

2020

SUSTAINABILITY  
REPORT



Southern Taiwan Science Park Bureau,  
Ministry of Science and Technology



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# Abstract

At the major site of strategic importance for technology, Southern Taiwan Science Park Bureau (STSPB) is dedicated to perfecting the industrial clusters in the park, enhancing the innovation and R&D momentum for park manufacturers and attracting manufacturers to set up factories. To achieve the goal of sustainable development, STSP Bureau actively assists with industrial innovation and transformation. With the advantages of industrial clusters, spill-over effect, advanced technology and concentration of talents and by connecting accelerators such as TransMedx and TAIRA with competitive industries and through forums on innovative technology or on innovation and entrepreneurship and industry or industry-government-university matching making meetings, we actively promote cross-sector collaboration among the industry, government, academia and research circles to stimulate new momentum for industrial R&D and seize a place in the market of emerging technology.

This Report is the 9<sup>th</sup> Corporate Sustainability Report published by the Bureau, disclosing information on three major aspects of ESG (Environmental, Social and Corporate Governance) incorporated with the administrative goals of STSP Bureau, corresponding to 15 of the SDGs. In addition, with the identification of 10 material topics, the implementation performance of STSP Bureau is fully disclosed in this Report.

## ■ Deployment Planning of Epidemic Prevention to Ensure the Safety of the Park

In 2020 year, The epidemic of COVID-19 has affected the global situation and trend. STSP Bureau has established an Emergency Response Team (ERT) to activate the notification process for infectious disease control, implement control measures, strengthen environmental cleaning, and assist park manufacturers with epidemic prevention & preparation and continuous operation planning. In addition, the Epidemic Information Section is set up on our official website to provide Epidemic Prevention Announcements, aiming at going through the storm of the epidemic together.



**Southern Taiwan Science Park Bureau,**  
**Ministry of Science and Technology**



## ■ Continuing the Optimization of the Environment, Respecting the Value of “Production, Living, Ecology and Life”

The Bureau has been ceaselessly working on environmental protection and promoting measures for “stable supply of water and electricity”, “friendly public service facilities”, and “accessible transportation” to handle public construction and facilities maintenance in the park when manufacturers continue to enter and operate here. Meanwhile, we are also promoting climate change adaptation works and actively providing manufacturers guidance to increase the efficiency of resources use. In 2020, the park manufacturers receiving guidance for water and energy conservation totally reduced 48,738.8 tonnes of CO<sub>2</sub>e. The Bureau makes regular environmental monitoring and maintenance of the ecology of the park to ensure the sustainable development of STSP.

## ■ Strengthening the Industrial Physique and Expanding Industrial Clusters

STSP Bureau has provided complete life functions in the park area, constructed complete infrastructure and combined the smart park technologies and network, and strengthened a high-quality employment environment in accordance with the Industrial Safety White Papers for the implementation of a smart, innovative and healthy STSP. The Bureau regularly organizes late-spring art events, ball games and neighborly activities and has invited the professional badminton player, Tai Tzu-Ying for the third time as the spokesperson to encourage the employees in the park to maintain a balance between work and life, create a living environment with comfort and cultural atmosphere.

## ■ Stabilizing Park Resources to Ensure Sustainable Operation

STSP serves as the regional innovation hub, linking the energy of local industry-academia-research-medical clusters and introducing various innovative R&D businesses into the park. In 2020, the annual turnover amounted to NTD 847.731 billion, a 14.06% increase compared with 2019. The integrated circuits, computer and peripheral equipment and biotechnology industries among the 6 major industries in the park have significant growth. In addition, 22 manufacturers (including 13 start-up companies) were introduced. The Bureau provides high-quality investment environment to attract manufacturers and talents. The number of park employees exceeds 80,000, creating economic output value and employment opportunities, making the park a practice field for the next generation of innovative industries, accelerating the innovation and transformation of the science park.

# Message from the Director-General

## Inherit the Past and Usher in the Future- Continuous Promotion of Future Industrial Development



This is the 25<sup>th</sup> year after the establishment of Southern Taiwan Science Park (STSP). STSP started from a place full of sugarcane fields to one holding strategic importance in the world. We have so many people to thank for along the way, including all the park manufacturers, park employees, public utility service providers and the staff in Southern Taiwan Science Park Bureau (STSP Bureau). It is the joint effort of these more than 80,000 partners that helped make it happen. In the future, STSP will drive the transformation of the local industries from a global perspective.

Under the administrative principles of “Empathy, Accountability, and Common Good”, STSP has actively participated in international exhibitions in economic aspect, established a reclaimed water plant to cope with the problem of water shortage in the environmental aspect, and continued to organize various events like STSP Charity Month, visits and exchanges, ball games and others in social aspects, dedicated to generating kinetic energy for the development of the park and creating a friendly environment at STSP.

Looking ahead to the international trends, there are three major goals to work on for the sustainable development of STSP.

Director-General

Chen-Kang Su 蘇振綱

## 1. “Generating the kinetic energy in the park”:

The solid foundation of the existing optoelectronics, semi-conductors, and biomedicine industries in STSP enables the park manufacturers to hold a place in AI, 5G, new generation of E-vehicles and other emerging industries, creating a complete industrial cluster at STSP.

## 2. “Lean and high-quality services”:

Including the stable supply of talents, water and electricity and the improvement of accessibility and living functions.

## 3. “Creating a friendly environment”:

The park manufacturers are devoted to the construction of buildings with Green Building Mark of Diamond Class, promoting an environment for green production, and optimizing the use of resources and energy, striving to enable harmonious coexistence between technology and environmental sustainability, creating a friendly workplace for the park employees to work at ease and enabling co-existence and co-prosperity between STSP and the environment.

In the future, the development of STSP will be closely tied with “Taiwan's 2030 Science&Technology Vision”. We will continue to attract investment from major manufacturers, introduce technologies from academic and research institutions to deepen the R&D capacity of the park, expand the effect of industrial clusters and promote Taiwan's industrial transformation and innovative R&D from a global perspective, creating a green science park with both technology and environmental sustainability.

# Editing Guidelines

This Report is the ninth Sustainability Report published by Southern Taiwan Science Park Bureau, Ministry of Science and Technology (hereinafter referred to as Southern Taiwan Science Park Bureau, STSP Bureau, the Bureau, or We). Since its development in early stages, STSP Bureau has been taking into account economic growth, environmental protection and cultural preservation to avoid or mitigate the impacts of development activities on the environment, supply chain and personnel as well as maintain the quality of the environment and life, constructing the science park into an international ecological park in the most environmentally friendly way. The 2020 Sustainability Report of Southern Taiwan Science Park Bureau, Ministry of Science and Technology shares the achievements the Bureau has accomplished in terms of communication and governance, fostering innovation and start-ups, serving the park and conducting local cultivation while stepping toward the sustainable operation of the science park.

## ● □ | Scope of the Report and Basis of Calculation

The reporting scope of this Report covers Southern Taiwan Science Park Bureau and the land under its jurisdiction (Tainan Science Park and Kaohsiung Science Park). The reporting period was between January 1 and December 31, 2020. The Industrial Safety Section of Environment & Labor Affairs Division collected the information concerning the overview of the operation and the analysis as well as the evaluation of the Bureau's performance and results in environmental management and social and economic aspects. All test data required by law was tested or verified by an impartial third party, and all numbers were presented in the most common way of description. Exact figures were given in this Report. All the statistical data disclosed in this Report came from the internal statistics and investigation results. Compared with the 2019 Sustainability Report, the re-editing of some data will be noted in the text of this 2020 Report.

## ● □ | Reporting Principles and Guidelines

The content framework of this Report was complied with the core option criteria for the GRI (Global Reporting Initiative) Standards and the AA1000 AccountAbility Principles (AA1000AP). The priorities of the sustainability considerations of the stakeholders' concern were identified through the substantive analysis model for the analysis of the strategic objectives of sustainable development, environmental protection issues, governance, labor rights in the park and Innovation and Entrepreneurship to be disclosed in this Report, and the guidelines listed served as the compilation basis while the following relevant guidelines and initiatives were referred to.

- GRI (Global Reporting Initiative) Sustainability Reporting Standards
- AA1000 AccountAbility Principles
- Sustainable Development Goals (SDGs)
- ISO 26000 Guidance on Social Responsibility

- The United Nations Global Compact
- Taiwan's Sustainable Development Goals

## ● □ | Verification of the Report

To increase the impartiality of this Report, we have entrusted British Standards Institution (BSI) to conduct the verification of this Report based on GRI Standards and type 1 moderate level assurance of AA1000 AS (Assurance Standard). It is verified by BSI that this Report complied with the framework and standard assurance level mentioned above, which improves the transparency and reliability of the organizational report. The Assurance Statement is in Appendix I and the GRI Content Index in Appendix II.

## ● □ | Publication of Report

STSP Bureau schedules to issue its Corporate Sustainability Report every year, and the content of the Report is simultaneously disclosed on its official website.

Current edition: Issued in August, 2021.

Previous edition: Issued in December, 2020.

## ● □ | Contact Information

It is hoped that the endeavor and achievement of STSP Bureau in the promotion of the park development can be better understood by the general public and our stakeholders through this Report. Feedback from all walks of life will serve as the basis for our continuous improvement. Please contact us for any questions or suggestions of this Report.

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STSP Bureau CSR Website



# 2020 Awards of STSP



## ★ Award ★

Awarded the 2020 Unit of Merit for Environmental Protection of Self-management of Diesel Vehicle Exhaust by the Environmental Protection Bureau of Tainan City



## ★ Award ★

The Joint Research Center for Green Energy Technologies at Shalun Smart Green Energy was honored with the Excellence Award of the 1st-Grade Building Engineering Category in the 20th Public Construction Golden Quality Awards by the Public Construction Commission.



## ★ Award ★

Ranked "Excellent" in the institutional performance evaluation of labor inspection in 2020





# ESG Performance and Goals

## Environment (E)



2020 Administrative Goals	Continuing the Optimization of the Environment, Respecting the Value of “Production, Living, Ecology and Life”	
2020 Material Topics	<b>2020 Implementation Performance</b>	
Water	<ul style="list-style-type: none"> <li>The quality of the discharged water was <b>100%</b> in line with the Effluent Standards.</li> <li>Counseling of water conservation for <b>5 park manufacturers</b> was completed, with a total water-saving potential of <b>42.308 million tons/year</b>.</li> <li>The total amount of water recovered in the whole park area was about <b>351,905 tons</b>.</li> </ul>	
	Energy	<ul style="list-style-type: none"> <li>Completed the counseling of energy conservation for <b>6 park manufacturers</b>, with a total energy-saving potential of <b>83.28 million kWh/year</b>.</li> <li>The solar power generation system helped reduce <b>35,450 tons</b> of carbon dioxide emissions.</li> <li>The e-shuttle bus averagely reduced carbon dioxide emissions by <b>503.21 kg</b> per day.</li> </ul>
		Waste
Emissions	<ul style="list-style-type: none"> <li>Regularly check various pollutants in accordance with the Air Pollution Control Act, and the emissions are all lower than the quota allocation of the EIA.</li> <li>Promoted the Self-management Program of Diesel Vehicle Exhaust, and a total (cumulative) of <b>1,848 vehicles</b> obtained the exhaust emission mark.</li> </ul>	

## Social (S)



2020 Administrative Goals	Strengthening the Industrial Physique and Expanding Industrial Clusters
2020 Material Topics	<b>2020 Implementation Performance</b>
Training and Education	<ul style="list-style-type: none"> <li>The total training hours of the STSP Bureau staff were <b>5,331</b> hours.</li> <li>1 person was granted the on-the-job subsidy, and the maximum amount of subsidy is <b>NTD 20,000</b> per person per semester.</li> </ul>
	Occupational Health and Safety in the Park

## Governance (G)



2020 Administrative Goals	Stabilizing Park Resources to Ensure Sustainable Operation
2020 Material Topics	<b>2020 Implementation Performance</b>
Anti-corruption	<ul style="list-style-type: none"> <li>There were no high-risk events or personnel listed in 2020.</li> <li>Organized anti-corruption advocacy activities and seminars, with a total of <b>410 participants</b>.</li> </ul>
Environmental Compliance	<ul style="list-style-type: none"> <li>Complied with environmental laws and regulations, and there were no major environmental pollution incidents.</li> </ul>
Socioeconomic Compliance	<ul style="list-style-type: none"> <li>No occurrence of incidents concerning corruption, violation of laws, or political donations.</li> </ul>
Investment Promotion	<ul style="list-style-type: none"> <li>The cumulative validly approved manufacturers reached <b>240</b>.</li> <li><b>22 manufactures</b> (including 13 start-ups) were introduced to the park, with an investment amount of <b>NTD 278.8 billion</b>.</li> <li>The annual turnover amounted to <b>NTD 847,731 billion</b>, an increase of <b>14.06%</b> compared with 2019.</li> </ul>

To prevent the spread of the Severe Pneumonia with Novel Pathogens (COVID-19, also referred to as the new coronavirus), Taiwan Centers for Disease Control (CDC) of the Ministry of Health and Welfare established the Central Epidemic Command Center (CECC) on January 20, 2020. Since Southern Taiwan Science Park Bureau is the country's critical infrastructure protection target, the Bureau started to launch the infectious disease reporting process immediately.

From the previous experience of the SARS epidemic in 2002 and the H1N1 flu in 2007, the Bureau experienced the harm the biological pathogens caused. To ensure sustainable production, we have established the Business Continuity Plan (BCP), which includes the preparation of epidemic materials, labor health management, and management of employees on business trips and having been to epidemic areas. In the fight against the epidemic, all the anti-epidemic policies are based on the information issued by the CDC. The Bureau plays the role to provide the information and integrate resources necessary for the manufacturers.

In the face of this epidemic of the Severe Pneumonia with Novel Pathogens, the Bureau has followed the government policy and cooperated with the existing anti-epidemic measures and response procedures and gradually strengthened the contingency measures as the epidemic progressed. To cope with the current epidemic situation, the measures we take are as follows.



Novel coronavirus pneumonia



STSP official website- Severe Pneumonia with Novel Pathogens Section



Severe Pneumonia with Novel Pathogens Section

### 1. Establishment of the response team and initial advocacy

- (1) Convened various anti-epidemic meetings and established a response team to conduct anti-epidemic work.
- (2) On January 31, we organized an anti-epidemic advocacy on the new coronavirus. Director Chien-Yuan Huang of Tainan Science-based Industrial Park Clinic explained the epidemic situation and also provided park business units with health education materials related to COVID-19 for their reference.

### 2. Building the webpage of a platform for epidemic prevention

- (1) The Severe Pneumonia with Novel Pathogens Section was set up on the official website of STSP to actively promote epidemic prevention information. Contents are updated in accordance with the latest information released by CDC on a daily basis.
- (2) Online epidemic reporting function has been established on STSP's Disaster Prevention Platform, and the statistical data include suspected cases (fever, 2-week self-health management), confirmed cases, receiving treatment and recuperating cases, hospitalized cases and recovered cases.

### 3. Management of the Bureau and park manufacturers

- (1) The public areas of the Bureau's Administration Building, facilities, dorms were all cleaned and disinfected. Epidemic prevention notices were posted. In addition, anti-epidemic materials, including infrared thermometers, masks, 75 Ethyl Alcohol, and hand sanitizer have been prepared.
- (2) Established the online inventory taking function for materials to understand whether the anti-epidemic materials in the park (such as masks, disinfection and cleaning supplies, temperature measurement devices) us enough. When the materials are not enough, it will be reported.
- (3) Park manufacturers are asked to log on the Earthquake Early Warning and Smart Disaster Prevention System every day to fill in the epidemic prevention situation and the analysis of short- medium- and long-term impacts and the Business Continuity Planning (BCP) is also set up to effectively grasp the changes in the epidemic situation, serving as important reference for the Bureau to respond.



In addition to the stringent countermeasures taken against the epidemic, this year start-ups under the guidance of the TAIRA (Taiwan AI Robotics Accelerator) also developed a number of achievements in the fight against the epidemic.

### A. Personal Positioning Trackers for those undergoing home quarantine

Spatial Topology Technology developed a COVID-19 Home Isolation Personal Positioning Tracker. By using sensing equipment such as the optical lens, LiDAR, and ultrasonic, coupled with the rapid and accurate indoor positioning computing system and combined with the world's smallest cloud wireless positioning device and iWEECARE's Temp Pal to remotely monitor the body temperature of those under home isolation. Through this system, a body temperature monitoring system can be set up in the residence of the quarantined to help people with the wearing of the Temp Pal. The automatic reporting function can reduce the epidemic prevention personnel's pressure. Besides, through the indoor positioning technology, whether the quarantined people are out can be remotely observed, reducing the number of physical visits and inspections. In addition, the Temp Pal can continuously measure the body temperature and issue a fever warning, enabling the users to better understand their health conditions and to contact medical help at the earliest time possible. This system has been successfully piloted in the plant of Might Electronic, which could effectively and automatically report the positioning of the staff. The application of the system can be expanded in the future to assist the government in the grasping of the whereabouts of those who are under quarantine.



### B. Smart Disinfectant Vending Machine

Yallvend Co., Ltd developed the Smart Disinfectant Vending Machine for the sale of Disinfectant by using digital identity verification technology to assist with the anti-epidemic operations. The Bureau set one Smart Disinfectant Vending Machine each at Park 17 Mall and at the lobby on the 1st floor of the single dormitory in Kaohsiung Park and held a press conference on March 5 to put into formal use. A total of 500 bottles of isopropanol disinfectant were distributed in the first 2 days, attracting a lot of people to come to experience the vending machine. This technology greatly simplifies the manual verification of documents and even helps reduce the risk of group infection. Smart vending machines will serve as daily sales points in STSP, and the online payment functions are also provided, making shopping in the science park even more convenient.

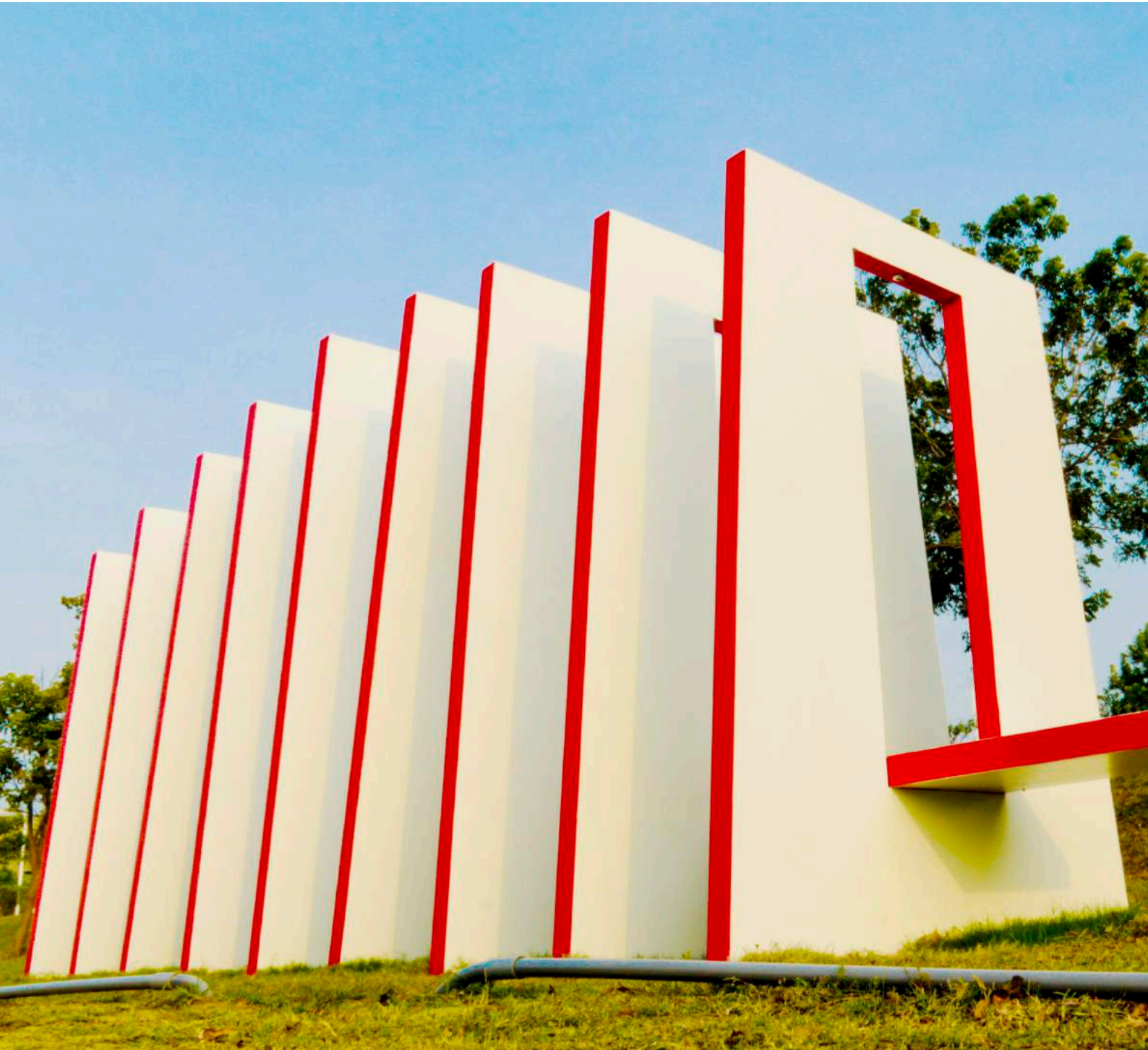
In the face of the epidemic, the Bureau has constantly considering ways to provide a safer environment in the science park. Through the accelerator program of Taiwan AI x Robotics Accelerator (TAIRA), the start-ups receiving the guidance have worked together to contribute to the epidemic prevention work, turning the crisis into a turning point.



# 1

Chapter

## Stepping Toward Sustainability

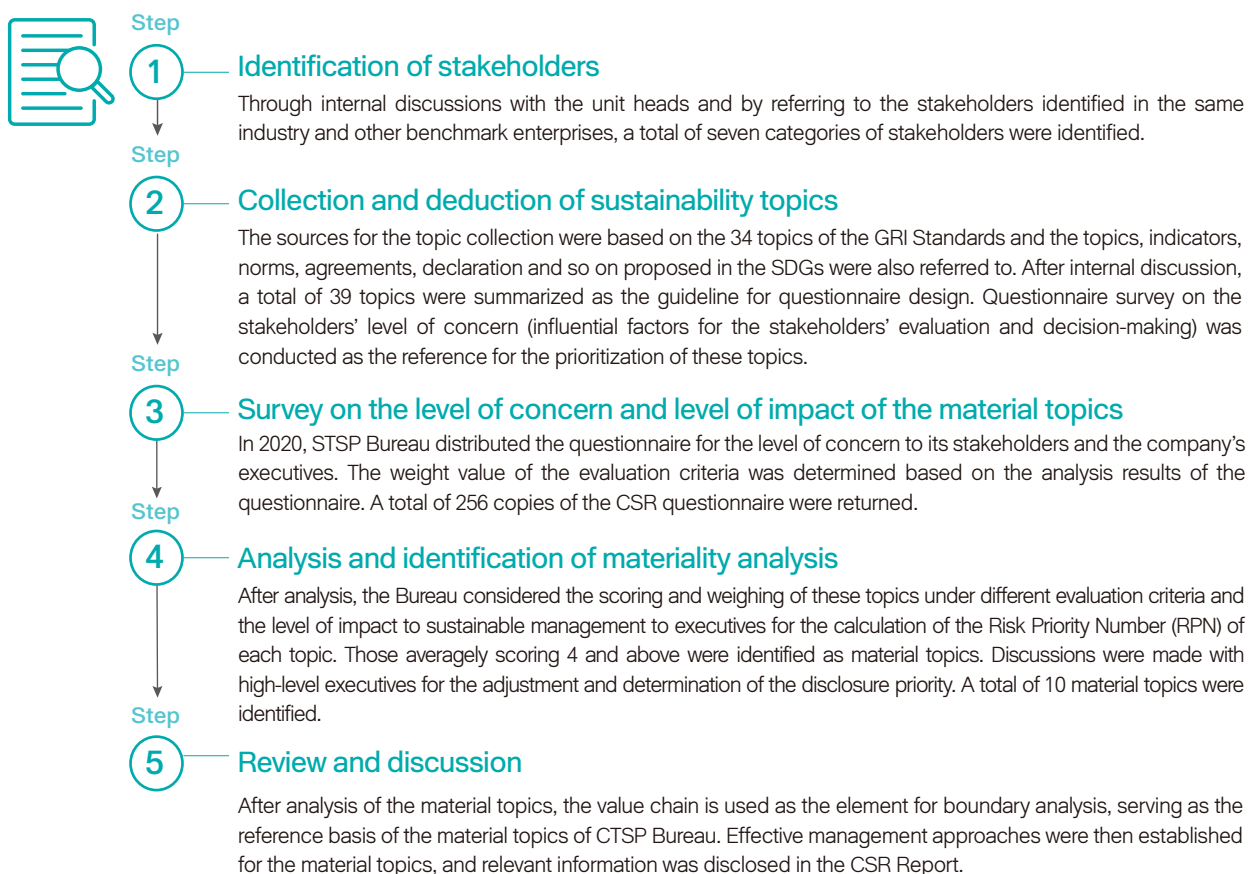


# 1. Stepping Toward Sustainability

## 1.1 Stakeholders and Identification Process of the Material Topics

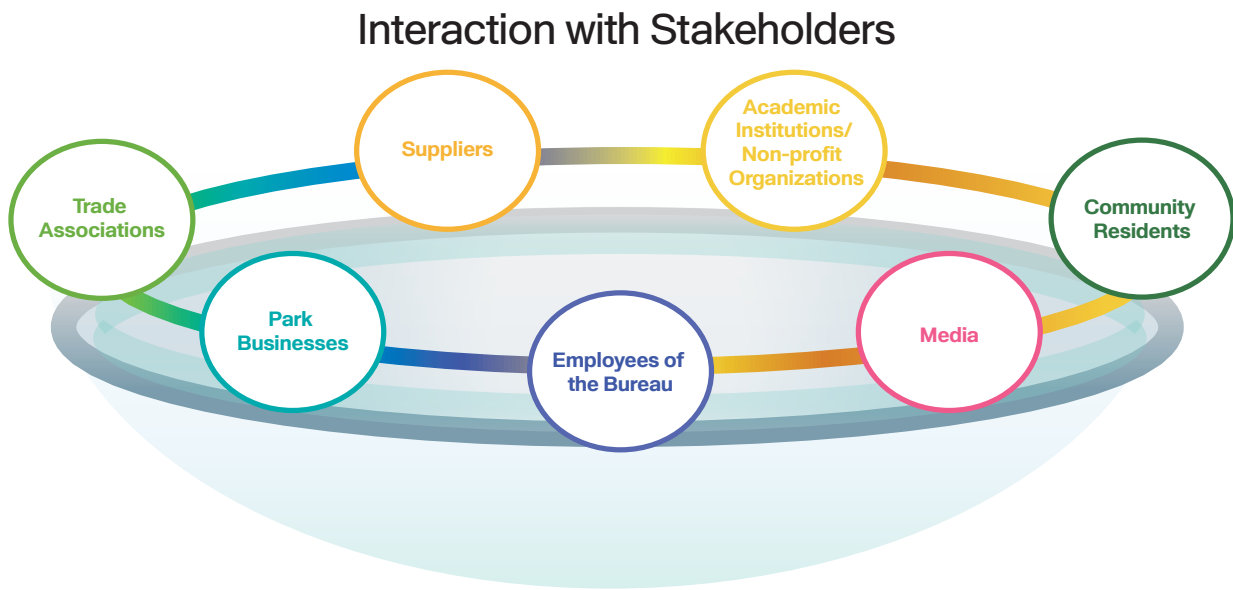
To implement sustainable operations and to promise the determination of value creation for our stakeholders, the Bureau has established a complete mechanism for sustainable management that echoes the 17 Sustainable Development Goals (SDGs) to create the greatest benefit of sustainability for all our stakeholders. STSP Bureau continues to communicate with the stakeholders and grasps the sustainability issues of concern. Through internal discussions with the unit heads and by referring to the stakeholders identified in the same industry and other benchmark enterprises, a total of seven categories of stakeholders are identified based on the AA1000 SES (Stakeholder Engagement Standards), including Employees of the Bureau, Park Businesses, Trade Associations, Community Residents, Academic Institutions/Non-profit Organizations, Suppliers and Media.

Substantive analysis was introduced in the compilation of this Sustainability Report and the issues of the stakeholders' concern were identified through a systematic analysis model, serving as the reference basis of information disclosure of this Report for effective communication with all stakeholders. Analysis of the material topics of this report was divided into the following five steps.



## 1.2 Interaction with Stakeholders

STSP Bureau's 7 major stakeholders include the employees of the Bureau, Park Businesses, Trade Associations, Community Residents, Academic Institutions/Non-profit Organizations, Suppliers and Media. Corresponding and smooth communication channels and platforms are established in accordance with the attributes and needs of the stakeholders to understand their needs and expectations of the development of Southern Taiwan Science Park so as to plan the sustainability policy for the whole science park.



Employees of the Bureau	Issues of Concern	① Labor Management Relations in the Park ② Employment and Labor Relations ③ Level of Wage ④ Occupational Health and Safety in the Park		
	Significance to the STSP Bureau	It refers to all the official staff in the STSP Bureau. With these employees, the Bureau is then able to handle various businesses. Therefore, the priority of the Bureau is to understand their needs.		
	Method of Engagement		Frequency	Corresponding Measures
	CSR questionnaire, annual satisfaction survey, annual report		Annually	See the chapters for details. 3. A Happy Workplace 4. Inclusion in the Park
	Monthly report		Monthly	
Director-General's mailbox, Employee opinion survey		Immediately		

Park Businesses	Issues of Concern	① Occupational Health and Safety in the Park ② Safe Working Environment ③ Level of Wage ④ Anti-corruption		
	Significance to the STSP Bureau	The Park businesses are an important factor for the Bureau to exist. All the services the Bureau provides have to refer to the opinions of these park businesses for the formulation of the policy guidelines.		
	Method of Engagement		Frequency	Corresponding Measures
	CSR questionnaire, annual satisfaction survey		Annually	See the chapters for details. 2. Integrity and Transparency 3. A Happy Workplace 4. Inclusion in the Park
	Director-General's mailbox, Official Website of the Bureau, grievance channels		Immediately	
Through auditing and counseling activities, labor training, and the nanny system		Immediately		



Trade Associations	Issues of Concern	① Employee Diversity and Equal Opportunity ② Industrial Upgrading ③ Level of Wage ④ Infrastructure in the Park		
	Significance to the STSP Bureau	The Allied Association for Science Park Industries is the bridge of communication between the STSP Bureau and various industries. Listening to the voice of the trade associations enable the Bureau to better understand the demands of the grassroots laborers and to better protect labor rights.		
	Method of Engagement		Frequency	Corresponding Measures
	CSR questionnaire		Annually	See the chapters for details. 3. A Happy Workplace
	Director-General's mailbox, official documents, regular meeting of the trade associations, organization of activities		Immediately	4. Inclusion in the Park 5. Advances of Startups

Suppliers	Issues of Concern	① Investment Promotion ② Infrastructure in the Park ③ Green Emissions ④ Circular Economy		
	Significance to the STSP Bureau	STSP Bureau's suppliers are divided into three categories, Financial, Engineering and Labor Suppliers. To enable smooth completion of various businesses and construction projects, the communication with these suppliers is extremely important.		
	Method of Engagement		Frequency	Corresponding Measures
	CSR questionnaire		Annually	See the chapters for details.
	Director-General's mailbox, Official Website of the Bureau		Immediately	4. Inclusion in the Park 5. Advances of Startups
Audit counseling, investment service mechanism		Immediately	6. Environmental Friendliness	

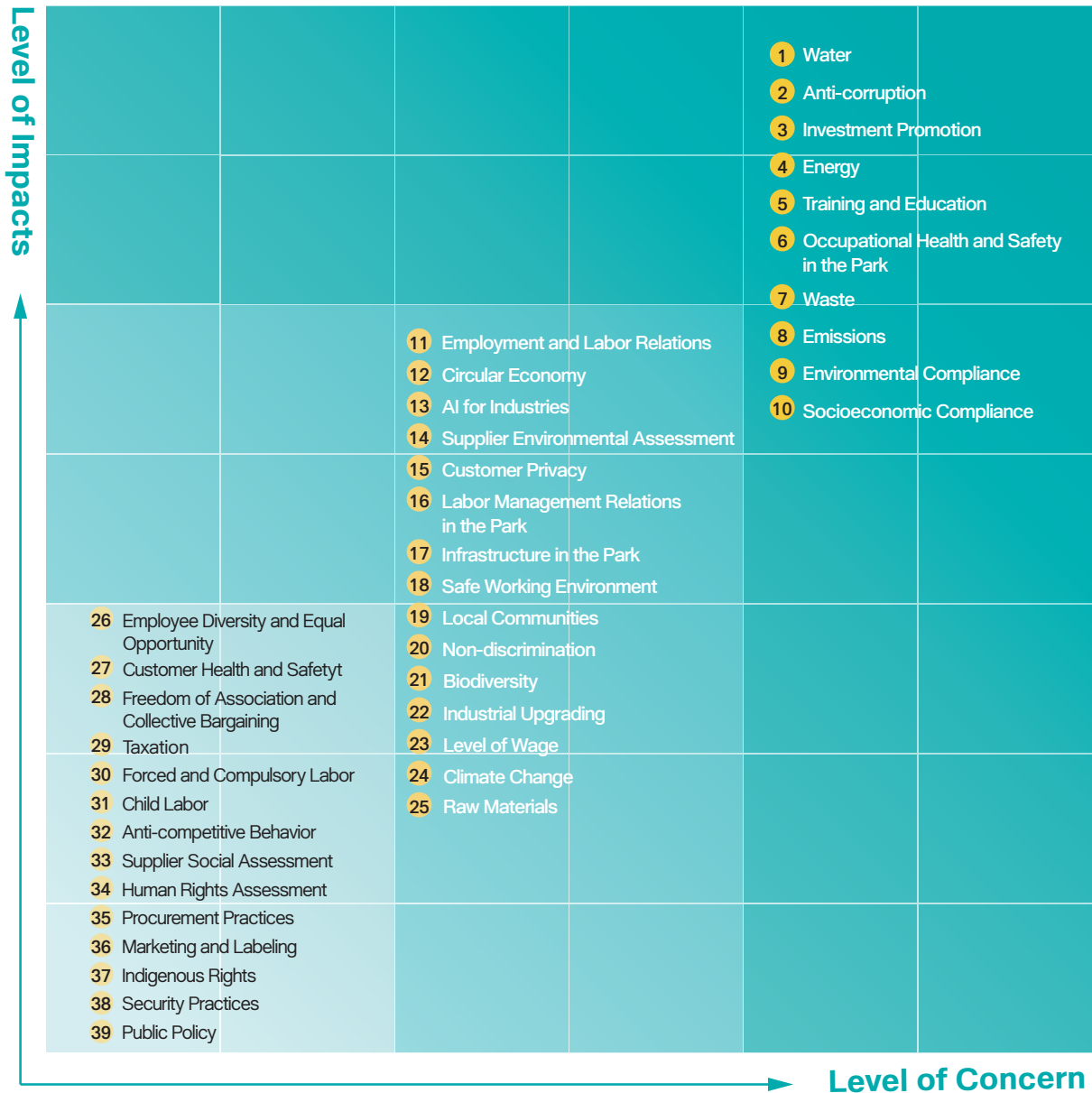
Academic Institutions / Non-profit Organizations	Issues of Concern	① Waste ② Emissions ③ Environmental Compliance ④ Circular Economy		
	Significance to the STSP Bureau	Through the linkage of academic research institutions, academic research can be introduced into physical application in the industries, which can help the upgrade of the park businesses.		
	Method of Engagement		Frequency	Corresponding Measures
	CSR questionnaire		Annually	See the chapters for details.
	Director-General's mailbox		Immediately	2. Integrity and Transparency 6. Environmental Friendliness
Course training, subsidy program, free visit activities		Immediately		

Community Residents	Issues of Concern	① Water ② Waste ③ Environmental Compliance ④ Emissions		
	Significance to the STSP Bureau	Based on the philosophy of taking it from society, giving it back to society, the Bureau should take care of the surrounding residents while operating to bring positive impacts on local society.		
	Method of Engagement		Frequency	Corresponding Measures
	CSR questionnaire		Annually	See the chapters for details.
	Director-General's mailbox, Official Website of the Bureau		Immediately	2. Integrity and Transparency 6. Environmental Friendliness
Club organization activities, charity activities		Immediately		

Media	Issues of Concern	① Socioeconomic Compliance ② Safe Working Environment ③ Customer Privacy ④ Marketing and Labeling		
	Significance to the STSP Bureau	To maintain the image of STSP Bureau, we strive to achieve effective communication with the media to avoid severe damage to the public's impression on STSP Bureau due to minor incidents.		
	Method of Engagement		Frequency	Corresponding Measures
	CSR questionnaire		Annually	See the chapters for details.
	Director-General's mailbox, Official Website of the Bureau, spokesman		Immediately	2. Integrity and Transparency 4. Inclusion in the Park

## 1.3 Management of Sustainability Issues

Based on the analysis results of the questionnaire and the results of discussions with our stakeholders over the years, STSP Bureau’s CSR Editing Team has identified a total of 10 material topics. The scatter diagram of 2020 material topics is made in accordance with the “stakeholders’ level of concern” and “level of impact on operations”. The analysis results are shown as follows.



## 1.4 Value Chain and Goals of the Material Topics

The material topics are divided into three categories in accordance with the three administrative goals for 2020, namely “Continuing the Optimization of the Environment, Respecting the Value of Production, Living, Ecology and Life”, “Strengthening the Industrial Physique and Expanding Industrial Clusters” and “Stabilizing Park Resources to Ensure Sustainable Operation”, and the Management Approaches of the

material topics are explained in this Chapter with the value chain serving as the element of boundary analysis. In the future, STSP Bureau will continue to strengthen management and disclose relevant information in the CSR Report.

Aspect of Sustainability	Material Topics	Corresponding GRI Topics	Boundary of Value Chain Impact		
			Upstream	Midstream	Downstream
			Suppliers	STSP Bureau	Park Businesses
Continuing the Optimization of the Environment, Respecting the Value of “Production, Living, Ecology and Life”	Water	GRI 303- Water and Effluents	⊙	⊙	⊙
	Energy	GRI 302- Energy	⊙	⊙	⊙
	Waste	GRI 306- Waste	⊙	⊙	⊙
	Emissions	GRI 305-Emissions	⊙	⊙	⊙
Strengthening the Industrial Physique and Expanding Industrial Clusters	Training and Education	GRI 404- Training and Education		⊙	
	Occupational Health and Safety in the Park	GRI 403- Occupational Health and Safety	○	⊙	⊙
Stabilizing Park Resources to Ensure Sustainable Operation	Anti-corruption	GRI 205- Anti-corruption	⊙	⊙	⊙
	Environmental Compliance	GRI 307-Environmental Compliance	⊙	⊙	⊙
	Socioeconomic Compliance	GRI 419- Socioeconomic Compliance	⊙	⊙	⊙
	Investment Promotion	Custom Topics	⊙	⊙	⊙

Note: ⊙ means direct impact; ○ means indirect impact.

## Management of the Objectives of the Material Topics

Material Topics	Water
<b>2020 Target Implementation Status</b>	<ul style="list-style-type: none"> <li>• Counseling of water conservation for 5 park manufacturers was completed, saving about 42.308 million tons/year of water in total.</li> <li>• Planning the self-construction of reclaimed water plants for park manufacturers.</li> <li>• Bid awarding of Tainan City Anping Reclaimed Water Plant New Construction Turnkey Project was completed in June.</li> </ul>
<b>Short-term Objectives (2021)</b>	<ul style="list-style-type: none"> <li>• To complete more than 5 cases of water-saving counseling among park businesses, promote energy and water conservation measures, guide the energy conservation and carbon reduction in the park and implement environmental education.</li> <li>• To complete the construction of the Yongkang Water Reclamation Plant.</li> <li>• To continue the promotion of self-construction of reclaimed water plants among park manufacturers.</li> <li>• To match the use of reclaimed water outside the Science Park (Yongkang and Anping) for park manufacturers.</li> </ul>
<b>Mid-term Objectives (2024)</b>	<ul style="list-style-type: none"> <li>• To complete the reclaimed water plant self-built by the park manufacturers and the first phase of water supply to reach 5,000 tons/day.</li> <li>• To enable the park manufacturers to use 18,000 tons of reclaimed water outside the science park (Anping and Yongkang Reclaimed Water Plants).</li> </ul>
<b>Long-term Objectives (2026~)</b>	<ul style="list-style-type: none"> <li>• To continue the handling of relevant energy saving business so as to achieve the most appropriate allocation under the limited resources to reach the goal of stabilizing water and electricity supply in the science park.</li> <li>• The total use of reclaimed water inside and outside the science park to reach 73,000 tons/day.</li> </ul>

Material Topics	Anti-corruption
<b>2020 Target Implementation Status</b>	<ul style="list-style-type: none"> <li>In 2020, a total of 15 people recused themselves in accordance with the Act on Recusal of Public Servants Due to Conflicts of Interest, and there were registries of 19 cases concerning Ethics Directions for Civil Servants.</li> <li>The Bureau organized an anti-corruption activity for social participation on the anniversary of the Bureau, and there were 200 participants.</li> <li>The Civil Service Ethics Office compiled the 2020 agency integrity risk assessment report and reported the report to the head of the agency for approval and review or revision at any time.</li> </ul>
<b>Short-term Objectives (2021)</b>	<ul style="list-style-type: none"> <li>To organize more than an anti-corruption activity or the advocacy of anti-corruption concept.</li> <li>To carry out the promotion and implementation of anti-corruption laws and regulations and preventive measures.</li> </ul>
<b>Mid-term Objectives (2024)</b>	<ul style="list-style-type: none"> <li>To strengthen integrity management of the agency, prevent conflict of interest and implement integrity risk management.</li> </ul>
<b>Long-term Objectives (2026~)</b>	<ul style="list-style-type: none"> <li>To achieve the goal of national integrity development and realize a clean government and transparent Taiwan, laying a foundation for sustainable integrity.</li> </ul>

Material Topics	Investment Promotion
<b>2020 Target Implementation Status</b>	<ul style="list-style-type: none"> <li>14 manufacturers entered STSP or expanded their plants.</li> <li>In addition, we also facilitated 36 cases of independent/joint R&amp;D of key technologies for industry, academic and research institutes.</li> </ul>
<b>Short-term Objectives (2021)</b>	<ul style="list-style-type: none"> <li>To attract 10 manufacturers to station in STSP or expand their plants.</li> <li>To facilitate 36 cases of independent/joint R&amp;D of key technologies industry, academic and research institutes.</li> </ul>
<b>Mid-term Objectives (2024)</b>	<ul style="list-style-type: none"> <li>To integrate the industrial clusters and set up investment promotion strategies annually to introduce more manufacturers to enter the science park.</li> </ul>
<b>Long-term Objectives (2026~)</b>	<ul style="list-style-type: none"> <li>To understand their needs for future layout and development and at the same time analyze the gap in the industry chain and introduce key manufacturers into the science park, attracting top manufacturers in the world to enter STSP to create a cluster for technology industry.</li> </ul>

Material Topics	Energy
<b>2020 Target Implementation Status</b>	<ul style="list-style-type: none"> <li>Completed the counseling of energy conservation for 6 park manufacturers, saving approximately 83.28 million kWh.</li> <li>The solar power generation system helped reduce 35,450 tons of carbon dioxide emissions.</li> <li>The e-shuttle bus averagely reduced the use of diesel by 193.1 liters per day.</li> </ul>
<b>Short-term Objectives (2021)</b>	<ul style="list-style-type: none"> <li>To complete counseling of energy conservation for at least 5 park manufacturers.</li> <li>To replace diesel buses with e-shuttle buses to reduce diesel consumption and reduce roadside air quality and GHG emissions.</li> </ul>
<b>Mid-term Objectives (2024)</b>	<ul style="list-style-type: none"> <li>To continue the promotion of energy conservation counseling for park businesses.</li> <li>To continue the use of renewable energy to reduce GHG emissions.</li> </ul>
<b>Long-term Objectives (2026~)</b>	<ul style="list-style-type: none"> <li>To reduce energy consumption, emissions of CO<sub>2</sub> while creating economic benefits to achieve the goal of a green science park.</li> </ul>

Material Topics	Training and Education
<b>2020 Target Implementation Status</b>	<ul style="list-style-type: none"> <li>The personal in the Bureau had an average of 43 hours of training.</li> </ul>
<b>Short-term Objectives (2021)</b>	<ul style="list-style-type: none"> <li>All the personnel in the Bureau can have more than 20 hours of business-related education and training every year.</li> </ul>
<b>Mid-term Objectives (2024)</b>	<ul style="list-style-type: none"> <li>To provide general management training, professional training and other related training to the personnel in the Bureau so strengthen and improve their administrative management, professional skills and information processing capabilities.</li> <li>To provide on-the-job training and development (such as leadership training, management development training, supervisor training) and other training to middle and high-level civil servants.</li> </ul>
<b>Long-term Objectives (2026~)</b>	<ul style="list-style-type: none"> <li>To promote the innovation and progress of the organization, form a good learning organization, increase resilience and competitiveness and establish a high-quality service team.</li> </ul>



Material Topics	Occupational Health and Safety in the Park
<b>2020 Target Implementation Status</b>	<ul style="list-style-type: none"> <li>The occupational disaster rate per thousand people was 1.08, 31.52% lower than the 3-year average.</li> <li>Organized 72 sessions of on-site counseling, publicity meetings, education and training, response drills and sharing meetings.</li> <li>Completed a total of 603 sessions of labor inspections (including 512 sessions of occupational safety and health inspections and 91 labor condition inspections).</li> <li>There were no major deaths and occupational accidents.</li> </ul>
<b>Short-term Objectives (2021)</b>	<ul style="list-style-type: none"> <li>To maintain the reduction of occupational disaster rate per thousand people by 10% every year.</li> <li>To carry out 470 sessions of labor inspections.</li> <li>To organize 51 sessions of on-site counseling, publicity meetings, education and training, response drills and sharing meetings.</li> </ul>
<b>Mid-term Objectives (2024)</b>	<ul style="list-style-type: none"> <li>To increase the health care penetration rate to 100%.</li> <li>To have 100% coverage rate of autonomous safety and health management system.</li> <li>To have 100% coverage rate of exposure assessment of chemical management and the hierarchical management system.</li> <li>To maintain 100% award coverage rate of excellent industrial safety units (personnel).</li> </ul>
<b>Long-term Objectives (2026~)</b>	<ul style="list-style-type: none"> <li>To establish an excellent working environment, encourage park manufacturers to implement various labor laws and regulations to protect the rights and interests of the workers in the science park.</li> <li>To construct a sustainable and disaster-free working environment with zero work-related injuries and zero occupational accidents.</li> </ul>

Material Topics	Waste
<b>2020 Target Implementation Status</b>	<ul style="list-style-type: none"> <li>The reuse volume of the industrial waste in the science park reached 343,951.85 tons, and the reuse rate reached 90.02%.</li> </ul>
<b>Short-term Objectives (2021)</b>	<ul style="list-style-type: none"> <li>To continue to maintain the reuse rate of industrial waste at 85% and more.</li> <li>To strengthen the counseling and inspection of environmental compliance of the industrial waste treatment in the park.</li> </ul>
<b>Mid-term Objectives (2024)</b>	<ul style="list-style-type: none"> <li>To continue the compliance with waste-related environmental regulations and conduct autonomous management to meet the expectation of the public.</li> </ul>
<b>Long-term Objectives (2026~)</b>	<ul style="list-style-type: none"> <li>To maintain the reuse rate of the industrial waste in the science park, improve the compliance of industrial waste treatment in the science park and promote sustainable resource circulation.</li> </ul>

Material Topics	Emissions
<b>2020 Target Implementation Status</b>	<ul style="list-style-type: none"> <li>Regularly check various pollutants in accordance with the Air Pollution Control Act, and the emissions are all lower than the quota allocation of the EIA.</li> <li>Promoted the Self-management Program of Diesel Vehicle Exhaust, and a total of (cumulative) 1,848 vehicles obtained the exhaust emission mark.</li> <li>Completed the counseling of energy conservation for 6 park manufacturers, saving approximately 83.28 million kWh and reducing 42,392.6 tons of CO<sub>2</sub>e emissions.</li> <li>The solar power generation system helped reduce 35,450 tons of carbon dioxide emissions.</li> <li>The e-shuttle bus averagely reduced the use of diesel by 193.1 liters per day.</li> </ul>
<b>Short-term Objectives (2021)</b>	<ul style="list-style-type: none"> <li>To continue regular inventory of various pollutants in accordance with legal requirements, and the emissions must be lower than the quota allocation of the EIA.</li> <li>To complete the counseling of energy conservation more than 5 park businesses.</li> <li>To replace diesel buses with e-shuttle buses to reduce diesel consumption and reduce roadside air quality and GHG emissions.</li> </ul>
<b>Mid-term Objectives (2024)</b>	<ul style="list-style-type: none"> <li>To comply with the conclusions of the EIA reports and reviews to effectively prevent and control pollution and discharge, striving to reduce the environmental impact to the minimum.</li> <li>To continue the use of renewable energy and reduce GHG emissions.</li> </ul>
<b>Long-term Objectives (2026~)</b>	<ul style="list-style-type: none"> <li>To reduce energy consumption, emissions of CO<sub>2</sub> while creating economic benefits to achieve the goal of a green science park.</li> </ul>

Material Topics	Environmental Compliance
<b>2020 Target Implementation Status</b>	<ul style="list-style-type: none"> <li>Complied with environmental laws and regulations, and there were no major environmental pollution incidents.</li> <li>Organized one advisory consultation and one briefing on environmental protection.</li> </ul>

Material Topics	Environmental Compliance
<b>Short-term Objectives (2021)</b>	<ul style="list-style-type: none"> <li>To handle relevant business in accordance with environmental regulations.</li> <li>Continue to organize more than 2 sessions of environmental protection-related seminars, briefings or observation meetings every year.</li> </ul>
<b>Mid-term Objectives (2024)</b>	<ul style="list-style-type: none"> <li>To continue the environmental compliance and organize related briefings on regulations and education and training.</li> <li>To provide park manufacturers with related education and training when the laws and regulations are updated to reduce operational risks.</li> </ul>
<b>Long-term Objectives (2026~)</b>	<ul style="list-style-type: none"> <li>To fulfill our corporate social responsibility, observe environmental-related laws and regulations, aiming at reaching zero violation of major regulatory incidents.</li> </ul>

Material Topics	Socioeconomic Compliance
<b>2020 Target Implementation Status</b>	<ul style="list-style-type: none"> <li>No corruption, violation of law or incidents involving political donation.</li> </ul>
<b>Short-term Objectives (2021)</b>	<ul style="list-style-type: none"> <li>To handle relevant business in accordance with socioeconomic regulations.</li> </ul>
<b>Mid-term Objectives (2024)</b>	<ul style="list-style-type: none"> <li>To continue compliance with socioeconomic regulations and organize relevant briefings on regulations.</li> </ul>
<b>Long-term Objectives (2026~)</b>	<ul style="list-style-type: none"> <li>To fulfill our corporate social responsibility, observe socioeconomic related laws and regulations, aiming at reaching zero violation of major regulatory incidents.</li> </ul>

## Management Approaches of Material Topics

Management Approach of Stabilizing Park Resources to Ensure Sustainable Operation	
<b>Corresponding material topics</b>	Anti-corruption, Environmental Compliance, Socioeconomic Compliance, Investment Promotion
<b>Corresponding Taiwan Sustainable Development Goals</b>	<ul style="list-style-type: none"> <li>Taiwan's SDG 6: Ensure environmental quality and sustainable management of environmental resources</li> <li>Taiwan's SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</li> <li>Taiwan's SDG 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</li> </ul>
<b>Significance to STSP Bureau</b>	The Bureau should observe all laws and regulations and disclose information in an open and transparent manner, setting integrity and law abiding its top priority. The Bureau should also attract industries to enter STSP to create economic output and employment opportunities for people to achieve the vision of sustainable management of the science park.
<b>Purpose of Management</b>	To ensure all actions taken by the Bureau are compliant with social, economic and environmental policies and regulations and can continue to drive industrial competitiveness so as to maintain normal operation of the science park.
<b>Goals and Targets</b>	<ul style="list-style-type: none"> <li>To stop all corruption cases, implement an internal control system and enhance the friendly and fresh image of the Bureau with enthusiastic services.</li> <li>To continue to observe all relevant laws and regulations to avoid accidental violations of laws.</li> <li>All pollution sources should be compliant with regulations, and autonomous management should be carried out to meet the expectation of people.</li> <li>To cooperate with the Executive Yuan in the promotion of industrial innovation development, grasp the world trend of digital intelligence, support industrial innovation with science and technology, and strengthen the R&amp;D of key industrial technologies to further drive the transformation and upgrade of the industry.</li> </ul>
<b>Responsible Units</b>	Civil Service Ethics Office, Environment and Labor Affair Division, Business Division, Investment Services Division and various Divisions and Offices in the Bureau
<b>Resources Invested</b>	<ul style="list-style-type: none"> <li>Responsible units are in charge of legal identification to establish corresponding management measures which will be implemented by relevant units.</li> <li>Conduct annual legal training of the employees in terms of social, economic, anti-corruption and ethics related laws and regulations.</li> <li>The Environment and Labor Affair Division conducts environmental regulation promotion meetings on an occasional basis and provides the manufacturers with consulting services regarding environmental protection business.</li> <li>To continue the promotion of the high-tech industry in Taiwan, joint investment briefings are held to publicize the high-quality investment environment in Taiwan and explore Taiwan's business opportunities.</li> </ul>

<b>Management Approach of Stabilizing Park Resources to Ensure Sustainable Operation</b>	
<b>Assessment and Management</b>	<ul style="list-style-type: none"> <li>Formulate relevant handling procedures in accordance with the Civil Servant Work Act and Ethics Directions for Civil Servants.</li> <li>To perform internal audit operations in accordance with the internal control system.</li> <li>Comply with relevant regulations, such as environmental regulations, Labor Standards Act and other relevant government regulations.</li> </ul>
<b>2020 Performance</b>	<ul style="list-style-type: none"> <li>There were no high-risk events or personnel listed in 2020.</li> <li>Organized anti-corruption advocacy activities and seminars, with a total of 410 participants.</li> <li>No violations of environmental regulations, and there were no major environmental pollution incidents.</li> <li>No occurrence of incidents concerning corruption, violation of laws, or political donations.</li> <li>No violations of socioeconomic regulations.</li> <li>The cumulative validly approved manufacturers reached 240.</li> <li>22 manufactures (including 13 start-ups) were introduced to the park, with an investment amount of NTD 278.8 billion.</li> <li>The annual turnover amounted to NTD 847.731 billion, an increase of 14.06% compared with 2019.</li> </ul>
<b>Management Approach of Continuing the Optimization of the Environment, Respecting the Value of “Production, Living, Ecology and Life”</b>	
<b>Corresponding material topics</b>	<b>Water, Energy, Waste, Emissions</b>
<b>Corresponding Taiwan Sustainable Development Goals</b>	<ul style="list-style-type: none"> <li>Taiwan's SDG 6: Ensure environmental quality and sustainable management of environmental resources</li> <li>Taiwan's SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all</li> <li>Taiwan's SDG 13: Take urgent action to combat climate change and its impacts</li> <li>Taiwan's SDG 17: Establish diversified partnerships and work together to advance the sustainable vision</li> <li>Taiwan's SDG 18: Establish a nuclear-free homeland by 2025</li> </ul>
<b>Significance to STSP Bureau</b>	Attach importance to the value of “Production, Living, Ecology and Life” and promote environmental policies of water conservation, power conservation, green electricity, recycling of resources and transplanting of trees to reduce the impact of production on the ecological environment for the construction of a high-quality industrial environment.
<b>Purpose of Management</b>	Environmental impact assessment (EIA) has to be passed before the development of the science park, and the actual operation also has to meet the cap of the total volume control to avoid the science park operations from exceeding the environmental load.
<b>Goals and Targets</b>	<ul style="list-style-type: none"> <li>To comply with the conclusions of the EIA reports and reviews to effectively prevent and control pollution and discharge, striving to reduce the environmental impact to the minimum.</li> <li>All the pollution sources are compliant with relevant regulations, and autonomous management is carried out to meet people's expectations.</li> <li>To reduce energy consumption and GHG emissions while creating economic benefits to achieve the goal of a green science park.</li> <li>To fulfill our corporate social responsibility, observe environmental related laws and regulations and reduce operational risks.</li> </ul>
<b>Responsible Units</b>	Environment and Labor Affair Division, Construction Management Division
<b>Resources Invested</b>	<ul style="list-style-type: none"> <li>The Environment and Labor Affair Division implements the review of the Environmental Permit before the manufacturers enter the science park for the implementation of the total volume control.</li> <li>Set up an Environmental Engineering Center in Tainan Science Park and a wastewater treatment plant and the Resource Recycling Center in Kaohsiung Science Park and entrust professional providers for the operations.</li> <li>Provide park manufacturers with water and energy conservation counseling.</li> <li>Promoted the Self-management Program of Diesel Vehicle Exhaust.</li> </ul>
<b>Assessment and Management</b>	<ul style="list-style-type: none"> <li>Regularly conduct environmental monitoring and continue to check the pollution discharge and emissions of park manufacturers in accordance with Water Pollution Control Act and Waste Disposal Act.</li> <li>Collect monthly statistics of water and electricity consumption of park manufacturers.</li> <li>Conduct inspections in accordance with the Waste Disposal Act on an irregular basis.</li> <li>Conduct GHG inventory regularly every year.</li> </ul>
<b>2020 Performance</b>	<ul style="list-style-type: none"> <li>The quality of the discharged water was 100% in line with the Effluent Standards.</li> <li>Counseling of water conservation for 5 park manufacturers was completed, with a total water-saving potential of 42.308 million tons/year.</li> <li>The total amount of water recovered in the whole park area was about 351,905 tons.</li> <li>Completed the counseling of energy conservation for 6 park manufacturers, with a total energy-saving potential of 83.28 million kWh/year.</li> <li>The solar power generation system helped reduce 35,450 tons of carbon dioxide emissions.</li> <li>The e-shuttle bus averagely reduced the use of diesel by 193.1 liters per day.</li> <li>The reuse volume of the industrial waste in the science park reached 343,951.85 tons, with the reuse rate of 90.02%.</li> </ul>

### Management Approach of Continuing the Optimization of the Environment, Respecting the Value of “Production, Living, Ecology and Life”

<b>2020 Performance</b>	<ul style="list-style-type: none"> <li>Regularly check various pollutants in accordance with the Air Pollution Control Act, and the emissions are all lower than the quota allocation of the EIA.</li> <li>Promoted the Self-management Program of Diesel Vehicle Exhaust, and a cumulative total of 1,848 vehicles obtained the exhaust emission mark.</li> </ul>
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### Management Approach of Strengthening the Industrial Physique and Expanding Industrial Clusters


<b>Corresponding material topics</b>	<b>Training and Education, Occupational Health and Safety in the Park</b>
<b>Corresponding Taiwan Sustainable Development Goals</b>	<ul style="list-style-type: none"> <li>Taiwan's SDG 3: Ensure and promote healthy lives and promote well-being for all at all ages</li> <li>Taiwan's SDG 4: Ensure comprehensive, fair and high-quality education, as well as advocate lifelong learning</li> <li>opportunities for all</li> </ul>
<b>Significance to STSP Bureau</b>	Human resources are the cornerstone of the sustainable management of the park. Experience can be passed on through education and training to improve the staff's leadership and abilities of communication and coordination. It can also strengthen the cohesion among the employees. In the meantime, the Bureau also attaches great importance to the health and safety of all the workers in the science park, strengthens the substantial management of the implementation of occupational safety and health to enhance the employees' attention to and efforts in a safe and healthy working environment, creating a sustainable working environment with health and safety in this smart park.
<b>Purpose of Management</b>	The employees are encouraged to surpass themselves and apply systematic thinking through diverse learning channels to enhance work value and inject new vitality into the workplace. To establish an excellent working environment, prevent manufacturers from violating human rights and labor-related regulations, reduce occupational safety risks, focus on applying innovative and smart technologies into disaster prevention, take the emerging occupational diseases into account, improve workers' health and innovate disaster prevention to have healthy labor force, creating a healthy science park.
<b>Goals and Targets</b>	<ul style="list-style-type: none"> <li>To promote organizational innovation and progress, form a good learning organization, improve resilience and competitiveness and establish a high-quality service team.</li> <li>To establish a sustainable working environment with health, safety and sanitation for all workers in the smart science park.</li> </ul>
<b>Responsible Units</b>	Personnel Office, Environment and Labor Affair Division and various Divisions and Offices in the Bureau
<b>Resources Invested</b>	<ul style="list-style-type: none"> <li>Organized various education and training courses, lecturers and seminars related to employees' businesses in accordance with the annual education and training plans.</li> <li>The Environment and Labor Affair Division organized occupational safety and health management targeting at the park businesses, provided Association for Promotion of Park Industrial Safety with counseling, and conducted workplace health promotion and other industrial safety and emergency response related businesses.</li> </ul>
<b>Assessment and Management</b>	<ul style="list-style-type: none"> <li>Comply with relevant regulations, such as Act of Gender Equality in Employment, Labor Standards Act and other relevant government regulations.</li> <li>Conduct on-site inspections, on-site counseling and labor inspection in accordance with Occupational Safety and Health Act.</li> <li>Organize workplace health promotion activities.</li> <li>To commend business units and personnel with excellent performance in workplace safety and health management.</li> </ul>
<b>2020 Performance</b>	<ul style="list-style-type: none"> <li>The total training hours of the STSP Bureau staff were 5,331 hours.</li> <li>1 person was granted the on-the-job subsidy, and the maximum amount of subsidy is NTD 20,000 per person per semester.</li> <li>As of 2020, the subscribers of the Industrial Safety Newsletter accumulated to 2,526.</li> <li>The penetration rate of health care has reached 97.80%.</li> <li>Conducted a total of 62 sessions of On-site Counseling of Occupational Safety and Health.</li> <li>Conducted a total of 4 sessions of workplace related disease prevention activities.</li> <li>A total of 3 manufacturers were awarded the Excellent Industrial Safety Unit (Personnel) and 7 employees in the science park won the award.</li> <li>Completed a total of 603 sessions of labor inspections (including 512 sessions of occupational safety and health inspections and 91 labor condition inspections), with the achievement rate of 129.3%.</li> <li>The occupational disaster rate per thousand people was 1.08, a decrease of 31.52% compared with the 3-year average.</li> </ul>

## 1.5 Smooth Communication Channels


STSP Bureau attaches great importance to the communication with stakeholders. Through the establishment of various websites and the issuance of various publications and propaganda and the use of charts and simple texts, readers can understand more easily the expectations, efforts, direction and performance of the corporate social responsibility in different fields while providing real-time as well as correct information of the science park to the stakeholders.

With the rapid dissemination of information, the Bureau releases major information and news on the Southern Taiwan Science Park Official Website on both regular and irregular basis, providing related publications for the stakeholders to download and read. In addition, the Bureau has also established the STSP 543 Fanpage to share information in the science park, bringing our stakeholders closer to STSP.


### Smooth Communication Channels




STSP official website




STSP's CSR website




STSP Annual Report




STSP Newsletter




Industrial Safety Newsletter



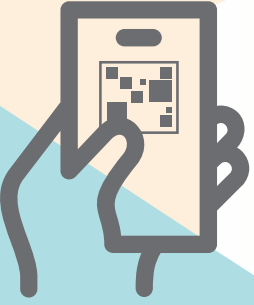

STSP 543 Facebook Fanpage



Sustainable Green LOHAS Website



STSP Public Art

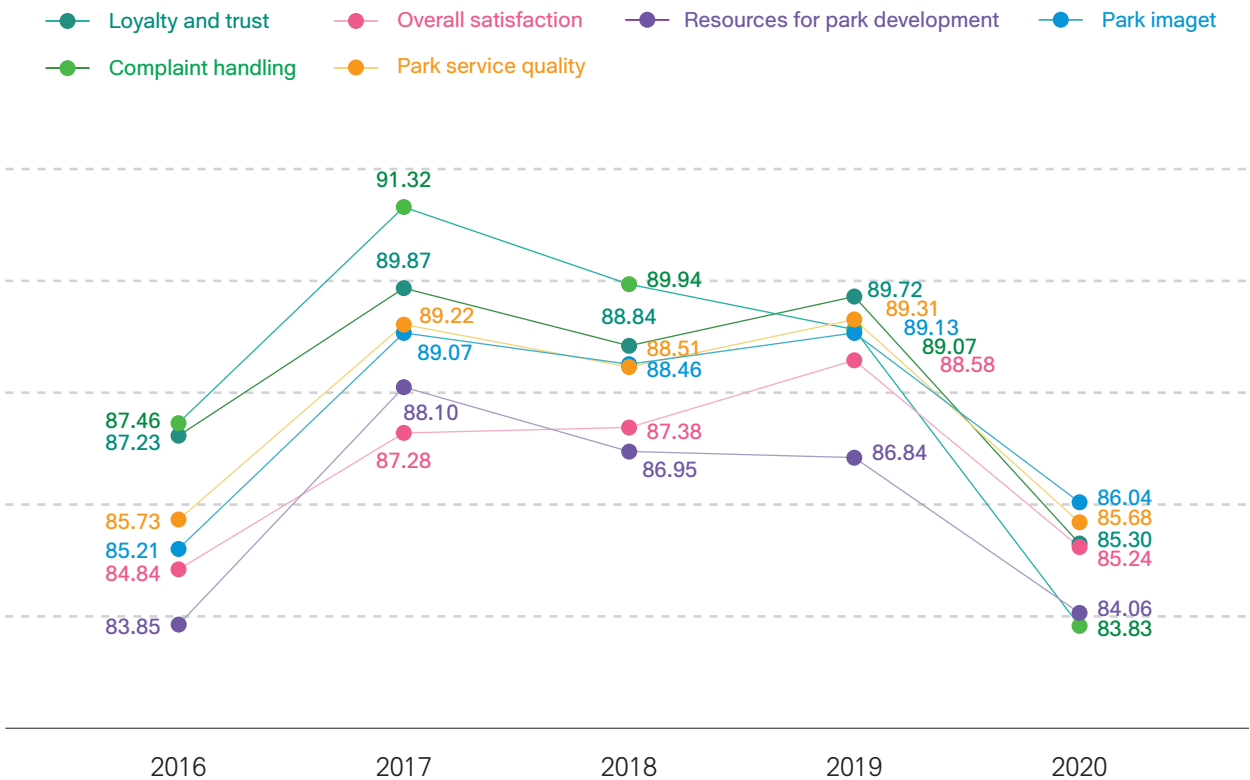
To listen to the staff’s voices, STSP Bureau has set up various communication channels such as the Director-General’s mailbox in the Secretariat Office and the complaint hotline of the Personnel Office and other compliant channels. Meanwhile, through various programs and plans, we help our staff solve problems that could affect work efficiency and enhance their centripetal force and cohesion for the Bureau. Through various assistance measures, we create a warm and caring working environment and a corporate culture with great interaction to enhance the competitiveness of this organization.

### ● | Satisfaction Survey of the STSP

STSP Bureau conducts a satisfaction survey on the park manufacturers ever year focusing on 6 major aspects, including park image, resources for park development, park service quality, overall satisfaction, complaint handling and loyalty and trust. According to the survey results in 2020, the overall satisfaction of STSP was 83.83 points. Among all the aspects, “park image” and “park service quality” scored the highest, and all aspects scored above 83 points. Aspects scored lower were also analyzed and reviewed. Discussions on the feedback from the neighboring residents and the park manufacturers’ satisfaction was also discussed to set up improvement policies in the park to continue to care about the needs of stakeholders and provide assistance and services.



#### Satisfaction Survey of the STSP



## ● | Grievance Channels

To listen to the voices of the stakeholders, the Bureau has established grievance channels. Among them, the Director-General's mailbox is the one most people used for complaints, accounting for nearly 80% among all. When a complaint is received, classification is immediately made, and based on different business scope, the corresponding units have to respond to and handle it. All the letters from the public will be responded by the corresponding unit within three days, and the handling situation has to be reported to the first-level executives every month.

In accordance with the prescriptions stipulated in the "Major Points of the Executive Yuan and its Subordinate Organs for Handling People's Petition Cases", when it requires interviews, hearings or investigations in the handling of general petition cases, it shall not take more than 30 days. According to the statistics between January and December in 2020, there were a total of 311 petition cases, among which, 262 cases were handled through the Director-General's mailbox while 49 were through external complaint letters. All of the complaints were fully responded and solved.

- Tel: +886-6-5051-001 (Tainan Science Park); +886-7-607-5545(Kaohsiung Science Park)
- Director's email: [service@stsp.gov.tw](mailto:service@stsp.gov.tw)
- Director of Personnel Office complaints hotline : +886-6-505-0848
- STSP Bureau Address: No. 22, Nanke 3rd Rd., Xinshi Dist., Tainan City ; No.23, Luke 5th Rd., Luzhu Dist., Kaohsiung City
- Accessible environment complaint hotline: +886-7-607-5545, ext:7123; Contact person: Wen-Chien Chang

2020	Number of complaints received
Construction Management Division	2
Environment & Labor Affairs Division	25
Business Division	2
Secretariat	0
Planning Division	2
Land Development Division	17
Investment Services Division	1
Personnel Office	0
Civil Service Ethics Office	0
Total	49

## ● | Report of Public Integrity Incidents

- Tel : +886-6-5051001#3005 (Civil Service Ethics Office)
- Email: [ethics@stsp.gov.tw](mailto:ethics@stsp.gov.tw)





# 2

Chapter

## Integrity and Transparency





# 2. Integrity and Transparency

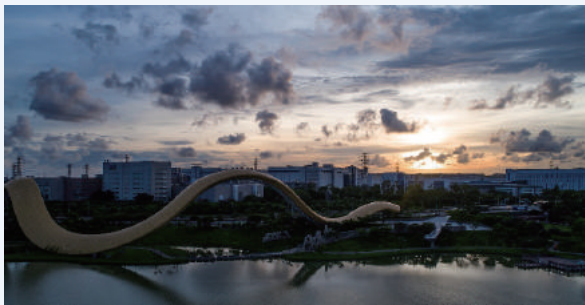
## 2.1 About Southern Taiwan Science Park

### Geographical Location

The establishment of Southern Taiwan Science Park (STSP) was approved in May, 1995, unveiling the development of the high-tech industries in Southern Taiwan. Complete software and hardware facilities have been built to provide a high-quality investment environment to attract domestic and foreign manufacturers to station here at STSP. Currently, Tainan Science Park and Kaohsiung Science Park within STSP are the ones providing services. Both the parks are devoted to building STSP into a safe, healthy and perfect place to pursue dreams, start businesses and even to start a family.



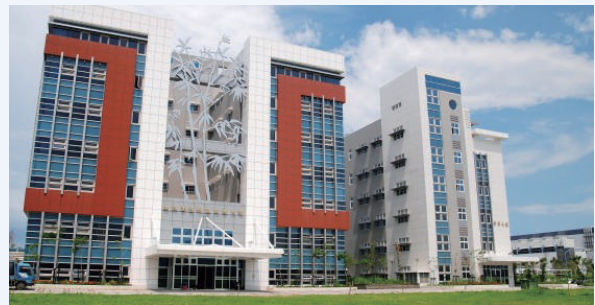
#### Tainan Science Park



Tainan Science Park is located among Xinshi, Shanhua and Anding Districts, with an area of 1,043 hectares. The main industries include optoelectronics, integrated circuits, precision machinery, biotechnology and green energy industries. The existing green energy manufacturers in the park and the surrounding academic institutions, the industry and academic circles are all linked together with Shalun Smart Green Energy Science City to create an Innovative Industry Ecosystem of Green Energy Technology.



#### Kaohsiung Science Park



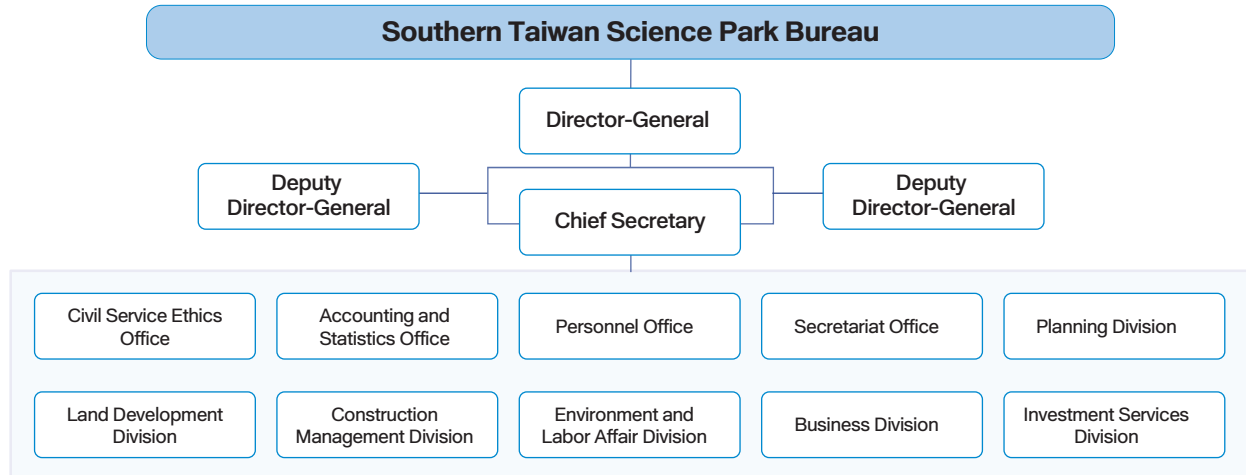
Kaohsiung Science Park is located among Luzhu, Gangshan and Yong'an Districts, with an area of 567 hectares. The main industries are optoelectronics, medical equipment and aerospace industries.



### Organizational Structure

The Bureau is a public agency. The organizational structure of the Southern Taiwan Science Park is composed of the Director-General, Deputy Director-General, Chief Secretary and 10 divisions and offices, including the Investment Services Division, Business Division, Environment and Labor Affairs Division, Construction Management Division, Land Development Division, Planning Division, Secretariat Office, Personnel Office, Accounting and Statistics Office and Civil Service Ethics Office, and the functions of the divisions and offices cover all the affairs in the science park. Environment and Labor Affairs Division serves as the coordinating unit, and each unit assigned a contact person as the editorial team member. The Report was released upon approval by the Director-General.

In terms of the displacement of the position of Director-General of STSP Bureau in 2020, the then Director General, Wei-Cheng Lin retired on November 2, and the position was taken over by the Deputy Director-General, Chen-Kang Su on January 22, 2021. On February 19, the then Chief Secretary, Ruey-Hwan Chen, was promoted the Deputy Director-General while the Chief of the Planning Division, Hsiu-Chen Lin, was promoted the Chief Secretary.



## STSP Service Items

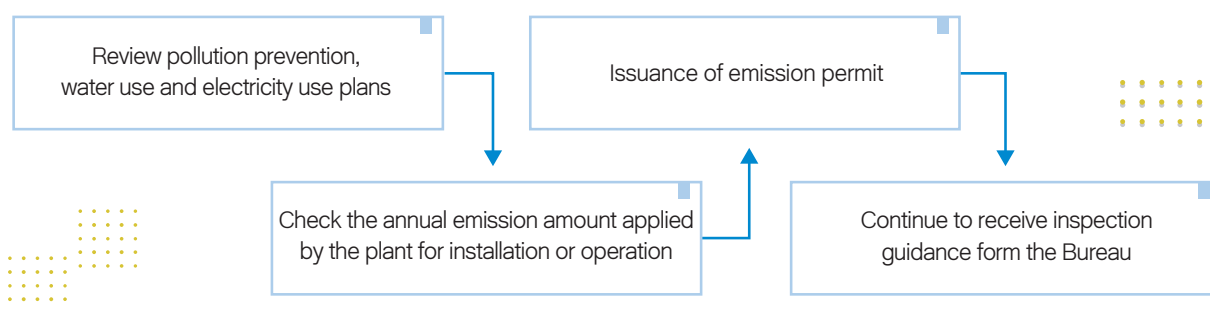
The purpose of the establishment of the science park is to establish an excellent base for the development of high-tech industry, balance regional development, and facilitate industrial upgrading. During the expansion process, there is a need to coordinate and communicate with all sectors in terms of environmental, safety, labor, and tax issues. STSP Bureau provides a one-stop service for park manufacturers. Coupled with the integrated infrastructure, including water, gas, power supply, logistics and safety assurance, we support smooth operation of park manufacturers, maintain excellent investment environment and quality of life to facilitate industrial development. The following divisions and offices are set up under the Bureau, in charge of the following affairs.

Division/ Office	Description of Service
Planning Division	<p><b>Planning Section:</b> In charge of the planning and promotion of park innovation, the entrepreneurial environment and important research on the development of science parks at home and abroad.</p> <p><b>Evaluation Section:</b> In charge of the promotion of the administrative innovation and the service quality and the planning and management of the park development goals and strategies.</p> <p><b>Financial Planning Section:</b> In charge of the research and comprehensive planning of the public affairs and estimates of operating funds, and the management and financial analysis of the park operating funds.</p>
Investment Division	<p><b>Investment Affairs Section:</b> In charge of the planning and promotion of the attraction of the investment in the science park, the incubation center and the preparation and approval of the application of units to be stationed in the science park.</p> <p><b>Industry-Academic Research and Development Section:</b> In charge of the research and development of industry-academia cooperation in the science park and the promotion and contact affairs of talent training and cultivation as well as the business review of the grants of the R&amp;D of innovative technology projects.</p> <p><b>Investment Promotion Section:</b> In charge of the planning and promotion of the park image and the promotion of the exchanges and cooperation with international science parks and related organizations.</p>
Environment and Labor Affair Division	<p><b>Industry Safety Section:</b> In charge of the planning and coordination of the disaster prevention and emergency response affairs in the science park, the operation management of the 24-hour emergency response center in the science park, the business guidance of the industrial safety promotion association, and the promotion of the health promotion in the workplace within the science park.</p>

Division/ Office	Description of Service
Environment and Labor Affair Division	<p><b>Labor Relations Section:</b> In charge of the counseling and assisting/inspection of labor relations in the science park and the handling of labor disputes.</p> <p><b>Environmental Protection Section:</b> In charge of the planning and promotion of the environmental protection work in the science park, the monitoring and test, analysis and information management of the environment quality of the science park.</p>
Business Division	<p><b>Industrial and Commercial Services Section:</b> In charge of the planning and implementation of the industrial and commercial registration of the park manufacturers (including company registration, factory registration and registration of chattel secured transactions), the deliberation and counseling management of the industrial and commercial services entering the science park.</p> <p><b>Foreign Trade Section:</b> The research and draft of the laws and regulations of the trade/bond and the collection of the park business management fees and the deliberation and counseling management of the life service industries entering the science park.</p>
Construction Management Division	<p><b>Civil Engineering Section:</b> In charge of the medium-to long-term annual budgeting of public construction projects and the establishment of park land development projects.</p> <p><b>Water, Electrical &amp; Traffic Section:</b> In charge of the management and rules of park transportation facilities maintenance, the overall planning, coordination and management of water and electricity in the science park, and the review of water and electricity plans as well as the issuance of electric technology license.</p> <p><b>Facility Maintenance Section:</b> Maintenance and management of park/green landscape planting and the establishment and maintenance of the geographic information system (GIS) of the science park.</p>
Land Development Division	<p><b>Land Planning and Construction Management Section:</b> In charge of the review and change of the urban planning in the park, the review and revision of non-urban land, and the planning, development and management of the ecological protection area in the science park.</p> <p><b>Land Acquisition and Rental Services Section:</b> The acquisition, expropriation, appropriation, cooperative development and land management of the land in the science park.</p> <p><b>Architectural Section:</b> The establishment and management of the public art in the science park.</p>
Other business	<p><b>Secretariat Office:</b> In charge of receiving and sending of official documents, the file application and procurement affairs services.</p> <p><b>Personal Office:</b> In charge of personnel administration related affairs.</p> <p><b>Civil Service Ethics Office:</b> In charge of the integrity services and other related affairs.</p> <p><b>Accounting and Statistics Office:</b> In charge of annual budget, accounting, and statistics affairs.</p>

## ● □ | Entry Application Services

STSP Bureau plays the role of a keeper to maintain the sustainable environment of the science park. In addition to knowing whether all business units actually fulfill the content of the permit, the Bureau also needs to conduct on-site inspections and follow-up the improvement so as to further review the blind spots of the system. By regulating all business units to operate in accordance with the content of the permit through feasible methods, the Bureau can thus implement the management of permits and promotion of the cap control of various types of pollution to promote favorable environmental quality and sustainability.



Concerning the various environmental protection facilities in the science park, in addition to the irregular inspection by the environmental protection authority and the internal random inspections in the Bureau, we also attach great importance to the complaints from the public, and even include them in the CSR Report as the material topics to respond to for the improvement of environmental regulations compliance.

We cooperate with the transformation of the government organizations and organize work related to information business and present our management quality and service efficiency with a sound information system and an integrated single portal in the hope of providing more convenient and friendlier services to the public.

Permit registration		Statistics
<b>Review of permit</b>	Review of application of construction permit and miscellaneous permit	199
	Usage permit (including change)	
	Interior renovation	
<b>Review of environmental permit</b>	Stationary pollution source permit	332
	Water pollution permit	
	Waste permit	
	Waste recycling permit	
<b>Foreign trade visa</b>	Export permit (EP)	1,128
	Import permit (IP)	
	Strategic High-tech Commodities (SHTC) Export Permit	
	Strategic High-tech Commodities International Import Certificate (IC)	
	General Certificate of Origin	
	ECFA Certificate of Origin	
<b>Industrial and commercial registration</b>	Handling company, factory, completion certification, chattel secured transactions and so on.	365

### Scale of Budget

As a public agency, the funds needed are for STSP Bureau to promote administrative affairs, perform official duties and maintain park operations. The budgets are from the national treasure and self-fundraising.

2020 Budget scale of STSP Bureau (NNIEHS excluded)	
Item	Amount
<b>The final amount of annual expenditure</b> (including final amount of personnel expenses Note 1)	NTD 0.510 billion (NTD 0.155 billion)
<b>The final account of expenditure of the total business revenues</b>	NTD 5.144 billion
<b>The final account of the total business costs</b>	NTD 4.373 billion
<b>The final account of the fixed assets construction improvement and expansion plans</b>	NTD 1.422 billion
<b>Business taxes paid</b>	NTD 63 million
Notes:	
1. Personnel expenses include statutory remunerations for staff members, contracted employees and technicians and janitors, bonuses, other grants, overtime pay, retirement pension and insurance.	
2. All the budgets and final reports are disclosed on the official website of STSP Bureau in an open and transparent manner for all to download online.	



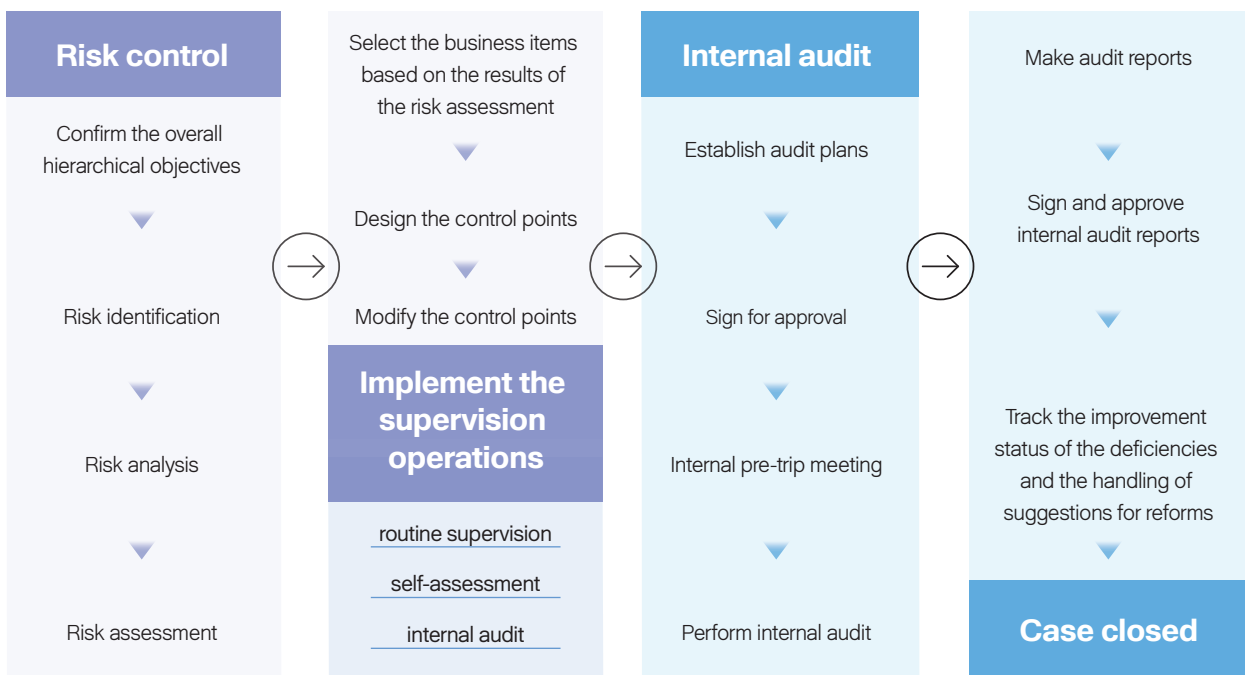
## 2.2 Risk Control

### Internal Control Management

To enable the sustainable management of the science park, the Bureau has established an internal control system. The Internal Control Team conducts the assessment of the internal control environment, risk assessment, control operations, communication and supervision mechanisms of the Bureau every year to have substantial control over major risks that could have impacts. The self-assessment of the internal control was completed on November 26, 2020, and 17 items had the completion rate of 93% while 7% were not applicable (no major normative items were assessed during the assessment period).

In addition, to implement the control mechanism, the Internal Audit Team will help with the inspection of the actual status of the implementation of the internal control in an objective and just perspective and will provide timely suggestions for improvement. The internal audit for 2020 was completed on December 24, with a total of 8 audit items and 0 item for improvement. The internal audit report will be prepared. This internal audit report will be submitted to the Director-General for approval and will be sent to all units and departments for reference in terms of the implementation of the internal control system so as to reduce or avoid the impacts of risks and thus enhancing the operational performance and service satisfaction.

**Flow chart of the internal control system**

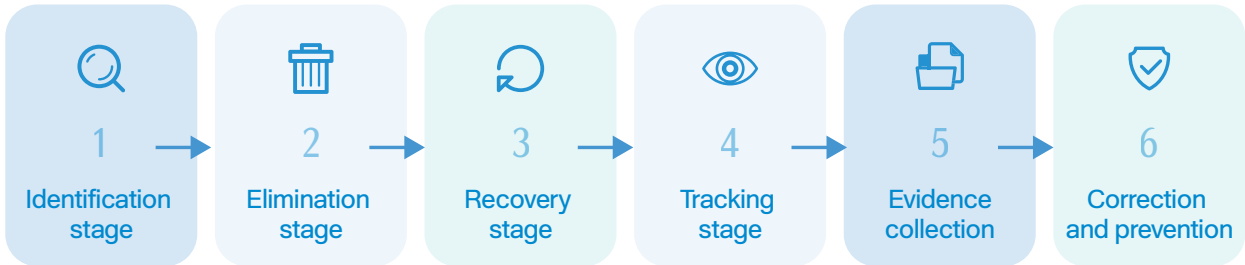


### Information Security

To ensure the confidentiality, integrity and availability of the information assets of the Bureau to provide safe, stable and highly efficient information services overall, the plan for information and communication safety maintenance is thus established.

Item	Description
<b>Information and Communication Safety Polity</b>	To ensure the confidentiality, integrity and availability of the information assets of the Bureau to provide safe, stable and highly efficient information services overall.
<b>Goals of Information Communication</b>	The Bureau's information communication statement is "No leakage of information, few information security incidents and uninterrupted services".
<b>Quantitative Goals</b>	<ul style="list-style-type: none"> <li>The business of leasing systems will not be affected due to equipment or system abnormalities.</li> <li>The maintenance availability of the data center reaches 99% and higher.</li> <li>The occurrence of reported information communication incidents higher than level 3 should be less than twice.</li> </ul>
<b>Qualitative Goals</b>	<ul style="list-style-type: none"> <li>Adjust the content of safety maintenance of information and communication properly in response to changes in regulations and technology to avoid unauthorized access, use, control, leakage, destruction, alteration, destruction or other infringements so as to ensure the confidentiality, integrity and availability.</li> <li>Reach the requirements for the classification of information communication security responsibility and lower the threats of risks of information communication safety.</li> <li>Enhance the staff's awareness of information security protection, effective detection and prevention of external attacks.</li> </ul>

STSP Bureau has passed ISO 27001 certification (Certificate TW14/10759) and is devoted to the maintenance of confidential information, physical security, employee safety, vendor security management and various hardware and software equipment, strengthening the classification and control process of confidential information. The information security control and management are compliant with the prescriptions in information security management documents. The handling process of information security incidents is as follows.



STSP Bureau implements the inspection of the data center safety management certification and relevant certification should be based on the international certification standards. By doing so, the safety certification levels can be improved, and the results are reported to the competent authorities on a regular basis.

Moreover, STSP Bureau is a Level-B agency for information security responsibility. In addition to complying with the Information Security Management Regulations of the Executive Yuan and its Affiliated Agency, the Bureau is also in charge of the following work to avoid potential threats to information security while on the other hand enhance the level of information security protection.

Information security advocacy and education & training is provided to the employees and contractors annually. If the personnel violate the regulations of confidential information management, penalties and punishments will be given based on the severity of the circumstances after investigations. There were no incidents of information leakage in 2020.



Classification of the information systems	Drill of business continuity operation	Safety testing
Check the levels of information systems for the corresponding requirements for information security protection.	Conduct the drill of continuity operation of the core information system once every other year.	Conduct the testing of the website security vulnerability once a year, the system penetration testing every other year, and the checkup of information security every other year.
Promotion of ISMS	Defense in depth	Information Security Education and Training
Maintain the validity of the ISO 27001 information security certification.	1. Antivirus, firewall, mail filtering protection. 2. IDS/IPS, WAF protection.	1. The information security personnel have to receive at least 12 hours of professional course training of information security or information security function training annually. 2. General users and supervisors have to receive at least 3 hours of general education and training of information security.
Audit method	Monitoring and management	Professional certification
The internal audit of the information security is conducted once a year.	SOC monitoring and management	1. Maintain the validity of 2 or more professional certificates of international information security. 2. Maintain the validity of 2 or more professional certificates of information security function training.

Definition of terms :

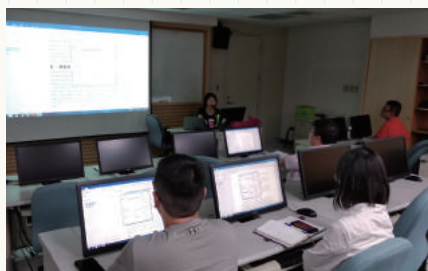
IDS/IPS- Intrusion Detection System/Intrusion Prevention System;

WAF Protection-Web Application Firewall;

SOC monitoring and management -Security Operation Center (Information Security Protection/Monitoring Center).



## General education and training of information security



## ISO 27001 information security certification



## Security Guards and Safety Control

STSP Special Police Brigade and the Fire Brigade are set up in the science park for timely response to immediate danger or hazardous emergencies. The Bureau also has arranged security personnel who take basic as well as professional educational training courses every month as required to ensure that they can handle any emergencies to maintain the security in the science park.

### Professional education and training for security personnel



## 2.3 Compliance

We abide by the Ethics Directions for Civil Servants prescribed by the Executive Yuan and ask the employees to conduct law-based administration when implementing their duties with integrity and impartiality. We also pay close attention to amendments to any domestic or foreign policies that can affect STSP. Relevant information is disclosed on the official website in an open and transparent manner.

<b>Social Compliance</b>	<b>Environmental Compliance</b>
<ul style="list-style-type: none"> <li>• No corruption.</li> <li>• No incidents violating laws and regulations.</li> <li>• No involvement in political contributions.</li> <li>• No violation of socioeconomic regulations.</li> </ul>	<ul style="list-style-type: none"> <li>• Compliance with environmental regulations.</li> <li>• No major incidents of environmental pollution.</li> <li>• Observation of voluntary environmental regulations.</li> <li>• No violation of the Basel Convention.</li> </ul>
<b>Government Compliance</b>	
<ul style="list-style-type: none"> <li>• Comply with the provisions of the Government Procurement Act, and there was no unfair competition.</li> <li>• Observe the principle of administrative neutrality and there are no political contributions and lobbying incidents.</li> </ul>	
<b>Service Responsibilities Compliance</b>	<b>Human Rights Compliance</b>
<ul style="list-style-type: none"> <li>• No violation of health and safety regulations.</li> <li>• No violation of voluntary code during the process of providing services.</li> <li>• No violation of laws and regulations.</li> <li>• No violation of the Personal Data Protection Act.</li> <li>• No major penalties.</li> <li>• No over marketing.</li> </ul>	<ul style="list-style-type: none"> <li>• Abide by the Labor Standard Act.</li> <li>• No discrimination.</li> <li>• No use of child labor.</li> <li>• No forced labor.</li> <li>• No violation of indigenous rights.</li> <li>• No human rights or labor complaints.</li> </ul>
<b>United Nations Convention against Corruption (UNCAC)</b>	
<ul style="list-style-type: none"> <li>• Government agencies should strengthen systems that promote transparency and prevent conflicts of interest.</li> <li>• Integrity, transparency, anti-corruption, honesty and responsibilities should be strengthened among public servants.</li> </ul>	



## ■ Advocacy of Integrity

The Civil Service Ethics Office of STSP Bureau is in charge of the formulation and promotion of anti-corruption laws and regulations, promoting the implementation of preventive measures, advocacy of integrity, handling of reported items, property declarations and avoidance of conflicts of interests of public servants, safety maintenance of agencies, maintenance of official secrets and so on. Every year, the office organizes annual integrity risk assessments for internal units and for employees by referring to Risk Incidents and Types of Risks. After assessment, no high-risk units and personnel were listed in 2020.



### The 17<sup>th</sup> Anniversary of STSP Bureau and Anti-corruption Advocacy Activity

#### Content of Lecture

We designed “integrity and anti-corruption” posters and questionnaire and a fun game called “Incorruption 16 Grid” to interact with the participants to convey the anti-corruption information and the integrity-related measures the Bureau has taken. This not only expanded scope of social participation in anti-corruption but also enhanced the image of integrity of STSP Bureau.

Number of Participants  
200



The public had enthusiastic participation in the Anti-corruption Advocacy Activity



Propaganda of integrity to the public through the questionnaire



### In 2020, STSP Bureau and the Prosecutors Office jointly organized a symposium on the trade secret protection system

#### Content of Lecture

We assisted STSP and enterprises as well as manufacturers in the southern region in strengthening the protection of trade secret and establishing management mechanism through seminars for the participants to communicate and exchange trade secret protection systems and consulting channels. This can help protect the park manufacturers' intangible assets from being infringed and continue to ensure the competitive advantages of the industries in the science park.

Number of Participants  
210



Minister of Justice Tsai Ching-Hsiang had a talk with park manufacturers on Practice of Trade Secret Protection



STSP manufacturers enthusiastically participated in the symposium

New-entry civil servants are one of the targets of the anti-corruption and integrity education in the Bureau, which is the orientation or on-the-job training for the employees in the form of lectures, symposiums, observations, quizzes and so on. The main purpose is to introduce the anti-corruption policies and related laws and regulations of the government and to provide consulting channels concerning anti-corruption affairs to assist new-entry civil servants in establishing correct legal understanding and deepening the awareness of integrity and honesty, enabling them to join in the construction of a clean government and at the same time enhancing the image of the Bureau's integrity. There were 10 new-entry civil servants in the Bureau in 2020, and the training rate reached 100%.



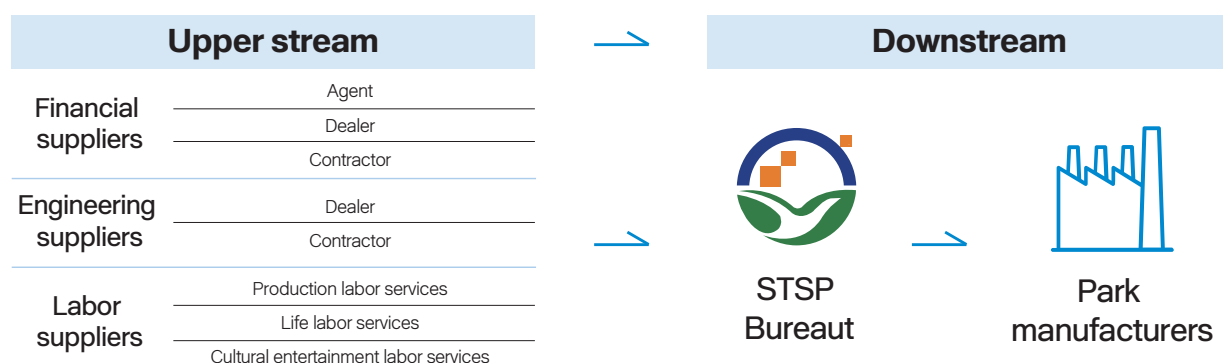
## 2.4 Management of Suppliers

The procurement of STSP is divided into engineering, financial and labor procurement. The selection of the suppliers, contractors and business partners are all publicly tendered in accordance with the Government Procurement Act. All the bids have to go through qualification screening. If there is any violation of the criteria announced, the bid will not be accepted. Except for the joint supply contract allowing the use of nearby manufacturers, there will be no restriction or special selection of local manufacturers. The private manufacturers entrusted by the Environmental Protection Center, Resource Recycling Center and Kaohsiung Wastewater Treatment Plant are all handled in accordance with the operating model of a company.

The procurement contract is handled in accordance with the Government Procurement Act and the Regulations for Priority Procurement of Eco-Products. Provisions concerning human rights in the Labor Standards Act should be specified in the contract. The Bureau had 22 engineering procurement projects, 98 labor procurement projects and 26 financial procurement projects in 2020, and 100% of the bid winners are all local manufacturers in Taiwan. The amount of local procurement was approximately NTD 3,326,753,975.

The services provided by STSP Bureau through various upstream suppliers, combined with the Bureau's own integration and matching capabilities, help park manufacturers create sustainable operating profits. At the same time, we give back to the social communities and share the common prosperity with the partners in the value chain of STSP Bureau.

## STSP Value Chain



### Environmental Inspections of Contractors

The Bureau conducts inspections on the current status of the construction projects in the park on a monthly basis to check whether the construction sites are compliant with the Management Regulations for Construction Project Air Pollution Control Facilities and the Check List for the compliance with such Regulations is also in place. If inconsistency is found, the construction unit will be informed on the spot to cooperate with the improvement and follow-up inspections.

Inspections of the construction sites can effectively reduce the occurrence of penalties imposed for violating the Management Regulations for Construction Project Air Pollution Control Facilities. In addition, the fugitive dust in the construction site or the pollution of the surrounding road surface can also be reduced. In 2020, there were a total of 14 construction sites of public works in the Tainan Science Park and the construction projects of the park manufacturers. A total of 152 inspections were conducted. In addition, 10 constructions sites were for the public works and park manufacturers' construction projects of Kaohsiung Science Park, with a total of 47 inspections.

Item	Tainan Science Park		Kaohsiung Science Park	
	Public works	Construction projects of manufacturers	Public works	Construction projects of manufacturers
Number of manufacturers inspected	3	11	1	9
Total number of inspections	72	80	1	46
Pass rate (not reaching serious deficiencies)	100%		96%	



# 3

Chapter

## A Happy Workplace



# 3. A Happy Workplace

## 3.1 Human Resource Structure

We know that genial services come from happy employees, so we attach great importance to the working environment, development, care for employees and labor rights. We have established multi-directional communication channels and provided equal treatment and respect, striving to create a safe workplace for our employees. The recruitment of personnel is fully protected by laws and regulations, and the personnel's due rights for appointment, rewards and promotion should not be affected due to differences in race, religion, skin color, political affiliation, age, gender, marriage status and physical and mental disabilities.

The total number of employees of STSP Bureau was 123 in 2020. The Director-General is appointed by the Executive Yuan to be in charge of the overall affairs of the Bureau. Two Deputy Director-Generals and one Chief Secretary are appointed by the Ministry of Science and Technology. There are 36 supervisors in total (no one from the minority groups and no foreign employees serve as supervisors). Among the employees, 111 are regular employees, 7 are employed employees and 5 are mechanics/ janitors. All the employees are residents in Taiwan, and no child labor under the age of 16 is hired. In addition, there are 27 non-employee workers in the Bureau, who are mainly to assist with the implementation of projects within the Bureau.

In accordance with Article 38 of the People with Disabilities Rights Protection Act that “Any given government department (agency/organization) of individual levels, public school, or public business agency/organization/institution whose total number of employees is no less than 34 shall employ people with disabilities with capability to work and the number of employees with disabilities shall be no less than 3 percent of the total number of the employees”, STSP Bureau has actively employed employees with physical and mental disabilities and promoted measures for a friendly workplace. In 2020, the Bureau hired 2 employees with physical and mental disabilities (one is severely physically and mentally disabled whereas the employment of a person with severe disabilities, the person shall be calculated as 2).

Staff Profile of STSP Bureau in 2020						
Item	Female			Male		
	Under 30	30-50	50 and more	Under 30	30-50	50 and more
Supervisor	0	4	9	0	8	15
Non-supervisor	5	27	9	4	33	9
<b>Total</b>	54			69		

Notes: 1. There were no part-time employees in 2020.  
 2. No child labor was used as dispatched labor to perform heavy and dangerous work.



## ● | New Staff and Turnover

All the regular employees are civil servants and are protected by the Civil Service Protection Act and Civil Service Employment Act. When employees leave the position due to retirement, promotion or changes of the job positions, and when the supervisor of the unit or when the executive of the unit have arrangements for leave, change, retirement or resignation, the complementary relationship during the period should be handled in accordance with the “Directions for Agency in Duty in Government Agencies”. The contracted staff are hired on a yearly basis, and therefore do not apply to the minimum notice period stipulated in the Labor Standard Act.

Ratio of new staff and labor turnover in 2020							
Item	Age	Under 30		30-50		50 and more	
	Gender	Female	Male	Female	Male	Female	Male
New staff	Number of people	0	1	3	6	0	0
	Ratio*	0.00%	0.81%	2.44%	4.88%	0.00%	0.00%
Labor turnover	Number of people	0	1	0	3	0	3
	Ratio*	0.00%	0.81%	0.00%	2.44%	0.00%	2.44%

Notes: 1. Employment rate= Number of new staff/Total number of staff at the end of the current year.

2. Turnover rate= Turnover number/Total number of staff at the end of the current year.

## ● | Safety in the Workplace

As a government agency, STSP Bureau is not regulated by the Labor Union Act and the Occupational Safety and Health regulations. There is no need to set up labor unions or the Labor Health and Safety Committee. In addition, there are no employees at high risks of occupational diseases. Relevant leave system is handled in accordance with the Civil Servant Leave Regulations. In 2020, there were zero occurrence of occupational disease, zero incident of work-related injuries, and zero incident of work-related deaths, and the ratio of serious and recordable work-related injuries among employees and non-employee workers was zero.

## 3.2 Compensation and Benefits

In accordance with regulations, STSP Bureau shall provide employees with insurance benefits in the event of disability, old-age care, death, family funeral, childbirth and parental leave without pay. When the staff have needs to leave without pay, such as for childcare, parent care and further studies, applications can be made in accordance with Regulations for Retaining Civil Service Position without Pay and other related welfare regulations. In addition to protecting the due rights of the staff, various system assessments, subsidies for further education and advocacy of training are also in place to create an environment for continuous learning and growth. Furthermore, diverse and interesting visits, study groups and recreational clubs are also arranged for the staff to enjoy, aiming at building a harmonious workplace that takes into account both the physical and mental health of our staff so as to further provide quality services.

## ● | Remuneration and Performance Evaluation

The compensation of STSP Bureau does not differ due to difference in gender, and the salary is 100% higher than the minimum wage prescribed by the Labor Standard Act, and the adjustment ratio is in accordance with the regulations of the Public Functionaries Remuneration Act. In addition, the performance appraisal, year-end bonus and condolence payment are all handled in accordance with the Civil Service Performance Evaluation Act and the 2020 Guide Governing the Year-End Working Performance Bonus and Condolence Payments to Military, School teachers and Staff.

Performance evaluation is conducted regularly in accordance with the Civil Service Performance Evaluation Act. Except for staff in the Personnel Office, Civil Service Ethics Office and Accounting and Statistics Office<sup>\*1</sup> and those on leave without pay, all the staff<sup>\*2</sup> should receive year-end performance appraisal or appraisal review while hired personnel are assessed with performance appraisal notice.

Note:

1. Staff in the Personnel Office, Civil Service Ethics Office and Accounting and Statistics Office directly reporting to the MOST (10 people in total) are regularly assessed by the Personnel Office, Civil Service Ethics Office and Accounting and Statistics Office of MOST.
2. The number of assessed staff was calculated based on 120 employees on December 1, 2020, and the percentage of employees receiving the evaluation was 100%.
3. The reason for the difference in the total number of employees in the Bureau was that one person retired, one transferred and one was on leave without pay.

## ● | Staff Benefits

STSP Bureau cares about every staff member in the Bureau. Only staff with healthy body and mind can provide good service efficiency. In accordance with the stipulations of the Civil Servant Association Act, the staff's freedom of assembly and association is guaranteed. The Bureau also provides subsidies to cover cultural and recreational activities, actively encouraging our staff to establish clubs and hold leisure activities on holidays. Our staff members are encouraged to form a habit of exercising to relieve work stress while at the same time enhance emotional exchanges among associates and enrich their lives. In 2020, the budget for cultural and recreational activities was NTD 254,000.

In accordance with relevant stipulations of the Measures for Improvement of the Leave of Civil Servants of the Executive Yuan and Its Affiliated Agencies, the total number of staff applying for tourism subsidies and National Travel Cards, including hired employees and janitors totaled 123 in 2020. In addition, on the eve of the staff's birthdays, the Director-General personally signs on the birthday cards and sends the cards together with the birthday cash gifts. Retirement of staff is handled in accordance with Public Servant Retirement and Pension Act. In 2020, there were no cases re-appealed and reviewed after being withdrawn by the Civil Service Protection & Training Commission.



Hiking in Ogasawara Mountain on September 19<sup>th</sup>



Table tennis match on July 28

### Parental Leave without Pay

In 2020, one employee applied for parental leave without pay (1 female) and two were reinstated (among the two female staff members, one belonged to current-year reinstatement and the other was cross-year reinstatement).

Item	Female	Male
The number of employees who were on parental leave without pay in the current year (A)	1	0
The number of employees who were expected to be reinstated after parental leave without pay in the current year (B)	1	0
The number of employees who were actually reinstated after parental leave without pay in the current year (C)	1	0
The cross-year number of employees who were actually reinstated after parental leave without pay (D)	1	0
The cross-year number of employees who were actually reinstated and has been reinstated for 12 months (E)	1	0
Reinstatement rate 1(C/B)	100%	-
Retention rate 2(E/D)	100%	-

Note: Cross year refers to application for parental leave without pay that was not applied in the current year but a year or two years earlier.

## 3.3 Labor-Management Equality

### Gender Equality and Human Rights

STSP Bureau supports and implements gender equality policy and does not limit one specific gender as a qualification. We also observe relevant laws and regulations in terms of recruitment and strictly require our suppliers to comply with relevant regulations. To create a friendly workplace with equal rights, we will increase the involvement of female staff in the decision-making process, eliminate occupational gender segregation and promote family-friendly policies to advocate the awareness of gender equality. Importance is also attached to the LGBT Group and to their rights to facilitate understanding, enabling friendliness and tolerance in the daily working environment.

2020 Employee training in equality and human rights		
Item	Total hours (Hr)	Ratio of training (%) (including physical courses, digital learning and so on)
Human rights policy training	390	81
Gender equality training	479	95



Gender Mainstreaming Film & Book Club



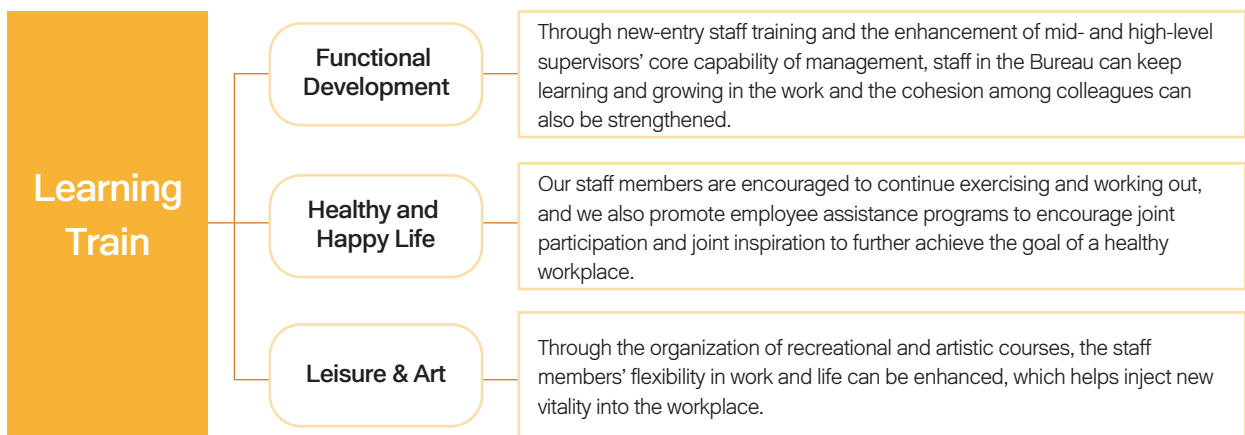
Lectures on Human Rights



## 3.4 Education and Training

### Staff Training

In 2020, the main planning of staff training is based on the annual schedules and goals, requiring all staff to receive more than 20 hours of training in business-related education and training every year (mechanics and janitors are not specifically required), which included 10 hours of major national policy related training. In 2020, training was combined with a series of activities entitled “Learning Train- Functional Development, Healthy and Happy Life and Leisure & Art”. Through diverse learning channels, our staff members can improve professionally and inject new vitality to their workplace to enhance their work value and to achieve self-realization. The total training hours for STSP Bureau staff amounted to 5,331 hours in 2020.



2020 Statistics of personnel education & training at STSP Bureau				
Employment Type	Supervisors		Non-supervisors	
	Female	Male	Female	Male
Number of people	13	23	41	46
Total training hours (hr)	605	725	1,887	2,114
Average training hours	47	32	46	46

Note: 1. The number above does include those on a leave without pay.  
 2. Average training hours= Total training hours in the category/ total number of employees in the category

Thank you for organizing such a high-quality course

The lecturer gave very clear explanation and I benefited a lot. I hope there are more courses like this.

The story is really touching. I learned a lot and am full of positive energy.



## ● | Subsidy for Training and Education

To encourage our staff members to apply for on-the-job education to enhance the overall competitiveness, STSP Bureau provides subsidies of NTD 20,000 at most per person per semester in accordance with the Main Points for Domestic Training and Education for Staff of Southern Taiwan Science Park Bureau of MOST. In 2020, one staff member was subsidized.

## 3.5 Energy Conservation

### ● | Management of Electricity Use

Through active response to and promotion of energy saving and carbon reduction policies, the Bureau effectively implements sustainable management through joint efforts through education and has integrated green management into daily operation. The goal of electricity use management at STSP Bureau is to maintain less annual power consumption compared with the previous year, indicating the effectiveness of the implementation of energy conservation measures.

Item	2018	2019	2020
<b>Electricity consumption (kWh)</b>	2,075,814	2,037,879	1,968,037
<b>Solar power consumption (kWh)</b>	20,937	20,945	20,955
<b>Energy consumption (GJ)</b>	7,548.30	7,411.77	7,160.37
<b>Floor area of STSP Bureau (m<sup>2</sup>)</b>	54,407.25	54,407.25	54,407.25
<b>Energy intensity (GJ/floor area)</b>	0.1387	0.1362	0.1316
<b>GHG emission intensity (ton CO<sub>2</sub>e/floor area)</b>	0.0205	0.0202	0.0195

- Notes: 1. The total energy consumption within the organization is calculated in accordance with the GRI Standards with joule or its multiples as the unit.  
 2. Every 1 kilowatt-hour of electricity= 1kWh= 3,600 joules.  
 3. Energy intensity is calculated with the floor area of the administration building of the Bureau serving as the denominator.  
 4. The GHG emission intensity of the Bureau was calculated based on the EPA's Greenhouse Gas Emission Coefficient Management Table 6.0.4 version.  
 5. The reorganization of the data in 2018 and 2019 was for the inclusion of electricity consumption in the Kaohsiung Administration Building.  
 6. The source of electricity at STSP Bureau is from Taiwan Power Company and solar power.

### ● | Water Conservation

We understand the importance of water resources, and STSP Bureau starts cherishing water by setting an example of promoting water conservation measures to improve the water consumption efficiency in all units and strengthen water management and water recovery to achieve the purpose of sustainable usage of water resources. Due to the fewer days of precipitation, the supply of reclaimed water was relatively reduced and the water use for air-conditioning was increased (the evaporation of cooling water was relatively increased), leading to the slight increase in water consumption of the Tainan Administration Building of the Bureau in 2020 by 497 m<sup>3</sup> compared with 2019.


Item	2018	2019	2020
<b>Water consumption (million liters)</b>	9.65	10.07	10.57
<b>Floor area of STSP Bureau's Tainan Administration Building (m<sup>2</sup>)</b>	42,565.70	42,565.70	42,565.70
<b>Water intensity (million liters/ m<sup>2</sup>)</b>	0.000227	0.000237	0.000248







Note: 1. Water intensity is calculated with the floor area of the administration building of the Bureau serving as the denominator.

2. Starting from 2021, the water consumption data reported to the Bureau of Energy will include the customer number of Kaohsiung Administration Building so that comparison between the two administration buildings at STSP can be made when the statistics are complete to facilitate the promotion of water conservation measures.

## Energy Conservation and Carbon Reduction Measures

After years of the Bureau's restless efforts in energy conservation and carbon reduction, the effectiveness of energy conservation achieved continues to accumulate. We spare no efforts to protect the environment, continue to ask our staff to abide by the energy and water saving measures and plan long-term and feasible measures. While operating the science park, the Bureau also strengthens counseling and inspections of air, wastewater discharge and waste disposal of the park manufacturers to ensure the compliance with environmental laws and regulations, aiming at stepping toward a low-carbon science park.



 <b>1</b>	 <b>2</b>	 <b>3</b>
<p>Make ice during the off-peak hours for the ice storage air conditioning system.</p>	<p>Promote the energy and electricity saving concept and adjust the air-conditioning supply time.</p>	<p>Make regular patrols and turn off power when not used at hand.</p>
 <b>4</b>	 <b>5</b>	 <b>6</b>
<p>Encourage the staff to take the stairs, and the elevator is set to skip the 2nd floor of the administration building.</p>	<p>Make use of card insertion device for energy conservation to ensure complete cut of power.</p>	<p>Automatic lighting system is installed in some areas, and the air conditioners are all installed with variable-frequency device.</p>



## ● | Green Procurement

To cooperate with the goal of the national green procurement policy, the Program for the Promotion of Green Procurement in Government Agencies, the environment performance is taken into consideration in the decision-making process of the procurement. In the Small Procurement System of the Bureau, there are green procurement options that remind and facilitate the statistics of green products so that priority can be given to products with energy labels, water efficiency labels, energy star labels and other environmental protection labels. As of 2020, the total amount of green product procurement amounted to NTD 3,006,135 and among them, 52 procurement projects had 100% of the designated products procured with environmental protection or energy labels. Our annual performance evaluation rating of green procurement is “excellent” every year.



GO GREEN



# 4

Chapter

## Inclusion at STSP

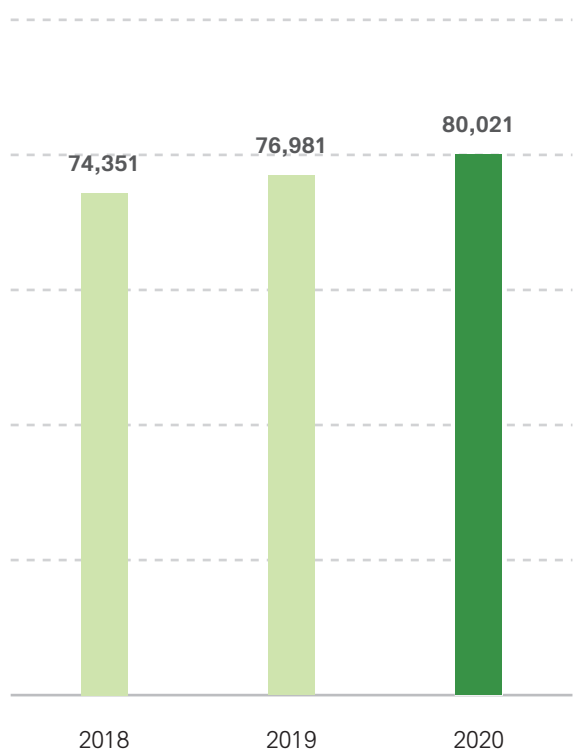


# 4. Inclusion at STSP

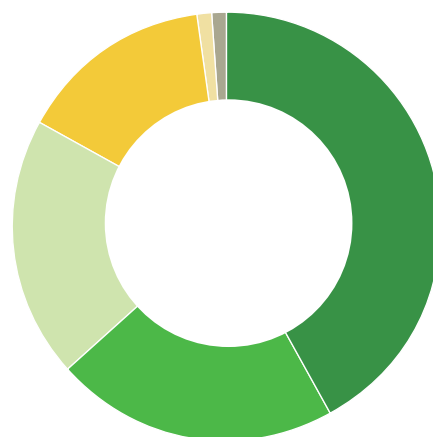
## 4.1 Employment of Talent in the Science Park

The industrial clusters in STSP are thriving. To assist the park manufacturers in finding good talents and help the job seekers with employment opportunities, STSP Bureau works with the local government and other business units to co-organize a number of talent recruitment activities every year. As of December, 2020, the total number of employees in STSP has reached 80,021, an increase of 3.9% compared with the same period in 2019. We hope to attract more excellent talents to join STSP and bring vitality to the science park.

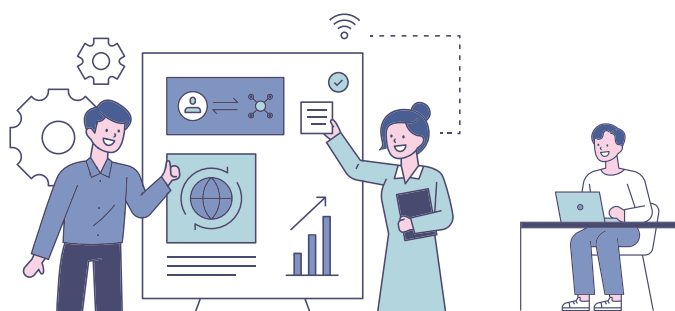
Employed population



Level of Education of Employees as of the end of 2020



College	42.0%	33,589人
Master's	21.6%	17,316人
High school	19.5%	15,590人
Junior college	14.8%	11,811人
PhD	1.1%	875人
Others	1.0%	840人





STSP has organized recruitment activities with many units in the park, providing an opportunity for those who are away from home to return and work in their hometown. The activities organized are as follows.



Group photo in front of Delta Electronics

### 2020 Summer Camp- A Visit to STSP

To enable college students, graduate students and doctoral students from various universities and colleges at home and abroad to better understand the environment and industrial development of STSP, the Bureau organized the 2020 Summer Camp- A Visit to STSP to trigger their willingness to work in STSP. There were a total of 8 sessions in July and August, 2020, and the experience tour in Tainan and Kaohsiung Science Park areas attracted students from 45 schools, including NTU, NTHU, NCTU and NCKU and many others.

### Employment Matchmaking, On-site Recruitment

The Bureau and Labor Affairs Bureau of Kaohsiung City Government co-organized the 2020 Employment Matchmaking, On-site Recruitment Event on August 22 in National Kangshan Agricultural & Industrial Vocational Senior High School. The participating manufacturers included Innolux Corp., King Slide Technology, Zacros Group, Mildex Optical, TSMC and so on this year. In addition to the recruitment of 4,000 people throughout Taiwan of the year by TSMC, a total of 249 job openings were provided by other park manufacturers this time, providing people with job opportunities to join in the technology industry.



The application form filling area is crowded with applicants



Opening ceremony of the Job Fair

### 2020 Living and Working in Tainan Job Fair

STSP Bureau and the Labor Affairs Bureau of Tainan City Government co-organized the 2020 Living and Working in Tainan Job Fair in Shanhua Community Center to solve the problems of lack of manpower for enterprises and job hunting for the public. The participating 9 manufacturers included E-One Moli Energy Corp., Innolux Corp., Taiwan Hodaka Technology, TSMC and so on. In addition to the recruitment of 4,000 people throughout Taiwan of the year by TSMC, other park manufacturers offered more than 600 job opportunities in precision machinery, semiconductor and optoelectronics industries, providing best quality options for the public.



The machines and 3-D printed products at AI\_Robot Base are really cool!! I get to have a clearer concept of related industries. Visiting the National Laboratory Animal Center is also a wonderful experience~

After this camp, I realized that STSP is not a place with factories and companies but a well-planned living area with lots of activities and many lively public arts. The experience really changed my way looking at STSP.

Being able to get the first-hand experience to understand the current situation of the industries really broadened the horizons for us students. The itinerary planning and the lunch were great. We were really thankful for the guides to work so hard to break the ice and chat with us all the way. Thank you so much.

We want to thank STSP for organizing this event for college students to enable us to know more about STSP. After the visit to STSP, we can also have a clearer idea of the direction for our future employment.



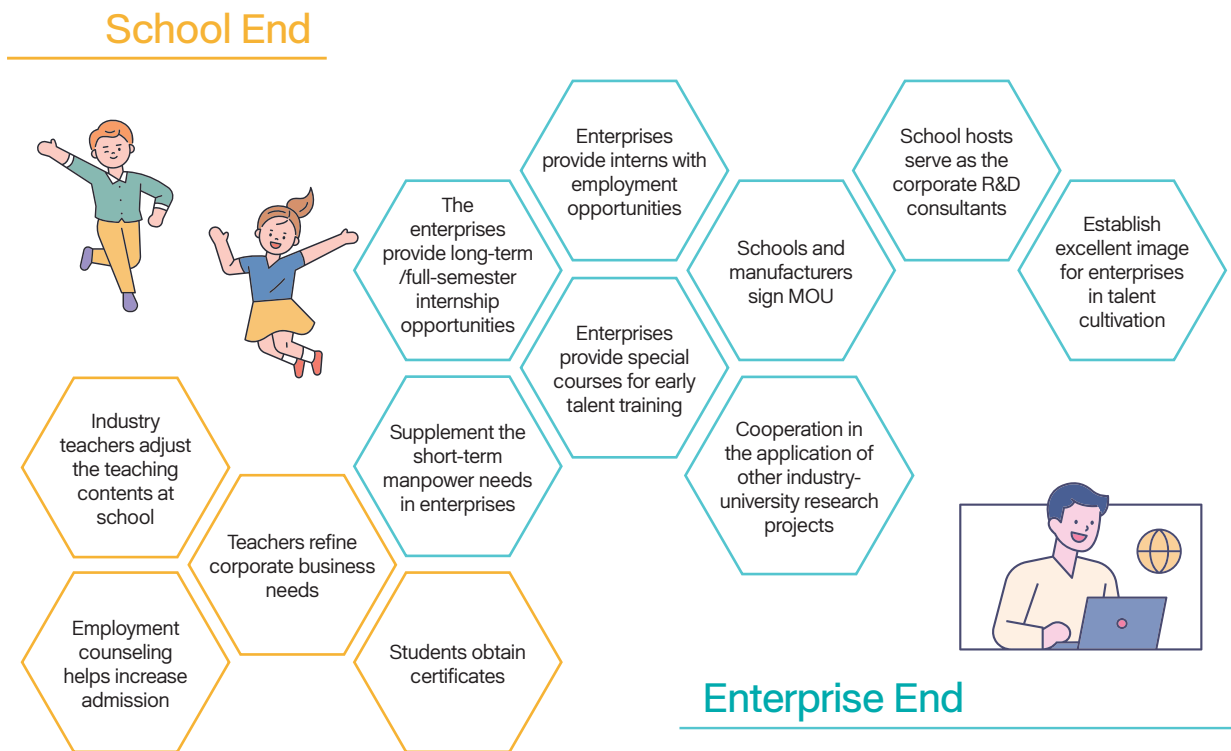
Participating students in 2020 Summer Camp- A Visit to STSP

## 4.2 Cultivation of Talent in the Science Park

### Science Park Talent Cultivation Subsidy Program

To encourage the sustainable innovation and R&D of the manufacturers and assist the cultivation of high-tech professionals, STSP Bureau encourages the colleges and universities near the science park to organize professional module courses that are in line with high-tech industries to enhance the professional skills of the graduates-to-be. Furthermore, theoretical teaching and practical experience are combined through internships to shorten the gap between learning and application among talents in the technology industry to establish an effective industry-academia matching mechanism for the park manufacturers.

This program facilitates exchange opportunities between schoolteachers and the industry in teaching and researching through industry-university collaboration projects, which further increases the employment opportunities for students. In 2020, STSP Bureau has confirmed 12 projects, with a total subsidy of NTD 8 million. A total of 9 schools actually implemented the talent cultivation projects, providing 11 module courses and corporate internship courses, cultivating 642 people. In addition, the cultivation results included 4 competitions, 6 categories of certification, 71 certificates in total, 1 session of results presentation and 1 industry-university collaboration projects.



Science Park Talent Cultivation Subsidy Program



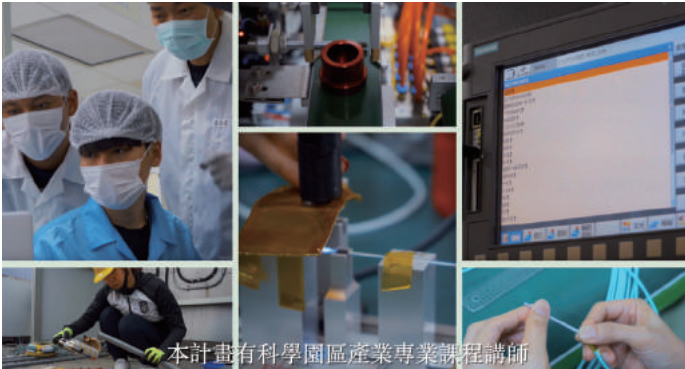
Enterprise visit from Chung Cheng University to the Precision Machinery Research and Development Center



Project implementation and content of hands-on projects



Internship experience sharing from Southern Taiwan University of Science and Technology



Internship situation in a participating enterprise



Epistar internship program briefing

## Professional and Technical Talent Training Program

To facilitate smooth industrial development and upgrading, STSP Bureau has been working on the services of talent training for more than a decade and has continued to promote the “Professional and Technical Talent Training Program” through professional courses and lectures. Top instructors are invited to give lectures on the latest R&D trends, and managers in the industry are invited to share their management experience, aiming at stimulating the innovative thinking among the talents. It is hoped that through the talent training program, substantial help can be provided for the R&D and growth of the industries and that talents can be cultivated for the preparation of the growth in the high-tech clusters.

In addition to launching 6 major types of courses targeting at the industries in the park in 2020, in response to the rise of semiconductor, AI and other related industries, we have planned courses with the main axes in semiconductor, intelligence and 5G and introduced two subsidy resources from Industrial Development Bureau, MOEA and Workforce Development Agency to expand the training capacity of STSP.

- A total of 441-hour physical courses were provided (including 4 major courses of professional courses, introduction of external resources, corporate classes and open classes), with approximately 1,562 trainees. Among them, 40% of the trainees were management-level position holders while 60% were continued learners.
- A total of 441-hour physical courses were provided (including 4 major courses of professional courses, introduction of external resources, corporate classes and open classes), with approximately 1,562 trainees. Among them, 40% of the trainees were management-level position holders while 60% were continued learners.
- Completed 6 sessions of talent matchmaking events, linking 12 manufacturers and 19 colleges and universities in the Academia-Industry Consortium for STSP, and more than 1,000 students and job-seekers participated in the matchmaking events.





Completion course for semiconductor manufacturing process



Introduced resources from MOEA and facilitated the corporate classes of smart manufacturing module



Invited biomedical engineering related inter-school students to United Orthopedic in Kaohsiung Science Park to have exchanges with experienced experts in the field



Flipping your Life-Taking the Opportunity in the Post-Pandemic Era-the HR Forum & Talent Matchmaking in Tainan

## 4.3 A Good Life in STSP

The Bureau provides park manufacturers with faster and more convenient services. The 12 categories of industrial and commercial services in the science park include banking and finance, post office, securities, travel agency, accounting, law, equipment service providers, electronic material agency and sales, consultancy, telecommunications, inspection and verification and customs clearance services to address the needs of park manufacturers. STSP Bureau aims at creating a high-quality environment with high efficiency, safety, health, and comfort to attract industries and talents.

### Amiable Services in the Science Park

In addition, to provide more complete life functions in the park, life service industries including food, shopping, sports, leisure, childcare and after school care centers are also introduced in the science park. Please check STSP official website for details.



Official website of STSP Bureau


### Upgrade of STSP Shuttle Bus

In addition to providing different lines of shuttle buses for commuting passengers and for to and from trips between TRA Nanke Station or HSR Tainan Station and STSP, there is also the Holiday Commercial Line shuttle bus taking visitors to Museum of Archaeology, Tainan Branch of NMP or to the Yinxi Lake



for a romantic walk. To better meet the users' demand, the STSP Shuttle Bus Green line (HSR Line) even combines the innovative measures of Demand Responsive Transportation System (DRTS) to receive reservation one hour before departure and pick up passengers at the shuttle bus stops in all plants in addition to the fixed bus schedules and station rides that will return back to Park 17 Stop to set off to HSR Tainan Station in accordance with the fixed bus schedules. It is recommended to download the APP, Science Park Action Wizard 2.0, and click on STSP for the real-time information of the STSP shuttle bus and other related information.









Science Park Action Wizard 2.0 Android



Science Park Action Wizard 2.0 ios



Advanced Traveler Information System

### ■ The First Self-Driving Bus Route in Southern Taiwan

STSP Bureau, Tainan City Government, MOEA and the Self-Driving Car Technology Company have made preparation for the past 6 months and have successively passed the self-driving bus experimental project and received the test license plate. Advanced fields such as 5G high-speed communication, Artificial Intelligence (AI), Internet of Vehicles (IoV), high-precision maps, automatic control, commercial large vehicles, smart energy and power grids, and system certification and verification require integration for cross-disciplinary collaboration to complete the innovative application. The technical team conducted the road trial test in



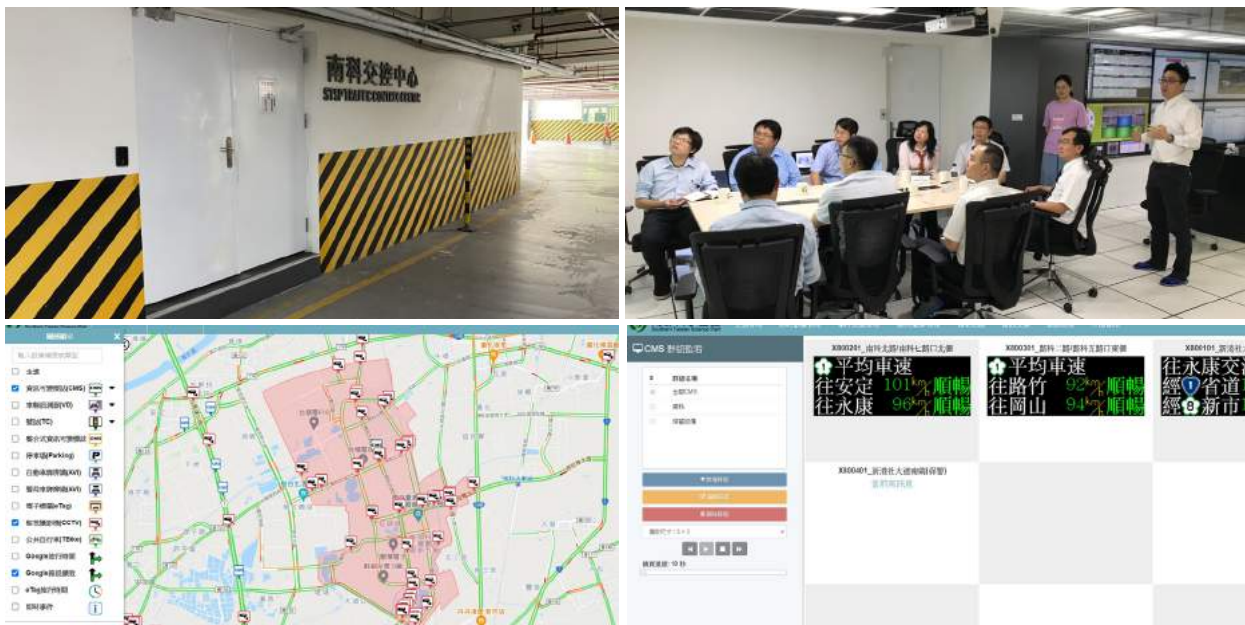
People experiencing a ride on the self-driving bus

Tainan Science Park and continued to carry out a 3-month no-passenger test. The length of the self-driving bus course will be 6.4 kilometers in the future. It is expected to run on holidays and stop at TRA's Nanke Station, Museum of Archaeology, Tainan Branch of NMP, STSP Bureau, and NNKIEH.

### ■ The STSP Traffic Control Center

During rush hours, the traffic flow from the south side of STSP accounts for about 44% of the overall traffic. The installation of a park cloud traffic control center enables the real-time traffic condition information on the major roads in the park area through the monitoring screen, providing real-time traffic condition for road users. Through the dynamic time base coordinated control of the traffic signal lights and the method of congestion adjustment, and with the installation of the travel time display service, travel time in the science park during rush hours can be shortened and the proportion of traffic on the south side of STSP can also be reduced. Pedestrians in the park or in the surrounding areas can also download the app or connect to the real-time traffic information to get the real-time traffic condition in the park. The Phase I (hardware and traffic control network facilities) and Phase II of Traffic Control Center Project (roadside equipment installation for traffic data collection, information release and traffic center connection control) have been completed to effectively reduce traffic congestion and improve the road use efficiency.

The overall performance of the guided strategy operation improved 7.6% in 2020		
	Improved traffic in the morning peak period	Improved traffic in the evening peak period
Tainan Science Park	10.1%	5.6%
Kaohsiung Science Park	5.3%	1.8%



In response to the continued growth of traffic flow in STSP and to continue the promotion of the informatization and intelligentization of traffic control facilities management, the Bureau plans to strengthen the operation of the traffic control center and gather as well as combine traffic information through the expansion of smart traffic control equipment and functions of traffic control system to shorten the response time of the traffic control strategy management. In addition, information exchange and integration are also conducted with other traffic control centers or monitoring centers to expand the scope of road



condition monitoring outside the park. Furthermore, intelligence image recognition system and dynamic traffic signals control strategies are utilized to relieve the traffic flow on the major roads in and out of the science park, reducing the travel time on the major roads in STSP during peak hours by 5-10%

### ■ Childcare in the Science Park

The establishment of the childcare facilities is conducted in accordance with the amended Act for Establishment and Administration of Science Parks. It is open to childcare institutions outside the science park to establish appropriate childcare facilities in the science park. The Bureau provides the venue for rent at preferential rates for the childcare facilities to enable the employees to arrange childcare so that they can concentrate on their work while working, achieving a balance between work and the family.

The Bureau also provides counseling for the park business units to provide childcare measures and breastfeeding rooms to implement a friendly workplace. A total of 20 park manufacturers received the counseling in 2020. In addition, subsidies for childcare facilities and measures are also budgeted every year to assist business units to handle these measures, encouraging them to create a safe workplace and family life for the workers at STSP. As of December, 2020, a total of 68 business units with 100 employees and more have provided childcare measures and breastfeeding rooms in accordance with regulations.

### ■ The establishment of a Multi-functional Sports Park in Kaohsiung Science Park

The Public Park No. 2 of the Kaohsiung Science Park has an area of 5.43 hectares, and it is a sports-oriented park, having 1 softball field, 3 basketball courts, 3 tennis courts, 1 speed skate rink (200 meters for 1 lap) and children amusement facilities, providing the employees in the science park with a recreational space with multiple functions.

*Phyllostachys makinoi*, a Taiwan's native species, is chosen to be planted as the main scenic trees, with the public art work, "Stationed Bamboo - Bug from Heaven" installed in the central circular square, to create the image of forest insects in the recreational square in the park. The public restrooms in the park are conceived with paper airplanes and triangular folding panels are used to express the architectural image of freedom, vitality and flying, creating an image of white paper planes flying in the green woods. In addition, diverse plants are planted around the sports facilities and the different flower seasons will create stunning visual beauty in time series. Moreover, the children play area can also strengthen the affection and interaction between parents and children. Under the efforts of STSP Bureau, the living functions of the Kaohsiung Science Park has gradually improved. It will not take too long for Kaohsiung Science Park to be developed to the scale of Tainan Science Park in the future.



Play area



Central circular square in the park



Basketball court



Ice rink

### ■ Exercise at STSP

STSP Bureau promotes exercise in the science park. In addition to the annual STSP CUP community spirit ball games for basketball, badminton, table tennis, volleyball, softball and other exchange matches, the highly popular 3-on-3 basketball game as well as the monthly night run in Tainan/Kaohsiung Science Parks are also held. In 2020, the Bureau continued to organize the Exercise at STSP, a fitness walking event with more than 3,000 participants. The professional badminton player, Tai Tzu-Ying was invited for the third time as the spokesperson, setting off a trend of exercise in the science park again. The Bureau is dedicated to promoting various sports in the science park, making the park a good place for starting business and families. The goal is to make STSP more than just a science park. We aim at creating a favorable living circle integrated with the surroundings where there is home, dream and future that awaits all to join this big family together.



STSP 5K Fitness Walking Event



World No.1 badminton play Tai Tzu-Ying appeared in STSP and demonstrated her skills



### ■ Working-Out at the Gym Together

Owin 1 Fitness Center not only helps with the formation of the habit of exercising for health promotion among the employees in the science park, it also organized the Exercise at STSP Health Promotion Activities during December, 2020 and provided course experience activities in the fitness center free of charge, including yoga, aerobic combat, Zumba, and gym facilities, which enabled employees in the park to relieve stress at work and exercise for the balance of body and mind through exercising.



## 4.4 A Good Workplace in STSP

Relevant measures concerning gender equality in employment are promoted through official documents, Facebook Fanpage, electronic bulletin board, emails and STSP Official Website as well as in large-scale events. In addition, the propaganda posters and materials are provided to actively encourage business units to participate in publicity meetings, coupled with Act of Gender Equality in Employment related quiz activities to improve the knowledge of business personnel, promote gender equality in employment and establish more stable working conditions and environment.

### ● | Advocacy on Gender Equality in Employment

To strengthen the park manufacturers' awareness and understanding of the Act of Gender Equality in Employment and prohibiting employment discrimination and to facilitate equal rights in the workplace, in addition to making short films to advocate gender equality, STSP Bureau also organized workshops and invited professionals to have lectures on Act of Gender Equality in Employment, case study of workplace sexual harassment, and practical case study of employment discrimination. It is hoped that the employees in the HR Department could find it useful in the handling of related issues in the future so as to further assist business units to construct a friendly workplace and promote labor-management harmony.

1. The publicity slogans for gender equality in employment were shown on the electronic bulletin board in STSP from time to time. Articles on gender equality in employment are also published in the Southern Taiwan Science Park Newsletter.
2. Made materials for the promotion of gender equality cases (including propaganda short film) to provide HR staff in the science park with materials for law propaganda targeting at labors and basic-level management for them to abide by the laws and regulations. In 2020, 5 sessions of playing the

propaganda short film on gender equality before the movies were organized on STSP Movie Night, and the content of the short film included parental leave without pay, childcare allowance and CEDAW promotion to strengthen the promotion of the gender equality concept.

3. In 2020, the Cheering Station for Gender Equality in Employment was established in 2 sessions of large-scale events, and questionnaire was designed to interact with the public on the spot, coupled with explanations of laws and regulations concerning gender equality in employment and employment discrimination (approximately 300 and 150 copies of questionnaire were completed respectively).
4. We organized 2 sessions of “Workplace Equality and Sexual Harassment Prevention Seminar” in Tainan Science Park and Kaohsiung Science Park each on September 15 and September 17 respectively, with 51 representatives from 38 manufacturers participating. Attorneys and judges were invited to have lectures on relevant laws and sexual harassment prevention through case study, hoping to enhance the business personnel’s professional knowledge and facilitate equality in the workplace.



Propaganda short film on gender equality played before the movies on STSP Movie Night



Slogans on the digital billboards in the science park



Workplace Equality and Sexual Harassment Prevention Seminar



## Gender Discrimination Cases

To provide legal assistance for employees or job seekers who are in gender equality lawsuits, the Bureau has set a fund of NTD 50,000 for legal assistance in gender equality lawsuits and set up a review team for legal assistance of gender equality cases. The committee is composed of 7 committee members, with 3 female and 4 male representatives, including 4 external experts, and is in charge of reviewing relevant subsidies of lawsuits. There was no application for the fund in 2020.

In 2020, the Bureau convened 3 sessions of Gender Employment Equality and Employment Discrimination Review Committee to discuss issues concerning Act of Gender Equality in Employment, discrimination cases violating Employment Service Act and complaints of sexual harassment in the workplace as well relief channels to safeguard the rights and interests of the complainants. Among them, the reviewing process of 1 case of gender discrimination and 1 case of sexual harassment in the workplace were completed. The Bureau used the cases as the propaganda materials to promote a friendly workplace and environment in the science park.

## ◻ | Promotion of Recognition of Workplace Equality in the Science Park

To safeguard labor rights, promote a friendly working environment, facilitate labor-management harmony and reduce labor disputes, STSP Bureau organizes the Award-Giving for Promotion of Work Equality in the Workplace for excellent business units to encourage enterprises to actively implement labor laws and regulations and construct a harmonious working environment. In 2020, a total of 66 excellent employees and 9 manufacturers promoting work equality in the workplace won the awards. However, due to the epidemic of COVID-19, the public award-giving ceremony was canceled. To commend the employees in the science park for their contributions to the construction and economic development of STSP, carry forward the spirit of dedication, promote the friendly workplace and build a harmonious labor-management relationship, a themed micro-film was produced to show the significance of these business units and employees and express gratitude toward them for their hard work, dedication and diligence. The micro-film is also used to publicize the glory and pride of people at STSP.



## ◻ | Industrial Safety and Environmental Protection Month

The activities for the Industrial Safety and Environmental Protection Month not only focus on how to enhance industrial safety and health management but also continue the promotion of “Promoting Exercising, Keeping Healthy” as the main axis of planning, which are in line with the policy goals of healthy exercise promotion, work stress relief and physical and mental well-being.

## ■ Deep Cultivation of Environmental Education

The Science Park has spared no efforts in promoting the concepts and actions of nature conservation. Therefore, it is hoped that colorful ecological experience can be enjoyed without destroying the natural environment so that we can get to know the preciousness and fragility of the protected areas and the biodiversity in Taiwan and further to take concrete and feasible eco-friendly actions in our lives





Maolin Environmental Education Center- Purple Crow Butterfly 3D Exhibition Hall (film introducing how migratory purple crow butterflies spend winter in Maolin)



Maolin Eco-Park (appreciation explanatory tour for purple crow butterflies)



A tour to Dona Tribe (Guided tour introducing tribal culture)



## ■ Cycling Trips

To promote eco-friendly, cost-saving, healthy and stress-relieving cycling activities, STSP Bureau and the Cycling Clubs of the park manufacturers co-organized cycling trips in Hu Tou Pei Scenic Area and Er-liao. The activity was divided into two groups. The roaming group had a biking trip to Hu Tou Pei Scenic Area while the endurance group had a biking trip to Er-liao, whose round trip was about 60 kilometers.



The roaming group biked around the lake in Ho Tou Pei Scenic Area



The endurance group took a photo at Guanriting in Erliao, Zuozen Dist.



### STSP Industrial Safety E-paper

STSP Bureau sends the STSP Industrial Safety E-paper to its subscribers to publicize related information on occupational safety in the park. As of March, 2021, a total of 227 issues of the e-newsletter have been published since the issuance, with a total of 2,526 subscribers. The content of the e-newsletters includes the monthly labor statistics, business promotion of the labor inspection center, industrial safety news and health promotion column for the real-time updates of news and activities.



STSP Industrial Safety E-paper



STSP Industrial Safety E-paper

## 4.5 A Smart, Healthy and Safe Science Park

We have been devoted to creating a safe, healthy and happy science park as our core work, aiming at developing high-quality labor force and increasing the attention and efforts of occupational safety and health in the working environment among the employees. In terms of occupational safety and health, we aim at creating a sustainable working environment for a healthy and safe smart park.

1 <sup>st</sup> Stage	2 <sup>nd</sup> Stage	3 <sup>rd</sup> Stage	4 <sup>th</sup> Stage
1999~2007	2008~2012	2013~2017	2018~2023
Reduction of occupational disasters	Integrated Risk Management for Disaster Prevention	Sustainable Development of a Science Park of Happiness	Creating a Smart Innovation and Health Park

To implement the vision of a Smart Innovation and Health Park, STSP Bureau has developed 14 action plans, aiming at achieving the following 6 goals in 5 years (2018~2022). The 6 goals include:

### Introducing smart and innovative technology into safety and health

To simplify the operation of the Earthquake Early Warning and Smart Disaster Prevention System, the Bureau integrates the Earthquake Early Warning System, the Monitoring System and the Environmental Monitoring System as well as the chemical management system, and through big data analysis, information can be presented in Geographic Information System (GIS) and 3-D realistic mode, making it possible to provide rapid and effective information and suggestions for decision-making to reduce damage caused by the disaster.



### ● | Increase health care penetration rate to 100%

The Employee Clinic of Southern Taiwan Science Park is the first medical service team from private medical center to be introduced among government-developed industrial zone and science parks, providing medical services and health consultation for employees of park manufacturers and the neighboring residents. The Employee Clinic of Southern Taiwan Science Park provides timely professional consultation and epidemic prevention guidance for park manufacturers from pulmonary tuberculosis in the past, to SARS, H1N1, H5N1 and even to the outbreak of the COVID-19 pandemic. It provides a full range of medical services, successfully playing the role of family physician in the big family of STSP.

The firstly established workplace ecosystem in the health park combines the strengthening of workplace safety and health of the Occupational Safety and Health Administration of Ministry of Labor, the Healthy Workplace Certification of the Health Promotion Administration of Ministry of Health and Welfare, and Sports Enterprise Certification of the Sports Administration of Ministry of Education. In 2018, the “Health Park, The First Year of Sports” was promoted to establish a healthy workplace ecosystem in the science park. We invited Tai Tzu-Ying as the spokesperson from the year 2019 to 2021 and organized neighborly ball games and a monthly night run to create a healthy and sporty atmosphere at STSP.

We organized workplace health promotion counseling and established the STSP Safety and Health Counseling Team, which is composed of the physicians of the Employee Clinic of STSP, senior nurses of the park manufacturers and experts in the academic circle to provide on-site counseling on physical and mental management and protection of the workers in manufacturing and construction industries.

Regarding the Article 22 of the Occupational Safety and Health Act, we focus on whether medical personnel are employed or contracted in accordance with the law to conduct health management, occupational disease prevention, health promotion, and other activities to ensure the health and protection of laborers.

<b>The number of counseling sessions in the plants for the past 3 years (2018~2020) reached 211</b>		
<b>Manufacturing safety and health</b>	<b>Construction industry</b>	<b>Health promotion projects</b>
77 sessions	91 sessions	43 sessions

In addition, according to the statistics of the Labor Health and Protection Management Reporting Information System of the Health Administration of Occupational Safety and Health Administration of

Ministry of Labor (as of the end of December, 2020), the overall health service rate of the science parks within STSP has reached 97.80% (the number of manufacturers that should employ or contract medical personnel was 91 to serve a total of 74,348 employees. Among them, 89 manufacturers completed system filing, serving 73,967 employees. The service rate was  $73,967/74,348=99.49\%$ ).

### • | **100% coverage rate of chemical management exposure assessment and hierarchical management system**

According to statistics, as of 2020, the number of reported manufacturers was 266, and the reporting rate of chemicals amounted to 7,576 types. The management of chemicals are explained as follows.

- (1) When a business unit in the science park introduces investment, advocacy and review of occupational safety and health related matters are implemented. When the business unit has the plant building and land releasing meeting, the Bureau will remind the matters to be noted concerning construction safety and health before the construction. During the time after plant construction and before the commencement of mass production, propaganda, inspection, counseling, and joint inspections will be carried out to have a supervision and care in the entire process of the life cycle of the plant in the science park.
- (2) We have established the Chemical Management Reporting Platform and the Earthquake Early Warning and Smart Disaster Prevention System to control the chemicals of the park manufacturers and to enhance our disaster response capabilities.
  - a. The Chemical Management Reporting Platform quickly grasps the location of storage, quantity, and types of the chemicals comprehensively from the source, and there is a built-in CCB chemical graded management software to implement graded risk management and hazard prevention.
  - b. The Earthquake Early Warning and Smart Disaster Prevention System integrates the environmental monitoring and chemical management systems, and by integrating the big data analysis of the monitoring of all systems, the disaster response capabilities of the science park can be improved.
- (3) Follow-up Supervision Measures:
  - a. Implement labor inspections and cooperate with the fire brigade in the science park to implement joint inspection of public hazardous materials to compare the list of hazardous chemicals of the park manufacturers and the information registered in the Smart Disaster Prevention System. The deadline of information correction will be notified for inconsistencies found.
  - b. Every season, there will be dedicated personnel to hasten the registration of chemicals and verification. In addition, external experts and scholars are also appointed to provide counseling to manufacturers on chemical storage and supervision methods.
  - c. In the future, it will combine with functions of the IoT for automatic registry and the flow of chemicals.

### • | **100% coverage rate of the self-management system of safety and health and on-site counseling for the improvement of the safety of the working environment**

STSP Bureau has been devoted to the disaster prevention and relief work through actively counseling and on-site inspection of the park manufacturers, which will effectively reduce the occurrence of

occupational disasters and will be of great help in the protection of the life, safety and health of the employees in the science park. On-site counseling mainly targets at the key points in the construction and manufacturing industry in the science park. The more business units that are stationed in the science park, the more plants that are going to be built. Therefore, the construction companies are the focus of the counseling. Through on-site counseling and advocacy, we hope to reduce the occurrence of occupational disasters and to help with the establishment of contractor management. As for the manufacturing industry, business units with high risks or high frequency of occupational disasters will be targeted for the counseling of improvement.

In 2020, in response to the high frequency of occupational disaster in places with high risks, such as Class A and C dangerous workplaces and the construction sites in the park, we started to promote the “On-site Counseling of Occupational Safety and Health” by integrating resources in the industry, government and academia to form an Industrial Safety Counseling Team to assist with the implementation of self-management of occupational safety and health at high-risk places to reduce the occurrence of occupational disasters, with a total of 62 sessions of counseling in total, among which, 31 sessions were in the construction industry, 19 in manufacturing industry, 8 in labor physical and mental health management and protection, and 4 in 5-year reevaluation of Class A and C dangerous workplaces.



Manufacturing Industry/ TSMC Fab 14 (Counseling of 5-year reevaluation of Class A and C dangerous workplaces)



Manufacturing Industry/ Synbio Tech Inc. (Counseling of physical and mental health management and protection)



SAFC Hitech Taiwan Co., Ltd. (Counseling of manufacturing industry)



New construction project of TSMC advanced packaging fab in STSP (Counseling of manufacturing industry)

A total of 6 sessions of propaganda meetings were held, focusing on not only the explanation of the key points of on-site counseling but also the education and training concerning the amended ISO 45001, prevention of labor heat hazard of high-temperature that often occur in construction factories, regulations and prevention of confined space operations, how to implement health management within the business units and so on. It is hoped that through the comprehensive propaganda meetings, the quality of the business units and the employees in the science park can be enhanced, their self-health management can



be improved and the occupational disasters in the science park can be reduced, reaching a win-win-win situation.

The Bureau works together with the Public Health Bureau of Tainan City Government, Southern District Workers' Health Services Center, STSP Industrial Safety Promotion Association and other organizations to organize various health promotion activities, case counseling and prevention of infectious diseases to ensure the health of the workers in the science park and the prevention of occupational diseases. In 2020, a total of 4 sessions training, seminars or related activities concerning work-related disease prevention and labor health were held.



On-site counseling & publicity meeting of occupational safety and health



Occupational Safety and Health & AI Forum

There are diverse types of industries in STSP, and if not careful, accidents and emergencies like occupational disasters, earthquakes, fires, natural disasters and others are likely to cause major property losses and casualties. Therefore, various firefighting training should be organized continuously and should also be well-planned. We organize firefighting training with Industrial Safety and Environmental Protection Month activities to help park manufacturers strengthen the awareness and training of fire safety so that

their employees can be familiar with fire disaster relief and equipped with emergency preparedness capabilities. Finally, we will continue to improve the overall firefighting capabilities in the science park through public emergency response drills.

# 1

Course

## Rea fire distinguishing training course

A total of 3 sessions were held (including 2 session in Tainan Science Park and 1 in Kaohsiung Science Park). The total number of trainees reached 161, and each session lasted 6 hours.

# 2

Course

## Vehicle overturning experience and self-rescue training course

To strengthen the advocacy of the importance of seat belts, participants experienced 360-degree overturning and were taught how to protect themselves and escape from the vehicle safely by the fire brigade. The total number of trainees was 35.

# 3

Course

## Relocation training of Joint Emergency Response Organization

A session of park defense joint prevention organization was organized for the training of high-tech factory fire or poisoning disaster rescue training among park manufacturers. The two-day training was participated by 35 trainees, with a total of 12 training hours.

# 4

Course

## Emergency response drill

Large emergency response drill was conducted once in Tainan Science Park and once in Kaohsiung Science Park in accordance with the training course targeting at park business units.



Pool fire extinguishing practice training



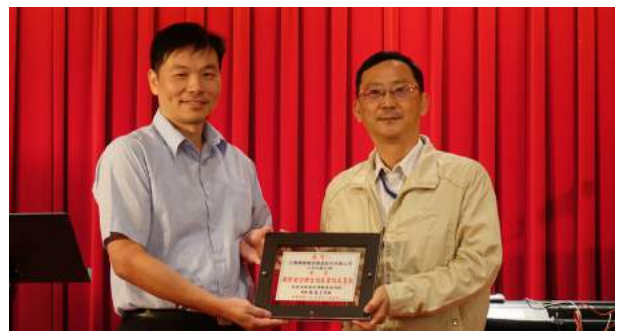
First aid practice (AED and CPR)



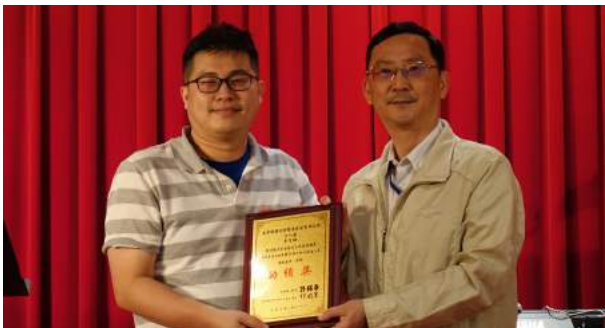
## • | Award coverage rate of excellent industrial safety reaching 100%

The Bureau promotes occupational safety and health in the science park through advocacy, guidance, and implementation of labor inspections to effectively improve the safety and health standards in the science park. Through the pre-assessment mechanism, the business units' self-management can be enhanced and the full participation mechanism can be expanded to promote the efficiency of the labor health and labor inspection so as to construct a safe, healthy and humanized working environment. To publicly commend the business units and employees with excellent occupational safety and health management to encourage the improvement of workplace safety standards and promote labor health and safety so as to carry forward the diligent and sociable spirit and the excellent tradition of moral character, we commend excellent employees and business units every year. In 2020, 3 manufacturers and 7 employees in the science park won the award.

Note: Coverage rate= Number of award winners in the unit  
(calculated from 2018)/ Total number of people in the science park



The Five-star Award for Excellent Occupational Safety and Health Units awarded by Li Po-Chang, Deputy Director-General of Occupational Safety and Health Administration



National Occupational Safety and Health Award awarded by Li Po-Chang, Deputy Director-General of Occupational Safety and Health Administration



Certificate of appreciation issued to manufacturers helping with the promotion of occupational safety and health related work



Excellent employees of national safety and health implementation

## ■ Maintaining the death rate per million workers in major occupational disasters at 20 and lower (reaching Japanese standards)

We have been devoted to the promotion of various disaster reduction plans and investigations to have thorough grasp of the high-risk places in the science park and advocate the importance of occupational disease prevention. To ensure the occupational safety of the workers, we further help the construction sites implement the establishment of self-management, which effectively reduces the potential disasters in the park while on the other hand improves the industrial safety standards in the science park.

In 2020, a total of 603 labor inspections were completed (including 512 sessions of occupational safety and health inspections and 91 sessions of labor condition inspections), with the achieving rate reaching 129.3%. The occupational disaster rate per thousand people in the science park in 2020 was 1.08, 31.52% lower than the 3-year average, reaching the target of disaster reduction.

Item	2016	2017	2018	2019	2020
<b>Occupational disaster rate (per thousand people)</b>	1.39	1.6	1.39	1.14	1.08
<b>Disabling Frequency Rate (FR)</b>	0.11	0.12	0.26	0.11	0.11
<b>Disabling Severity Rate (SR)</b>	9.16	2.32	3.44	1.56	1.06
<b>Death rate of major occupational disaster (per million people)</b>	38.25	0	0	38.97	0

Note: Disabling frequency rate (FR) and disabling severity rate (SR) were calculated based on the announcement stipulated by Occupational Safety and Health Administration

- (1). Disabling frequency rate (FR)= (Total number of people injured x 200,000)÷ total hours worked
- (2). Disabling severity rate (SR)= (number of work days lost x 200,000) ÷ total hours worked



Photos of labor inspection



# 5

Chapter

## Advances of Startups



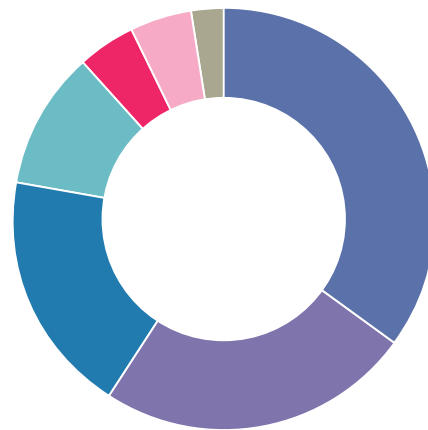
# 5. Advances of Startups

## 5.1 Overview of the Park Development

The high-quality environment of STSP attracts manufacturers at home and abroad. In 2020, 22 manufacturers (including 13 start-up companies) were introduced into STSP, with an investment amount of approximately NTD 278.8 billion. There were 16 plant construction projects in the same year. The cumulative number of validly approved manufacturers as of 2020 reached 240, showing that the investment attraction power of STSP continues to grow.

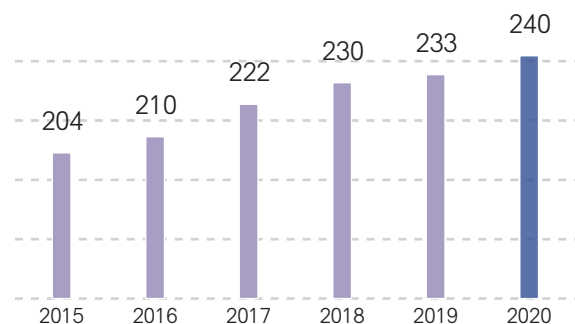
STSP is dedicated to industrial innovation to create the momentum for the industries in the science park. The turnover of STSP in 2020 amounted to NTD 847.731 billion, a 14.06% increase compared with 2019. This was because the integrated circuit industry at STSP is internationally competitive for its advanced manufacturing technology, and the turnover of the integrated circuit industry accounted for the most ratio, amounting to NTD 546.587 billion. Benefited from the strong demand for semiconductors in the global market and the growth trend of the mass production of the world's most advanced 5 nm process at STSP, the turnover increased by 20.71%, followed by the NTD 212.276 billion of the Optoelectronics industry. At the beginning of 2020, the shipment delays caused by the global pandemic led to the decline in the turnover, but the subsequent explosive growth brought by the Stay-at-Home Economy boosted the quotes of panels and this wave reversed the situation and became the trend for growth, resulting in the annual growth of 0.09% in the turnover. Communication and computer and peripheral industries grew because of the return wave of

Number of validly approved manufacturers in 2020 by industry



Computer and peripheral	84
Precision machinery	58
Optoelectronics	45
Integrated circuit	25
Communication	11
Others	11
Biotechnology	6

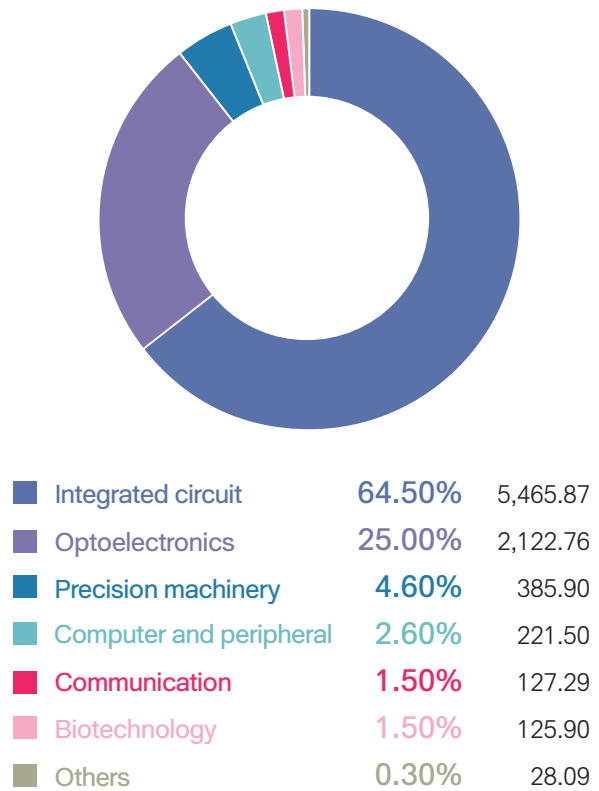
Number of validly approved manufacturers



Taiwanese businesses, and the turnover in the two industries increased by 39.33% and 37.66% respectively. Moreover, the biotechnology industry STSP has been putting long-term efforts in for development showed an increase of 37.05% in the turnover.

In terms of the export of the six major industries in the science park, the integrated circuit industry accounted for the largest amount of 54.90% among all the exports from STSP, and the export volume increased by 38.80% compared with 2019 thanks to the strong demand in the markets of 5G, high-performance computing and IoT, followed by the optoelectronics industry with its export volume of NTD 173.343 billion in 2020, accounting for approximately 34.04% of the overall export volume of STSP, a slight decrease of 0.92% compared with the same period of 2019 mainly due to the impact of the global pandemic of COVID-19 at the beginning of 2020 which influenced the production momentum, leading to reduced export volume.

2020 turnover by industry



## Expansion of the Park Area

According to the land lease statistics, as of the end of December, 2020, the lease rate of Tainan Science Park was 98.8% while that of Kaohsiung Science Park was 88.67%. To cope with the challenges of industrial development, the Bureau has prepared the industrial layout in advance to prepare land for industrial development and gather resources for industrial development.

The total area for Ciaotou Science Park development totals 262.39 hectares, and the land area for manufacturers to set up plants and production service facilities is approximately 164.27 hectares. The 2-stage EIA process was completed by March, 2021 and has been submitted to EPA for deliberation. It is expected to allow potential investors to check out land and register by the end of 2021, and manufacturers will be able to enter the science park to establish plants from September, 2022. After the completion of construction, the annual output is estimated to be NTD 100~180 billion, providing 7,500~11,000 job opportunities.





In addition, the 3-phase expansion plan of Tainan Science Park is also launched, with a total area of 92.26 hectares, which can provide 48.23 hectares for plant establishment. Currently, the environmental assessment and changes in urban planning are being handled. The land is expected to be provided for manufacturers to enter and set up plants in 2023. After the completion of the construction, the output of the park is estimated to reach NTD 42 billion, providing 5,250 job opportunities.



Notional diagram of the industrial planning for Tainan Science Park Phase III Expansion Project



## 5.2 International Exchanges

STSP Bureau received 80 visiting groups from home and abroad and more than 2,600 important guests in 2020. The visiting groups included India-Taipei Association, Confederation of Industrial Chambers of the United Mexican States, Kaohsiung Office of Japan-Taiwan Exchange Association, Science and Technology Division, Taipei Economic and Cultural Center in India, European Economic and Trade Office, Singapore Trade Office in Taipei, National Development Council, CPC Corporation, Panasonic Corporation and so on, showing that STSP has become a very important base for the clusters of technology industries in Southern Taiwan and is highly recognized by all circles for its technological strength.



### Visiting Groups

- Jan.** • The visiting group of India-Taipei Association was led by the Deputy General Rishikesh Swaminathan.  
• NCKU's MIT Visiting Group was led by Professor Chih-Han Chang.
- Feb.** • The visiting group of Confederation of Industrial Chambers of the United Mexican States was led by its president, Mr. Francisco Cervantes Diaz.
- Mar.** • The visiting group of Kaohsiung Office of Japan-Taiwan Exchange Association was led by its Deputy Director General Furuta Kiyoshi.
- May.** • The visiting group of Science and Technology Division, Taipei Economic and Cultural Center in India was led by its Director Chin Tsan Wang.
- June.** • The visiting group of Singapore Trade Office in Taipei was led by the Trade Representative, Mr. Yip Wei Kiat.  
• GIS Group was led by its CEO, Jason Yeh, Vice President MS. Li-Fen Chen, and Director, Mr. Chun-Hui Gao of the Allied Association for Science Park Industries.
- July.** • CPC Corporation and Panasonic Corporation was led by CPC's former Chairman, Mr. Chein Tai.
- Aug.** • The Local Technology and Education Research Program of Ministry of Education was led by the President of Taiwan Society, Mr. Chuan-Hsin Lee.
- Sep.** • European Economic and Trade Office was led by the Deputy Director, Thomas Jürgensen.  
• GF-EMBA of National Taiwan Normal University was led by Professor and Director of GF-EMB, Shih-Yu Chou.  
• Visited by Chief Economist of Nomura Research Institute, Richard C. Koo.  
• OCAC's Overseas Chamber of Commerce Cadre and Youth Business Training Program was led by the Vice President Chen-Hua Lu.
- Oct.** • Advanced Battery Materials Industry Alliance was led by Dr. Li-Ying Kuo.  
• Slovak Economic and Cultural Office in Taipei was led by Representative Mr. Martin Podstavek.
- Nov.** • The 2020 Diplomatic Corps and Commercial Personnel in Taiwan was led by Vice Minister Miguel Li-jeY Tsao.  
• Straits Exchange Foundation was led by Secretary-General, Chih-Hung Chan and visited the iBIOMED FLAGSHIP HALL in STSP.
- Dec.** • Pacific American School was led by the principal Chia-Ming Chu.  
• IMC Innovation Research Association was led by the Chairman Wen-Jun Guo of L'arc Hotel.



Group photo of the visiting Confederation of Industrial Chambers of the United Mexican States



Group photo of the visiting GIS Group



Group photo of the visiting GF-EMBA of National Taiwan Normal University



Group photo of the visiting Overseas Chamber of Commerce Cadre and Youth Business Training Program of OCAC



Group photo of the visiting 2020 Diplomatic Corps and Commercial Personnel in Taiwan

## ● | Investment Attraction

To continue the promotion of the development of high-tech industries in Taiwan, STSP has been devoted to attracting domestic and foreign investments and jointly made Joint Investment Promotion Briefing to promote Taiwan's high-quality investment environment to expand business opportunities for Taiwan. Despite the great impact of severe pandemic of COVID-19 on global industries and economy, STSP still attracted 22 manufacturers to enter the science park thanks to the proper control of the epidemic and the booming development of semiconductor and 5G industries.

### ■ Site Survey and Investment Promotion Seminar of the Semiconductor Supply Chain of STSP

STSP Bureau and Kaohsiung City Government co-organized the Site Survey and Investment Promotion Seminar of the Semiconductor Supply Chain of STSP on December 16, 2020, attracting 17 semiconductor material and equipment manufacturers. These manufacturers were guided for a site survey in the Kaohsiung Science Park area and introduction of the environment of the Ciaotou Science Park was also conducted, together with a seminar for exchanges. We hope to build an industrial cluster of the advanced manufacturing process of critical materials for semiconductor that can connect to Tainan Science Park in the north and the materials and petrochemical settlements in Nanzi, Taishe, Renwu, Daliao, Linyuan and Dalinpu in the south, creating the "S" corridor for the semiconductor industry in Southern Taiwan.

## ● | Participating in Industrial Exhibitions

To attract investment from overseas high-tech manufacturers, STSP has actively participated in large-scale industrial exhibitions at home and abroad to market Southern Taiwan Science Park, attract investment and promote industries, demonstrating the performance of management of STSP, increasing STSP's global visibility, and establishing as well as enhancing the image of the high-quality STSP.

### ■ Consumer Electronics Show (CES)

Consumer Electronics Show (CES) is the largest consumer electronics exhibition in the world and is also an important trend indicator of technological development every year. The CES 2020 was held from January 7 to 10, 2020. 4 startups coached by Taiwan AI x Robotics Accelerator (TAIRA) shortlisted in the Taiwan Tech Arena (TTA) in CES to exhibit the innovative R&D results. In addition, Brilliant Optronics Co., Ltd. and Taiwan User-Friendly Sensor and Tech. Inc. coached by the Start-up Workshop performed well in the exhibition, and Brilliant Optronics' multi-function smart window film won the Innovation Award at CES 2020.

Before the exhibition, STSP Bureau also visited the Idealab, an accelerator based in California and the start-up Taboola. We also visited the City Hall of Arcadia City and the councilman of Chinese descent to understand the development trend for start-ups, serving as a reference for STSP Bureau to assist the start-ups in Southern Taiwan with the planning and also accumulating practical experience for the Bureau to guide start-ups in the future.

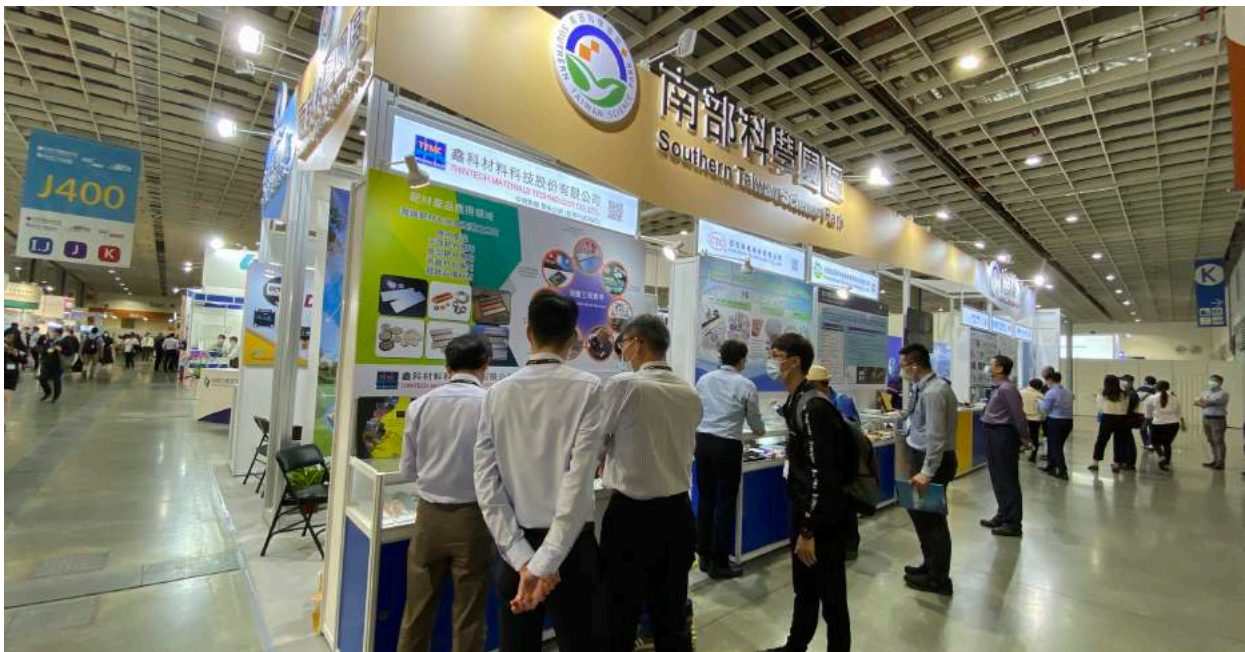




Opening press conference of CES TTA

### ■ OPTP Taiwan

To promote the results of the transformation of the manufacturers in STSP, manufacturers including Innolux, ULVAC Taiwan, Applied Materials Taiwan, and Thintech Materials participated in the OPTP Taiwan held from Oct. 21 to 23, presenting the latest products and technology from the upstream of materials, panels, semiconductor equipment, optoelectronic detector, 5G applications to the forward-looking space optoelectronics and optoelectronics application for national defense, highlighting the superb strength of the complete industry chain and cross-domain strength of the optoelectronic manufacturers in STSP.



Thematic Pavilion of STSP

### ■ BIO Asia-Taiwan Exhibition

The development of biotechnology industry is promising in the post-epidemic era. STSP Bureau and 13 biomedical companies in the science park participated in the BIO Asia-Taiwan 2020 held from July 23 to 26 in Hall 2 of Taipei Nangang Exhibition Center. With the smart biomedicine as the main axis of the exhibition, we formed a strong team of biomedical manufacturers focusing on the fields of biomedical testing, wound

dressing, innovative medical device, and precision medicine, demonstrating excellent products and R&D technologies. STSP, CTSP, and the NarLabs jointly formed the Thematic Pavilion of Ministry of Science and Technology (MOST). In the end, Syngen Biotech and Excelsius Medical, two manufacturers in STSP were awarded the Outstanding Company of the Year and Emerging Company of the Year respectively by the organizer.



Thematic Pavilion of Ministry of Science and Technology (MOST)

## ■ Healthcare+ Expo Taiwan

STSP continues to assist many traditional industries in Southern Taiwan with the technological upgrading, attracting manufacturers to enter the science park and invest in setting up factories. Products of the manufacturers have entered the international market. Among them, dentistry and orthopedics in particular, have developed a complete medical device industry cluster and product line. We set up the Thematic Pavilion of STSP Precision Health Industry Cluster in the 2020 Healthcare+ Expo Taiwan held from December 3 to 6, showing the advantages of the ICT and Biomedicine industries in STSP by introducing AI and Big Data database into the application of precision medical detection technologies, equipment and personalized medicine.

In addition to setting up a thematic pavilion, STSP Bureau, CTSP Bureau, Industrial Development Bureau of MOEA, and Taiwan Instrument Research Institute held the Joint Results Presentation and Seminar of the 2020 Startup Acceleration and International Promotions for the Medical Device Industry, with the main axis of “accelerating start-ups, taking deep roots, and international marketing”, leading startups and biomedical manufacturers with advantages and niche to jointly create a new era of the precision health industry in Taiwan. Biomedical manufacturers were invited to share the latest technology, and the participants were all impressed by the presentation of research results and the products introduced by the manufacturers.





Thematic Pavilion of the STSP Precision Health Industry Cluster



Group photo of the Joint Results Presentation and Seminar

## 5.3 Building Industrial Clusters in STSP

To assist with the development of an industrial cluster, STSP Bureau cooperates with the MOST's development plan and actively assists with the industrial upgrading to build an high-quality R&D environment, promote the linkage of the R&D results and industrial needs, deepen the linkage between the industry and academia and exert the synergy of resources integration to improve the innovative ecological environment and link with the international market and resources to facilitate industrial innovation and competitiveness in the global market.

## Technology Upgrade Promotion Program for Aerospace Critical System in STSP

Southern Taiwan is an important town for domestic aerospace industry development. However, the aerospace industry has been developing silently under the light of the technology industries. To connect the momentum of the aerospace industry in the south for the formation of the aerospace industry cluster, the Bureau has visited the industry to listen to opinions, striven for budgets and sought support from various units. In 2017, we successfully secured a 4-year flashflag project, the very first and only project dedicated to the aerospace industry in Taiwan, encouraging manufacturers to invest in independent research and development of aerospace technology so as to construct a great academic and research environment and integrate the R&D energy in the academia so as to establish a R&D platform to foster professional talents and further to enhance our competitiveness in aerospace industry to develop an aerospace industry cluster.

In 2020, the total amount of subsidies amounted to NTD 290 million, and the subsidies were provided to 8 manufacturers for the upgrade of key system technologies and 10 for aviation certification. A briefing was held to call for projects on October 21, 2019. STSP Bureau held the 2020 Aerospace Industry Forum-Development and Transformation from Aviation to Space, result presentation and investment promotion briefing, with a total of 63 manufacturers (116 participants) and 12 media joining the forum to witness the brilliant results.





Since the promotion of the program, we have facilitated NTD 4.64 billion of investment in total, an increase of NTD 2.14 billion in the output value, helped obtained 121 certificates and contributed to a number of international collaborations, industry-university cooperation and internships in aerospace enterprises. The development of Taiwan's aerospace industry is promising. STSP Bureau will seize this crucial opportunity to cooperate with our corporate partners to jointly establish a supply chain of the aerospace industry in southern Taiwan to strive to get a share in the global aerospace market.

### STSP Smart Biotech Medical Cluster

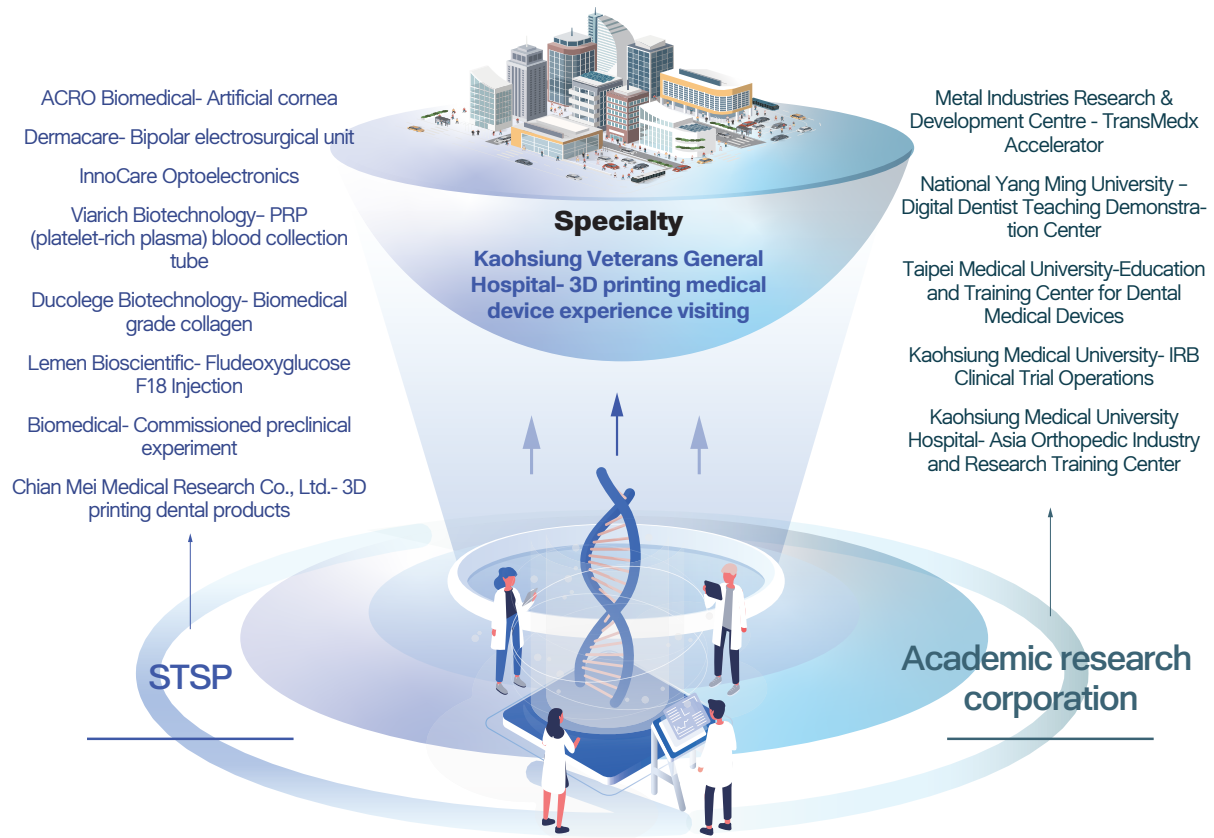
After a decade of active operation of the cluster of medical device industry at STSP, the products of the medical device manufactures have successively passed the TFDA and GMP certifications from Ministry of Health and Welfare, CFDA from China, FDA and CE certifications from abroad. To support the manufacturers to take root and have steady growth locally and to lead the medical device cluster to step toward the international stage, it is imperative that we help manufacturers implement strategies to break through the difficulties in marketing.



STSP Smart Biotech Medical Cluster

### STSP Smart Biotech Medical Cluster

- To construct a STSP-centered medical device cluster with characteristics
- To develop innovative technologies or products focusing on smart biomedicine
- To promote trust- based clinical experience
- To establish an integrated industrial alliance- based marketing model



To facilitate the development of STSP Smart Biotech Medical Cluster, the Bureau continues to promote the development plan for the STSP Smart Biotech Medical Cluster. In 2020, there were 52 applications and among them, 19 were chosen and subsidized, and the total amount of subsidies approved amounted to NTD 74 million. At the end of 2020, there were 84 manufacturers in total, with the turnover reaching NTD 12.6 billion. It is planned for park manufacturers to participate in events and exhibitions, and through cross-boundary cooperation among industry, academia, research and medical cluster, key resources can be integrated with increased technological momentum, accelerating the commercialization of medical devices. In addition, featured teaching centers are also used to establish trust in domestic medical devices.

## • | TransMedx Accelerator

To construct and improve the innovation ecosystem of STSP Smart Biotech Medical Cluster, STSP joined hands with Metal Industries Research & Development Center (MIRDC) and a venture capital, TransPacific Venture Partners (TPV) to establish TransMedx Accelerator, the only accelerator in Taiwan focusing on the field of medical device. Since its official launch in August, 2019, the selection of forward-looking start-ups across the country has started to recruit start-ups in the medical device to join TransMedx and provide them with coaching by mentors from international-level start-up companies, including a group of mentors composed of operating executives from the Silicon Valley.

TransMedx held the Result Presentation and International Venture Capital Matchmaking Exchange Meeting on March 30 in iBIOMED FLAGSHIP HALL in Kaohsiung Science Park, inviting many international venture capital companies and park manufacturers to join this grand event. After the meeting, the venture capital companies signed the letter of intent for investment evaluation with four teams. It was estimated that the amount of funds raised would reach NTD 100 million. STSP Bureau serves as the bridge connecting investors and start-up companies to link the Medtech start-up team with corporations and venture capital companies to assist and accelerate great start-ups to step up to the international stage.



The results were on display for the distinguished guests



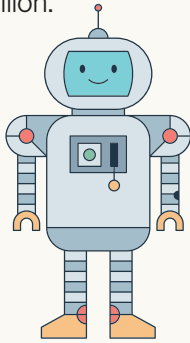
TransMedx  
Accelerator



## • | Subsidy Program for AI\_Robot Base at STSP

To encourage new ventures, academic and research institutions and companies in Southern Taiwan to invest in the AI robot related product technology development, self-manufacturing and innovation and entrepreneurship activities, STSP Bureau aims at linking the facilities and resources of AI\_Robot Base at STSP to facilitate the development of innovation and the commercialization of AI\_Robot related achievements, bringing in more AI talents and industrial development.

The scope of the subsidy program in 2020 was in 4 major fields, including smart biomedicine, smart manufacturing, drones, and others (including Fintech, Agritech, AIoT (AI+ IoT+ Smart City), Extended Reality (AR, VR and MR), AI (Artificial Intelligence) or robotics). A total of 18 projects were approved in the subsidy program, and the total amount of subsidies amounted to NTD 69.23 million.



2020 results of approved subsidies

Type of subsidy	Number of recipients
Academic research institutions	6
New ventures	12



Subsidy Program for AI\_Robot Base at STSP

## • | R&D and Innovation-based Industry- academia Collaboration Projects

To promote the development of the science park from efficiency-oriented to innovation-oriented, STSP actively encourages the park manufacturers to work with academic research institutions to accelerate the cross-domain integration of industries and the formation of industrial clusters and stimulate industrial differentiation and high added value of the science park.

- (1) Encourage the industry and academia to invest in the R&D of industrial heterogeneous integration and critical technology to promote the integration of the industry chain.
- (2) Bridging industrial development and academic research, accelerating the commercialization of the creativity from academia and research institutions in the market.
- (3) Cultivation on high-quality R&D talents needed in the industry in advance to shorten the time it takes for employment in the future.
- (4) Assist the new (start-ups) companies with potentials to shorten the investment period and stimulate momentum for innovation.

The final decision was made to approve subsidies to the 2020 R&D projects of 6 manufacturers in biotechnology, optoelectronics and precision machinery, with a total subsidy amount of NTD 25.58 million.

<b>Number of journal papers (including technical reports)</b>		21
<b>Number of talents cultivated by academic and research institutions</b>		21
<b>Number of derivative patents</b>	<b>Number of application</b>	13
	<b>Number of patent obtained</b>	0
<b>Number of technical transfers</b>		1

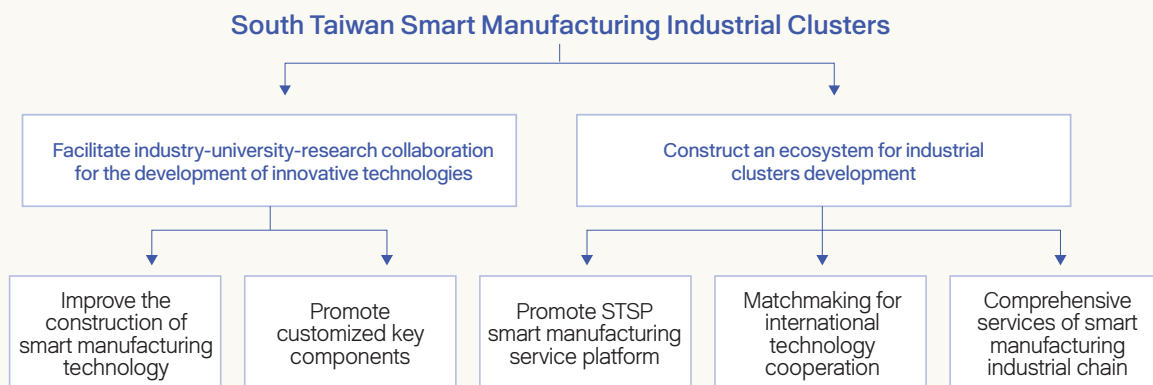


R&amp;D and Innovation-based Industry-academia Collaboration Projects of the Science Park

\* Note: The 2020 R&D and Innovation-based Industry-academia Collaboration Projects is still on-going by the time this Report publishes, and the table shows estimated benefit.

## South Taiwan Smart Manufacturing Industrial Clusters

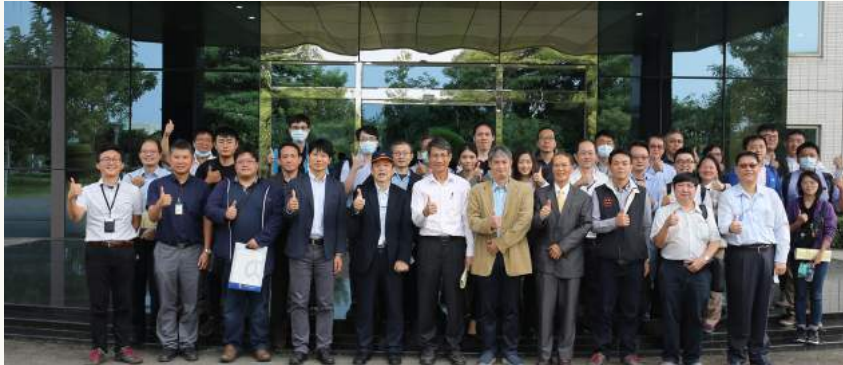
STSP Bureau started to promote the South Taiwan Smart Manufacturing Industrial Clusters Project in 2017, focusing on assisting the production line of park manufacturers to step toward Smart Automation. By integrating the virtual and actual manufacturing resources to provide comprehensive services, we aim at assisting park manufacturers with the upgrade of smart manufacturing to attract advanced smart manufacturing industrial chain to STSP, forming a cluster of smart manufacturing at STSP.



To assist smart manufacturers with the combination of 5G and information security technology to create more diverse business opportunities, we co-organized the Seminar on 5G Smart Manufacturing Application and Information Security of IoT with Telecom Technology Center on October 13, 2020 and invited speakers to share the international trends and forward-looking planning of smart manufacturing related industries, providing abundant information to the participants.

In terms of 3D printing, the Business Opportunities Exchange Meeting for Leading Innovative Application of Additive Manufacturing with Smart Manufacturing was held on November 27. This meeting connected the business opportunities of terminal application demand of additive

manufacturing, powder material demand, critical process provision and the complete equipment delivery supply chain. The experience sharing from experts was used as the trigger, and with the exchange of demands from different industries, the purpose of facilitating the business opportunities of the additive manufacturing industry at STSP is realized, accelerating its application to industrial and civilian production industries.



Group photo of distinguished guests at the exchange meeting



South Taiwan Smart  
Manufacturing  
Industrial Clusters

As of 2020, the Bureau has successfully guided 3 cases of upgrading to smart process and 11 manufacturers to enter STSP, facilitated the matching of 2 cases of international technology and 23 cases of core critical technologies since the promotion of this project. The Bureau encourages industry-university-research collaboration for innovative technology development in the south through the subsidy program. In addition, through the smart manufacturing service platform, we help those who are in need to get ideas from the concept so as to accelerate product development of manufacturers and construct an ecosystem for the development of industrial clusters. In 2020, there were 3 subsidy programs in total, with the total subsidy amounting to NTD 12.8 million.

## 5.4 Cultivation of New Ventures

To encourage new ventures, investment in development and self-manufacturing of AI robot related products and cultivation of cross-disciplinary innovative talents, STSP Bureau provides new ventures with entrepreneurship counseling, professional instructors from the industry, linkage with the industry and capital matching to introduce new start-ups into the science park to deepen the root of technology in the science park and revitalize the development of STSP.

### • | The Start-up Workshop (From IP to IPO Program)

STSP Bureau established the Start-up Workshop in 2013 to actively assist and train the start-up teams to participate in From IP to IPO (FITI), focusing on areas of biomedicine, innovative technology and design and information application and services, and each session is 6-month long. It is hoped to link the



entrepreneurial counseling resources at home and abroad to help the young generation of students to start the path toward innovation and entrepreneurship through 6 months of systematic training, which can further boost the entrepreneurship trend in Taiwan.



Start-up Workshop



From IP to IPO Program (FITI)

Teams guided by the Start-up Workshop participated in the first session of From IP to IPO Program (FITI) supported by Ministry of Science and Technology (MOST) in 2020 and achieved good results once again. In the final competition of innovative technology presented in July, Turing Chain stood out from 20 start-ups with its innovative TuringCerts and won the Outstanding Startup Awards and the NTD 2 million start-up fund while AIMED and PackAge+ won the Startup Potential Award. In November, Start-up Workshop led 3 start-ups to participate in the final competition of the 2<sup>nd</sup> session, and Tellurium and Pin-I Biotech were honored with the Outstanding Startup Awards for the application of organic tellurium compounds to the treatment of carbapenicillin-resistant bacterial infections and the development of 3D Bioceramic Aggregate respectively and won the reward of NTD 2 million each. In addition, ActuaViz also won the Startup Potential Award.

### 2 Winning teams of FITI in 2020

Item	First session	Second session
Outstanding Startup Awards Each Winning team gets the reward of NTD 2 million	Turing Chain	Tellurium
		Pin-I Biotech
Startup Potential Award Each Winning team gets the reward of NTD 250,000	AIMED	ActuaViz
	PackAge+	



Group photo of the winning teams from STSP



Group photo of the winning teams from STSP

As of the end of 2020, a total of more than 200 teams have been incubated, and a cumulative 95 teams have been coached to set up start-up companies. The total capital of these startups amounted to more than NTD 2.67 billion. Among them, 9 teams entered the incubation center in STSP, and 14 teams have become the industry in the science park. In recent years, STSP Bureau has introduced the accelerators like StarFab and RainMaking for the coaching of start-ups and co-creation to provide a test field for the start-ups.

## • | Dream Realization at STSP's AI\_ROBOT Base

Under the artificial intelligence (AI) policy promoted by MOST, STSP has combined the advantage of industrial cluster in the park and created the AI\_ROBOT Base at STSP. Based on the strategy of rooting downward, upgrading upwards and extending outwards, STSP has jointly invested in the professional talent cultivation and smart technology development since 2007. Accelerators are introduced, Taiwan AI Robotics Accelerator (TAIRA) is promoted, a test field is provided, and services of coaching resources, business model planning and matching investment are also provided. In 2020, 21 start-up teams were coached to cooperate with 9 large corporations. In addition, assistance was constantly provided to the start-up teams with the expansion of channels and matching of business opportunities, successfully helping the start-up teams obtain orders from manufacturers in STSP and also investment with a total amount of NTD 34.56 million from investment institutions and angel investors.



AI\_ROBOT Base at STSP

## • | Taiwan AI Robotics Accelerator (TAIRA)

STSP Bureau integrates the start-up resources, creates opportunities for the start-ups based on the corporate needs, and provides channels of business opportunities for the entrepreneurs. We cooperate with StarFab Accelerator (hereinafter referred to as StarFab), the largest mentor-led accelerator, and have created the Taiwan AI Robotics Accelerator (hereinafter referred to as TAIRA), the largest business accelerator in Southern Taiwan.



Taiwan AI Robotics Accelerator (TAIRA)

The core spirit of TAIRA is “innovation through field domains and transforming industries through startups” and the accelerator leads start-ups working on AI solutions and Robotics to gain access to corporate resources and business partnership opportunities. The cooperation mode of large-scale businesses working with small scale corporations and the provision of R&D subsidies and business cooperation opportunities have attracted high-quality start-ups to Southern Taiwan for co-creation of innovation with businesses and linkage with international resources to access to the international cooperation network, assisting these entrepreneurs with rapid growth in the most direct way.



Photo taken at the European market exchange and matchmaking activity on February 20



MOU signing with Mizuho Bank on May 28





Group photo of Japanese and Taiwanese enterprises and the start-up team on August 21



Canada-Taiwan innovation exchange and matchmaking meeting on October 14

The four major subjects set for TAIRA in 2020 include Smart Manufacturing, Smart Healthcare, Smart City and Agritech. After the launch of TAIRA Solution Wanted briefing on May 20, a total of 110 (84 domestic and 26 foreign) start-ups signed in for the competition. Among them, 48 teams entered the semi-finals. After 2 days of briefing and one-on-one matchmaking, 23 groups of start-ups finally successfully matched with 10 companies including Mizuho Bank, Sumika Technology, E-Da Hospital and so on to jointly launch in-depth cooperation on solutions in different subjects. The 3<sup>rd</sup> Demo Day was held on December 16, and the corporate mentors joined hands with 16 AI startup teams to present the results of the co-creation to win the investment intention from 4 renowned venture capitals. Finally, a total of 5 start-ups received investment intention of a cumulative of NTD 70 million.



TAIRA Demo Day

## Co-construction of a Platform for Start-ups

To call for more resources from key enterprises in Southern Taiwan to strengthen the ecosystem of the innovative start-ups in the science park, STSP Bureau invited the Yizai Association co-organized by TYG Group and Ta Yih Group, whose participating members were led by the chairman to visit STSP to understand the resources of AI\_ROBOT Base and have face-to-face talks with outstanding start-ups through the platform of TAIRA for cross-field innovation on July 24. On November 26, STSP Bureau once again organized the Yizai Association Industry 4.0 Start-ups Exchange Meeting and had technical discussion with 3 start-ups on smart manufacturing, providing the corporate members of Yizai Association options for industrial upgrading. A total of



19 first- and second-generation members participated in the exchange meeting. It is hoped that the enormous corporate resources in the Yizai Association and the start-ups can be linked together to create industrial business opportunities together with the start-ups in the future.

“



Group photo of the start-up activity



Most members of Yizai Association are traditional industries, and are often faced with huge survival challenges of paradigm shift. Through the visit to STSP, we learned that there are in fact so many new solutions that can be grafted to traditional industries. In the future, there will be an open platform connecting members of Yizai Association and the start-ups teams in STSP through industry classification, which can bring momentum for traditional industries in Southern Taiwan to upgrade to jointly create the future for traditional industries.

**Chairman of Yizai Association**  
**Robert Wu**

”

## • | FIRST Robotics Competition Teams

FRC, FIRST Robotics Competition, formed in the United States, is the largest robotics competitions in the world. The main purpose of it is to cultivate students to become leaders in the fields of science and technology. To cultivate future talents needed in the new generation of industries, STSP Bureau actively built the AI\_ROBOT Base at STSP and assists participating teams in the regional competitions to receive courses and guidance from the professional groups. Practical courses, intensive training camps and FRC simulation competitions are planned every year to deepen the education of self-manufacturing.

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2020 Flag Awarding of FRC Regional

The international regional competitions were canceled due to the pandemic of COVID-19 in 2020. However, the epidemic situation in Taiwan was properly controlled, and the Flag Awarding of FRC Regional Competition and Inter-School Competition for Friendship was held in February, 2020, attracting 15 teams from 29 schools to participate in this event. At the end of March, FRC teams conducted the development plan for the epidemic prevention robot and in April, and advocacy of epidemic prevention was conducted in the campus of NNKIEH, TRA's Nanke Station and night markets in the communities.



”

In the second half of the year, we continued to actively involve in the FRC-related training. The training for 2021 FRC national team started, attracting more than 100 trainees to sign up. A basic training camp was held, inviting FRC Team 6998 from NNKIEH that won the Entrepreneurship Award in 2019 Hawaii Regional to be the lecturers. As of August, 2020, a total of 20 teams have been trained to participate in FRC Regional Competitions.



**Among the 28 teams that signed up for the 2020 FRC Science Park Taichung 5G Pilot Regional in November, 21 were from AI\_ROBOT Base at STSP, and among them, 6 teams won the league championship.**



Group photo of the league championship in the 2020 FRC Science Park Taichung 5G Pilot Regional

“ We decided to change the mechanism 2 months before the competition. We put so much effort just to get more advantages. It all paid off in the competition today.”  
— Zhou Shi-Jie, one of the contestant

We want to express our gratitude to those who gave us technical and spiritual support along the way, including STSP Bureau, the sponsors, teachers and our parents. We were greatly inspired. FRC is not only a competition in engineering but also a process for the development of characters, which may be what FIRST wants to convey to us.”  
— Chen Po-Jui, Leader of the Program Team



AI\_ROBOT Base continued the 2019 approach to cultivate the teams' ability to raise funds by themselves and held the 2020 FRC Fundraising Matchmaking Meeting & Engineering Note Competition. NNKIEH won the first prize, followed by Beimen Senior High School and Jhuci Senior High School. The number of companies caring about robotics education increased from 14 last year to 32 this year, and the amount of sponsorship increased from NTD 1.25 million to NTD 2.8 million.

It is hoped that through various training and competitions, these teams we trained can successfully and accurately combine sports science and technology to win the championship in 2021 FRC International Competition to increase Taiwan's exposure internationally.



# 6

Chapter

## Environmental Friendliness





# 6. Environmental Friendliness

## 6.1 Energy Resources Management at STSP

In the process of pursuing sustainable development, the grasp and effective utilization of resources and energy have become the one and only way to ensure the win-win situation for economic development and environmental protection. STSP Bureau adheres to the concept of green and sustainable development and conducts energy and resources management based on the balanced development among energy conservation, economic development, and environmental protection, aiming at becoming a science park with environmental and economic efficiency.

### Energy Use

Southern Taiwan Science Park continues to expand, and the number of manufacturers as well as the turnover continues to grow, and consequently, the demand for energy resources and the intensity of use also increases. To stabilize the use of energy resources among park business units, STSP Bureau regularly gathers statistics and controls energy consumption to ensure the compliance with the approved amount in EIA. Due to the plant expansion of the park manufacturers, the electricity consumption increased in 2020.

Item	2018	2019	2020
<b>Electricity use (kWh)</b>	10,791,991,852	11,280,777,692	13,200,148,196
<b>Energy consumption (GJ)</b>	38,851,170.67	40,610,799.69	47,520,533.51
<b>Annual turnover of park businesses (NTD 100 million)</b>	7,956.42	7,432.40	8,477.31
<b>Energy intensity (GJ/NTD 100 million in revenue)</b>	4,883.00	5,464.02	5,605.61

- Notes: 1. The total energy consumption within the organization was calculated using Joule or its multiple as the unit in accordance with the disclosure principle of GRI Standards.  
 2. Every 1 kilowatt-hour of electricity=1kWh=3,600 kilojoules.  
 3. Energy intensity is calculated using the total turnover of STSP in the current year as the denominator.  
 4. The source of electricity in STSP all came from Taiwan Power Company.

### Water Resources

The main water intake in the science park comes from tap water. Enterprises' intake and consumption of water as well as the quality of discharged water may cause impacts on the ecosystem. Therefore, the Bureau assists park businesses to understand their overall water use status. Based on the Water Risk Atlas of the World Resources Institute, it shows that Tainan Science Park and Kaohsiung Science Park belong to Low - Medium (1-2), indicating that the water intake of park businesses does not cause a major impact on the ecological environment. Due to the plant expansion of the park manufacturers, the water intake increased in 2020.

Item	2018	2019	2020
<b>Water intake (million liters)</b>	49,995.60	53,886.39	63,728.60
<b>Water discharge (million liters)</b>	38,566.84	40,945.65	45,852.19
<b>Water consumption (million liters)</b>	11,428.76	12,940.74	17,876.41
<b>Annual turnover of park businesses (NTD 100 million)</b>	7,956.42	7,432.40	8,477.31
<b>Water intensity (million liters /NTD 100 million in revenue)</b>	6.28	7.25	7.52

Note: 1. Water intensity is calculated using the total turnover of STSP in the current year as the denominator.  
2. Water consumption = water intake - water discharge

## Greenhouse Gas Inventory

The Bureau conducted the 2019 annual GHG inventory in 2020, and the organizational boundaries of the organization were Tainan Science Park and Kaohsiung Science Park, and the total emission of carbon dioxide amounted to 7,104,389.0850 tons. Due to the expansion projects of park businesses in 2019, the GHG emissions also increased by 4.2% resulted from the increase in production capacity. STSP Bureau is actively implementing energy conservation counseling measures, hoping to reduce the environmental burden.

Item	Tainan Science Park	Kaohsiung Science Park	Total
<b>Scope 1 (tons of CO<sub>2</sub>e)</b>	1,247,024.9175	61,572.5543	1,308,597.4718
<b>Scope 2 (tons of CO<sub>2</sub>e)</b>	5,157,483.2944	638,308.3185	5,795,791.6129
<b>Total (tons of CO<sub>2</sub>e)</b>	6,404,508.2119	699,880.8729	7,104,389.0850
<b>Turnover (NTD 100 million)</b>	6,865.22	567.13	7,432.35
<b>Intensity (tons of CO<sub>2</sub>e/ NTD 100 million)</b>	932.8919	1,234.0749	955.8739

Note: 1. All other indirect emissions (Scope 3): Due to the inability to control its activities and GHG emissions, only the identification of emission sources was carried out. Quantification was not conducted. Only vehicles for commuting and business trips in the science park, vehicles transporting waste to outside of the science park for treatment and those for raw material transportation were qualitatively enumerated.  
2. The verification of GHG inventory will be completed in October, 2021 (statistics for 2020 have not been completed before the publication of this Report).  
3. The GHG emission coefficient referred to the table of GHG emission coefficient management v. 6.0.4 released by Environmental Protection Administration, and GWP value for the CO<sub>2</sub>e conversion was from IPCC Fourth Assessment Report: Climate Change 2007 (AR4).  
4. Types of greenhouse gases include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>).

## 6.2 Counseling of Energy Conservation for Park Businesses

To reduce the water consumption in the science park to solve the urgent water problems to meet the EIA requirements and to cooperate with the promotion of energy conservation and carbon reduction policies, the Bureau has actively engaged in the counseling of water saving and energy conservation and strengthened the advocacy to encourage park manufacturers to build green factories. In terms of the effectiveness of the counseling, approximately 48,700 tons of carbon dioxide emissions were reduced in 2020, equivalent to the amount of fixed carbon of 125 Daan Forest Parks. In the future, we will continue

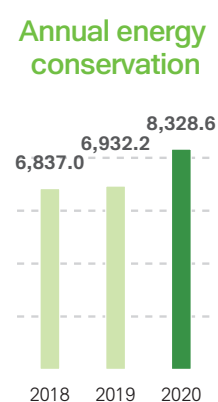
to handle energy conservation and water saving measures to achieve the most appropriate distribution under the condition of limited resources to achieve the purpose of stable supply of water and power in the science park.

Note: Daan Forest Park absorbs approximately 389 tons of carbon dioxide emissions annually. Source: [https://ghgregistry.epa.gov.tw/Information/Information\\_Infor.aspx?r\\_id=1748](https://ghgregistry.epa.gov.tw/Information/Information_Infor.aspx?r_id=1748).

## • | Counseling of Energy Conservation

STSP Bureau has provided counseling of energy conservation to 56 manufacturers so far. In 2020, 6 park business units received the counseling. In terms of the actual results of the energy conservation measures, the total power saved was approximately 83.286 million kWh annually, equivalent to the reduction of 42,392.6 tons of carbon dioxide emissions in a year.

Item	2018	2019	2020
<b>CO<sub>2</sub> reduction (tons CO<sub>2</sub>e)</b>	36,441.2	35,284.9	42,392.6
<b>Annual energy conservation (10,000 kWh)</b>	6,837.0	6,932.2	8,328.6

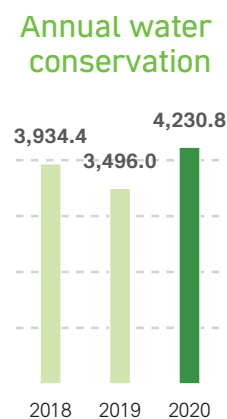


Note: The power coefficient for 2020 was calculated with 0.509 kgCO<sub>2</sub>e/kWh (in accordance with the table of GHG emission coefficient management v. 6.0.4 released by Environmental Protection Administration).

## • | Counseling of Water Conservation

The Bureau has promoted counseling of water conservation to 119 manufacturers so far. In 2020, 5 park business units received the counseling. In terms of the actual results of the water conservation measures, the water saved was approximately 42.308 million tons/year, equivalent to the reduction of 6,346.2 tons of carbon dioxide emissions in a year.

Item	2018	2019	2020
<b>CO<sub>2</sub> reduction (tons CO<sub>2</sub>e)</b>	6,295.0	5,244.0	6,346.2
<b>Annual water conservation (10,000 tons)</b>	3,934.4	3,496.0	4,230.8



Note: 1. According to the announcement of Taiwan Water Company (TWC), approximately 0.150 kg of CO<sub>2</sub>e emission can be reduced for every ton of tap water saved.  
2. The 2019 data was reorganized based on the coefficients announced of the current year and the values were recalculated.



## 2020 Excellent Manufacturers for Energy Conservation and Water Saving

Category	Item	Excellent manufacturer for energy conservation	Excellent manufacturer for water saving
Manufacturer with large water (electricity) consumption		ChipMOS TECHNOLOGIES INC. (Tainan Factory)	Innolux Corporation (Fab F)
		Taiwan Semiconductor. Manufacturing Company Ltd. (FAB 14 P3, P4).	Taiwan Semiconductor. Manufacturing Company Ltd. (FAB 14 B P7).
Manufacturer with small water (electricity) consumption		King Slide Technology Co., Ltd.	AUO Kaohsiung Fab



Visit by ChipMos Technologies Inc.



Visit by Savior Lifetec Corporation

## Green Buildings in the Science Park

STSP Bureau promotes green buildings and the mutualism between the buildings and the environment, implements energy conservations of the buildings, and continues to reduce energy consumption and the emissions of carbon dioxide, making STSP the science park with the highest density of EEWB diamond grade green buildings. Tainan Science Park and Kaohsiung Science Park have obtained the diamond grade of the Ecological Community Evaluation System (EEWH-EC), accounting for 2/5 of the diamond grade EEWB- Eco Community in Taiwan.

Statistics of Green Building Achievements in 2020	
Number of certified cases	31
Number of bronze cases	3
Number of silver cases	7
Number of gold cases	6
Number of diamond cases	16
Total	63



Exterior design of Anping Reclaimed Water Plant

No typhoons landed Taiwan and there was also little rain in 2020, leading to the worst drought we have faced for the past 56 years. STSP Bureau started the water saving and energy conservation counseling in 2004 and 2010 respectively, which have reduced the water consumption and urgent water use problems in the science park so far. In addition, we have also cooperated with the construction of reclaimed water plants that will be able to provide the industries with stable water supply immediately, which can effectively alleviate the intensified drought and water shortage due to increased drought.

Yongkang Plant and Anping Plant are two of the demonstration sites of the Executive Yuan's Demonstration and Promotion Scheme for Recycling and Reusing Discharged Water from Public Wastewater Treatment Plants. Yongkang Reclaimed Water Plant, jointly promoted by STSP Bureau, Tainan City Government and Construction and Planning Agency of Ministry of Interior, is the very first water plant in Taiwan that can provide process water to high-tech industries, which is expected to start water supply in June, 2021. The water quality of Yongkang Reclaimed Water Plant meets 21 process water standards of TSMC and other high-tech manufactures. In the first phase, it will supply 0.8 ton/day, and the supply will increase to 1.55 tons per day upon full operation, providing process water to park manufacturers.

### Water supply schedule for reclaimed water plants at STSP

Category	Water volume (ton/day)	Water supply schedule (tentative)
Yongkang	First phase: 8,000	June, 2021
	Second phase: 15,500	December, 2023
Anping	First phase: 10,000	October, 2022
	Second phase: 37,500	October, 2024
Rende (water exchange)	10,000 (Chimei: 6,000)	January, 2024
Science Park	First phase: 5,000	January, 2022
	Second phase: 20,000	January, 2024



Anping Reclaimed Water Plant is the second water plant STSP Bureau works with Water Resources Bureau of Tainan City Government with the construction, and reclaimed water here is again used in the technology industry. This is the second reclaimed water plant with a daily capacity of 10,000 tons of reclaimed water, and it is expected to be completed in October, 2022. Combining the capacity of Yongkang and Anping Reclaimed Water Plants, the daily capacity of water supply can reach 53,000 tons, providing about 1/5 of the effective water storage capacity of the Nanhua Reservoir, which will definitely help create the niche in the industry.

The Rende Reclaimed Water Plant that is under planning will provide water to the existing nearby manufacturers in need of water through water source exchange, and the park manufacturers will subsidy the difference in payment and make use of the exchanged tap water, which will significantly reduce the expenses for construction and operation of pipelines. Through the cooperation mode of water source exchange, the efficiency of emerging water supply mode and development among four parties (the city government, the party to be exchanged of water source, the party changing the water source and STSP) can be achieved. At the same time, water demand is also met, achieving the synergy of making flexible use of water resources.

In addition, STSP Bureau handled the Urban Planning for Public Facilities Operation Procedures in Tainan Science Park based on the investment incentive regulations and announced to solicit manufactures to invest in the construction of a 20,000-ton/day reclaimed water plant on the 7<sup>th</sup> land used for water. After selection, TSMC obtained the priority right to negotiate and the contract signing with STSP Bureau was completed on April 1, 2020. The Science Park Industrial Wastewater Reclamation Plant Project is scheduled to start in 2021. The initial plan is to provide 5,000 tons of reclaimed water every day, and the capacity can be increased to 20,000 tons of reclaimed water daily in 2023.

To stabilize industrial water use, with the support and assistance among the partners, including STSP, Construction and Planning Agency of Ministry of Interior, Water Resources Agency, MOEA, Tainan City Government and water users (TSMC, Innolux, and UMC), the Bureau took the lead introducing reclaimed water from Yongkang Reclaimed Water Plant into the science park. In 2019, the contract of providing reclaimed water from Anping Reclaimed Water Plant to the science park area was signed, and in 2020 the investment incentive contract of reclaiming water from industrial effluents was also completed. With limited water resources, the balance between reclaimed water supply and allocation is completed, creating co-prosperity between the industries and the environment, reducing the pressure of developing traditional water resources and achieving the goal of a sustainable science park.



## 6.3 Smart Disaster Prevention in the Science Park

The impact of climate change resulted from global warming is getting more and more significant. In addition to reducing GHG emissions, we also need to consider its uniqueness and promote the climate change adaptation in phrases when facing the uncertainty that the impact climate change brings in terms of time and space. Meanwhile, we also need to link disaster prevention and relief with the sustainable development goals to ensure the sustainable development of STSP.

GRI Standards regard climate change issues as part of the ESG management capabilities and performance while TCFD (Task Force on Climate-Related Financial Disclosures) guidelines encourage organizations to incorporate related climate change risks into financial impact assessment for in-depth disclosure, providing stakeholders with forward-looking information that is more favorable for decision-making and proposals for effective response strategies. Based on the four core elements of TCFD, STSP Bureau established Governance, Strategies, Risk Management and Indicators and Targets as the framework to enable our stakeholders and industries inside and outside STSP to understand how we assess climate-related risks and opportunities.



## • | Utilities Response System

The emergency contact and notification mechanism of the Utilities Response System can effectively improve the communication efficiency of abnormal water and electricity supply to avoid wasting manpower in the reporting of causes for abnormal water and electricity supply. Besides, through this mechanism, STSP Bureau can grasp the status of losses for the park manufacturers in the shortest time and the manufacturers can also rapidly understand the cause of the abnormal water and electricity supply to facilitate the corresponding contingency measures. Since the establishment of the Line Group for Water in 2017, Power and Gas Supply Committee, manufacturers can be notified immediately through instant messaging to understand the cause of the abnormality and the recovery situation of each manufacturer.

## • | Disaster Response System

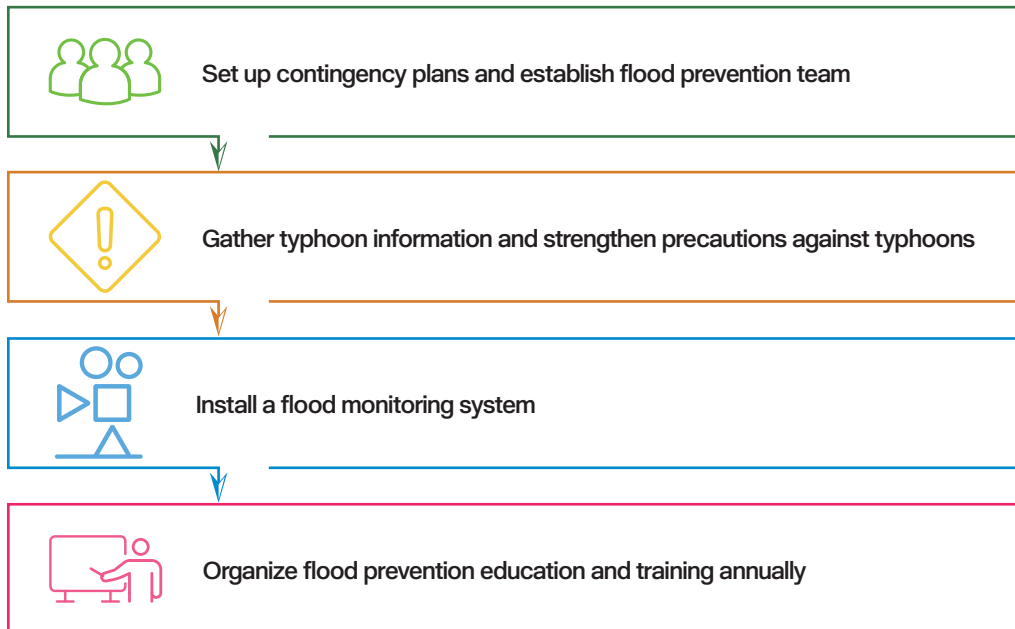
To achieve the purpose of immediate notification, rescue (treatment) and aftermath handling, the existing disaster prevention and response resources in the public and private sectors in the science park are integrated to plan a simple, feasible, unified and highly efficient disaster prevention and relief system. The “Implementation Plan for the Construction of a Joint Prevention and Response System at STSP” is formulated to promote the disaster prevention and relief system in the science park and establish a joint prevention and response organization and radio system. In addition, various technologies and experiences at home and abroad are also referred to for the development of Emergency Response Support System that is incorporated with mobile devices, seismograph monitoring signals, flood control monitoring system and geographic information system. With the introduction of the geographic information system, location maps of tap water pipelines, drainage lines, power facilities and gas pipelines can be obtained and related information inquiries can be made. Main information of the villages within 3 km outside the science park is also included so that if the scope of disaster is likely to affect the surrounding residents, village information can be learned through diffusion simulation and the graphical interface so that immediate notification can be made to the liaison office of the village chief to ensure that disaster prevention and response procedure can be completed immediately.

## • | Flood Prevention and Response System

To ensure smooth water drainage within and around Tainan and Kaohsiung Science Parks and to reduce possible floods and disasters as early as possible during flood season, personnel would be assigned for 24-hour monitoring. During the flood season between May 1 and Nov. 30 every year, when the Central Weather Bureau issues a land warning or torrential rain in the area where the science park is located, the flood prevention team is immediately established. There are three levels of alert, and resident personnel at all levels (maintenance manufacturers, flood control team members, deputy director-general) are required to be stationed for 24-hour monitoring in shifts within an hour after receiving notification.



## Emergency response measures




## Earthquake Early Warning and Smart Disaster Prevention System


To improve and integrate the park's disaster relief response capabilities to meet the needs of smart disaster prevention and relief, the Earthquake Early Warning and Smart Disaster Prevention System was established in 2017, combining various systems in the smart science park (chemical registration system, environmental monitoring information system, traffic control center database, smart building group database, portable disaster relief equipment, and flood prevention system), coupled with the risk assessment and disaster simulation calculations, the 3D visual disaster prevention and relief command system based on GIS (Geographic Information System) is established to rapidly provide integrated intelligence for the commander to make decisions. A total of 266 manufacturers and 7,576 chemical records have been registered in the Earthquake Early Warning and Smart Disaster Prevention System, and 2 domestic patents were obtained.




# Scenario description of smart disaster prevention and relief

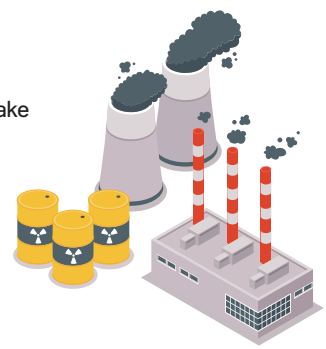
Integration of chemicals, earthquakes, environmental monitoring, intersection monitoring and water level information for response and handling as well as suggestions for decision making.

- 

**01** Earthquake Early Warning System: linking the equipment with escape  
Compound disaster scenario: Plant fire and chemical spills after the earthquake
- 

**02** Make use of smart traffic and building group monitors to monitor the accident scene
- 

**03** Monitor the site of the accident and at the same time take air pollution sample, and make use of AR technology to implement the pollution dispersion model



## Scenario description of Earthquake Early Warning and Smart Disaster Prevention System




Portable mass spectrometer



- 

**05** Pollution dispersion model—Disaster simulation to assist the commander with decision making
- 

**04** The first ever chemical registration management by floor combined with 3D GIS

- 

**06** Smart environmental monitoring

STSP Bureau conducts smart disaster prevention and relief system related education and training. It is hoped that park business units can join the operation of the system to reduce the occurrence of occupational disasters.



## Advanced Disaster Education and Training Center

Director-General of Occupational Safety and Health Administration of Ministry of Labor and Director-General of STSP Bureau jointly signed an MOU to promote the “Occupational Safety and Health Multi-somatosensory Extended Reality (XR), Disaster Prevention Simulation Training Field Project” under the witness of the Minister of Labor on July 31 to achieve the synergy of cross-organizational and cross-field cooperation for a win-win situation.

Extended Reality (XR) Disaster Prevention Simulation Training Field is different from conventional education and training approach. It adopts three technologies of augmented reality (AR), virtual reality (VR) and mixed reality (MR), such as Computer Automatic Virtual Environment (CAVE) that stimulates underwater operations, simulated flying or plunge experience with the combination of robotic arms and chairs, and the simulated driving of forklifts, providing a brand new network of audio-visual experience platform for multiple people to operate and experience, realizing the real feel for the workers to enhance their ability to identify hazards in the workplace.



## 6.4 Pollution Control Measures of Park Businesses

### • | Review of Environmental Permit

To accurately grasp the environmental impact the pollutants cause during the construction period, STSP Bureau has actively worked on the environmental impact assessment commitments and improvement of the review conclusions and continued to entrust professionals to handle the “Environmental Monitoring Plan During Construction Period at STSP”, focusing on the investigations and tracking of the surrounding environmental quality of the park area under construction, so as to grasp the level of impact every project has on the quality of the environment, make timely adjustment of the construction method and take effective preventive measures to achieve the goal of taking care of the construction and maintaining the environment quality at the same time. Meanwhile, through the collection and analysis of the background data of the environment, a long-term environmental monitoring system and database can be established to meet the requirements of environmental tracking control.

#### STSP environmental permit review



In 2020, the number of approved environmental permits was 332, including 70 permits for fixed pollution source, 116 water pollution permits, 138 permits for waste, and 8 permits for waste recycling. Relevant service information and qualification for application are all available on STSP Bureau's official website to provide open and transparent service information.

### • | Overview of Waste Treatment

As the park businesses develop, the industrial waste in the science park also increases year by year. STSP Bureau actively provides counseling to park businesses to implement source separation and recycling to reach the goal of resource recovery, waste reduction and no secondary pollution. The reuse volume of the park businesses reached 343,951.85 tons in 2020.

Item	2020		
	Production volume (tons)	Reuse volume (tons)	Utilization rate (%)
<b>Science Park</b>			
<b>Tainan</b>	368,962.48	333,707.95	90.45
<b>Kaohsiung</b>	13,119.60	10,243.91	78.08
<b>The whole park</b>	382,082.08	343,951.85	90.02

In addition, to cope with the diverse types and characteristics of waste produced in diverse industries in Tainan Science Park, the Bureau has established a well-equipped Resource Recycling Center with waste removal equipment and treatment facilities to properly remove and dispose waste in the park. In 2020, the Resource Recycling Center properly processed 31,563 tons of waste.

By promoting the third phase of construction of the landfill site of the Resource Recycling Center in Tainan Science Park, the Bureau not only maintains normal waste removal and normal operation of the treatment facilities (equipment) but also strengthens the capabilities of effective treatment of general inorganic waste produced in the science park and increases the total amount and a site (the designed



landfill capacity is 90,000m<sup>3</sup>, with 15 years of service life) for safe landfill (of bottom ash, fly ash, etc.) of general industrial waste classified and incinerated. By doing so, the future needs of the landfill volume and scheduling as well as use of landfill sites can be met for the Resource Recycling Center, and it also demonstrates the determination to implement environmental protection policies.

Unit: tonne

Composition of waste		Hazardous waste		Non-hazardous waste		Remarks
		On-site	Off-site	On-site	Off-site	
<b>Method of treatment</b>		On-site	Off-site	On-site	Off-site	
<b>Transfer during disposal</b>	<b>Preparation for reuse</b>	-	-	-	-	
	<b>Recycling</b>	-	-	-	-	
	<b>Other disposal operations</b>	-	-	-	52	The Resource Recycling Center removes and transports the recyclables in the dorm area, and Sinshih Cleaning Squadron does the recycling and disposal
	<b>Subtotal</b>	-	-	-	52	
	<b>Total</b>	-		52		
	<b>Sum</b>	52				
<b>Direct disposal</b>	<b>Incineration (including energy recovery)</b>	5,655	-	22,003	264	Off-site (transfer to large incineration plant)
	<b>Incineration (excluding energy recovery)</b>	-	-	-	-	
	<b>Landfill</b>	-	-	3,538	-	bottom ash, fly ash, etc.
	<b>Other disposal operations</b>	44	-	7	-	Physical/Chemical Treatment, solidification
	<b>Subtotal</b>	5,699	-	25,548	264	
	<b>Total</b>	5,699		25,812		
	<b>Sum</b>	31,511				
<b>Temporary stored in the plant</b>		-				
<b>Total amount of waste</b>		31,563				

Note: 1. Please refer to the classification of the Waste Disposal Plan for the composition of waste (classified into A/B/C/D/E/R.....).

2. The weight of waste is in tons.

3. Types of recycling operations: such as preparation for reuse, recycling, and other recycling operations.

4. Description of types of recycling: such as downgrade uses, upgrade uses, composting or anaerobic digestion.

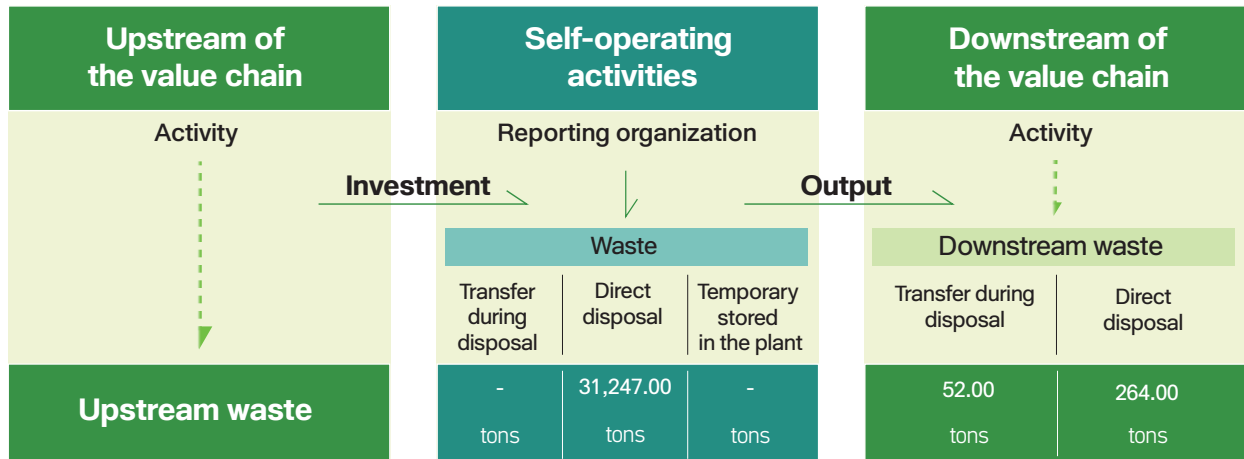
5. Other recycling operations: such as the change of purpose of use or refurbishing.

6. Type of disposal methods, such as incineration (including energy recovery), incineration (excluding energy recovery), landfill and other disposal operations.

7. Description of other disposal operations: such as dumping, open burning or deep well injection.

8. "On-site" refers to the area within the physical boundary or administrative control of the reporting organization; "off-site" refers to the area outside the physical boundary or administrative control of the reporting organization.

9. Part of the industrial waste in Tainan Science Park is transported to the treatment agencies by the park manufacturers themselves; all industrial waste in Kaohsiung Science Park is transported to the treatment agencies by the park manufacturers themselves.



## Wastewater Treatment

The tap water used in Tainan Science Park mainly comes from Wushantou Reservoir through Tanding Water Treatment Plant and Nanhua Reservoir through Nanhua water Treatment Plant. Water resources for Kaohsiung Science Park is from Agongdian Reservoir through Luzhu Water Treatment Plant and the surface water of the weir of Gaoping River through Pingding Water Treatment Plant.

In 2020, all the wastewater generated in the whole science park was properly treated and met the influent standards of the science park before being discharged into the sewage system. After treatment, the quality of all discharged water meets the effluent standards. The effluents of Tainan Science Park and Kaohsiung Science Park are discharged into Yanshuel River and Tuku Drainage respectively before finally flowing to the ocean. Part of the discharged water is recycled for equipment cleaning, plant watering and landscape ponds. To strengthen the efficiency of the wastewater treatment plant in Kaohsiung Science Park for the treatment of wastewater rich in ammonia nitrogen, the A/O treatment system for the activated sludge process was newly added to reduce the discharge of nitrogenous substance and lessen the load on the wastewater treatment system and environmental impact.

To ensure the water quality of the science park, there is a water quality inspection room in the Environmental Protection Center. The testing and evaluation of the testing capabilities of the inspection room is done through an impartial, objective and independent third party, which can enable us to understand the water quality of influents/effluents, treatment units, rain/sewage sewers and so on. It can also guarantee the fairness and objectivity of its testing and sewage charges.

Unit: million liters

2020 Overview of wastewater treatment at STSP			
Item	Tainan Environmental Protection Center	Wastewater treatment plant in Kaohsiung Science Park	Sum
Amount of tap water	79.77	2.27	82.03
Amount of influents	42,894.63	3,331.18	46,225.81
Amount of effluents	42,685.87	3,166.32	45,852.19
Amount of water recovery	290.87	61.03	351.91

Note: 1. The amount of influents is the industrial wastewater discharged by park businesses to Tainan Environmental Protection Center and Wastewater treatment plant in Kaohsiung Science Park.

2. The amount of effluents is the effluents discharged from Tainan Environmental Protection Center and Wastewater treatment plant in Kaohsiung Science Park to the sea.

Overview of water recovery at STSP from 2018 to 2020				
Item		2018	2019	2020
Recycling rate of wastewater	Tainan Environmental Protection Center	0.84%	0.63%	0.68%
	Wastewater treatment plant in Kaohsiung Science Park	2.92%	3.26%	1.83%
Usage rate of recycled water	Tainan Environmental Protection Center	77.61%	74.04%	78.48%
	Wastewater treatment plant in Kaohsiung Science Park	98.94%	99%	96.42%

Note: 1. Wastewater recycling rate= recovered water/influent.

2. Usage rate of reclaimed water= reclaimed water usage/ (reclaimed water usage+ tap water usage).

In 2018 and 2019, Wastewater treatment plant in Kaohsiung Science Park provided water for the use of 6 park landscape pools around the clock, but the water level of these landscape pools was often too high. Therefore, the duration of providing refilling water for the landscape pools was changed to 8:00-17:00 in 2020, resulting in the reduced wastewater recycling rate.

## Advanced Wastewater Treatment

The second wastewater treatment plant in Tainan Science Park has been completed. It is adjacent to the ecological conservation zone and the 1-hectare wetland, located at the intersection of Siraya Avenue and Huanxi Road. The exterior of the wastewater treatment plant is based on the theme of water purification. Through layered filtration and dynamic water flow, it presents the beauty of rhythm and dynamic beauty, showing a very different appearance of a wastewater treatment plant.

Currently, its capacity of wastewater treatment has reached 40,000 tons per day. Wastewater is treated through Secondary (Biological) Process and tertiary filtration and the treatment of the sludge adopts mechanical thickening and dewatering. The process units include pre-treatment, preliminary sedimentation tank, adjustment tank, neutralization tank, anoxic tank, aeration tank, secondary sedimentation tank, chlorination tank, rapid filter, reclaimed water pumping station, mechanical equipment building and sludge treatment building. The amount of waste sludge in 2020 was 16,303 tons, which was handed over to the Resource Recycling Center for incineration treatment and to qualified treatment companies for heat treating.

## Air Pollution Control

In accordance with Air Pollution Control Act, in addition to GHG, STSP Bureau also takes regular inventories of various air pollutants, including nitrogen oxides, sulfur oxides, volatile organic compounds and particulate matters to reduce environmental burden.

Unit: tonne

Item	Tainan Science Park	Kaohsiung Science Park
Nitrogen oxides (NOX)	431.0	28.5
Sulfur oxides (SOX)	97.0	9.0
Volatile organic compounds (VOCS)	474.0	96.3
Particulate matters (Par)	86.8	9.6

Note: The figures in the table were the permitted emissions of pollutants in Tainan and Kaohsiung Science Parks as of the end of 2020 (ton/year).



The increase in concentration of GHG has caused more and more significant global warming effects. The result of global warming not only affects the biological ecology but also damages economic activities of humans greatly. The ozone layer that is very important to living creatures on earth is also destroyed because of this. The Bureau understands the seriousness of it and is devoted to environmental protection. No ozone-depleting substances are used in the Bureau, and no harmful gases that have significant impact on the environment and the ozone layer were emitted in 2020.

## ● | Monitoring of the Environment

In 2020, STSP Bureau received 2 odor and 1 pipe with white smoke in total, and all were investigated and handled immediately. In 2020, the major monitoring items in the science park all met the legal requirements. Detailed indicators and data of monitoring are regularly disclosed on the official website of the Bureau. Please go to the “Environmental Monitoring Data” section for details.



Environmental monitoring data query

Monitoring item	Tainan Science Park	Kaohsiung Science Park
Monitoring of air quality	✓	✓
Monitoring of environmental noise	✓	✓
Monitoring of environmental vibration	✓	✓
Monitoring of surface water quality	✓	✓
Monitoring of traffic	✓	✓
Monitoring of the Resource Recycling Center	✓	There is no Resource Recycling Center.
Monitoring of water quality of effluents in the wastewater treatment plant	✓	✓
Monitoring of groundwater quality	✓	✓

## ● | Briefing Session Related to Environmental Protection

For the park manufacturers to understand the development trend of national environmental protection control direction and environmental regulation management systems, two sessions of environmental related seminars, briefings or observation sessions were held based on the characteristics of the park or the needs of the manufacturers. The content of the meeting included filling in the application form for the permit, explanation of environmental laws & regulations and environmental issues, and observation of manufacturers with excellent environmental performance. STSP Bureau hopes to improve the park manufacturers' familiarity of the regulations and grasp the trend of changes in the regulation before enforcement for early response. In addition, after the enforcement of the regulations, the manufacturers can have clear understanding of the content of the regulation for compliance.

A session of Experts and Scholars Consultation Conference was held on August 15, 2020 for the exchanges of opinions on the method of obtaining the air pollution offset for the newly established (expanded) park in the future. In addition, in response to the public's concern about the industrial waste disposal in recent years, a briefing session was held on November 20 for the park manufacturers to understand the government's policies and control points for the promotion of waste management in the future, guiding the science park to move toward a circular economy of resources.



Experts and Scholars Consultation Conference on August 5



Briefing session on November 20

## 6.5 Renewable Green Energy

STSP promotes the steps toward “sustainable environment and a green park” to keep moving forward. Renewable energy systems are installed while park equipment is replaced to reduce GHG emissions.

### Renewable Energy System

STSP Bureau has actively installed solar panels in the science park (on the roofs of NNKIEH, Administration Building of the Bureau, Police Building, STSP Commercial Center, flood control pumping station, wastewater treatment plant, Resource Recycling Center, and standard factories in the science park). The total statistics related to the installment of solar panels for manufacturers and public departments are organized in the table below. It shows that the amount of power generation increases while CO<sub>2</sub>e is decreasing year by year, achieving the effect of environmental protection.

Item	2018	2019	2020
Installation of solar panels (kW)	27,853	43,919	54,519
Annual power generation (10,000 kWh)	3,477	4,969	6,965
Reduction in carbon dioxide emissions (tons)	18,532	25,294	35,450

## • | Energy-saving LED Street Lights

We continue to move forward to reach the goal of energy conservation, carbon reduction and decrease in public electricity consumption. In accordance with the Technical Specifications for Setting up LED Street Lights in Taiwan of the Energy Bureau of MOEA and considering the development technology of LED streetlight products available in the market, LED streetlights with appropriate illuminance and luminous efficiency are chosen. Starting from 2010, LED streetlight have been replaced in stages. As of the end of 2019, all the streetlights in Tainan Science Park have been completely replaced with 2,738 LED lamps in total. By the end of 2019, the streetlights in Kaohsiung Science Park have all been placed with 1,654 LED lamps in total. In 2019, the high beam lights in the parking lot were also replaced by LED lamps. A total of 371 lamps have been replaced as of the end of 2020.

## • | Electronic Shuttle Bus

Currently, the Bureau has 7 e-shuttle buses in Tainan Science Park, with a total of 694 passengers per day, an average daily mileage of about 772.4 kilometers, reducing the use of diesel by 193.1 liters averagely every day (e-vehicle mileage/4 kms per liter of gas) and reducing 503.21 kg CO<sub>2</sub>e averagely every day.

## • | Self-management of Exhaust

STSP Bureau cooperates with the Environmental Protection Agency and the local government to promote the policy of air quality purification zone and counseled businesses in Tainan Science Park to join the Self-management of Diesel Vehicle Exhaust promoted by the Environmental Protection Bureau of Tainan City and won the affirmation of the city government for 4 consecutive years. In 2020, STSP Bureau has obtained a total of (cumulative) 1,848 exhaust emission marks.



2020 Excellent Unit for Environmental Protection Certification for Self-management of Diesel Vehicle Exhaust

## 6.6 Ecology Conservation at STSP

As the science park develops, STSP Bureau has planted various flowers, plants and trees in the science park and taken good care and implemented conservation of these plants to strengthen the ecological conservation and restoration of the science park. We also make long-term plans to promote green buildings and encourage park manufacturers to build green buildings, hoping to create a more environmentally friendly green science park.

## • | Greening of Landscape

To create a colorful image of the diversity of the planting belt along the main roads of Tainan and Kaohsiung Science Parks, the Bureau continuous to plan the landscape improvement project in the science parks every year to replace poor-growing arbores or aging shrubs. The overall landscaping is



based on a people-oriented perspective with the concept of multi-layered planning. Seasonal patterns and color changes are chosen to match the areas around the park in four seasons to show rich and colorful scenery. The overall landscape is all refreshed after the greening and beautification of the park area is completed.

	Year	2018	2019	2020
<b>Arbores</b>	Tainan Science Park	127,436	128,679	123,219
	Kaohsiung Science Park	91,398	92,366	92,293
<b>Shrubs</b>	Tainan Science Park	509,639	561,215	572,176
	Kaohsiung Science Park	107,807	112,489	148,343

In the face of so many fallen leaves and branches, the Bureau started to establish a green resources recycling plant in Tainan Science Park where fallen leaves are mixed with organic cane fertilizers to make compost. Large residual branches are crashed into wood chips using wood chippers and are scattered in the green landscape planting belt in the science park. In 2016, the establishment of the green resource recycling plant in Kaohsiung Science Park was also completed for the sustainable use on the land of STSP. In 2020, Tainan and Kaohsiung Science Parks totally produced 738 tons of deciduous compost and 86 tons of wood chips. Based on the statistics, a total of 4,994 tons of compost and 2,413 tons of wood chips were produced during 2013 and 2020



Cosmos flowers at the Yinx Lake in Tainan Science Park



Fire-cracker vines at the Dazhou Drainage Pavilion in Tainan Science Park



Gliciridia sepium at the Yinx Lake in Tainan Science Park



Bead Tree at the Yinx Lake in Tainan Science Park





Rosy Trumpet Tree at the Gongqi Park in Tainan Science Park



Sunflowers in the Administrative Service Area in Tainan Science Park



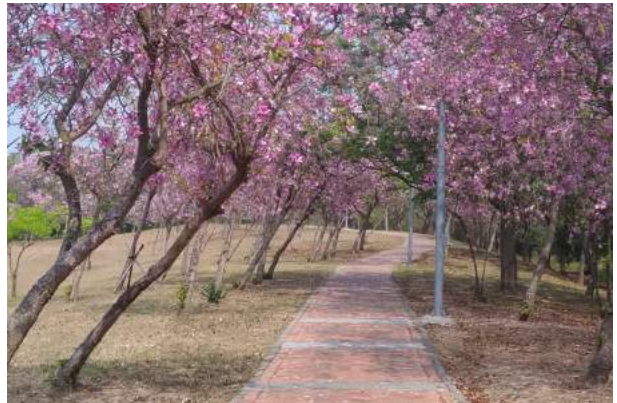
Golden Shower Trees at Park 17 Mall in Tainan Science Park



Golden Phoenix Trees on Nanke N. Road in Tainan Science Park



Golden Trumpet Trees on Huandong Road in Tainan Science Park



Orchid Trees at Titan Lake in Tainan Science Park

## Adoption of Beach Cleanup

From 2017 to 2020, the Bureau responded to the Adoption of Coastal Cleanup initiated by Environmental Protection Administration and adopted the 500-meter coast along the Gold Coast in the South District of Tainan City. The Gold Coast has beautiful landscape, a soft and delicate beach and broad coastline. We led our staff to the Gold Coast for the beach cleanup to convey and implement environmental education in real actions, encouraging our staff to take actions to protect the earth, assist in the maintenance of a clean coastal environment to contribute to the marine environment and take practical actions to remove the trash in the coastal area.





Resource Recycling Center's Beach Cleanup Activity



Resource Recycling Center's Beach Cleanup Activity



Straight pre-stressed hammock bridge structure



The habitat of aquatic fireflies

## Ecology of the Detention Pond in Kaohsiung Science Park

The ecological detention pond in Kaohsiung Science Park is located in the southwest corner of the park. The planned habitats are for Oriental Pratincole and *Phasianus colchicus formosanus* Elliot. Coupled with the newly completed habitat for fireflies, this area has become an ecological education field with abundant diversity.

We specially invited international firefly experts to guide us with the planning of firefly habitat cultivation and at the same time working on the recovery of aquatic firefly *Aquatica ficta* and terrestrial firefly *Pyrocoelia analis*. Leafy vegetables and aquatic plants are planted in the habitat of fireflies to raise snails, stone snails and *thiara torulosa* that firefly larvae love best. In addition, the habitat also has the clean and flowing water of the detention pond and an environment without light pollution. The firefly recovery chose the local fireflies in Luzhu District. It is hoped that in the spring of 2021, the disappeared light of the fireflies can shine again on this land.

Considering the special environment of the detention pond and the habitat of the fireflies, a pedestrian bridge has been installed at the narrowest part of the detention pond to guide pedestrians to concentrate the activities in the north of the detention pond, and the south side of it is reserved for the habitat of local birds such as *Phasianus colchicus formosanus* Elliot and swallows to avoid human interference. The straight pre-stressed hammock bridge structure is adopted for this pedestrian bridge. The smile curve and weight reduction of the bridge show the attitude of energy saving, carbon reduction and eco-friendliness, fully expressing the concept of the science park with its leading technology and the concept of caring for this planet. Therefore, the establishment of "a smile" (bridge) does not require too many facilities, staying in line with its original design concept of being simple and mild, being mild and beautiful.

## • | Aggregation of Ecosystem

Due to the geographic location of the science park, it has a unique plain farming ecology. After years of efforts and planning, the Bureau has finally created abundant ecological resources in the science park today, including grassland, shrubs, detention ponds (for flood prevention), ditches and so on, covering the diverse habitats of the plain and attracting diverse creatures that forms aggregation in the science park.

To make this fertile land of STSP a home for the aboriginals and passing visitors, the Bureau has specially planned a 30-hactare land for ecological protection to conserve bird habitats, and it has become the best demonstration of symbiosis between development and ecological conservation. In addition, we also commissioned ecological conservation groups to conduct ecological survey in the science park to analyze the changes in the number of the population. Observation and recording of the reproduction of protected species of birds were particularly carried out, which has also formed a unique ecological characteristic at STSP.

The survey results in 2020 are as follows.

	Birds	Amphibian	Butterfly	Odonata
<b>Tainan Science Park</b>	66 species and 35 families	4 species and 4 families	23 species and 4 families	10 species and 3 families
<b>Kaohsiung Science Park</b>	69 species and 34 families	5 species and 4 families	19 species and 4 families	10 species and 3 families

Among the birds observed in Tainan Science Park, 9 species are the protected birds announced by the Council of Agriculture (not in the IUCN Red List), and 10 species are observed in Kaohsiung Park.

Item		Tainan Science Park	Kaohsiung Science Park
Protected species	Class III	Glareola maldivarum, Lanius cristatus	Glareola maldivarum, Lanius cristatus
	Class II	Phasianus colchicus, Elanus caeruleus, Accipiter trivirgatus, Rostratula benghalensis, Falco tinnunculus, Falco peregrinus, Oriolus chinensis	Phasianus colchicus, Elanus caeruleus, Falco tinnunculus, Oriolus chinensis, Acridotheres cristatellus, Rostratula benghalensis, Falco peregrinus, Accipiter trivirgatus,
Frogs		Duttaphrynus melanostictus, Hylarana guentheri, Fejervarya limnocharis, Microhyla fissipes	

Note: The protected species mentioned in this report are listed in the Schedule of Protected Species designated by Council of Agriculture of Executive Yuan in 2019.



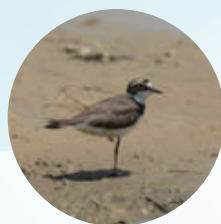
*Phasianus colchicus*



*Accipiter trivirgatus*



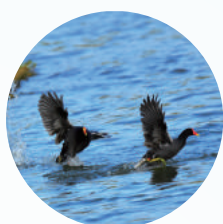
*Junonia almana*



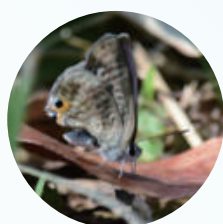
*Charadrius dubius*



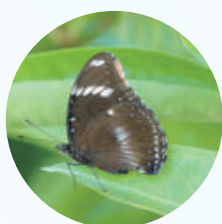
*Egretta garzetta*



*Gallinula chloropus*



*Lampides boeticus*



*Hypolimnas bolina*



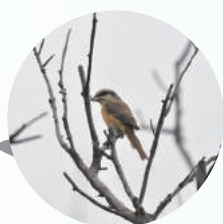
*Dicrurus macrocercus*



*Streptopelia tranquebarica*



*Pycnonotus sinensis*



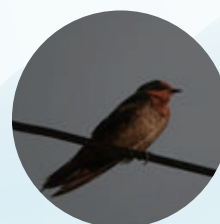
*Lanius cristatus*



*Pantala flavescens*



Nest of *Phasianus colchicus*



*Hirundo tahitica*



## Ecological Observation Tour for Residents

In terms of ecological construction, multiple detention ponds have been established in STSP and the ecological reserve is also planned at the same time, aiming at creating a diversified ecological environment that attracts birds, butterflies, dragonflies and other creatures to stay in the park for recovery to enrich the natural environment in the science park.

After years of ecological monitoring and survey, a total of more than 100 animals and 200 plants are found in the science park, showing good results in the creation of ecological environment. We hope to share the results achieved for the harmonious coexistence of the industry and the environment with the public through the guided birding tour and visit activities.

Therefore, the science park plans to organize ecological observation tour. The guided tour provides static explanation and observation of equipment so the visitors can not only “listen” to the explanation but also “see” what is being explained with the observatory equipment to leave deeper impression on the visitors so that when they return home, they can share what they see with others, serving as the word-of-mouth promotion of the results of the ecological maintenance in the science park

### Guided tour in the ecological reserve



## Environmental Education

STSP Bureau continues to organize environmental education and related activities that incorporate issues of water pollution control, waste reduction, natural environment exploration and disaster and flood prevention. In 2020, a total of 27 sessions of environmental courses were organized, with a total of 720 participants, and more diverse eco-friendly concepts and measures will be introduced to create a green science park with sustainable development.

Photos taken in environmental education courses

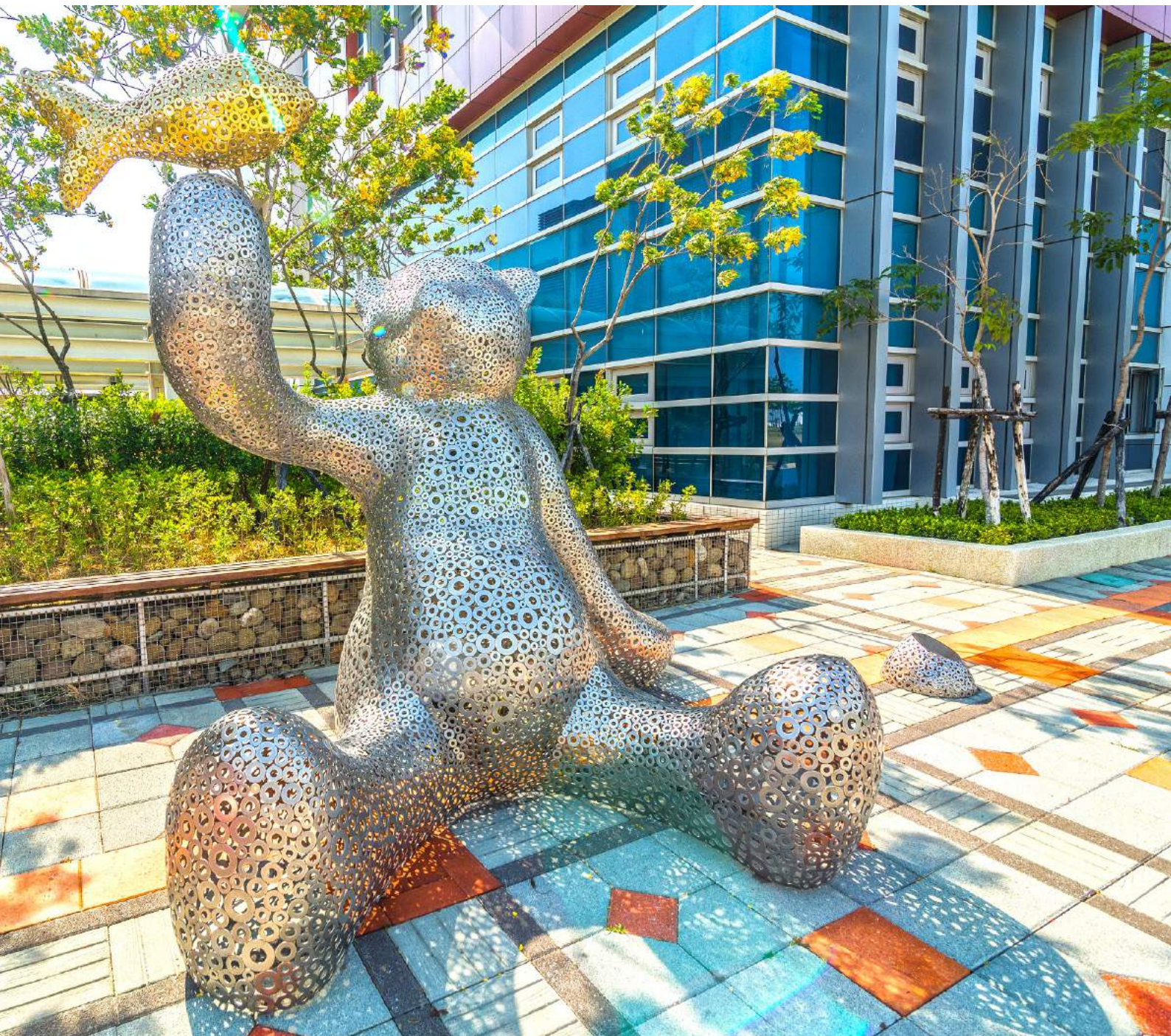




# 7

Chapter

## Lifestyles of Health and Sustainability (LOHAS) at STSP



STSP's Installation Art / Great day



# 7. Lifestyles of Health and Sustainability (LOHAS) at STSP

## 7.1 Good-Neighborliness

The Bureau organizes various activities every year to attract employees in the science park to enjoy and bring their families to attend. The residents in the surrounding communities are also invited to enjoy together.

### • | STSP Late Spring Art Event

Every March and April when spring comes and flowers bloom, STSP Bureau will organize the STSP Late Spring Art Event. 2020 is the 10<sup>th</sup> year of this event, with the theme of “Ten Years of Youth in the Happy Science Park”, providing great music to accompany the happy science park we have spent a decade working in. The 2020 event was held from March 14 to April 25, and on the Saturday afternoons of these four weeks, performances were presented by local schools, clubs and performing groups, which was combined with culture and art, showing great singing, musical and magic performances. Free refreshments, Mobile Museum of Museum of Archaeology, Tainan Branch of NMP and booths of young farmers and public welfare groups were also provided to attract people working in STSP and residents in the neighboring communities to enjoy on holidays to relieve their pressure in their daily life, improve the quality of life in STSP, and enhance relationship with the residents in the neighborhood, bringing a grand feast of art and culture in the science park.



## Exhibitions in Hsing-Kuang Hsier Local Culture Hal

Hsing-Kuang Hsier Local Culture Hall is a structure with the combination of religion and culture, which exhibits Siraya's and pre-historic culture. Every April is the most beautiful blooming season around this area. The trail around the lake and the blooming pink orchid trees attract tourists here and there taking pictures and enjoying the picnic on the lawn.

There are abundant of displays inside the hall, with detailed introduction of Siraya tribe, the largest tribe of Pingpu Aborigines, and displays of many unearthed cultural relics. There are also volunteers to introduce the belief in God Ali in Siraya culture. Some DIY activities are held on holidays, suitable for parents and children to come and enjoy while looking at the traces of the history in this important high-tech town. Many exhibitions were organized in the hall in 2020, attracting many art lovers to visit and make exchanges.



"Paintings in Magnificence"- Members' Joint Exhibition of Tavocan Fine Arts Society



"Enjoyment in Art"- Yi Shiu Ink Painting Solo Exhibition

## ❏ | Pomelo Picking with Friends in Japanese Businesses

STSP Bureau invited Farmers' Association of Madou to co-organize the "Cultural Experience of Pomelo Industry in Madou for Japanese Businesses at STSP" on September 19. A total of 32 people participated in this cultural experience, including executives from 6 Japanese Businesses in the park and representatives from Japan-Taiwan Exchange Association. The participants went to visit the pomelo garden to experience pomelo picking. Pomelo masters were also invited to teach participants techniques of choosing pomelos. All participants experienced pomelo picking and had a lot of fun on this sweaty day.

After the hard work of fruit picking, the participants then embraced the tasting time. In the afternoon, they enjoyed the sweet and juicy red pomelos with the rice pudding with toppings of their choice. The aroma of the delicacies at the table with the afterglow of the sunset interwove the satisfying feast for all participants.

STSP Bureau made use of the holiday and combined local industrial and cultural activities to establish a platform for exchanges with Japanese companies in STSP, providing an opportunity for Japanese supervisors, practitioners, and their families to relax and relieve their pressure. The cultural and life experience activity was well received by our Japanese friends, and they also expressed their gratitude and affirmation, strengthening the Taiwan-Japan friendship.



“ Last year we went to Madou to see pomelo flowers. This year, we couple were happy to see the pomelo trees. This is such a delightful activity that we will participate in next year once again for sure



“ This is my second time participating in the cultural activity for Japanese businesses. I want to thank STSP Bureau for planning such an interesting activity for us!





## • | 2020 Christmas at STSP- Join Hands to Embrace Happiness

To embrace the coming of Christmas and New Year, STSP Bureau held a Christmas Party & Holiday Lighting Ceremony with the theme of “2020 Christmas at STSP” at Puxin Park on the evening of December 18. This year, the Deputy Director-General led representatives of the park manufacturers to light up the main lamp of the 6-meter wishing pool and tossed gold coins to make wishes, hoping that every member of the big STSP family can achieve his/her dream and obtain happiness in the coming new year. When the party ended, the public could still see the beautiful and delicate lighting decorations, such as the Angels’ Wings at the Yingxi Lake, the Sea of Lanterns, the Aqua Planet, and the Overpass Tunnel on Siraya Avenue until January 31, 2021. The public could invite friends and gather here at STSP to enjoy the lights and take pictures, share the happiness in the daily life, and embrace the coming of 2021.



## • | Helping Farmers, Happy Purchase

Due to the impact of COVID-19 in 2020, the beginning of the new semester was postponed for secondary and primary schools, resulting in huge sales stress for farmers providing organic vegetables for school lunches. Therefore, to help these farmers solve the difficulty, STSP Bureau cooperated with Tainan City Government and the Agriculture Bureau. In addition to the propaganda of purchasing the vegetables to the Employees’ Welfare Committees of all park manufacturers, the Bureau also held the “Organic Vegetables for Health”, a generous organic vegetables giving away activity from February 18 to 21, providing a bag of free organic vegetables to those who have purchased a certain amount in designated stores in the four business districts of STSP.

The public responded enthusiastically to the activity, saying that this activity is extremely meaningful for that they can not only enjoy the fresh organic vegetables for free but also help local farmers solve their problems. This activity was also supported by co-organizing stores. In addition to increasing customers’ consumption in the business districts, the sense of identity with the business districts among the customers can also be enhanced.

During the epidemic, STSP not only actively works on epidemic prevention but also continues to solve the problems all industries may face, aiming at getting rid of the threat brought by the epidemic.

## Love Never Stops

Since 2015, STSP Bureau has worked with Rotary Club Nanke and World Vision Taiwan to raise funds and jointly promote the STSP Charity Month with the purpose of “Care for the Locals, Let Love Grow Roots” to gather love and care at STSP and bring hopes to the disadvantaged for emergency medical care and other needs in the surrounding areas of Tainan and Kaohsiung Science Parks, providing assistance to these families in need. STSP Charity Month continues to cooperate with World Vision Taiwan and Luway Opportunity Center and starts new cooperation with Tainan City Social Assistance Account, providing assistance from medical and emergency assistance, early treatment for people with disabilities and adult day care service to the “Creation of Independent Homeland- Home and Learning Equipment Subsidies for Disadvantaged Families” through the Tainan City Social Assistance Account. By providing subsidies for furniture, appliances, computers and other home and learning equipment, the basic quality of life for the disadvantaged families can be improved, helping them to be independent and get rid of poverty. STSP Charity Month has been implemented for six years, and the cumulative funds raised so far totaled NTD 11,170,021.



As of the end of 2020, the cumulative funds of NTD 9.49 million have been distributed to 3,034 people from 812 disadvantaged households in Xinshi, Shanhua and Anding Districts where Tainan Science Park is located and Luzhu, Gangshan and Yonggan Districts where Kaohsiung Science Park is located.

Item	Participating manufacturers	Amount of total donation	Number of recipients	Number of aided households
1 <sup>st</sup> Year	31	NTD 715,612	211	58
2 <sup>nd</sup> Year	29	NTD 1,572,720	528	117
3 <sup>rd</sup> Year	37	NTD 3,153,995	524	146
4 <sup>th</sup> Year	29	NTD 2,118,565	671	228
5 <sup>th</sup> Year	11	NTD 1,957,004	1,100	263
6 <sup>th</sup> Year	31	NTD 1,652,125	-	-
Accumulative total	-	NTD 11,170,021	3,034	812

Note: The funds raised in 2020 will be used in 2021, so there have not been recipients and households receiving such fund yet.

## Good Neighbor Fund

In 2020, the Bureau continued to promote the recycling of waste resources. NTD 135 will be provided as the good neighbor fund for every ton of waste processed by the incinerator, and the total fund reached NTD 3,406,392, which will be proportionally used in the communities within 1.5 km of the Resource

Recycling Center for the improvement of quality of life, local sanitation, environmental quality, beautification of environment, education and cultural standards so as to maintain good neighborly relations, facilitate investment of park business units and local prosperity and development.

Item	Amount of waste incineration (tons)	Total rebate amount (NTD)
2018	25,278	3,410,483
2019	25,023	3,376,176
2020	25,248	3,406,392

## 7.2 A Visit to Museum of Archaeology

Museum of Archaeology, Tainan Branch (STSP Museum of Archaeology) has an area of 2.44 hectares and is located next to the Administration Building of STSP Bureau. STSP Museum of Archaeology has a unique exterior design, and it contains more than 8 million cultural and archaeological relics, all were unearthed with the development of STSP, reflecting the profound context of craft and cultural life of this land. There are various activities and promotion education inviting all to come to know and cherish this rare science park with humanities.



### • | Lecture Activities for Park Manufacturers

Relevant education and training for the propaganda of the notification mechanism of the preservation of archaeological sites is organized for STSP park manufacturers and construction personnel to strengthen their understanding of the regulations of the Cultural Heritage Preservation Act. Participants are provided with the format of the construction plan and the production process of the project monitoring plan. In addition, they are also shared with the work content of the site inspectors and project supervisors as well as the types of archaeological relics. Through the lecture activity, park manufacturers can better understand the importance of protecting the archaeological site.



Lecture activity



## Follow Me to Archaeology

To promote the connotation and local history of the archaeological culture in STSP, the “Follow me to Archaeology” event was specially launched in 2020. The main axis of this event is to “link archaeology and life together”. With the design of the event, the archaeological culture is transformed into a novel and unique perceptual experience, allowing the public to observe and listen with their eyes and ears, feel the fragrance through their noses and tongues, and move their hands and bodies, just like the way prehistoric humans used to survive with their sensitive five senses. Follow Me to Archaeology is specially organized for parents and children, and the public can also understand the culture and life wisdom of prehistoric humans.

The knowledge of the archaeological relics is promoted through interesting exhibition and experiencing activities so that the public can understand how to make use of natural and resources to make natural, healthy, and eco-friendly utensils. By making these natural utensils, the public can reflect on the life without plastics. People can come to STSP for exploration. Archaeology connects the past with the present and the future, and we can get to know the trajectory of the local life.

### Start from the sugarcane field



### Fun board games



### New era of utensils



### Historic life dance





# 8

Chapter

## New Perspective with Prosperity



## 8. New Perspective with Prosperity

Looking ahead to the global development trend in the future, we can find impacts and challenges across the aspects of society, technology, economy, environment, and politics on human life, and Taiwan is also facing the same issues. In response to the challenges mentioned above, the government has set the Taiwan's 2030 Science & Technology Vision, established the three visions of “innovation, inclusive, and sustainability”, and put forward the five major goals of “LOHAS society, high value-added economy, resilient environment, innovative education and inclusive technology”. It is hoped that the socioeconomic and technological development trend for Taiwan’s future is guided through the linkage of local, international, and future strategies.

The Ministry of Science and Technology (MOST) leads the scientific and technological development of the country. Through inter-ministerial coordination and cross-field integration, policies are jointly promoted with the government, maximizing the synergy of the scientific and technological resources. In the process of resource investment and planning, it is emphasized that technology responds to social needs, deepens humanity values, and promotes the happiness technology to enhance people’s liveliness and well-being. MOST is responsible for the promotion of scientific promotion and cultivate excellent talents in scientific research to enhance the international influence of the scientific research of Taiwan through the dedication to the pursuit of research excellence and in-depth fundamental research. In addition, through the close linkage of industry-academic-research collaboration, the diffusion of research results and optimization of services and environment in the science park, the innovation development and industrial innovation can be supported to create new values for scientific research, actively leading Taiwan to respond to future challenges. STSP Bureau will take more active actions to help industries innovate and transform to enhance the competitiveness of the manufacturers. The key points for future outlooks are as follows.

- 1 Create excellent investment environment to attract high-tech manufacturers to enter the science park to form industry and service clusters. Establish an innovation-oriented government service to meet the needs of manufacturers’ operation and the life functions of the employees. Implement a one-stop service to improve the service quality of the science park.
- 2 Combine the innovative R&D momentum, actively establish a cultivation field for start-ups in the science park, strengthen the cultivation of innovative and high value-added enterprises, enhance the R&D technology and investment, promote the industry-academic-research collaboration and resource integration, strengthen regional innovation systems, and promote innovation transformation in the science park.
- 3 Continue to introduce green thinking, link the R&D results of green energy, uphold the concept of protecting environment, cherishing resources and co-existence of industry and eco-environment sustainability, reduce negative impacts industrial activities have on the earth and facilitate co-prosperity and sustainable development of technology and environment.
- 4 In 2020, under the impact of COVID-19 epidemic, emerging business opportunities such as the application of 5G, AI, IoT, automotive electronics, high performance computing, and biometric recognition are expanding rapidly. Manufacturers’ high-end products are launched, all conducive to maintaining the export of the science park, and the turnover, export value, and number of employees all increased despite the influence of the epidemic, creating new record highs.
- 5 In the future, we work in line with the MOST’s three visions of innovation, inclusive, and sustainability, and continue to promote investment in the R&D of critical technologies such as digital technology and precision health, value-added software and hardware, and cross-industry integration. In addition, we also combine local development, strengthen the linkage of local demand, optimize energy resource use, and improve circular economy and related work. We will continue to create high-quality environment for investment to attract high-tech manufacturers to station here in STSP. Satisfaction of the park manufacturers is improved through the organization of talent cultivation subsidy plans, cultivation of industrial and technological manpower, and strengthening of the smart service efficiency.



# 9

Chapter

## Appendix





# Appendix I: Verification statement



## INDEPENDENT ASSURANCE OPINION STATEMENT

### 2020 Southern Taiwan Science Park Bureau, Ministry of Science and Technology Sustainability Report

The British Standards Institution is independent to Southern Taiwan Science Park Bureau, Ministry of Science and Technology (hereafter referred to as STSPB in this statement) and has no financial interest in the operation of STSPB 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 STSPB only for the purposes of assuring its statements relating to its sustainability responsibility, 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 STSPB. 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 STSPB only.

#### Scope

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

1. The assurance scope is consistent with the description of 2020 Southern Taiwan Science Park Bureau, Ministry of Science and Technology Sustainability Report.
2. The evaluation of the nature and extent of the STSPB's adherence to AA1000 AccountAbility Principles (2018) in this report as conducted in accordance with type 1 of AA1000AS v3 sustainability assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process.

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

#### Opinion Statement

We conclude that the 2020 Southern Taiwan Science Park Bureau, Ministry of Science and Technology Sustainability Report provides a fair view of the STSPB sustainability responsibility programmes and performances during 2020. 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 STSPB and the sample taken. We believe that the 2020 economic, social and environmental performance information are fairly represented. The Sustainability responsibility performance information disclosed in the report demonstrate STSPB's efforts recognized by its stakeholders.

Our work was carried out by a team of Sustainability report assurors 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 STSPB's description of their approach to AA1000AS v3 and their self-declaration in accordance with GRI Standards: Core option were fairly stated.

#### Methodology

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

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

### Materiality

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

### Responsiveness

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

### Impact

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

### GRI Sustainability Reporting Standards (GRI Standards)

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

### Assurance level

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

### Responsibility

The sustainability report is the responsibility of the STSPB's chairman as declared in his responsibility letter. Our responsibility is to provide an independent assurance opinion statement to stakeholders giving our professional opinion based on the scope and methodology described.

### Competency and Independence

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

For and on behalf of BSI:

  
Peter Pu, Managing Director BSI Taiwan



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2021-07-07

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## Appendix II: Global Reporting Initiative (GRI) Index

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.

GRI Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ remark
<b>Organizational Profile</b>						
GRI 102 General disclosure 2016	102-1	Name of the organization	●	2.1 About Southern Taiwan Science Park	26	
	102-2	Activities, brands, products, and services	●	2.1 About Southern Taiwan Science Park	26	
	102-3	Location of headquarters	●	2.1 About Southern Taiwan Science Park	26	
	102-4	Location of operations	●	2.1 About Southern Taiwan Science Park	26	
	102-5	Ownership and legal form	●	2.1 About Southern Taiwan Science Park	26	
	102-6	Markets served	●	2.1 About Southern Taiwan Science Park	26	
	102-7	Scale of the organization	●	2.1 About Southern Taiwan Science Park 3.1 Human Resource Structure	26 38	
	102-8	Information on employees and other workers	●	3.1 Human Resource Structure	38	
	102-9	Supply chain	●	2.4 Management of Suppliers	35	
	102-10	Significant changes to the organization and its supply chain	●	Editing Guidelines	5	
	102-11	Precautionary Principle or approach	●	2.2 Risk Control 6.3 Smart Disaster Prevention in the Science Park	30 96	
	102-12	External initiatives	●	Editing Guidelines	5	
<b>Strategy</b>						
GRI 102 General disclosure 2016	102-14	Statement from senior decision-maker	●	Message from the Director-General	3	
	102-15	Key impacts, risks, and opportunities	●	2.2 Risk Control 6.3 Smart Disaster Prevention in the Science Park	30 96	
<b>Ethics and Integrity</b>						
GRI 102 General disclosure 2016	102-16	Values, principles, standards, and norms of behavior	●	2.3 Compliance	33	

GRI Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ remark
GRI 102 General disclosure 2016	102-17	Mechanisms for advice and concerns about ethics	●	2.3 Compliance	33	
<b>Governance</b>						
GRI 102 General disclosure 2016	102-18	Governance structure	●	2.1 About Southern Taiwan Science Park	26	
<b>Stakeholder Engagement</b>						
GRI 102 General disclosure 2016	102-40	List of stakeholder groups	●	1.2 Interaction with Stakeholders	13	
	102-41	Collective bargaining agreements	●	—	—	No labor union has been established at STSP.
	102-42	Identifying and selecting stakeholders	●	1.1 Stakeholders and Identification Process of the Material Topics	12	
	102-43	Approach to stakeholder engagement	●	1.2 Interaction with Stakeholders	13	
	102-44	Key topics and concerns raised	●	1.2 Interaction with Stakeholders	13	
<b>Report Profile</b>						
GRI 102 General disclosure 2016	102-45	Entities included in the consolidated financial statements	●	—	—	STSP is a government agency, and it does not contain entities included in the consolidated financial statement.
	102-46	Defining report content and topic Boundaries	●	Editing Guidelines 1.4 Value Chain and Goals of the Material Topics	5 15	
	102-47	List of material topics	●	1.3 Management of Sustainability Issues	15	
	102-48	Restatements of information	●	Editing Guidelines	5	
	102-49	Changes in reporting	●	Editing Guidelines	5	
	102-50	Reporting period	●	Editing Guidelines	5	
	102-51	Date of most recent report	●	Editing Guidelines	5	
	102-52	Reporting cycle	●	Editing Guidelines	5	
	102-53	Contact point for questions regarding the report	●	Editing Guidelines	5	

GRI Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ remark
GRI 102 General disclosure 2016	102-54	Claims of reporting in accordance with the GRI Standards	●	Editing Guidelines	5	
	102-55	GRI content index	●	Appendix II : Global Reporting Initiative (GRI) Index	128	
	102-56	External assurance	●	Editing Guidelines	5	
<b>Topic-specific disclosure: 200 series (Economic topics)</b>						
<b>Economic performance</b>						
GRI 201 Disclosure of Economic Performance 2016	201-1	Direct economic value generated and distributed	●	2.1 About Southern Taiwan Science Park 3.2 Compensation and Benefits	26 39	
	201-3	Defined benefit plan obligations and other retirement plans	●	3.2 Compensation and Benefits	39	
<b>Indirect Economic Impacts</b>						
GRI 203 Disclosure of Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	●	7.1 Good-Neighborliness	116	
<b>Procurement Practices</b>						
GRI 204 Disclosure of Procurement Practices 2016	204-1	Proportion of spending on local suppliers	●	2.4 Management of Suppliers	35	
<b>*Anti-corruption</b>						
GRI 103 Management approach of Anti-corruption 2016	103-1	Explanation of the material topic and its Boundary	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-2	The management approach and its components	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-3	Evaluation of the management approach	●	1.4 Value Chain and Goals of the Material Topics	15	
GRI 205 Disclosure of Anti-corruption 2016	205-1	Operations assessed for risks related to corruption	●	2.3 Compliance	33	



GRI Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ remark
GRI 205 Disclosure of Anti-corruption 2016	205-2	Communication and training about anticorruption policies and procedures	●	2.3 Compliance	33	
	205-3	Confirmed incidents of corruption and actions taken	●	2.3 Compliance	33	
<b>Anti-competitive Behavior</b>						
GRI 206 Disclosure of Anti- competitive Behavior 2016	206-1	Legal actions for anti- competitive behavior, anti-trust, and monopoly practices	●	2.3 Compliance	33	
<b>*Investment Promotion</b>						
GRI 103 Management approach of Investment Promotion 2016	103-1	Explanation of the material topic and its Boundary	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-2	The management approach and its components	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-3	Evaluation of the management approach	●	1.4 Value Chain and Goals of the Material Topics	15	
<b>Topic-specific disclosure: 300 series (Environmental topics)</b>						
<b>*Energy</b>						
GRI 103 Management approach of Energy 2016	103-1	Explanation of the material topic and its Boundary	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-2	The management approach and its components	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-3	Evaluation of the management approach	●	1.4 Value Chain and Goals of the Material Topics	15	
GRI 302 Disclosure of Energy 2016	302-1	Energy consumption within the organization	●	3.5 Energy Conservation 6.1 Energy Resources Management at STSP	44 90	
	302-3	Energy intensity	●	3.5 Energy Conservation 6.1 Energy Resources Management at STSP	44 90	
	302-4	Reduction of energy consumption	●	3.5 Energy Conservation 6.1 Energy Resources Management at STSP	44 90	
<b>*Water and Effluents</b>						
GRI 103 Management approach of Water and Effluents 2018	103-1	Explanation of the material topic and its Boundary	●	1.4 Value Chain and Goals of the Material Topics	15	

GRI Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ remark
GRI 103 Management approach of Water and Effluents 2018	103-2	The management approach and its components	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-3	Evaluation of the management approach	●	1.4 Value Chain and Goals of the Material Topics	5	
	303-1	Interactions with water as a shared resource	●	6.1 Energy Resources Management at STSP 6.4 Pollution Control Measures of Park Businesses	90	
	303-2	Management of water discharge-related impacts	●	6.4 Pollution Control Measures of Park Businesses	101	
GRI 303 Disclosure of Water and Effluents 2018	303-3	Water withdrawal	●	6.1 Energy Resources Management at STSP 6.4 Pollution Control Measures of Park Businesses	90	
	303-4	Water discharge	●	6.1 Energy Resources Management at STSP	90	
	303-5	Water consumption	●	6.1 Energy Resources Management at STSP	90	
<b>Biodiversity</b>						
GRI 304 Disclosure of Biodiversity 2016	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	●	6.6 Ecology Conservation at STSP	107	
	304-2	Significant impacts of activities, products, and services on biodiversity	●	6.6 Ecology Conservation at STSP	107	
	304-3	Habitats protected or restored	●	6.6 Ecology Conservation at STSP	107	
	304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	●	6.6 Ecology Conservation at STSP	107	
<b>*Emissions</b>						
GRI 103 Management approach of Emissions 2016	103-1	Explanation of the material topic and its Boundary	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-2	The management approach and its components	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-3	Evaluation of the management approach	●	1.4 Value Chain and Goals of the Material Topics	15	
GRI 305 Disclosure of Emissions 2016	305-1	Direct (Scope 1) GHG emissions	●	6.1 Energy Resources Management at STSP	90	

GRI Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ remark
GRI 305 Disclosure of Emissions 2016	305-2	Energy indirect (Scope 2) GHG emissions	●	6.1 Energy Resources Management at STSP	90	
	305-4	GHG emissions intensity	●	6.1 Energy Resources Management at STSP	90	
	305-5	Reduction of GHG emissions	●	6.2 Counseling of Energy Conservation for Park Businesses	91	
<b>*Waste</b>						
GRI 103 Management approach of Waste 2020	103-1	Explanation of the material topic and its Boundary	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-2	The management approach and its components	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-3	Evaluation of the management approach	●	1.4 Value Chain and Goals of the Material Topics	15	
	306-1	Waste generation and significant waste-related impac	●	6.3 Smart Disaster Prevention in the Science Park	96	
	306-2	Management of significant waste-related impacts	●	6.3 Smart Disaster Prevention in the Science Park	96	
GRI 306 Disclosure of Waste 2020	306-3	Waste generated	●	6.3 Smart Disaster Prevention in the Science Park	96	
	306-4	Waste diverted from disposal	●	6.3 Smart Disaster Prevention in the Science Park	96	
	306-5	Waste directed to disposal	●	6.3 Smart Disaster Prevention in the Science Park	96	
<b>*Environmental Compliance</b>						
GRI 103 Management approach of Environmental Compliance 2016	103-1	Explanation of the material topic and its Boundary	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-2	The management approach and its components	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-3	Evaluation of the management approach	●	1.4 Value Chain and Goals of the Material Topics	15	
GRI 307 Disclosure of Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	●	2.3 Compliance	33	
<b>Topic-specific disclosure: 400 series (Social topics)</b>						
<b>Employment</b>						
GRI 401 Disclosure of Employment 2016	401-1	New employee hires and employee turnover	●	3.1 Human Resource Structure	38	



GRI Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ remark
GRI 401 Disclosure of Employment 2016	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	●	3.2 Compensation and Benefits	39	
	401-3	Parental leave	●	3.1 Human Resource Structure	38	
<b>Labor/Management Relations</b>						
GRI 402 Disclosure of Labor/ Management Relations 2016	402-1	Minimum notice periods regarding operational changes	●	3.1 Human Resource Structure	38	
<b>*Occupational Health and Safety</b>						
GRI 103 Management approach of Occupational Health and Safety 2018	103-1	Explanation of the material topic and its Boundary	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-2	The management approach and its components	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-3	Evaluation of the management approach	●	1.4 Value Chain and Goals of the Material Topics	15	
	403-1	Occupational health and safety management system	●	4.5 A Smart, Healthy and Safe Science Park	61	
	403-2	Hazard identification, risk assessment, and incident investigation	●	4.5 A Smart, Healthy and Safe Science Park	61	
	403-3	Occupational health services	●	4.5 A Smart, Healthy and Safe Science Park	61	
	403-4	Worker participation, consultation, and communication on occupational health and safety	●	4.5 A Smart, Healthy and Safe Science Park	61	
	403-5	Worker training on occupational health and safety	●	4.5 A Smart, Healthy and Safe Science Park	61	
	403-6	Promotion of worker health	●	4.5 A Smart, Healthy and Safe Science Park	61	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	●	4.5 A Smart, Healthy and Safe Science Park	61	
GRI 403 Disclosure of Occupational Health and Safety 2018	403-8	Workers covered by an occupational health and safety management system	●	4.5 A Smart, Healthy and Safe Science Park	61	

GRI Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ remark
GRI 403 Disclosure of Occupational Health and Safety 2018	403-9	Work-related injuries	●	4.5 A Smart, Healthy and Safe Science Park	61	
	403-10	Work-related ill health	●	3.1 Human Resource Structure	38	
4.5 A Smart, Healthy and Safe Science Park				61		
<b>*Training and Education</b>						
GRI 103 Management approach of Training and Education 2016	103-1	Explanation of the material topic and its Boundary	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-2	The management approach and its components	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-3	Evaluation of the management approach	●	1.4 Value Chain and Goals of the Material Topics	15	
GRI 404 Disclosure of Training and Education 2016	404-1	Average hours of training per year per employee	●	3.4 Education and Training	43	
	404-3	Percentage of employees receiving regular performance and career development reviews	●	3.2 Compensation and Benefits	39	
<b>Non-discrimination</b>						
GRI 406 Disclosure of Non- discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	●	3.3 Labor-Management Equality	42	
				4.4 A Good Workplace in STSP	57	
<b>Freedom of Association and Collective Bargaining</b>						
GRI 407 Disclosure of 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	●	3.2 Compensation and Benefits	39	
<b>Child Labor</b>						
GRI 408 Disclosure of Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	●	3.1 Human Resource Structure	38	
<b>Forced or Compulsory Labor</b>						
GRI 409 Disclosure of Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	●	—	—	STSP's operations and suppliers were no forced labor of incidents.
<b>Rights of Indigenous Peoples</b>						
GRI 411 Disclosure of Rights of Indigenous Peoples 2016	411-1	Incidents of violations involving rights of indigenous peoples	●	—	—	STSP was no cases of violations involving rights of indigenous peoples.

GRI Category/ Material Aspects	No.	GRI Index	External Verification	Chapter and Section	Page	Omit/ remark
<b>Human Rights Assessment</b>						
GRI 412 Disclosure of Rights of Human Rights Assessment 2016	412-2	Employee training on human rights policies or procedures	●	3.3 Labor-Management Equality	42	
				4.4 A Good Workplace in STSP	57	
<b>*Local Communities</b>						
GRI 103 Management approach of Local Communities 2016	103-1	Explanation of the material topic and its Boundary	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-2	The management approach and its components	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-3	Evaluation of the management approach	●	1.4 Value Chain and Goals of the Material Topics	15	
GRI 413 Disclosure of Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	●	4.1 Employment of Talent in the Science Park	48	
				4.2 Cultivation of Talent in the Science Park	50	
				4.3 A Good Life in STSP	52	
				7.1 Good-Neighborliness	116	
<b>Public Policy</b>						
GRI 415 Disclosure of Public Policy 2016	415-1	Political contributions	●	—	—	STSP was no cases of political contributions.
<b>Marketing and Labeling</b>						
GRI 417 Disclosure of Marketing and Labeling 2016	417-1	Requirements for product and service information and labeling	●	—	—	STSP is a government agency, and it has no profitmaking products and services.
<b>*Socioeconomic Compliance</b>						
GRI 103 Management approach of Socioeconomic Compliance 2016	103-1	Explanation of the material topic and its Boundary	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-2	The management approach and its components	●	1.4 Value Chain and Goals of the Material Topics	15	
	103-3	Evaluation of the management approach	●	1.4 Value Chain and Goals of the Material Topics	15	
GRI 419 Disclosure of Socioeconomic Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	●	2.3 Compliance	33	



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Goal 3	Ensure healthy lives and promote well-being for all at all ages	4.3 A Good Life in STSP	52
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	4.2 Cultivation of Talent in the Science Park	50
Goal 5	Achieve gender equality and empower all women and girls	4.4 A Good Workplace in STSP	57
Goal 6	Ensure availability and sustainable management of water and sanitation for all.	6.1 Energy Resources Management at STSP 6.4 Pollution Control Measures of Park Businesses	90 101
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all.	6.5 Renewable Green Energy	106
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	5.1 Overview of the Park Development	70
Goal 9	Build resilient infrastructure, promote inclusive and Sustainable industrialization and foster innovation.	5.3 Building Industrial Clusters in STSP	77
Goal 10	Reduce inequality within and among countries	4.4 A Good Workplace in STSP	57
Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable.	4.3 A Good Life in STSP	52
Goal 12	Ensure sustainable consumption and production patterns.	6.4 Pollution Control Measures of Park Businesses	101
Goal 13	Take urgent action to combat climate change and its impacts.	6.3 Smart Disaster Prevention in the Science Park	96
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.	6.5 Renewable Green Energy	106
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.	1.2 Interaction with Stakeholders 2.3 Compliance	13 33
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4	The elimination of all forms of forced and compulsory labor.	4.4 A Good Workplace in STSP	57
5	The effective abolition of child labor.	4.4 A Good Workplace in STSP	57
6	The elimination of discrimination in respect of employment and occupation.	4.4 A Good Workplace in STSP	57
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7	Businesses should support a precautionary approach to environmental challenges.	6.3 Smart Disaster Prevention in the Science Park	96
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9	Encourage the development and diffusion of environmentally friendly technologies.	6.5 Renewable Green Energy	106
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10	Businesses should work against corruption in all its forms, including extortion and bribery.	2.3 Compliance	33



**Southern Taiwan Science Park Bureau,**  
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