and specific action plans.	2.2 Statistics of Energy and Carbon Emission	70

Appendix V : Sustainable Development Goals (SDGs) Index

To keep the operations of TSC in line with international trends, we refer to the Sustainable Development Goals (SDGs) as corresponding to the company's major theme, goals and policies to have a comprehensive and sustainable business advantages in a rapidly changing environment.

Item	Sustainable Development Goals	Chapter and section	Page
Goal 1	End poverty in all its forms everywhere.	4. Creating Social Value	109
Goal 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture.	3. Leveraging Natural Capital 4. Creating Social Value	90 109
Goal 3	Ensure healthy lives and promote well-being for all at all ages.	4. Creating Social Value	109
Goal 5	Achieve gender equality and empower all women and girls.	5. Taking Care of Taiwan Sugar Corporation Partners	138
Goal 6	Ensure availability and sustainable management of water and sanitation for all.	2. Mitigating Climate Impact	58
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all.	2. Mitigating Climate Impact	58
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	4. Creating Social Value 5. Taking Care of Taiwan Sugar Corporation Partners	109 138
Goal 10	Reduce inequality within and among countries.	1. Stepping Toward Sustainable Governance	10
Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable.	2. Mitigating Climate Impact	58
Goal 12	Ensure sustainable consumption and production patterns.	2. Mitigating Climate Impact 3. Leveraging Natural Capital 4. Creating Social Value	58 90 109
Goal 13	Take urgent action to combat climate change and its impacts.	2. Mitigating Climate Impact	58
Goal 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.	3. Leveraging Natural Capital	90
Goal 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.	1. Stepping Toward Sustainable Governance	10



Appendix VI: Sustainability Accounting Standards Board (SASB) Index

AGRICULTURAL PRODUCTS

Sustainability Disclosure Topics & Accounting Metrics					
TOPIC	CODE	ACCOUNTING METRIC	CATEGORY	RESPONSE	PAGE NUMBER
Greenhouse Gas Emissions	FB-AG-110a.1	Gross global Scope 1 emissions (Metric tonnes (t)CO ₂ e)	Quantitative	The GHG emission of Scope 1 company-wide in 2023 was 93,315.4220 tCO ₂ e	—
	FB-AG-110a.2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Discussion and Analysis	Please see 2.3 Net Zero Emissions Pathway Planning	73
	FB-AG-110a.3	Fleet fuel consumed (Gigajoules, GJ)	Quantitative	The total consumption of diesel and gasoline in Sugar Business Division in 2023 was 48,477.59 GJ	—
		Percentage renewable	Quantitative	In 2023, the vehicles of the Company did not use renewable energy	—
Energy Management	FB-AG-130a.1	Operational energy consumed (Gigajoules, GJ)	Quantitative	The total energy consumption company-wide in 2023 was 1,483,919.99 GJ	—
		Percentage grid electricity (Percentage, %)	Quantitative	The Company's purchased electricity accounted for 64.98% of the overall electricity consumption in 2023	—
		Percentage renewable (Percentage, %)	Quantitative	The Company's bagasse co-generation for self-use and biogas power generation for self-use accounted for 10.11% of the overall electricity consumption in 2023	—
Water Management	FB-AG-140a.1	Total water withdrawn (Thousand cubic meters, m ³)	Quantitative	The total water intake company-wide in 2023 was 10,431,537.54 m ³	—
		Total water consumed (Thousand cubic meters, m ³)	Quantitative	The total water consumption company-wide in 2023 was 8,602,562.5 m ³	—
		The entity shall disclose its water withdrawn in locations with High or Extremely High Baseline Water Stress (Percentage, %)	Quantitative	0%. Water used in the Company in 2023 was all from regions not belonging to highly or very highly water-stressed regions in Taiwan	—
		The entity shall disclose its water consumed in locations with High or Extremely High Baseline Water Stress (Percentage, %)	Quantitative	0%. Water used in the Company in 2023 was all from regions not belonging to highly or very highly water-stressed regions in Taiwan	—
	FB-AG-140a.2	Description of water management risks and discussion of strategies and practices to mitigate those risks	Discussion and Analysis	Please see 2.4.1 Pollution Control	83
	FB-AG-140a.3	Number of incidents of non-compliance associated with water quantity and/or quality permits, standards, and regulations (Number)	Quantitative	In 2023, TSC's Sugar Business Division had 1 violation of water quality permit standards. Please see 1.3.2 Compliance and Information Disclosure for details	50
	FB-AG-250a.1	Global Food Safety Initiative (GFSI) audit (1) non-conformance rate and (2) associated corrective action rate for (a) major and (b) minor non-conformances (Rate)	Quantitative	Xiaogang Factory of the Sugar Business Division has the FSSC 22000 certification. In 2023, a total of 93 items were investigated in the external audit, and there were 2 minor non-conformities, with the failure rate of 2.15%. Improvements have been completed, with the corrective action rate of 100%	—
	FB-AG-250a.2	Percentage of agricultural products sourced from suppliers certified to a Global Food Safety Initiative (GFSI) recognized food safety certification program (Percentage by cost, %)	Quantitative	Please see "List of proportion of each food category that has passed food safety certification or obtained food safety label" in 4.1 Food Safety Management and "List of ratio of suppliers complying with food safety system standards" in 4.3.2 Supplier Management	109 118
Food Safety	FB-AG-250a.3	Number of recalls issued (Number)	Quantitative	0, there was no incident of food recall in 2023	—
		total amount of food product recalled (Metric tons, t)	Quantitative	0, there was no incident of food recall in 2023	—

Sustainability Disclosure Topics & Accounting Metrics					
TOPIC	CODE	ACCOUNTING METRIC	CATEGORY	RESPONSE	PAGE NUMBER
Workforce Health & Safety	FB-AG-320a.1	(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR) for (a) direct employees and (b) seasonal and migrant employees (Rate)	Quantitative	In 2023, the employees of the Company Occupational fatality rate : 0 Recordable occupational injury rate : 0.76 False alarm rate : 7.36 (Ratios calculated on the basis of 1,000,000 working hours)	—
Environmental & Social Impacts of Ingredient Supply Chain	FB-AG-430a.1	Percentage of agricultural products sourced that are certified to a third-party environmental and/or social standard, and percentages by standard (Percentage by cost, %)	Quantitative	Please see 4.3.2 Supplier Management	118
	FB-AG-430a.2	Suppliers' social and environmental responsibility audit (1) non-conformance rate and (2) associated corrective action rate for (a) major and (b) minor non-conformances (Rate)	Quantitative	Please see 4.3.2 Supplier Management	118
	FB-AG-430a.3	Discussion of strategy to manage environmental and social risks arising from contract growing and commodity sourcing	Discussion and Analysis	Please see 4.3 Sustainable Management of the Value Chain	116
GMO Management	FB-AG-430b.1	Discussion of strategies to manage the use of genetically modified organisms (GMOs)	Discussion and Analysis	<ul style="list-style-type: none"> Self-operated farms choose domestic varieties of sugarcane, organic rice, and non-GMO soybeans, which are all non-GMO products. It is clearly stipulated in the raw sugar purchase contract that the raw materials shall not be produced from genetically modified crops (sugarcane, beets). Therefore, the finished sugar does not contain genetically modified ingredients. The soybean procurement standards are "second-grade soybeans of the U.S.," which are mostly genetically modified soybeans. Therefore, the finished soybean salad oil is labeled in accordance with food regulations, stating that "This product does not contain genetically modified ingredients, but is processed from genetically modified soybeans." 	—
Ingredient Sourcing	FB-AG-440a.1	Identification of principal crops and description of risks and opportunities presented by climate change	Discussion and Analysis	Please see 2.1 Task Force on Climate-related Financial Disclosures (TCFD)	61
	FB-AG-440a.2	Percentage of agricultural products sourced from regions with High or Extremely High Baseline Water Stress (Percentage by cost, %)	Quantitative	<ul style="list-style-type: none"> The raw sugar of TSC comes from Thailand, Australia, and Central and South America. Soybeans are mainly produced in North America, but they are purchased through importers, and we only have the information of which port they are exported from, and currently there is no information of where they are grown The sugarcane is self-produced, and not in areas classified as high or extremely high water stress regions 	—

ACTIVITY METRIC			
CODE	ACTIVITY METRIC	CATEGORY	RESPONSE
FB-AG-000.A	Production by principal crop (Metric tonnes, t)	Quantitative	<p>The production plan for 2023 was as follow :</p> <ol style="list-style-type: none"> The annual output of organic rice is planned to be at 800-850 tonnes of wet rice (including contract crops). Depending on the weather and quality, 400 tonnes of packaged organic rice can be supplied to the market every year The annual output of non-GMO soybeans is 39 tonnes of wet soybeans
FB-AG-000.B	Number of processing facilities (Number)	Quantitative	6 agricultural product production factories, including 1 organic rice mill, 2 sugar factories, 1 sugar refinery, 1 special sugar processing factory, and 1 oil factory
FB-AG-000.C	Total land area under active production (Hectares)	Quantitative	5,989.60 hectares, including 88.79 hectares of self-operated organic rice paddies (24 hectares self-cultivation in t Huadong District), and 5,900.81 hectares of self-operated sugarcane farms (3,282.23 hectares under Huwei Sugar Factory and 2,618.58 hectares under Shanhua Sugar Factory)
FB-AG-000.D	Cost of agricultural products sourced externally (Reporting currency)	Quantitative	<p>In 2023, the total cost of external procurement of agricultural products by the Sugar Business Division and the Department of Agribusiness Management amounted to NTD 6,857,564.17, and the items and amounts are as follows :</p> <p>Purchase of organic rice: NTD 15,192.22 thousand Purchase of raw sugar: NTD 5,448,477.05 thousand Purchase of soybeans: NTD 857,280.65 thousand Purchase of crude soybean oil: NTD 533,154.25 thousand Purchase of frozen ginger juice: NTD 3,460.00 thousand</p>

MEAT, POULTRY & DAIRY

Sustainability Disclosure Topics & Accounting Metrics					
TOPIC	CODE	ACCOUNTING METRIC	CATEGORY	RESPONSE	PAGE NUMBER
Greenhouse Gas Emissions	FB-MP-110a.1	Gross global Scope 1 emissions (Metric tonnes (t) CO ₂ e)	Quantitative	The GHG emission of Scope 1 company-wide in 2023 was 93,315.4220 tCO ₂ e	—
	FB-MP-110a.2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Discussion and Analysis	Please see 2.3 Net Zero Emissions Pathway Planning	73
Energy Management	FB-MP-130a.1	Total energy consumed (Gigajoules, GJ)	Quantitative	The total energy consumption company-wide in 2023 was 1,483,919.99 GJ	—
		Percentage grid electricity (Percentage, %)	Quantitative	The Company's purchased electricity accounted for 64.98% of the overall electricity consumption in 2023	—
		Percentage renewable (Percentage, %)	Quantitative	The Company's bagasse co-generation for self-use and biogas power generation for self-use accounted for 10.11% of the overall electricity consumption in 2023	—
Water Management	FB-MP-140a.1	Total water withdrawn (Thousand cubic meters, m ³)	Quantitative	The total water intake company-wide in 2023 was 10,431,537.54 m ³	—
		Total water consumed (Thousand cubic meters, m ³)	Quantitative	The total water consumption company-wide in 2023 was 8,602,562.5 m ³	—
		The entity shall disclose its water withdrawn in locations with High or Extremely High Baseline Water Stress (Percentage, %)	Quantitative	0%. Water used in the Company in 2023 was all from regions not belonging to highly or very highly water-stressed regions in Taiwan	—
		The entity shall disclose its water consumed in locations with High or Extremely High Baseline Water Stress (Percentage, %)	Quantitative	0%. Water used in the Company in 2023 was all from regions not belonging to highly or very highly water-stressed regions in Taiwan	—
	FB-MP-140a.2	Description of water management risks and discussion of strategies and practices to mitigate those risks	Discussion and Analysis	Please see 2.4.1 Pollution Control	83
	FB-MP-140a.3	Number of incidents of non-compliance with water quality permits, standards, and regulations (Number)	Quantitative	In 2023, TSC's Livestock Business Division had 1 violation of water quality permit standards. Please see 1.3.2 Compliance and Information Disclosure for details	50
	Land Use & Ecological Impacts	FB-MP-160a.1	Amount of animal litter and manure generated (Metric tonnes · t)	Quantitative	Pig manure: 3,922.77 tonnes Dead pigs: 1697.84 tonnes
Percentage managed according to a nutrient management plan (Percentage, %)			Quantitative	Not applicable	—
FB-MP-160a.2		Percentage of pasture and grazing land managed to Natural Resources Conservation Service (NRCS) conservation plan criteria (Percentage by hectares, %)	Quantitative	0%. The Livestock Business Division currently has no planning of grazing land	—
FB-MP-160a.3		Animal protein production from concentrated animal feeding operations (CAFOs) (Metric tonnes, t)	Quantitative	0%. The 17 pig farms under the Livestock Business Division are self-owned pastures, and none of them belongs to centralized animal breeding operation	—
Food Safety	FB-MP-250a.1	Global Food Safety Initiative (GFSI) audit (1)non-conformance rate and (2) associated corrective action rate for (a) major and (b) minor non-conformances (Rate)	Quantitative	TSC self-produced meat products do not yet have GFSI certifications such as FSSC 22000	—
	FB-MP-250a.2	Percentage of supplier facilities certified to a Global Food Safety Initiative (GFSI) food safety certification program (Percentage, %)	Quantitative	Please see “List of proportion of each food category that has passed food safety certification or obtained food safety label” in 4.1 Food Safety Management and “List of ratio of suppliers complying with food safety system standards” in 4.3.2 Supplier Management	109 118

Sustainability Disclosure Topics & Accounting Metrics					
TOPIC	CODE	ACCOUNTING METRIC	CATEGORY	RESPONSE	PAGE NUMBER
Food Safety	FB-MP-250a.3	Number of recalls issued (Number)	Quantitative	In 2023, there was a food recall of the processed meat product of TSC's Livestock Business Division. Please see 1.3.2 Compliance and Information Disclosure for details	50
		total weight of products recalled (Metric tonnes, t)	Quantitative	0.19 tonnes	—
	FB-MP-250a.4	Discussion of markets that ban imports of the entity's products	Discussion and Analysis	The meat products of the Company are all sold domestically, export products are coordinated with the MOA's plans and implementation, so there is no market where imports are prohibited.	—
Antibiotic Use in Animal Production	FB-MP-260a.1	Percentage of animal production that receiving (1) medically important antibiotics and (2) not medically important antibiotics, by animal type (Percentage by weight, %)	Quantitative	Not applicable The items, specifications, purposes, uses, dosages, withdrawal period, and precautions for the use of antibiotics used by the Company for the treatment of pigs are all compliant with the regulations stipulated in the Veterinary Drugs Control Act and Animal Industry Act	—
Workforce Health & Safety	FB-MP-320a.1	Total Recordable Incident Rate (TRIR) and (2) fatality rate (Rate)	Quantitative	In 2023, the employees of the Company Occupational fatality rate: 0 Recordable occupational injury rate: 0.76 False alarm rate: 7.36 (Ratios calculated on the basis of 1,000,000 working hours)	—
	FB-MP-320a.2	Description of efforts to assess, monitor, and mitigate acute and chronic respiratory health conditions	Discussion and Analysis	Please see 5.3.3 Employee Health Management	157
Animal Care & Welfare	FB-MP-410a.1	Percentage of pork produced without the use of gestation crates (Percentage by weight, %)	Quantitative	100 %. For detailed information of pig farming of the Company, please see 3.1 Renovation Plan of Modern Livestock Housing	92
	FB-MP-410a.2	Percentage of cage-free shell egg sales (Percentage, %)	Quantitative	TSC does not raise chickens.	—
	FB-MP-410a.3	Percentage of production certified to a third-party animal welfare standard (Percentage by weight, %)	Quantitative	Please see 3.1 Renovation Plan of Modern Livestock Housing	92
Environmental & Social Impacts of Animal Supply Chain	FB-MP-430a.1	Percentage of livestock from suppliers implementing the Natural Resources Conservation Service (NRCS) conservation plan criteria or the equivalent (Percentage by weight, %)	Quantitative	Not applicable	—
	FB-MP-430a.2	Percentage of supplier and contract production facilities verified to meet animal welfare standards (Percentage, %)	Quantitative	Not applicable All the Taisugar meat products are 100% from our self-operated pig farms, and they are all produced and marketed by TSC	—
Animal & Feed Sourcing	FB-MP-440a.1	Percentage of animal feed sourced from regions with High or Extremely High Baseline Water Stress (Percentage by weight, %)	Quantitative	<ul style="list-style-type: none"> There is no relevant information Raw material corn for TSC's animal feed was mainly purchased from the U.S., Brazil, South Africa, and Taiwan in 2023. However, the corns are purchased through importers, and we only have the information of which port they are exported from, and currently there is no information of where they are grown 	—
	FB-MP-440a.2	Percentage of contracts with producers located in regions with High or Extremely High Baseline Water Stress (Percentage by contract value, %)	Quantitative	0% . TSC's meat processing factory is located in Taiwan and not in areas with high or extremely high levels of water stress	—

Sustainability Disclosure Topics & Accounting Metrics					
TOPIC	CODE	ACCOUNTING METRIC	CATEGORY	RESPONSE	PAGE NUMBER
Animal & Feed Sourcing	FB-MP-440a.3	Discussion of strategy to manage opportunities and risks of feed sourcing and livestock supply presented by climate change	Discussion and Analysis	<ul style="list-style-type: none"> When there is shortage of the raw material of the pig feed, corn, the feed formula will be revised to reduce the amount of corn and use alternative raw materials The Company get the international and domestic production and prices of corn and the factors affecting the production and prices from the international futures market analysis and the FoodChina.com. Then depending on the demand for corn in the business division, the raw material procurement and acceptance are conducted in accordance with the regulations in the Government Procurement Act and the Company's internal control operation points concerning the "key points of material procurement, acceptance, and payment," and the imported raw materials are purchased flexibly in batches 	—

ACTIVITY METRIC			
CODE	ACTIVITY METRIC	CATEGORY	RESPONSE
FB-MP-000.A	Number of processing and manufacturing facilities (Number)	Quantitative	2 manufacturing facilities including 1 fresh pork factory and 1 processed meat factory
FB-MP-000.B	Animal protein production, by category; percentage outsourced (Various, Percentage, %)	Quantitative	In 2023, the total number of hogs produced reached 168,473, and the production of pork products reached 1,073 tonnes. The pork is all self-produced by TSC without outsourcing

PROCESSED FOODS

Sustainability Disclosure Topics & Accounting Metrics					
TOPIC	CODE	ACCOUNTING METRIC	CATEGORY	RESPONSE	PAGE NUMBER
Energy Management	FB-PF-130a.1	Total energy consumed (Gigajoules, GJ)	Quantitative	The total energy consumption company-wide in 2023 was 1,483,919.99 GJ	—
		Percentage grid electricity (Percentage, %)	Quantitative	The Company's purchased electricity accounted for 64.98% of the overall electricity consumption in 2023	—
		Percentage renewable (Percentage, %)	Quantitative	The Company's bagasse co-generation for self-use and biogas power generation for self-use accounted for 10.11% of the overall electricity consumption in 2023	—
Water Management	FB-PF-140a.1	Total water withdrawn (Thousand cubic meters, m ³)	Quantitative	The total water intake company-wide in 2023 was 10,431,537.54 m ³	—
		Total water consumed (Thousand cubic meters, m ³)	Quantitative	The total water consumption company-wide in 2023 was 8,602,562.5 m ³	—
		The entity shall disclose its water withdrawn in locations with High or Extremely High Baseline Water Stress (Percentage, %)	Quantitative	0%. Water used in the Company in 2023 was all from regions not belonging to highly or very highly water-stressed regions in Taiwan	—
		The entity shall disclose its water consumed in locations with High or Extremely High Baseline Water Stress (Percentage, %)	Quantitative	0%. Water used in the Company in 2023 was all from regions not belonging to highly or very highly water-stressed regions in Taiwan	—
Water Management	FB-PF-140a.2	Number of incidents of non-compliance associated with water quantity and/or quantity permits, standards, and regulations (Number)	Quantitative	0 incident. In 2023, there was no incident in relation to major violation of water quality related laws and regulations	—
	FB-PF-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	Discussion and Analysis	Please see 2.4.1 Pollution Control	83

Sustainability Disclosure Topics & Accounting Metrics					
TOPIC	CODE	ACCOUNTING METRIC	CATEGORY	RESPONSE	PAGE NUMBER
Food Safety	FB-PF-250a.1	Global Food Safety Initiative (GFSI) audit (1) non-conformance rate and (2) associated corrective action rate for (a) major and (b) minor non-conformance (Rate)	Quantitative	<ul style="list-style-type: none"> The FSSC 22000 and BRC certification of processed foods are obtained from the OEM. It is only known that certification has been obtained, but detailed information such as specific discrepancies in primary and secondary audit items cannot be obtained TSC self-produced meat products do not yet have GFSI certifications such as FSSC 22000 	—
	FB-PF-250a.2	Percentage of ingredients sourced from Tier 1 supplier facilities certified to a Global Food Safety Initiative (GFSI) recognized food safety certification program (Percentage by cost, %)	Quantitative	Please see “List of proportion of each food category that has passed food safety certification or obtained food safety label” in 4.1 Food Safety Management and “List of ratio of suppliers complying with food safety system standards” in 4.3.2 Supplier Management	109 118
	FB-PF-250a.3	Total number of notices of food safety violation received (Number)	Quantitative	In 2023, there was a food recall of the processed meat product of TSC’s Livestock Business Division. Please see 1.3.2 Compliance and Information Disclosure for details	50
		Percentage corrected (Percentage, %)	Quantitative	100%. For details on this matter, please see 1.3.2 Compliance and Information Disclosure	50
	FB-PF-250a.4	Number of recalls issued (Number)	Quantitative	In 2023, there was a food recall of the processed meat product of TSC’s Livestock Business Division. Please see 1.3.2 Compliance and Information Disclosure for details	50
		total amount of food products recalled (Metric tonnes, t)	Quantitative	0.19 tonnes	—
Health & Nutrition	FB-PF-260a.1	Revenue from products labeled and/or marketed to promote health and nutrition attributes (Reporting currency)	Quantitative	The total sales of health food and functional drinks totaled NTD 177,981 thousand in 2023	—
	FB-PF-260a.2	Discussion of the process to identify and manage products and ingredients related to nutritional and health concerns among consumers	Discussion and Analysis	Please see 4.2 Developing High-quality and Healthy Foods	112
Product Labeling & Marketing		Percentage of advertising impressions made on children (Percentage, %)	Quantitative	0 %. In 2023, the Company’s advertising appeal was not targeted at children	—
	FB-PF-270a.1	Percentage of advertising impressions made on children promoting products that meet dietary guidelines (Percentage, %)	Quantitative	0 %. In 2023, the Company’s advertising appeal was not targeted at children	—
	FB-PF-270a.2	Revenue from products labeled as containing genetically modified organisms (GMOs) (Reporting currency)	Quantitative	NTD 0. The Company’s soybean salad oil and soybean lecithin are labeled as “The raw material is (included) genetically modified soybeans, but the product does not contain genetically modified ingredients” in accordance with laws and regulations	—
		Revenue from products labeled as containing genetically modified non-GMO (GMOs) (Reporting currency)	Quantitative	TSC’s sales of non-GMO domestic soybean in 2023 was NTD 6,712 thousand	—
	FB-PF-270a.3	Number of incidents of non-compliance with industry or regulatory labeling and/or marketing codes (Number)	Quantitative	In 2023, there was one incident of violation related to industry or regulatory labeling and marketing standards of the functional drink (Garlic Essence) of the Biotechnology Business Division. See 1.3.2 Compliance and Information Disclosure for details of this incident	—
	FB-PF-270a.4	Total amount of monetary losses as a result of legal proceedings associated with labeling and/or marketing practices (Reporting currency)	Quantitative	NTD 0. In 2023, there was no financial and pecuniary losses caused by relevant legal proceedings at TSC	—

Sustainability Disclosure Topics & Accounting Metrics					
TOPIC	CODE	ACCOUNTING METRIC	CATEGORY	RESPONSE	PAGE NUMBER
Packaging Lifecycle Management	FB-PF-410a.1	Total weight of packaging (Metric tonnes, t)	Quantitative	In 2023, the total weight of the packaging materials used by the Company's meat processing plant and the Biotechnology Business Division totaled 1,310.82 tonnes	—
		Percentage made from recycled and/or renewable materials (Percentage, %)	Quantitative	In 2023, the paper packaging materials (163.26 tonnes) used by the Company's meat processing plant and the Biotechnology Business Division accounted for 12.45% of the overall packaging materials in 2023	—
		Percentage that is recyclable, reusable, and/or compostable (Percentage, %)	Quantitative	In 2023, the paper, metal, and glass packaging materials (229.65 tonnes) used by the Company's meat processing plant and the Biotechnology Business Division accounted for 23.03% of the overall packaging materials in 2023	—
	FB-PF-410a.2	Discussion of strategies to reduce the environmental impact of packaging throughout its lifecycle	Discussion and Analysis	Please see 2.4.2 Waste Management	86
Environmental & Social Impacts of Ingredient Supply Chain	FB-PF-430a.1	Percentage of food ingredients sourced that are certified to third-party environmental and/or social standards, and percentages by standard (Percentage by cost, %)	Quantitative	Please see 4.3.2 Supplier Management	118
	FB-PF-430a.2	Suppliers' social and environmental responsibility audit (1) non-conformance rate and (2) associated corrective action rate for (a) major and (b) minor non-conformances (Rate)	Quantitative	Please see 4.3.2 Supplier Management	118
Ingredient Sourcing	FB-PF-440a.1	Percentage of food ingredients sourced from regions with High or Extremely High Baseline Water Stress (Percentage by cost, %)	Quantitative	0 %. In 2023, the food raw materials procured by the Company's meat processing plant, the Marketing Business Division, and the Biotechnology Business Division did not come from highly or very highly water-stressed regions	—
	FB-PF-440a.2	List of priority food ingredients and discussion of sourcing risks due to environmental and social considerations	Discussion and Analysis	<ul style="list-style-type: none"> The priority food raw material for processed meat is pork, and the pork used is self-produced by TSC. Therefore, there is no procurement risk caused by environmental or social factors In 2023, the priority food raw material Biotechnology Business Division purchased was "clam extract." This raw material is from domestic (Hualien) suppliers. There are currently no procurement risks arising from environmental or social factors 	—
ACTIVITY METRIC					
CODE	ACTIVITY METRIC	CATEGORY	RESPONSE		
FB-PF-000.A	Weight of products sold (Metric tonnes, t)	Quantitative	In 2023, the total weight of processed meat products sold was 433 tonnes; the weight of health care products totaled 245.25 tonnes		
FB-PF-000.B	Number of production facilities (Number)	Quantitative	2 self-owned food processing factories (including 1 biotechnology factory and 1 meat processing factory)		

Publishing Schedule of the Report

This is the 15th issuance of a non-financial report by Taiwan Sugar Corporation, with its release frequency aligned with the financial reports. Taiwan Sugar Corporation annually publishes its Sustainability Report, and this Report is also disclosed to the public in the Corporate Sustainable Development Area on our official website.

- ▶ Previous edition: June, 2023
- ▶ Current edition: July, 2024
- ▶ Next edition: Scheduled in August, 2025



Contact Information

You can download the complete Sustainability Report in the Corporate Sustainability Area on TSC's official website. Please contact us for any question or suggestion for this ESG Report. Your opinions are the driving force for our progress. We look forward to your valuable suggestions to enable our next Sustainability Report that is in line with the needs of our stakeholders, providing the information all the stakeholders want to know. Here is our contact information :



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