



Central Taiwan Science Park Bureau,  
Ministry of Science and Technology



# 2020 Sustainability Report

# Content

About this Report	4
Message from the Director-General	6
2020 Sustainability Management Performance	7
Special Section – COVID19 Epidemic Prevention Measures	10

## Sustainable Development 12

Introduction to Central Taiwan Science Park	14
Stakeholder Interaction	16
Material Topics Identification	20
Material Topic Value Chain and Goals	23
Active Implementation of Sustainable Development Goals (SDGs)	27

## Core Policies

### Policy 1 : Innovation Driven Industries 30

1.1 Park Development and Innovation Transformation	34
1.2 Prospering Smart Industry	38
1.3 Combining Industry, Government, Academia and Research	42
1.4 Strengthening International Cooperation	44
1.5 Innovation Creates New Dreams	47
1.6 Integration of Technological Creativity and Self-production	48

### Policy 2 : Integrity Governance 52

2.1 Compliance with Laws and Regulations	55
2.2 Park Supply Chain	59
2.3 Information Security Management	64

### Policy 3 : Workplace Safety and Health 66

3.1 Creating Career Opportunities	69
3.2 Cultivating Talent	71
3.3 Park Labor Rights	72
3.4 Creating a Safe and Healthy Park	74

### Policy 4 : Climate Action 78

4.1 Risk Management	82
4.2 Climate Change Disaster Prevention and Adaptation	83
4.3 Energy Resources Management	88
Special Column : Green Building Ecological Community	93

### Policy 5 : Environmental Management 94

5.1 Total Mass Based Control	97
5.2 Air Pollution and Greenhouse Gases	100
5.3 Sewage Discharge	102
5.4 Waste disposal	105
5.5 Environmental Monitoring	109

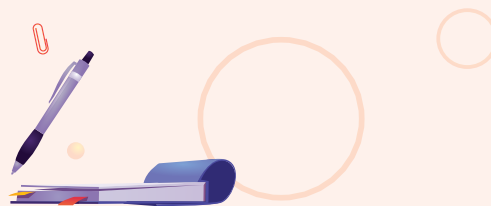
### Policy 6 : Social Interaction 112

6.1 Convenient Life in the Smart Park	115
6.2 Good Neighborliness and Friendly Environment	119
Special Column : CTSP 17th Anniversary Celebration	126
6.3 Promoting AI Education	127

## Future Outlook 130

## Appendix 132

Appendix I : Operation Overview of CTSP Bureau	134
Appendix II : Verification statement	144
Appendix III : Global Reporting Initiative (GRI) Index	146
Appendix IV : Sustainable Development Goals (SDGs) Index	156
Central Taiwan Science Park Bureau, Ministry of Science and Technology	158
2020 Sustainability Report Editorial Committee	



# Abstract

In order to implement the corporate social responsibility of sustainable development and further communication with stakeholders, the Central Taiwan Science Park Bureau has issued the fifth Sustainability Report. To keep up with global trends, and connect and have a dialogue with the outside world, in this report it is disclosed that the Central Taiwan Science Park should apply its core capabilities to implement 15 of the United Nations' 17 Sustainable Development Goals (SDGs), and further strives to implement the four sustainable management goals of co-existence and co-prosperity, i.e. Production, Living, Ecology, and Life, fulfilling our responsibilities as members of the global village.

The Central Taiwan Science Park Bureau has established multiple channels of communication with stakeholders through the official Central Taiwan Science Park website, the Corporate Social Responsibility website, social media fan pages, annual reports and text messages to interact with stakeholders and understand issues of concern, and then provide relevant responses and explanations in this report. The 2020 Sustainability Report explains the core policies, goals and management performance of the Central Taiwan Science Park Bureau with six themes : Driving Innovation, Integrity Governance, Healthy Workplace, Climate Action, Environmental Management and Social Interaction.

## Innovation Driven Industries

In response to trends, the Central Taiwan Science Park Bureau cooperates with the various plans of the Ministry of Science and Technology, concentrates industry, university and research capabilities, and actively brings together domestic and foreign manufacturers. The Bureau also participates in international events, holds investment briefings to encourage an upsurge in returning manufacturer investment in Taiwan, encourages innovation among the Park's manufacturers and personnel, set up the AI Robotics Hub, established an Open Innovation Platform. While providing cultivation and innovation resources, it further walks on the cutting edge of technology, cultivates future talent, and links diverse resources, all these in order to develop momentum for industrial upgrading.

## Integrity Governance

As a government agency, the Central Taiwan Science Park Bureau follows The Freedom of Government Information Law to protect people's right to know, and the Ethics Guidelines for Civil Servants established by the Executive Yuan in the hope that civil servants carry out their duties with integrity, fairness and unselfish motive in accordance with laws and regulations and, thereby, to maintain the Government's good reputation. And further establish safe and reliable e-Governance in order to reduce information security risks, maintain alertness and complete information, improve the overall quality of information services, and cooperate with the Executive Yuan to encourage various agencies to strengthen information security management.

## Workplace Safety and Health

In order to assist park enterprises in recruiting high-quality talent and building a healthy workplace, the Central Taiwan Science Park Bureau organizes recruitment activities to attract a wealth of talent, acting as go-between for overseas talent returning to Taiwan to contribute their acquired expertise, actively cultivates high-quality R&D manpower, promotes occupational safety and health related work, handles various labor inspection plans and labor complaints in the Park, lawfully and reasonably finds appropriate solutions to and actively resolves labor disputes, combined with various activities to implement the protection of labor rights, promote labor health, and facilitate a safe, healthy, and humanized labor environment.

## Climate Action

Environmental protection and climate change are important issues that currently require the joint efforts by everyone around the world. The tightening of domestic environmental regulations and the increase in energy costs and restrictions have caused operational impacts. As a government agency, the Central Taiwan Science Park Bureau, in addition to cooperating with the competent authorities to create green energy, should also assist in coaching and educating manufacturers in the Park on the concepts of energy conservation, resource recycling, pollution prevention and ecological conservation, in order to implement the concepts of harmonious co-existence and co-prosperity between science park development and environmental protection.

## Environmental Management

Since establishment, the Central Taiwan Science Park Bureau has never slackened on environmental protection efforts, continuously strengthening guidance and monitoring air pollution, water pollution, and manufacturing waste in the Park in order to ensure compliance with relevant environmental protection regulations. In addition, all parks must abide by environmental impact assessment reports and review conclusions. The Central Taiwan Science Park Bureau is committed to minimizing environmental impact and regularly implementing environmental monitoring, with the ultimate goal of not affecting the ecology, environment and people's lives.

## Social Interaction

In order to enhance the friendship between manufacturers in the Park and the surrounding areas, and build a friendly park with ecological co-prosperity and co-existence, the Central Taiwan Science Park Bureau has created a leisure and recreation space for community residents. It conducts annual ecological surveys in each Park and cooperates with the Park's retention and settling pond ecology, reserving more suitable environments for the growth and habitats of animals and plants. At the same time, the Central Taiwan Science Park Bureau organizes close-knit and good-neighborly exchange visit activities to enhance exchanges between manufacturers and neighboring communities, promote environmental education, develop educational curriculum programs, and assist and tutor in the development of education in the related fields of smart robots, thereby actively cultivating domestic students.





# About this Report

Welcome to the 2020 Sustainability Report of the Central Taiwan Science Park Bureau under the Ministry of Science and Technology (hereinafter referred to as this report). This report was officially renamed the Sustainability Report (formerly known as the Corporate Sustainability Report) in 2021. This report is the fifth Non-financial reporting Sustainability Report issued by the Central Taiwan Science Park Bureau under the Ministry of Science and Technology (hereinafter referred to as the Central Taiwan Science Park Bureau, the CTSP Bureau or the Bureau). This Report was compiled by referencing GRI (Global Reporting Initiative) Standards for the disclosure of relevant performance and content. The Central Taiwan Science Park Bureau fully grasps the world's technological development trends to focus on four major governing principles, namely industrial AI and innovation transformation, the digital transformation of park services, accelerating park development and investment promotion, and creating a sustainable ecological park, while continuing to promote various businesses and expanding the innovation and entrepreneurship clusters in the Park, accelerating the march towards a new era for the Central Taiwan Science Park.

In 2020, the Central Taiwan Science Park Bureau's 2019 Corporate Sustainability Report earned the Platinum Award at the Taiwan Corporate Sustainability Award (TCSA), the highest honor awarded by the Taiwan Institute for Sustainable Energy, becoming the only entity in the Government and NGO category to win the platinum award. Through continuous diligence action, the Bureau was awarded platinum after earning the gold award twice before for its reports, further gaining the recognition and encouragement of other units for its implementation of sustainable operation, friendly environment and social welfare society. In the future, the Bureau will continue to promote a circular economy under the spirit of sustainable development, plan for the opportunities and risks brought about by climate change, while continuing the development of smart parks and the implementation of ecological communities to create a model for sustainable science parks.



## ▶ Reporting Scope and Calculation Basis

The scope of this Report covers CTSP Bureau and its jurisdiction (Taichung Park, Huwei Park, Houli Park, Erlin Park, and Chung Hsing Park) and the reporting period was between January 1 and December 31, 2020. Compared with the 2019 report, there were no major changes in the organization or supply chain in terms of the reporting scope of this year's report. All test data as required by law was tested or verified by an impartial third party, and all numbers were presented according to the standard method of numerical description, with exact figures used in the content data. All statistical data disclosed in the Report is derived from the internal statistics and survey results of colleagues from each department comprising the Sustainability Report Editorial Working Group of this Bureau. The overall operation profile, environmental management, and socio-economic performance, etc.

are compiled by the Environment and Labor Affairs Division. The finalized report was issued by the Bureau director. If there is any reorganization of information in this Report compared to the previous report, it will be noted in the text of each chapter.

## ► Reporting Principles and Guidelines

The content structure of this Report follows the core criteria of the GRI (Global Reporting Initiative) Standards and AA1000 AccountAbility Principles. The substantive analysis model was used to identify and prioritize stakeholders' concerns about sustainability considerations for those aspects needing to be disclosed, namely environmental protection issues, related strategies, goals and measures, labor behavior, social aspects, human rights, and local community impact in the Central Taiwan Science Park, etc., with listed guidelines used as a basis for compiling the Report. The report concurrently echoes the United Nations Sustainable Development Goals (SDGs), the Sustainable Development Goals of Taiwan, the ISO 26000 Guidance on Social responsibility, the United Nations Global Compact, the Task Force on Climate-related Financial Disclosures (TCFD), and other such principles.

## ► Report Issuance

The CTSP Bureau schedules the issuance of its Sustainability Report annually with the contents of the Report simultaneously published on its official website. If a report is not released for any reason, relevant contents will be disclosed in other publications.

Previous edition : Issued in July 2020

Current edition : Issued in July 2021

## ► Report Verification

To increase the impartiality of this Report, the Bureau entrusted the British Standards Institution (BSI) to verify this Report in accordance with GRI (Global Reporting Initiative) Standards and AA1000AS (Assurance Standard) Type 1 - Moderate Level Assurance. It was verified by BSI that this Report complied with the aforementioned framework and assurance standard level, enhancing the transparency and reliability of the organizational report. The verification statement is attached in Appendix II, and the GRI content index in Appendix III of this Report as reference.

## ► Contact Information

It is hoped that through this report, the general public and relevant stakeholders will better understand the endeavours and achievements of the CTSP Bureau in the promotion of sustainable management. Feedback from all walks of life serves as the basis for continuous improvement. For any questions or suggestions regarding the 2020 Sustainability Report of the Central Taiwan Science Park Bureau, please contact us below :

The contact information is as follows :

Central Taiwan Science Park Bureau, Ministry of Science and Technology

Report contact person : Ms. Yi-Ling Wu, Technician, Environment and Labor Affairs Division

Tel : 886-(0)4-2565-8588 Ext. 7935

Email : miuki@ctsp.gov.tw

Website : www.ctsp.gov.tw





# Message from the Director-General

The Central Taiwan Science Park has always adhered to the concept of co-existence and co-prosperity and development in a win-win direction of "production, living, ecology, and life". While improving the industrial investment environment, creating employment and generating economic growth, we continue contributing to the maintenance of the environment and ecology, and the promotion of social health and well-being. In line with policies, we have in recent years made every effort to promote the use of green energy by manufacturers in the Park, strive to reduce greenhouse gas emissions, and establish an environmental education field, hoping to interact and prosper with the local community.

In 2020, with the world affected by the COVID-19 pandemic, Taiwan's epidemic prevention has been successful. Through the joint efforts of all colleagues and business partners, the Central Taiwan Science Park has achieved outstanding performance in economic, environmental and social aspects :

**Economic performance :** Annual turnover in 2020 grew against trends and reached NT\$935.9 billion, an increase of 17.4% compared to 2019, taking a big step towards a trillion NT\$ turnover park. With a total of 219 approved manufacturers and a total investment of more than NT\$2 trillion, the number of employed exceeded 50,000, all hitting historical highs. In addition, in response to global industrial development trends, and in line with the Government's six strategic core industrial policies, innovative technological energy is continuously accumulated in the Park, enabling manufacturers to grasp opportunities for global supply chain restructuring in the post-pandemic era.

**Environmental performance :** In 2020, the Central Taiwan Science Park Bureau's 2019 Corporate Sustainability Report was awarded the Platinum Award at the Taiwan Corporate Sustainability Award (TCSA). In order to actively implement the United Nations Sustainable Development Goals, it further established a Climate Change Identification Group to plan corresponding management actions in response to climate change issues. In addition, the Taichung Science Park was awarded the fifth Eco-Community Green Building - Diamond Mark certification in Taiwan. The Central Taiwan Science Park has collated many years of ecological observation records in the Park and in 2020 published a book titled The Science Park Where Butterflies, Dragonflies, and Birds Fly. Through these diversified achievements, it demonstrates the Central Taiwan Science Park's long-term sustainable management efforts.

**Social performance :** In 2020, the overall satisfaction survey score of manufacturers in the Central Taiwan Science Park was 87.35%, higher than the overall average of the three science parks. To take care of community residents, the Park continued implementation of the Good Neighbors Health Care Project to provide free health checkups and epidemiology follow-up surveys. Furthermore, scientific and technological talent are the foundation of the sustainable development of the Park industries. In addition to the existing experimental junior high school, a senior high school, and a bilingual department, the Bureau is planning to establish an elementary school and a kindergarten. An experimental school with five departments will be completed in the Park.

The 2020 Sustainability Report explains the core policies for the implementation of sustainable operations of the Central Taiwan Science Park Bureau with six themes, i.e. Driving Innovation, Integrity Governance, Healthy Workplace, Climate Action, Environmental Management and Social Interaction. Looking toward the future, the Central Taiwan Science Park will continue adopting Taiwan's 2030 vision as the main development axis, i.e. innovation, tolerance, and sustainability, and through industrial digital transformation and innovative research and development, become a new form of sustainable innovation park.

Director-General  
Dr. Maw-Hsin Hsu

許茂新





# 2020 Sustainability Management Performance



## Economic Performance

- +17.4%** Turnover reached NT\$935.979 billion, a year-on-year increase of 17.40% compared to 2019.
- +20.25%** Export value was approximately NT\$537.6 billion, an increase of 20.25% from 2019.
- 36 sessions** Co-organized 36 sessions of various talent recruitment activities, making available more than 700 job vacancies.
- +1.99%** The number of employees reached 51,827, an increase of 1.99% from 2019.
- 10 sessions** Held a total of 10 investment promotion briefing sessions at home and abroad.
- 219 manufacturers** Introduced a total of 219 manufacturers.
- 100%** Winning tenders for the year were all companies fully established and registered in Taiwan.
- 100% compliance** Procurement contracts 100% complied with model contracts provided by the Engineering Association and with human rights requirements.
- 77 cases** Financial rescue programs totaling NT\$59.437 million.
- 5 cases** Strengthened the promotion of smart machinery and aerospace industry upgrading plans, and subsidized 5 cases totaling NT\$32.08 million.
- 11 cases** Subsidized 11 manufacturers and start-up companies through the Central Taiwan Biomedical Industry Development Acceleration Program totaling NT\$32.206 million, drove manufacturers to invest NT\$58.609 million in R&D, applied for 16 domestic and foreign patents, and cultivated a total of 315 talents.





## Environmental Performance

### First Publication

Published the ecological observation records of Taichung Science Park in the book *The Science Park Where Butterflies, Dragonflies, and Birds Fly*, with the records of 60 species of butterflies, 26 species of dragonflies and 85 species of birds in the area.

### 100% compliance

Environmental protection businesses were 100% in compliance with total volume caps and stricter environmental impact assessment commitments.

### 987 times

Provided environmental protection business consulting services 987 times.

### 646,780 tons

Provided water conservation guidance to 3 manufacturers, with a total water-saving potential of 646,780 tons, which can reduce 97.02 tons of CO<sub>2</sub>e for the year.

### 10,485 MWh

Provided energy conservation guidance to 5 manufacturers, with a total energy-saving potential of 10,485 MWh, which can reduce 5,336.87 metric tons of CO<sub>2</sub>e for the year.

### 100% compliance

The wastewater treatment plants in all the Parks are operating in compliance with regulations, and are 100% in compliance with discharge water standards and environmental impact assessment commitments.

### 94.4%

The recycling rate of industrial waste in the Parks reached 94.4% (including resource utilization).

### 2,021 instances

Carried out 2,021 instances of environmental monitoring projects.

### 12 species

A total of 12 protected bird species were found in the ecological survey.

### 18 sessions

Conducted a total of 18 sessions of EIA tracking, supervision meetings and on-site inspections.

### 119 metric tons

A total of 118,959 passenger trips were made on the free shuttle bus, equivalent to a reduction of 119 metric tons in CO<sub>2</sub>e emissions.

### 2,538 participants

A total of 69 environmental education activities in the Taichung, Huwei and Houli park sewage treatment plants were held, with a total of 2,538 participants.

### Environmental Performance

- 46.33MW** The cumulative solar power generation capacity of the Park has exceeded 46.33MW.
- 85%** The water recovery rate from the production processes in the Park reached 85%.

### Social Performance

- 87.35 points** The overall manufacturer satisfaction score was 87.35, higher than the overall average of the three Science Parks.
- 557 sessions** A total of 12 special inspection programs and 557 labor supervision and inspection sessions were implemented under the labor supervision and inspection program.
- 274 sessions** Implemented a good neighbor program in Houli Park to provide free health check-ups for residents who meet the requirements. As of 2020, a total of 274 publicity sessions, 5,763 telephone interviews and 4,144 health examinations have been conducted.
- 2,152 people** An epidemiological follow-up survey was conducted (once every 5 years), with a total of 2,152 questionnaire surveys and blood biochemical tests carried out.
- 7,427 people** Conducted various industry-academia collaboration projects, talent cultivation, the AI Robotics Hub and training programs, with talent consisting of 7,427 master's and doctoral degree holders required by industries undergoing the cultivation program.
- 45 teams** Tutored 45 teams for the 2020 From IP to IPO Program (FITI), of which 5 teams won the Outstanding Entrepreneurship Award, 8 teams won the Entrepreneurship Potential Award, and 20 teams established companies.
- World's First** 28 domestic high school teams competed in the world's first 2020 FRC Science Park Taichung 5G Pilot Regional, and through live online broadcast global FRC competition fans could watch the competition together. The two-day live broadcast reached nearly 20,000 viewers.



## COVID19 Epidemic Prevention Measures

Faced with the serious situation of a severe and especially infectious pneumonia epidemic in 2020, and in order to reduce the impact of the COVID-19 virus on park manufacturers and ensure smooth operation, the Park trade union and Bureaus of the three science parks jointly convened a 3-region video conference on February 17, 2020 to discuss the possible impacts of the COVID-19 epidemic on the industries in the Parks, and the corresponding response measures and matters requiring government assistance. Park manufacturers were invited to learn about the relevant epidemic prevention measures and discuss the Parks' epidemic prevention and response issues. The comprehensive measures for epidemic prevention and continuity operation of the Central Taiwan Science Park Bureau are as follows :

### Implement epidemic prevention and control measures within the Bureau

- › Establish an emergency response team.
- › Establish a channel of communication with the Taiwan Centers for Disease Control and the Health Bureau of the jurisdiction to promptly update the status of the epidemic situation and provide related epidemic prevention consultations.
- › Strengthen cleaning and disinfection of the environment, post epidemic prevention announcements, and control the entry of non-essential visitors on official business.
- › Prepare epidemic prevention materials, infrared thermal imaging cameras, forehead thermometers, goggles, masks, 75% alcohol, alcohol-based hand sanitizer and other epidemic prevention equipment.
- › Strengthen the self-health management of employees and the reporting and tracking mechanism of those having travelled abroad.
- › Implement measures to stagger work hours and work commute in various units.

### Assist manufacturers in the Park to prepare for epidemic prevention and continuity operation planning

- › Establish a single contact and service point, while designating the Director-General as convener. Each business unit to assist in various contact and notification operations.
- › Request manufacturers to establish relevant epidemic prevention management mechanisms and assist them in the establishment of operational continuity plans.
- › Require manufacturers to strengthen their personnel health education on epidemic prevention and the implementation of frequent hand washing as well as the monitoring of body temperature.
- › Assist in the deployment of production lines for industrial masks required by manufacturers in the Park.
- › Invite manufacturers who have implemented corporate operational continuity plans to share epidemic prevention practices and continuity operation countermeasures, and invite experts to guide manufacturers in planning and implementation.

# CORONAVIRUS



- › Coordinate with logistics companies in scheduling storage space to assist manufacturers in dealing with issues of goods that cannot be exported immediately.
- › Develop a special application plan for bonded goods with the Customs Administration under the Ministry of Finance, and assist manufacturers in applying for temporary storage of bonded goods outside the zone.

## Strengthen epidemic prevention measures

- › Establish an online epidemic prevention zone to strengthen the promotion of relevant anti-epidemic guidelines and guidelines for corporate operational continuity plans.
- › Announce the Park medical consultation hotline and formulate a standard operating procedure for emergency medical care.
- › Through LINE groups and emails, actively provide relevant epidemic and epidemic prevention information of park manufacturers.

In addition, in response to returning Taiwanese businessmen, the Central Taiwan Science Park Bureau has successfully matched 17 returning businessmen with investments of up to NT\$42 billion, the bulk of which was made up by the precision machinery industry, followed by the biotechnology and opto-electronic industries. The CTSP Bureau shall continue assisting with the international economic and trade situation-such as the US-China trade war and even now when the world is severely being tested by the COVID-19 pandemic-grasp the global industrial supply chain layout trend, and cooperate with the overall policy direction of the Ministry of Science and Technology, the Ministry of Economic Affairs and other relevant ministries, while assisting Taiwanese businessmen who are willing to return to Taiwan to invest in deepening development in Taiwan. The preparations for the relocation of high-tech industries to Taiwan and the return of Taiwanese businessmen are as follows:

- (1)Take inventory of the land and factory buildings still available in the Park, and accelerate recovery for the use of returning Taiwanese businessmen of such not actively and effectively used.
- (2)Establish a special project task force to provide customized and exclusive services.
- (3)Each investment case has an exclusive project manager to provide comprehensive services. If the investment subject is not an authorized project, the task force will actively seek external support (inter-ministerial conference, horizontal contact, and reporting to higher authorities).
- (4)All investment processes are listed in detail for handling deadlines and project management, and projects that can be operated in parallel are integrated.
- (5)Provide other service needs (R&D grants and talent recruitment, etc.).
- (6)Regularly review effectiveness and implement adjustment practices.

The Central Taiwan Science Park Bureau will actively understand the production situation of manufacturers, and coordinate responses with various government departments so as to help businesses survive the epidemic together and minimize its impact on the Park industries.



# Sustainable Development



Introduction to Central Taiwan Science Park

Stakeholder Interaction

Material Topics Identification

Material Topic Value Chain and Goals

Active Implementation of Sustainable Development Goals (SDGs)





200.25  
195.01  
153.00



## Introduction to Central Taiwan Science Park

With the advantage of Taiwan's precision machinery industry largely and most densely located in Central Taiwan, the CTSP has driven the development of precision machinery towards smart machinery, actively introducing forward-looking industries such as smart robotics, smart machinery, biomedicine, etc. to strengthen the competitive advantages of industrial innovation and construct a complete industrial community. In the future, under the advantages of the existing semiconductor, optoelectronics, precision machinery, biotechnology and other industries, the CTSP will continue to improve on existing strengths, develop smart automation system integration services, introduce smart medical assistive technologies, as well as low-carbon, lightweight, and energy-saving industries. The five parks under the CTSP Bureau's jurisdiction encompasses a total development area of approximately 1,485 hectares, planned to develop characteristic industrial clusters : the Taichung Science Park and Houli Science Park will be built into a key research and development base for AI, software and system integration, Huwei Science Park a key biotechnology and pharmaceutical base, Chung Hsing Science Park for the introduction of high-tech R&D industries, while the Erlin Science Park is to be an AI smart machinery development center.

### Taichung Science Park : Industrial Development Core

### Chung Hsing Park : Technology Research and Development Leader

### Houli Science Park : Optoelectronic Semiconductor Center

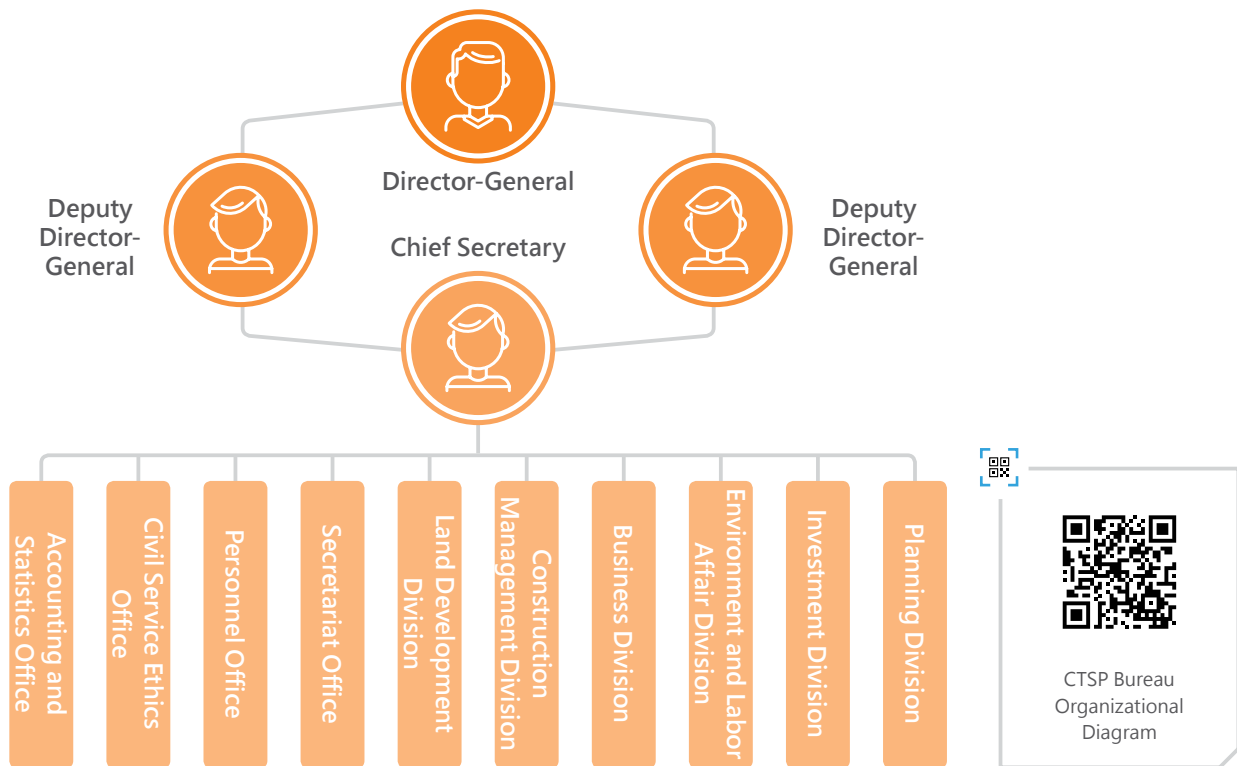


### Huwei Science Park : Biotechnology Pilot

### Erlin Science Park : Science and Technology Ecological Park

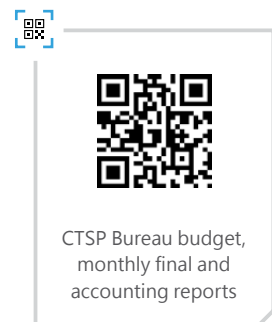
## ► Organizational Structure

The purpose of the Government's establishment of science parks is to provide an excellent environment for industrial development with the introduction of high-tech industrial development, bringing into full play the effect of industrial clusters, and promoting the rapid transformation and upgrading of the domestic industrial structure. During the process of expansion and development of the Park, the requirements and expectations of the Park manufacturers and surrounding neighborhoods are responded to in addition to coordinating with local communities. In accordance with the Organization Act of the Central Taiwan Science Park Bureau, Ministry of Science and Technology and business needs, the Bureau has set up 6 divisions and 4 offices, and formulated and announced the service requirements following the spirit of the "Government Service Quality Improvement Program" issued by the Executive Yuan, namely having the innovative spirit of active responsibility and courage to effectively improve service quality and Park manufacturers' satisfaction, creating a good R&D environment to nurture outstanding talent, striving to create a new niche for the technology sector.



## ► Budget Scale

As a public agency, the CTSP Bureau is funded by the Treasury Fund in addition to self-financing. The budget includes the funds for conducting official business of the CTSP Bureau, and the Park operating fund. The final accounting for 2020 showed official revenue of NT\$7 million and expenditure on official business of NT\$533 million (incl. personnel costs of NT\$165 million). The final accounting of operating fund income (excluding that of the CTSP National Experimental High School) amounted to NT\$4.085 billion, while costs and expenses accounted for NT\$3.598 billion (incl. NT\$119 million in personnel costs). The final accounting of the fixed asset construction improvement and expansion plan equaled NT\$1.517 billion, while business



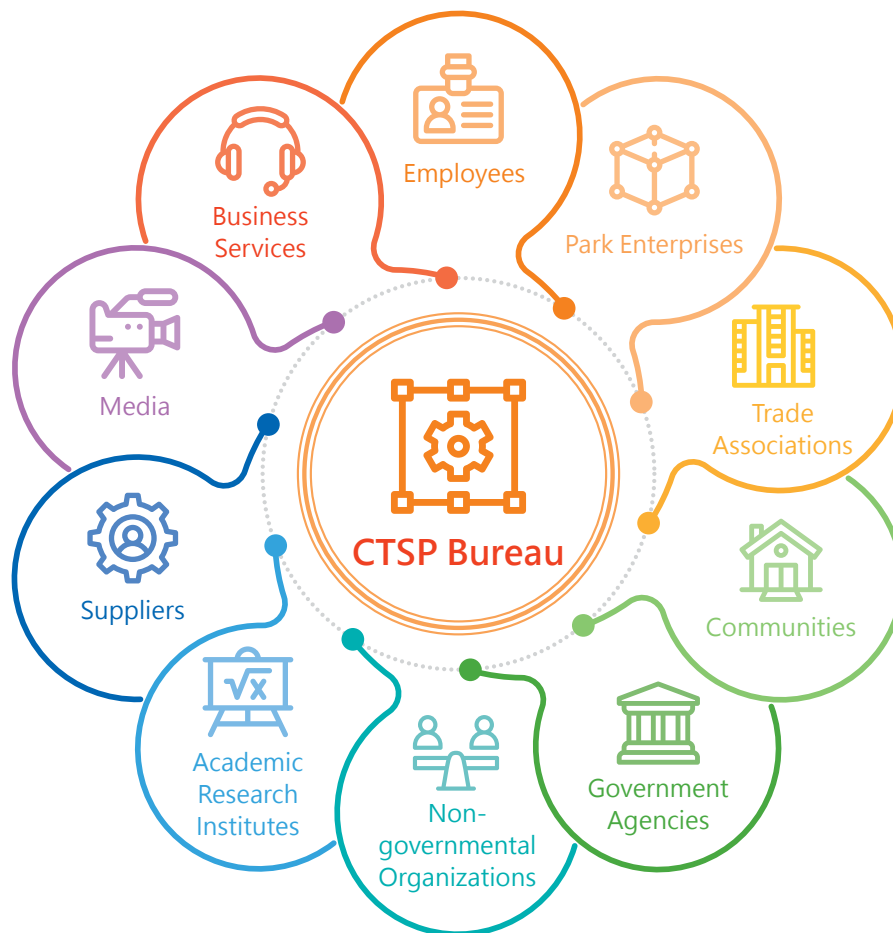


tax paid totalled NT\$33 million. The Central Government's forward-looking infrastructure design plan for the second phase of the special final accounts has a total annual revenue of NT\$5 million and an annual expenditure of NT\$409 million. All budgets and final reports are publicly available online and disclosed on the official website of the CTSP Bureau in an open and transparent manner.

## Stakeholder Interaction

### ► Stakeholder Identification and Communication Channels

Through internal discussions with the heads of all units, and with reference to stakeholder groups identified by businesses within the same industry as well as other benchmark enterprises, the CTSP Bureau adopted the 5 principles of the AA1000 AccountAbility Stakeholder Engagement Standard to identify 10 types of stakeholders and their scoring and prioritization.



The CTSP Bureau makes use of the official CTSP website, CTSP Corporate Sustainability website, CTSP Facebook fan page, CTSP News Facebook public group, CTSP Annual Reports, CTSP Newsletter, and the CTSP Sustainability Report (originally called the Corporate Sustainability Report) etc. for formal communication and exchanges with the outside world, while other channels are also utilized to understand stakeholders' issues of concern and provide relevant responses and explanations. An English version of the Corporate Sustainability Report was issued in 2020, while the English version of the website was also published online for a more international outlook, allowing more diverse stakeholders access to the current situation and sustainable activities of the Bureau.







CTSP Official Website	CTSP Corporate Sustainability Website	CTSP Facebook Fan Page	CTSP News Facebook Public Group	CTSP Annual Reports	CTSP Newsletter

In addition to communication with various stakeholders through daily operations, the Bureau has also set up an email contact address for the Director-General, a whistleblower hotline and email address (Tel : 04-2565-8588 ext. 6801 or discipline@ctsp.gov.tw) to facilitate convenient public communication. In 2020, the CTSP Bureau received a total of 127 petitions, among which 5 were administrative reform proposals, 2 inquiries on administrative laws, 22 reports of administrative violations, and 98 cases of administrative rights protection.

Stakeholder	Stakeholder Importance	Issues of Concern	Communication Channels	2020 Communication Effectiveness
<p><b>Employees</b></p>	The service capability of the Bureau is derived from having excellent employees. The CTSP Bureau attaches great importance to employee input and maintaining smooth, interactive communication channels to ensure maximum efficiency.	<ul style="list-style-type: none"> <li>› Compliance with environmental protection related laws and regulations</li> <li>› Occupational safety and health</li> <li>› Anti-corruption</li> </ul>	<ul style="list-style-type: none"> <li>› Employee seminars</li> <li>› Education and training</li> <li>› Sexual harassment complaint hotline</li> <li>› Director-General's mailbox</li> <li>› Internal e-bulletin</li> <li>› Official notification system</li> </ul>	<ul style="list-style-type: none"> <li>› The average time spent on employee education and training was about 51 hours per person.</li> </ul>
<p><b>Park Enterprises</b></p>	The core governance goal of the Bureau is to expand the output value of the CTSP. Therefore, smooth and unimpeded communication with manufacturers is maintained at all times to facilitate the economic development of the Central Taiwan region.	<ul style="list-style-type: none"> <li>› Innovation and entrepreneurship</li> <li>› Occupational safety and health</li> <li>› Stable water and electricity supply</li> <li>› Compliance with environmental protection related laws and regulations</li> </ul>	<ul style="list-style-type: none"> <li>› Publicity, seminars &amp; briefings</li> <li>› Phone contact</li> <li>› Manufacturer visits</li> <li>› Official website announcements</li> <li>› Official documents</li> <li>› Satisfaction surveys</li> </ul>	<ul style="list-style-type: none"> <li>› 10 Environmental protection regulation briefings, and 13 Park business counseling seminars.</li> <li>› Overall satisfaction survey score of manufacturers was 88.35 points.</li> <li>› 8 Manufacturers received water and energy conservation counseling.</li> </ul>



Stakeholder	Stakeholder Importance	Issues of Concern	Communication Channels	2020 Communication Effectiveness
 <p><b>Trade Associations</b></p>	<p>Only through exchanges with industry associations can the Bureau really grasp the overall opinions of park enterprises to properly plan park management details.</p>	<ul style="list-style-type: none"> <li>› Occupational safety and health</li> <li>› Stable water and electricity supply</li> <li>› Training and education</li> </ul>	<ul style="list-style-type: none"> <li>› Trade association seminars</li> <li>› Trade association director and supervisor meetings</li> </ul>	<ul style="list-style-type: none"> <li>› Co-organized a CSR lecture and experience sharing session with the Allied Association for Science Park Industries.</li> </ul>
 <p><b>Neighboring Communities (Organizations and the Public)</b></p>	<p>The Bureau adheres to the goal of co-existence and co-prosperity with neighboring communities, therefore attaches great importance to public opinion.</p>	<ul style="list-style-type: none"> <li>› Waste disposal</li> <li>› Compliance with environmental protection related laws and regulations</li> <li>› Local communities</li> </ul>	<ul style="list-style-type: none"> <li>› Borough chief seminars</li> <li>› CTSP newsletter</li> <li>› Publicity, seminars &amp; briefings</li> <li>› In-person visits</li> <li>› Petition hotline</li> </ul>	<ul style="list-style-type: none"> <li>› Held 42 Good Neighbors Health Care Project publicity sessions, with 846 telephone interviews and 738 health checks conducted.</li> </ul>
 <p><b>Government Agencies</b></p>	<p>As a public agency, the Bureau is also responsible for the promotion of government orders by higher-level agencies and business-related authorities.</p>	<ul style="list-style-type: none"> <li>› Emissions</li> <li>› Waste disposal</li> <li>› Compliance with environmental protection related laws and regulations</li> <li>› Stable water and electricity supply</li> </ul>	<ul style="list-style-type: none"> <li>› Phone contacts</li> <li>› Official documents</li> <li>› Email</li> <li>› Publicity, seminars &amp; briefings</li> </ul>	<ul style="list-style-type: none"> <li>› A total of 2 anti-corruption advocacy seminars were held in 2020.</li> </ul>
 <p><b>Non-governmental Organizations (NGO's)</b></p>	<p>In order to dispel external doubt regarding the environmental impact of the production activities in the Park, the Bureau actively cooperates with NGO's to ensure normal operation status through substantive review meetings and visits.</p>	<ul style="list-style-type: none"> <li>› Occupational safety and health</li> <li>› Anti-corruption</li> <li>› Indirect economic impacts (park infrastructure construction)</li> </ul>	<ul style="list-style-type: none"> <li>› Environmental impact assessment (EIA) briefings</li> <li>› Environmental supervision meetings</li> <li>› Park visits</li> <li>› Review meetings</li> <li>› In-person visits</li> </ul>	<ul style="list-style-type: none"> <li>› Held a total of 18 EIA review, tracking and supervision meetings for various development plans.</li> </ul>

Stakeholder	Stakeholder Importance	Issues of Concern	Communication Channels	2020 Communication Effectiveness
 <p>Academic Research Institutes</p>	Through links to academic research institutes, academic research is introduced into industrial entity applications, which can help promote the upgrading of park businesses. Therefore, the Bureau actively plays an intermediary communication role.	<ul style="list-style-type: none"> <li>› Compliance with environmental protection related laws and regulations</li> <li>› Innovation and entrepreneurship</li> <li>› Anti-corruption</li> </ul>	<ul style="list-style-type: none"> <li>› Official documents</li> <li>› Phone contacts</li> <li>› Project briefings</li> </ul>	<ul style="list-style-type: none"> <li>› Organized 4 forum sessions</li> <li>› Held 2 technical exchange meetings</li> </ul>
 <p>Suppliers</p>	The Bureau must communicate with suppliers to ensure that all services meet the needs to maintain stable daily Park operations.	<ul style="list-style-type: none"> <li>› Anti-corruption</li> <li>› Emissions</li> <li>› Effluents</li> </ul>	<ul style="list-style-type: none"> <li>› Phone contacts</li> <li>› On-site inspections</li> <li>› Irregular meetings</li> </ul>	<ul style="list-style-type: none"> <li>› Conducted more than 1,600 on-site inspections for engineering projects.</li> </ul>
 <p>Media</p>	The bureau maintains interactive and smooth communication with the media. The Bureau can promptly release public opinion responses to issues to avoid the dissemination of misinformation.	<ul style="list-style-type: none"> <li>› Investment promotion</li> <li>› Effluents</li> <li>› Anti-corruption</li> <li>› Innovation and entrepreneurship</li> </ul>	<ul style="list-style-type: none"> <li>› Press releases</li> <li>› Press conferences</li> </ul>	<ul style="list-style-type: none"> <li>› Issued 31 press releases.</li> </ul>
 <p>Business Services</p>	The convenience of park business services affects workers' willingness to work in the Park. Therefore, the Bureau maintains close communication with the business services industry.	<ul style="list-style-type: none"> <li>› Effluents</li> <li>› Anti-corruption</li> <li>› Occupational safety and health</li> </ul>	<ul style="list-style-type: none"> <li>› Impromptu meetings</li> <li>› Business services industry networking forums</li> <li>› Emails</li> <li>› Park satisfaction surveys</li> </ul>	<ul style="list-style-type: none"> <li>› Established a business services platform website with 888 pageviews.</li> <li>› In September 2020, 68 participants went to the central offices of the Legislative Yuan and the surrounding services industry to observe and learn.</li> </ul>

Note : The frequency of communication with various stakeholders is based on actual needs on either a real-time or irregular basis. In addition, periodic monthly or annual publications and annual satisfaction surveys are conducted.

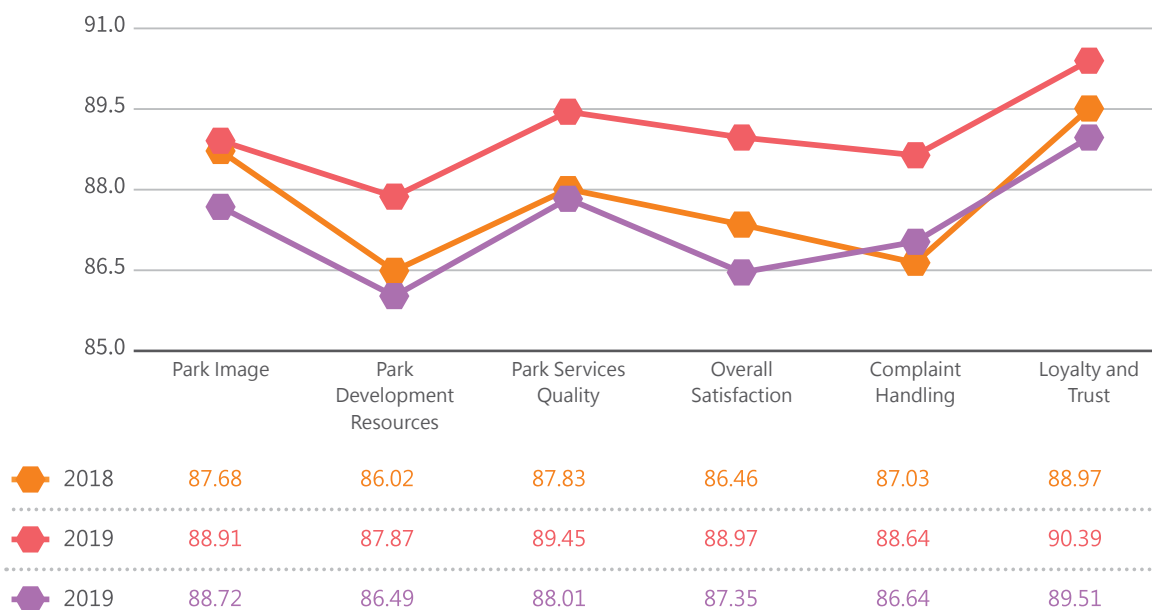


## ► Park Manufacturer Satisfaction Survey

Opinions expressed by manufacturers are an important basis for the CTSP Bureau to improve or enhance the various services of the Park. In addition to the satisfaction survey and the tracking of the reflected opinions, the industry management team is instructed to complete the improvements as soon as possible. The bureau organizes a working group to handle manufacturer visits every year. However, in response to the impact of the COVID-19 epidemic, in 2020 the CTSP Bureau instead sent a letter to solicit opinions from manufacturers.

In order to ensure fair, objective and consistent service quality evaluation indicators, to encourage the Bureau to pay attention to the satisfaction of its service targets, and to achieve the purpose of improving service quality, the Ministry of Science and Technology commissions a professional survey company to conduct a satisfaction survey every year. The overall satisfaction score given by manufacturers in 2020 was 87.35 points, which is higher than the overall average of the three science parks. Of the six aspects surveyed, the highest score was for loyalty and trust. The survey shows that the quality of the services provided by the Park has been affirmed and is supported by manufacturers. In the future, the Bureau will continue to care about the needs of manufacturers and assist in providing solutions, so as to obtain more affirmative and positive reviews from manufacturers. In addition, it also conducts surveys on surrounding community residents to understand their evaluation of the Park.

Park Manufacturer Satisfaction Survey



## Material Topics Identification

The Bureau introduced the substantive analysis model in the preparation of this Sustainability Report in the hopes of identifying the sustainability topics of concern to stakeholders, which will serve as a reference basis for the disclosure of information in this Report, facilitating effective communication with all stakeholders. The analysis of the material topics of this Report is divided into the following five major steps :

- 1 Stakeholder Identification**

Through internal discussions with and feedback from colleagues and the heads of various departments, and by referring to stakeholder groups identified in the sustainability reports of the same industry, **10 categories** of stakeholders were identified.
- 2 Sustainability Topic Collection & Summarizing**

Taking GRI Standards and Sustainable Development Goals as the basis for topic collection in the context of sustainability, **38 topics** were summarized and a questionnaire was designed, covering corporate governance, economics, as well as environmental and social aspects.
- 3 Topics of Concern & Impact Surveys**

The CTSP Bureau distributed questionnaires on the topic concerns to stakeholders and senior executives of the CTSP Bureau. Based on the analysis results of the returned questionnaires, it determined the weighted value of the evaluation criteria. A total of **167 questionnaires** were returned, of which 11 questionnaires concerned the level of impact (completed by CTSP senior executives).
- 4 Materiality Analysis & Identification**

In 2020, the CTSP Bureau identified **17 material topics** after analysis. Considering the scoring and weighing of each topic under different evaluation criteria and the degree of impact on sustainable management operations the risk priority number for each topic was calculated. Discussions with senior executives were held to adjust and formulate disclosure priorities.
- 5 Review & Discussion**

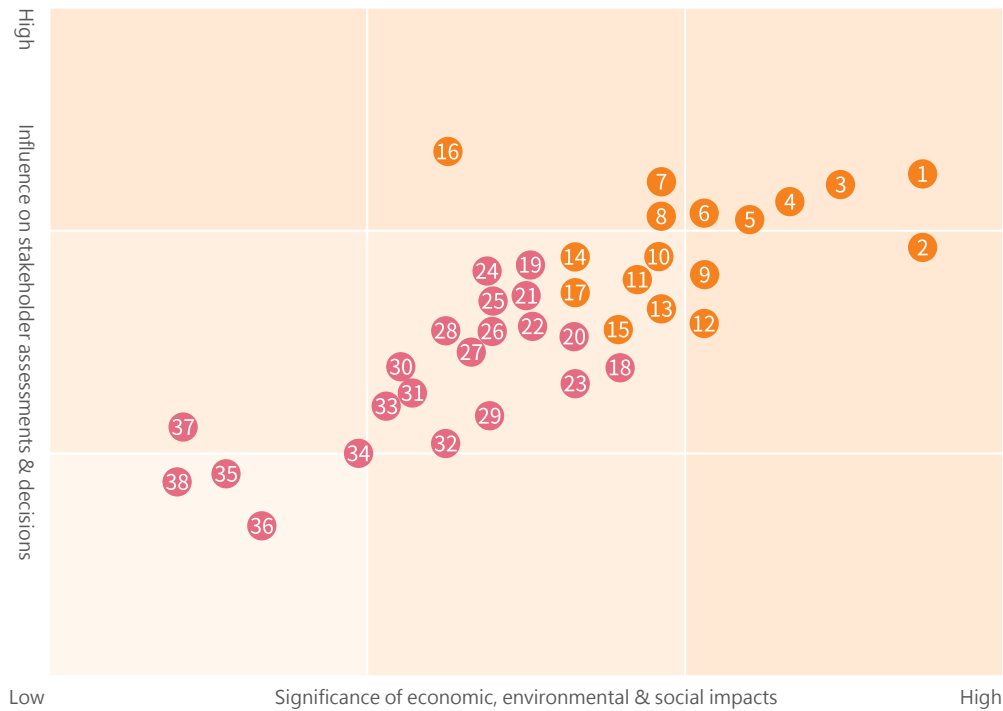
After analysis of the material topics, the value chain is used as the boundary analysis element, to serve as the cornerstone of the material topics of the CTSB Bureau. Effective management policies are then formulated for each major theme, and relevant information is disclosed in the Sustainability Report.

## ► Material Topics Identification Result

After the material topics of this year were analyzed by the stakeholder questionnaire and internally identified and discussed, a total of 17 material topics were identified. Compared with the 2019 report, the names of some material topics were adjusted or merged, and added Investment Promotion, Circular Economy, and Financial Disclosure of Climate Change as material topics, which is explained and disclosed in this Report.



### Materiality Matrix



### Prioritization of Material Topics

① Anti-corruption	⑦ Environmental Compliance	⑬ Indirect Economic Impacts (Infrastructure in the Park)
② Investment Promotion	⑧ Waste	⑭ Climate Change Financial Disclosure
③ Stable Energy Supply	⑨ Energy (Energy Saving, Renewable Energy)	⑮ Socioeconomic Compliance
④ Innovation & Entrepreneurship	⑩ Circular Economy	⑯ Labor Management Relations in the Park
⑤ Water and Effluents	⑪ Economic Performance (Industrial Upgrading)	⑰ Local Communities
⑥ Emissions	⑫ Promotion of Safe Workplace	

18 AI for Industries	25 Sustainable Digital Transformation	32 Supplier Social Assessment
19 Customer Health Safety	26 Training and Education	33 Materials
20 Occupational Health and Safety	27 Non-discrimination	34 Freedom of Association and Collective Bargaining
21 Supplier Environmental Assessment	28 Biodiversity	35 Security Practices
22 Customer Privacy	29 Marketing and Labeling	36 Rights of Indigenous Peoples
23 Forced or Compulsory Labor	30 Gender Equality	37 Human Rights Assessment
24 Anti-competitive Behavior	31 Child Labor	38 Procurement Practices

## Material Topic Value Chain and Goals

Following analysis, the Material Topics for the 2020 Sustainability Report were summarized into six corresponding aspects, namely Innovation-Driven Industries, Integrity and Transparent Governance, Workplace Safety and Health, Climate Action, Environmental Management, and Community Interaction, while taking the value chain as the element for boundary analysis. In the future, the CTSP Bureau will continue to strengthen management and disclose relevant information in the Sustainability Report.

Corresponding Theme Policy 1 : Innovation Driven Industries 

Page Number : 30

### Corresponding GRI Standard or Custom Topic :

GRI 201 : Economic Performance (Industrial Upgrading) · Innovation & Entrepreneurship

### CTSP Bureau Value Chain Impact Boundary

CTSP Bureau · CTSP Manufacturers · Research Institutes · Government Agencies

2020 Goals	2020 Goal Achievement Status
<ul style="list-style-type: none"> <li>› Investment promotion target of introducing 18 new manufacturers annually.</li> <li>› Hold at least 6 sessions of the Innovative Technology and the Innovation and Entrepreneurship Forums, and Industry-Academia Exchange Meeting, and at least one industry-university-institute exchange meeting.</li> <li>› Promote "Consolidating Regional Cooperation -the Advancement Project for Smart Machinery and Aerospace Industries in Central and Southern Taiwan (2017 to 2020). More than 1 manufacturer is expected to be introduced into the science park, with the investment amount of NT\$50 -100 million and facilitate the R&amp;D of more than 5 cases of core technologies independently or jointly developed by the industry, academia and research institute.</li> <li>› Continue to offer counselling to the innovation teams, with the expectation that more than 18 new startups can be established.</li> </ul>	<ul style="list-style-type: none"> <li>› A total of 22 new manufacturers were introduced.</li> <li>› Held a total of 9 events (including 1 online).</li> <li>› Completed the promotion of "Consolidating Regional Cooperation -the Advancement Project for Smart Machinery and Aerospace Industries in Central and Southern Taiwan (2017 to 2020)</li> <li>› A total of 13 startups were established.</li> </ul>

Short-term Goals	Medium- & Long-term Goals (3+ years)
<ul style="list-style-type: none"> <li>› Investment promotion target of introducing 20 new manufacturers annually.</li> <li>› Hold at least 6 sessions of the Innovative Technology and the Innovation and Entrepreneurship Forums, and Industry-Academia Exchange Meeting, and at least one industry-university-institute exchange meeting.</li> <li>› Promote the Acceleration of Bio-medical Industry Innovation Program in the Central Region (2019 to 2020). and promote more than 8 cases of industry-university-research-medicine collaboration.</li> <li>› Continue counselling the innovation teams, with the expectation that more than 18 new startups can be established.</li> </ul>	<ul style="list-style-type: none"> <li>› Gradually improve the CTSP semiconductor, optoelectronic, precision machinery, and biotechnology industrial chains, and build a sustainable industrial ecosystem.</li> </ul>



Corresponding Theme Policy 2 : Integrity Governance 

Page Number : 52

Corresponding GRI Standard or Custom Topic :

GRI 419 : Socioeconomic Compliance · GRI 307 : Environmental Compliance · GRI 205 : Anti-corruption

CTSP Bureau Value Chain Impact Boundary

CTSP Bureau · CTSP Manufacturers · Suppliers & Contractors · Research Institutes · Government Agencies

2020 Goals	2020 Goal Achievement Status
<ul style="list-style-type: none"> <li>› Hold 5 sessions of environmental protection law and regulation explanatory meetings.</li> <li>› Strengthen integrity governance, prevent conflicts of interest and implement risk control.</li> </ul>	<ul style="list-style-type: none"> <li>› Goal reached</li> <li>› Goal reached</li> </ul>
Short-term Goals	Medium- & Long-term Goals (3+ years)
<ul style="list-style-type: none"> <li>› Hold 5 sessions of environmental protection law and regulation explanatory meetings.</li> <li>› Strengthen integrity governance, prevent conflicts of interest and implement risk control.</li> </ul>	<ul style="list-style-type: none"> <li>› Continue to implement the promotion, education and training of environmental and socio-economic regulations related to the Park business, with the hope of zero violations of major laws &amp; regulations.</li> <li>› Build the vision of clean governance and an honest society.</li> </ul>

Corresponding Theme Policy 3 : Workplace Safety and Health 

Page Number : 66

Corresponding GRI Standard or Custom Topic :

Safe Workplace Audits · CTSP Labor Relations

CTSP Bureau Value Chain Impact Boundary

CTSP Bureau · CTSP Manufacturers · Research Institutes · Government Agencies · Community Residents · Employees

2020 Goals	2020 Goal Achievement Status
<ul style="list-style-type: none"> <li>› Continue to conduct at least 3 publicity briefings related to labor laws and regulations, and conduct a total of 60 sessions of labor condition inspections (including work gender equality inspections), and labor law compliance visits.</li> </ul>	<ul style="list-style-type: none"> <li>› Goal reached</li> </ul>
Short-term Goals	Medium- & Long-term Goals (3+ years)
<ul style="list-style-type: none"> <li>› Continue to conduct at least 4 publicity briefings related to labor laws and regulations, and conduct a total of 88 sessions of labor condition inspections (including work gender equality inspections), and labor law compliance visits.</li> </ul>	<ul style="list-style-type: none"> <li>› Actively promote a harmonious labor-management relationship in the Park, promote enterprise workplace equality, and build the CTSP Park into a friendly workplace.</li> <li>› Construct a sustainable and disaster-free, healthy workplace environment, with zero workplace injuries and occupational accidents.</li> </ul>



**Corresponding GRI Standard or Custom Topic :**

Stable supply of water and electricity · GRI 302 : Energy (Energy Saving, Renewable Energy) · Climate Change Financial Disclosures

**CTSP Bureau Value Chain Impact Boundary**

CTSP Bureau · CTSP Manufacturers · Research Institutes

2020 Goals	2020 Goal Achievement Status
<ul style="list-style-type: none"> <li>› Reach a cumulative solar photovoltaic installation capacity of 45.72 MW.</li> <li>› Achieve the various water reclamation rate goals for different industrial processes in the Park (such as 85% for the semiconductor and optoelectronic industries).</li> <li>› In response to the initial operation of the Erlin Park, install a reclaimed water treatment system with a capacity of 200 tons per day.</li> <li>› Taichung Park obtained the Ecological Community Evaluation System (EEWH-EC) of Taiwan green building assessment certification.</li> </ul>	<ul style="list-style-type: none"> <li>› Cumulative capacity exceeded 46.33 MW.</li> <li>› Goal reached</li> <li>› Goal reached</li> <li>› Goal reached</li> </ul>

Short-term Goals	Medium- & Long-term Goals (3+ years)
<ul style="list-style-type: none"> <li>› Increase photovoltaic installation capacity by 1.25 MW.</li> <li>› Achieve the various water reclamation rate goals for different industrial processes in the Park (such as 85% for the semiconductor and optoelectronic industries).</li> </ul>	<ul style="list-style-type: none"> <li>› Increase solar energy generation equipment to reach a cumulative solar photovoltaic installation capacity of 76.77 MW by 2025.</li> <li>› Promote experience exchanges, technical upgrades, and pursue the optimization of water and electricity use for park manufacturers. Under the principle of rationalization of energy use efficiency, promote further increases in the water reclamation rate of various industrial processes in the Parks.</li> <li>› In line with the Erlin Park operation, set up a water resource regeneration center and binary water supply pipelines in phases ( 20,000 metric tons per day in phinal phase). Reclaimed water uses : plant cooling water, toilet flushing, road cleaning, cooling, and landscape supplemental water or green space irrigation, etc. Furthermore, the supply and demand of reclaimed water in the Park is to be reviewed on a rolling basis, and a dedicated system to provide water required by manufacturers or reclaimed water business operators in neighboring areas as needed to improve efficiency.</li> <li>› The other CTSP Parks (Taichung and Houli) will cooperate with the planning schedules of regional reclaimed water development programs (such as at Suinan and Fengyuan) to jointly promote the use of water resources.</li> </ul>





Corresponding Theme Policy 5 : Environmental Management



Page Number : 94

Corresponding GRI Standard or Custom Topic :

GRI 303 : Water and Effluents · GRI 306 : Waste · GRI 305 : Emissions · Circular Economy

CTSP Bureau Value Chain Impact Boundary

CTSP Bureau · CTSP Manufacturers · Suppliers & Contractors · Government Agencies · Community Residents

2020 Goals	2020 Goal Achievement Status
<ul style="list-style-type: none"> <li>› The overall sewage treatment rate in the Park at 100%.</li> <li>› Erlin Park to promote the optimization of water reclamation and reuses all reclaimed water.</li> <li>› The rate of proper disposal of waste to reach 100%.</li> </ul>	<ul style="list-style-type: none"> <li>› Goal reached</li> <li>› Goal reached</li> <li>› Goal reached</li> </ul>
Short-term Goals	Medium- & Long-term Goals (3+ years)
<ul style="list-style-type: none"> <li>› The overall sewage treatment rate in the Park at 100%.</li> <li>› Erlin Park to promote the optimization of water reclamation and reuses all reclaimed water.</li> <li>› The rate of proper disposal of waste to reach 100%.</li> </ul>	<ul style="list-style-type: none"> <li>› Continue providing guidance and check that park manufacturers comply with environmental protection permit documentation requirements as well as discharge water quality standards.</li> </ul>

Corresponding Theme Policy 6 : Social Interaction



Page Number : 112

Corresponding GRI Standard or Custom Topic :

GRI 413 : Local Communities · GRI 203 : Indirect Economic Impacts (Park Infrastructure Construction) · Investment Promotion

CTSP Bureau Value Chain Impact Boundary




CTSP Bureau · CTSP Manufacturers · Suppliers & Contractors · Government Agencies · Media · Community Residents

2020 Goals	2020 Goal Achievement Status
<ul style="list-style-type: none"> <li>› Regularly interact and communicate with community residents, while continuing Park construction.</li> <li>› Phase I construction of the standard factory buildings in Huwei Park is expected to be completed in November 2021.</li> </ul>	<ul style="list-style-type: none"> <li>› Goal reached</li> <li>› In process</li> </ul>
Short-term Goals	Medium- & Long-term Goals (3+ years)
<ul style="list-style-type: none"> <li>› Regularly interact and communicate with community residents, while continuing Park construction.</li> <li>› Phase I construction of the standard factory buildings in Huwei Park is expected to be completed in November 2021.</li> </ul>	<ul style="list-style-type: none"> <li>› Continue environmental education work for the 3 sewage plants and hold 7 neighborhood events as part of the national clean home campaign.</li> <li>› Continue to implement ecological communities to maintain sustainable development and a friendly environment.</li> </ul>








Note : The Value Chain Impact categories are classified as follows : Direct Impact includes the CTSP Bureau, CTSP Employees, CTSP Manufacturers, and Government Agencies. Suppliers & Contractors fall under Impact on Business, while Academic Research Institutes, Media, and Community Residents are included in Contributed Impact.

# Active Implementation of Sustainable Development Goals (SDGs)

In 2015, the United Nations adopted a total of 17 Sustainable Development Goals (SDGs) and 169 specific targets, which are provided to countries as a reference guide for policy transformation. The CTSP Bureau follows the global trend, integrates with the world, and uses its core capabilities to respond to the SDGs and the 15 corresponding Sustainable Development Goals of Taiwan as well as specific practices, allowing interested parties to understand the sustainable business results of the CTSP Bureau.

UN SDGs	Corresponding Taiwan SDG Indicators	Actions Taken
 <p>1 NO POVERTY</p>	1.4.1 Number of entrepreneurship training courses.	<ul style="list-style-type: none"> <li>As of 2020, 17 startups have entered the field of innovation and entrepreneurship, 190 teams have been cumulatively counselled in the From IP to IPO (FITI) program, while of those 94 have established new companies.</li> </ul>
	1.4.2 Number of citizens assisted in consultation services.	
 <p>3 GOOD HEALTH AND WELL-BEING</p>	3.9.1 Improve air quality and protect public health.	<ul style="list-style-type: none"> <li>In Houli Park, a program was implemented to provide free health check-ups for residents who meet the requirements. A total of 274 publicity sessions, 5,763 telephone interviews and 4,144 health check-ups were conducted from 2011 to 2020.</li> <li>Epidemiological follow-up surveys (once every 5 years), and a total of 2,152 questionnaire surveys and blood biochemical tests have been conducted.</li> </ul>
	4.3.1 The participation rate of youth and adults in higher education during the past 12 months.	<ul style="list-style-type: none"> <li>Under the Professional and Technical Talent Training Plans the CTSP offered 19 training courses in 5 categories, with a total of 599 trainees.</li> <li>Approved subsidies for a total of 13 module courses and corporate internship courses in 8 schools with a subsidy amount of NT\$8 million with an expectation of reaching a total of 684 people.</li> </ul>
 <p>4 QUALITY EDUCATION</p>	4.4.2 The rate of courses established related to information technology in senior high schools to enable youth to obtain information and skills related to technology.	<ul style="list-style-type: none"> <li>Organized the world's first 2020 FRC Science Park Taichung 5G Pilot Regional competition, with 28 domestic high school teams competing.</li> </ul>
	4.7.4 The number of qualified educational environments and facilities.	<ul style="list-style-type: none"> <li>A total of 3 sewage plants under the jurisdiction of the CTSP as well as Park manufacturers TSMC and AU Optronics have obtained certification as Environmental Education Facilities and Venues.</li> </ul>
	5.4.1 Time gap of unpaid housework and family care between spouses (including cohabitation).	<ul style="list-style-type: none"> <li>In order to promote substantive gender equality, the CTSP Bureau has specially set up a Committee on Gender Discrimination and Gender Equality in Employment to hold a total of 3 related promotion meetings in 2020.</li> </ul>



UN SDGs	Corresponding Taiwan SDG Indicators	Actions Taken
 <p>6 CLEAN WATER AND SANITATION</p>	<p>6.4.3 Process water reclamation ratio in science parks. 6.4.5 Level of water stress.</p>	<ul style="list-style-type: none"> <li>› In 2020, all the Parks under the jurisdiction of the Bureau had a water reclamation rate of over 80%.</li> <li>› In order to alleviate the potential impact of water resources on production in the Park, the Bureau continues to provide guidance and advocacy related to water conservation and water recycling.</li> </ul>
 <p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p>7.2.1 Cumulative installed capacity of renewable energy.</p>	<ul style="list-style-type: none"> <li>› The CTSP and park manufacturers jointly promote solar power generation. In 2020, the cumulative solar power generation capacity of CTSP exceeded 46.33 MW.</li> </ul>
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p>	<p>8.1.1 Economic growth rate.</p> <hr/> <p>8.6.1 Number of young people participating in vocational training and employment rate after training. 8.6.2 Public employment services institutions provide youth job placement.</p>	<ul style="list-style-type: none"> <li>› Manufacturers in the Park continued to invest in the Park, with effective and promising results. In 2020, turnover reached NT\$935.979 billion, an increase of 17.40% over the same period in 2019.</li> <li>› A total of 36 talent recruitment events were held in 2020, and the number of employees in December reached 51,827, an increase of 1.99% from 50,817 in the same period in 2019.</li> </ul>
 <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	<p>9.1.1 The growth percentage of passenger volume of bus.</p>	<ul style="list-style-type: none"> <li>› The CTSP provides free shuttle bus service, and the total number of passenger rides in 2020 reached 118,959.</li> </ul>
 <p>10 REDUCED INEQUALITIES</p>	<p>10.3.1 Promote public awareness of relevant laws and regulations on gender equality and elimination of employment discrimination.</p>	<ul style="list-style-type: none"> <li>› In 2020, 1 Employment Discrimination Evaluation and Gender Work Equality Committee meeting, and 3 labor law advocacy meetings were held.</li> </ul>
 <p>11 SUSTAINABLE CITIES AND COMMUNITIES</p>	<p>11.11.1 Gbps Broadband Network Universal Deployment.</p>	<ul style="list-style-type: none"> <li>› In cooperation with the Ministry of Science and Technology and the Using ICT Technology for the Development of Smart Park Project, a total of 179 wireless network hotspots have been completed, with an achievement rate of 293%. The cumulative usage reached approximately 1,202,368 times (from December 2016 to the end of December 2020).</li> </ul>
 <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	<p>12.1.1 The number of passing the cleaner production assessment system of the green factory label.</p>	<ul style="list-style-type: none"> <li>› As of the end of 2020, buildings in the CTSP have obtained 35 green building, 1 diamond grade intelligent building, 1 diamond grade ecological community, and 4 green factory mark awards from the Ministry of Economic Affairs.</li> </ul>

UN SDGs	Corresponding Taiwan SDG Indicators	Actions Taken
<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	12.4.3 Proportion of industrial waste recycled in science parks.	<ul style="list-style-type: none"> <li>› In the past seven years, the recycling rate (including resource recycling) of industrial waste in the Parks under the jurisdiction of the Bureau has increased from 71.26% to 94.4%.</li> </ul>
	12.6.3 Number of listed companies required to prepare and file CSR reports.	<ul style="list-style-type: none"> <li>› As of the end of 2020, 47 companies in CTSP have issued CSR reports.</li> </ul>
	12.7.1 Ratio of green procurement by government agencies.	<ul style="list-style-type: none"> <li>› In 2020, the total purchase amount of environmental protection products by the CTSP Bureau was NT\$2.027 million, accounting for 100% of the total purchase amount.</li> </ul>
<p>13 CLIMATE ACTION</p>	13.1.1 Identify climate risks, map out prioritized adaptation action plan and execute accordingly.	<ul style="list-style-type: none"> <li>› In order to implement climate change risk management, in 2021, the CTSP Bureau will set up a Climate Change Identification Team to formulate relevant response measures.</li> </ul>
	13.3.2 Promote public behavior changes and implement local low carbon actions.	<ul style="list-style-type: none"> <li>› Huwei Park operates electric shuttle vehicles, which provided 14,750 rides traveling 30,867 kilometers by the end of 2020.</li> </ul>
	13.3.3 Scientific capacity-building and service for climate change adaptation.	<ul style="list-style-type: none"> <li>› From 2018 to 2020, the energy-saving and carbon-reduction benefits of smart streetlights reduced CO<sub>2</sub>e emissions by approximately 1,012.5 metric tons.</li> </ul>
<p>15 LIFE ON LAND</p>	15.5.1 Red list index of terrestrial vertebrate.	<ul style="list-style-type: none"> <li>› Ecological surveys in each Park in 2020 found 10 rare and valuable species, 2 protected bird species, 9 bird and 7 reptile species endemic to Taiwan, and 17 bird sub-species endemic to Taiwan.</li> </ul>
<p>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</p>	16.4.1 Corruption conviction rates.	<ul style="list-style-type: none"> <li>› As a public agency, the CTSP Bureau should lead by example and follow various laws and regulations, make information public and transparent, and put an end to all corruption cases. There were no corruption cases in 2020.</li> </ul>
	16.5.1 The downloads of Government Open Data.	<ul style="list-style-type: none"> <li>› In line with the Government's information disclosure policy, various data can be downloaded from the official website of the Bureau. In addition, annual reports and monthly newsletters of the CTSP are published to provide the outside world with the latest developments of the Park.</li> </ul>
<p>17 PARTNERSHIPS FOR THE GOALS</p>	17.9.2 Numbers of countries participating in environmental protection cooperation activities / meetings.	<ul style="list-style-type: none"> <li>› As of the end of 2020, the CTSP has signed memoranda of cooperation with 16 foreign science parks and the Asian Science Park Association, and joined 3 international science park organizations such as ASPA, IASP, AURP, in addition to the International Forum of Agricultural Robotics (FIRA). The CTSP will continue foreign park communication, opening up potential cooperation opportunities.</li> </ul>

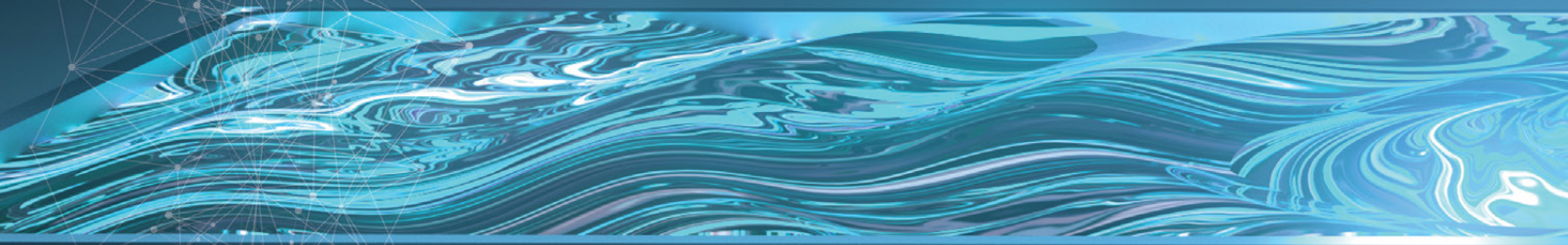
# Core Policies



Lorem ipsum dolor sit amet, consectetur adipiscing elit.

## Policy 1: Innovation Driven Industries

- 1.1 Park Development and Innovation Transformation
- 1.2 Prospering Smart Industry
- 1.3 Combining Industry, Government, Academia and Research
- 1.4 Strengthening International Cooperation
- 1.5 Innovation Creates New Dreams
- 1.6 Integration of Technological Creativity and Self-production





Lorem ipsum dolor sit amet,  
 consectetur adipiscing elit.




Lorem ipsum dolor sit amet,  
 consectetur adipiscing elit.

200.25  
195.01  
153.00





The rapid development of artificial intelligence has become the focus of the information industry. In response to this trend, the Central Taiwan Science Park Bureau cooperates with the various plans of the Ministry of Science and Technology, concentrates industry, university and research capabilities, and actively brings together domestic and foreign manufacturers. The Bureau also participates in international events, holds investment briefings to encourage an upsurge in returning manufacturer investment in Taiwan, encourages innovation among the Park's manufacturers and personnel, set up the AI Robotics Hub and established an Open Innovation Platform. While providing cultivation and innovation resources, it further walks on the cutting edge of technology, cultivates future talent, and links diverse resources, all these in order to develop momentum for industrial upgrading.

Corresponding Material Topics	Corresponding SDGs	Management Objectives and Policies
<ul style="list-style-type: none"> <li>› GRI 201 : Economic Performance (Industrial Upgrading)</li> <li>› Innovation &amp; Entrepreneurship</li> <li>› Investment Promotion</li> </ul>		<ul style="list-style-type: none"> <li>› Drive the development of high-tech industries in Central Taiwan.</li> <li>› Link industry, government, academic and research resources to support the sustainable development of industrial clusters.</li> <li>› Encourage innovative R&amp;D and the development of new ventures, brewing energy for the next industrial upgrading.</li> </ul>

### Commitments and Goals

#### Short-term Goals

- › Set the investment promotion target of introducing 20 manufacturers for investment every year.
- › In order to consolidate and integrate the resources of CTSP manufacturers and industry, government, academia, and research, promote industry-university training cooperation, and strengthen industry-university linkages and talent exchanges, it is expected that at least 6 sessions of the Innovative Technology and the Innovation and Entrepreneurship Forums, and Industry-Academia Exchange Meeting, and at least one industry-university-institute exchange meeting are to be held to continue to promote the industrial development of the central region and participate in innovation activities in the industry-academic circles.
- › Promote the Biomedical Industry Innovation Program in the Central Region (2019-2022), promote more than 8 cases of industry-university-research-medicine cooperation, and it is expected that the cumulative increase in derivative output value reaches NT\$ 150 million or more.
- › Actively create a high-quality entrepreneurial environment and provide professional counselling resources and introduce accelerators to link industries, continue to coach innovative teams. It is expected that more than 18 startups can be established.

#### Medium and Long-term Goals (3+ years)

- › Gradually improve the CTSP semiconductor, optoelectronic, precision machinery, and biotechnology industrial chains, and build a sustainable industrial ecosystem.

### Responsible Units

Investment Division, Planning Division

### Invested Resources

- The Investment Division carries out the Park promotion, investment promotion, and resource planning for innovation and cultivation.
- In cooperation with the Ministry of Science and Technology's Forward-looking Infrastructure Development Program, it is planned to build an AI Robotics Hub in four years (2017-2020) worth NT\$ 1 billion.
- Through the Innovation and Entrepreneurship Incentive Program, the innovative camp allows the innovation team to confirm the business model, holds two tiers of competitions every year, and provides entrepreneurial funds based on rankings.

### Complaints Mechanism

Director-General's mailbox

### Management System and Evaluation Mechanism

- The Planning Division collects monthly statistics on park investment, industrial turnover, and number of employees.

### 2020 Performance

- CTSP turnover in 2020 reached NT\$935.979 billion, an increase of 17.40% over 2019.
- A total of 22 new manufacturers were introduced, with a total investment of NT\$9.147 billion, and 11 manufacturers' capital increase projects, totalling about NT\$15.747 billion, were completed.
- Advancement Project for Smart Machinery and Aerospace Industries in Central and Southern Taiwan approved 5 projects for subsidies, with a subsidy amount of NT\$32.08 million.
- The Project of Acceleration of Medical Device Industry Innovation and International Leap Promotion - Acceleration of Biomedical Industry Innovation Program in the Central Region approved subsidies to 11 park manufacturers and start-up companies.
- The Science Park R&D and Advanced Industry-Academia Collaboration Program approved 4 subsidized R&D programs, with an approved subsidy amount of NT\$ 11.56 million.
- Tutored 45 teams for the From IP to IPO program (FITI), of which 5 teams won the Outstanding Entrepreneurship Award, 8 teams won the Entrepreneurship Potential Award, and 20 teams established companies.
- Assisted in the establishment of robot-related startups or settled in 49 incubation centers and accelerators, and created 485 job opportunities.
- Promote the Application Scheme of Intelligent Manufacturing Technology ", summarize common demand plans, introduce an AI-based international software service platform, and build 6 demonstration cases of smart manufacturing technology application programs.
- CTSP Accelerator has assisted startups operating companies to grow rapidly and increase added value. It has introduced more than 3 startups to the CTSP to become scientific enterprises.



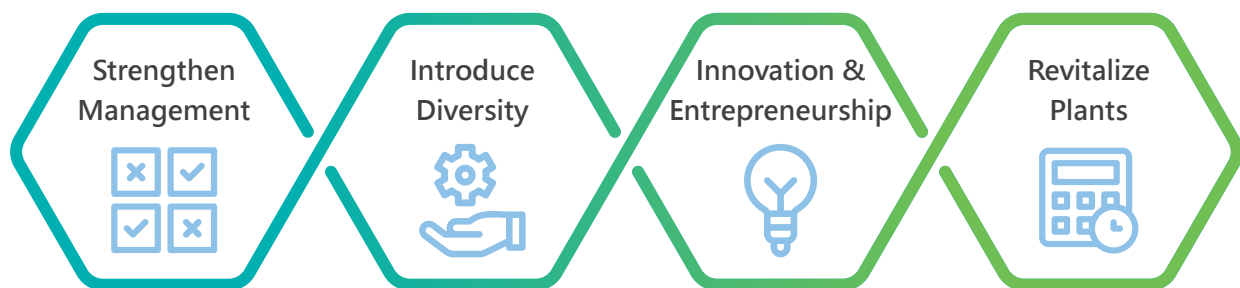


## 1.1 Park Development and Innovation Transformation

On June 6, 2018, the Act for Establishment and Administration of Science Parks was amended, the word "industrial" was deleted, the types of organizations that can be stationed in the Park were relaxed, and diversified types of innovative research and development businesses were introduced. Science parks no longer only emphasized the clustering of manufacturing industries, but that of technological innovation. In February 2020, in line with the amendment of the establishment and administration regulations, the Bureau officially held an unveiling ceremony to amend the name of the Park, deleting the word "industrial", which symbolized that the CTSP has reached a milestone in innovation based on the foundations laid in the past.

Following the relaxation and revision of the regulations, by the end of 2020, 3 limited companies and 21 new manufacturers with a total investment of about NT\$ 9.2 billion were introduced to the CTSP. In the future, the Park will regard technological innovation as its core value to guide industrial upgrading.

### Future development direction of the science park following the revision of regulations



### ▶ Continuous Growth of Industrial Clusters

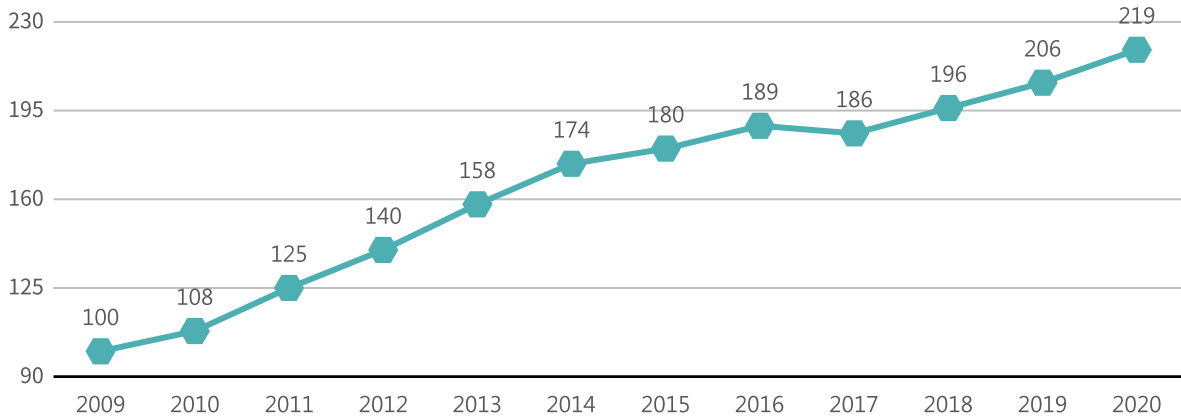
Both domestic and foreign high-tech industries have been introduced to be stationed in the Park. As of the end of 2020, under the active investment promotion of the Bureau, 219 manufacturers have been effectively approved, and 14 research institutions and incubation centers have been introduced. In addition, to encourage entrepreneurship and innovation in the Park, incubation centers, or research institutions with incubation services, to cultivate excellent manufacturing technology and invest in the science park, the Bureau organizes annual awards for the Park's entrepreneurial and innovation incubation centers to cultivate high-quality manufacturers. In 2020 National Chung Hsing University, Chaoyang University of Technology and National Chinan University won the award.



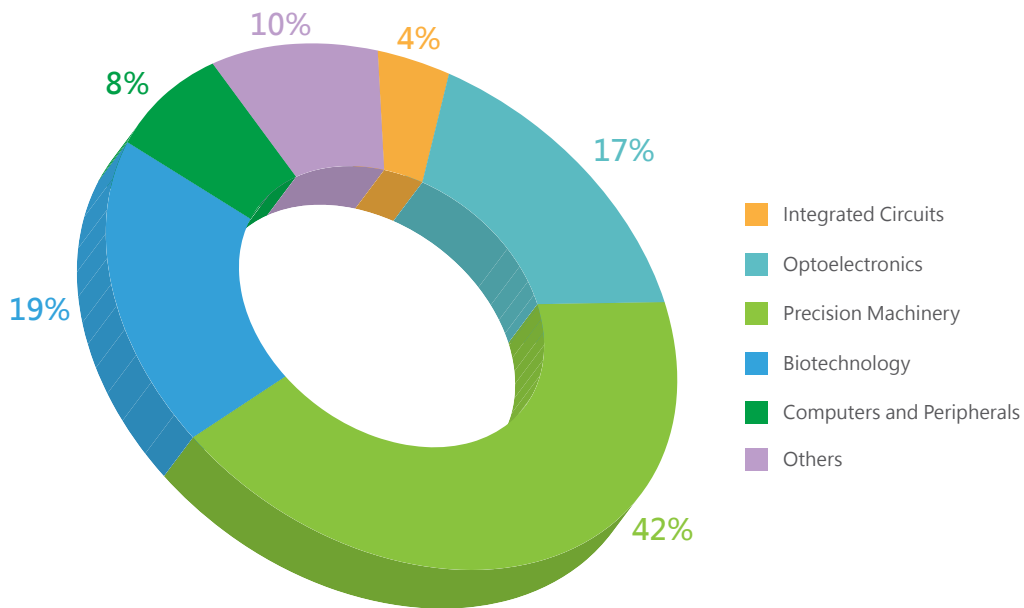
Detailed manufacturer information  
can be found on this website



### Number of validly approved manufacturers



### Ratio of companies in each industry



### Successful Integration of Industrial Clusters

#### Integrated Circuits



- Already 9 companies have been introduced into CTSP, including TSMC, Winbond, Micron, Siliconware, Applied Materials, Macronix, and Tokyo Electron, etc.
- The planned investment amount is NT\$1,148 billion.

#### Optoelectronics



- 37 manufacturers are located in the Park, including benchmark companies such as AU Optronics, Corning, Nitto Denko, JSR Micro, Epistar, GSEO, Ohara, Taiwan Color Optics and Raystar.
- The planned investment amount is NT\$891.2 billion.



### Precision Machinery



- ▶ A total of 92 manufacturers have been introduced, including Gallant Precision, Delta Electronics, Tan Kong Precision, CFTC, and Mosa Industrial, making it the industry with the most manufacturers in the CTSP.
- ▶ The planned investment amount is NT\$68.7 billion.
- ▶ In 2020 Paragon Machinery, a 50-year-old machine tool manufacturer, and MC-Bauchemie Müller etc. entered CTSP, adding further force to the development of the CTSP Precision Machinery Industry.

### Biotechnology



- ▶ A total of 43 manufacturers are located in CTSP including Orient Pharma, Everest Pharm., Addimune, Yushen Bio, GeneReach, Singen, Microware Precision, isRed Pharma, Minima and CH Biotech.
- ▶ The planned investment amount is NT\$13.7 billion.

### Computers and Peripherals / Communication and Digital Content



A total of 17 manufacturers including Fomex Technology, Fulltech Fiber Glass, Bolymin, WFE Technology, GKB Security, Orange Electronics, and Bigbest are stationed in the Park, while in the communication and digital content industries, Inpaq Technology and ADI Communications also entered the market.

### Others (provide scientific and industrial operations, management, and technical services, etc.)



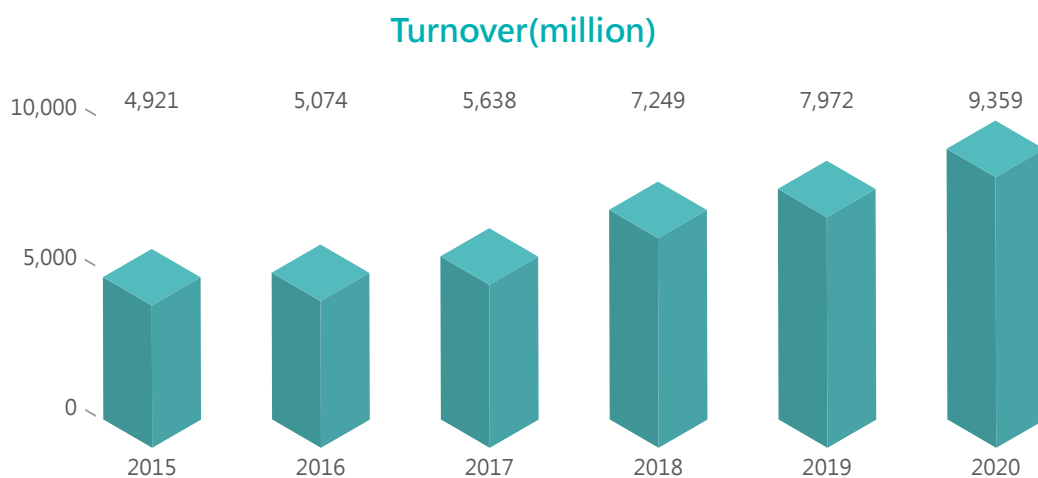
19 Other park businesses (gas supply, warehousing logistics, and solar energy, etc.) have settled in the Park, including Road Ahead Technologies, Balazs Asia and Air Liquide.

## ▶ Record High Turnover

In 2020, the business turnover of the Park reached NT\$935.979 billion, an increase of 17.40% compared to the NT\$797.232 billion in 2019, yet again hitting a record high. The integrated circuit industry made up the largest amount of this turnover, followed by the optoelectronic industry, and then the precision machinery industry.

The integrated circuit industry benefited from the increase in demand for 5G, servers and high-performance computing, and the continued increase in high-end semiconductor process orders, which led to a 23.80% growth in turnover. The optoelectronic industry was affected by supply exceeding demand in the panel industry during the first half of the year, and weak demand in the smartphone market. However, in the second half of the year, driven by the stay-at-home economy, panel demand rebounded, and the decline in turnover shrank from 14.31% in the first half to 3.12%.

The precision machinery industry was affected by the China-United States trade war and the COVID-19 pandemic, with market demand slowing down. In addition, lockdown measures in various countries and strict domestic border risk management policies affected equipment orders and shipments, and turnover declined by 5.79%. Furthermore, due to the epidemic, the demand for testing reagents in the biotechnology industry increased, with the prices of equipment and reagents rising, driving sales growth to 5.55%.



### 2020 Turnover by Industry

Unit : NT\$ 1 billion

Industry	2019		2020		Growth Rate (%)
	Turnover	Proportion (%)	Turnover	Proportion (%)	
Integrated Circuit	6,052.60	75.92	7,493.22	80.06	23.80
Photoelectric	1,541.46	19.34	1,493.35	15.95	-3.12
Precision Machinery	257.18	3.23	242.30	2.59	-5.79
Computer and Peripheral	32.21	0.40	32.97	0.35	2.38
Biotechnology	63.70	0.80	67.23	0.72	5.55
Other	25.17	0.31	30.72	0.33	22.05
<b>Total</b>	<b>7,972.32</b>	<b>100.00</b>	<b>9,359.79</b>	<b>100.00</b>	<b>17.40</b>



The total import and export trade volume in 2020 was NT\$681.766 billion, an increase of 14.56% from 2019. Exports accounted for about NT\$ 537.526 billion, an increase of 20.25% from 2019, while imports were about NT\$ 144.24 billion, a decline of 2.62% from 2019. In 2020, exports exceeded imports by a value of NT\$ 393.286 billion.

In the face of the epidemic, which has hit the global economy, and affected by the US-China trade war, the Park's remote business opportunities continue to grow. The semiconductor supply chain in the Park continues to expand with the demand for key advanced process applications. Supply and demand of the industrial chains are fully loaded with active production capacity, highlighting a relatively high degree of market value and competitiveness, and under the active demand for remote applications and 5G equipment, the orders remain in high gear.

### 2020 Comparative Analysis of the Industrial Import and Export Trade Volume of the Park

Unit : NT\$ 1 billion

Industry	Export Value		Growth Rate (%)	Import Value		Growth Rate (%)
	2019	2020		2019	2020	
Integrated Circuit	3,134.60	4,008.01	27.86	1,346.77	1,272.47	-5.52
Photoelectric	1,116.22	1,154.65	3.44	98.24	89.08	-9.32
Precision Machinery	163.02	155.72	-4.48	25.40	66.36	161.24
Computer and Peripheral	27.48	26.11	-4.96	5.33	8.73	64.00
Biotechnology	28.63	30.27	5.75	2.84	4.85	70.42
Other	0	0.50	0	2.58	0.91	-64.73
<b>Total</b>	<b>4,469.95</b>	<b>5,375.26</b>	<b>20.25</b>	<b>1,481.16</b>	<b>1,442.40</b>	<b>-2.62</b>

## 1.2 Prospering Smart Industry

### ► Advancement Project for Smart Machinery and Aerospace Industries in Central and Southern Taiwan

Due to the China-United States trade war and COVID-19 epidemic, the global supply chain ecology has been affected. In order to again challenge the global industrial landscape following the epidemic, smart production transformation is imperative. The Bureau invested another NT\$ 32.08 million in 2020 to assist 5 manufacturers in the development of smart machinery applications, including the research and development of key technologies for high precision intelligent detection of optical glass lenses, which will help improve production yields. 5G

line monitoring technology was applied to build smart production lines, where operators can independently perform monitoring, maintenance and troubleshooting, further improving quality and productivity. In terms of aerospace industry applications, focus was placed on the research, development and innovation of aerospace material equipment processing technology, including the development of smart ultrasonic processing modules that can be used for superalloy and composite material processing, and the development of precision steel ball smart grinding machines, and further encouraged manufacturers to develop equipment domestically, increasing the proportion of the domestic aerospace industry's future machinery and equipment.

The CTSP Bureau has joined hands with industry-university research units to jointly develop and innovate smart technologies, increase the output value of smart machinery in the central and southern regions, and strengthen the competitive advantages of domestic industries. From 2017 to 2020, the Bureau will implement the Strengthening Regional Cooperation - Advancement Project for Smart Machinery and Aerospace Industries in Central and Southern Taiwan. To date, it has provided NT\$154.22 million to help 18 manufacturers carry out research and development plans for smart, automated equipment and production lines.

### Manufacturers Approved for Subsidies in the 2020 Strengthening Regional Cooperation - Advancement Project for Smart Machinery and Aerospace Industries in Central and Southern Taiwan

Project	Applicants
Innovation	Hantop Intelligence Tech.
	PRO Machinery
	Tan Kong Precision Tech
Research and Development	CALIN Technology
	Leadwell CNC Machines



Strengthening Regional Cooperation - Advancement Project for Smart Machinery and Aerospace Industries in Central and Southern Taiwan





## ▶ Central Region Biomedical Industry Innovation Program

Since 2019, the Bureau has been promoting the Project of Acceleration of Medical Device Industry Innovation and International Leap Promotion-Acceleration of Biomedical Industry Innovation Program in the Central Region. With the existing advantages of the CTSP in precision processing and optical industries, the Bureau combined with manufacturers of minimally invasive medical materials and medical care to manufacturers and hospital resources are assisted in the development of high-value minimally invasive surgical instruments and smart assistive devices. In 2020, 11 park manufacturers and start-up companies were approved for subsidies totaling NT\$ 32.206 million, and 3 manufacturers were assisted in applying for entry into CTSP. The Park has assisted manufacturers to invest NT\$58.609 million in R&D, applied for 16 domestic and foreign patents, and cultivated a total of 315 talents. During the three-day exhibition period of the December 2020 Healthcare Expo Taiwan , 11 subsidized park manufacturers and the CTSP Bureau jointly exhibited at the CTSP Biomedical Industry Innovation Hall, and another 7 CTSP manufacturers also set up booths to participate, showcasing top technology and manufacturing energy in the fields of precision health, minimally invasive surgical medical materials, smart assistive devices and other medical products.

### CTSP Manufacturers Approved for Subsidies in the 2020 Acceleration of Biomedical Industry Innovation Program in the Central Region

Integrated Type	Extended Type
Lian Chan Precision Maxima Biotech MedicalTek EPED Inc. CatchGene United Orthopedic INTAI Technology LifeOS Genomics	Cenefom Corp. Biotegy Free Bionics



CTSP Biomedical Industry Innovation Hall Group Photo



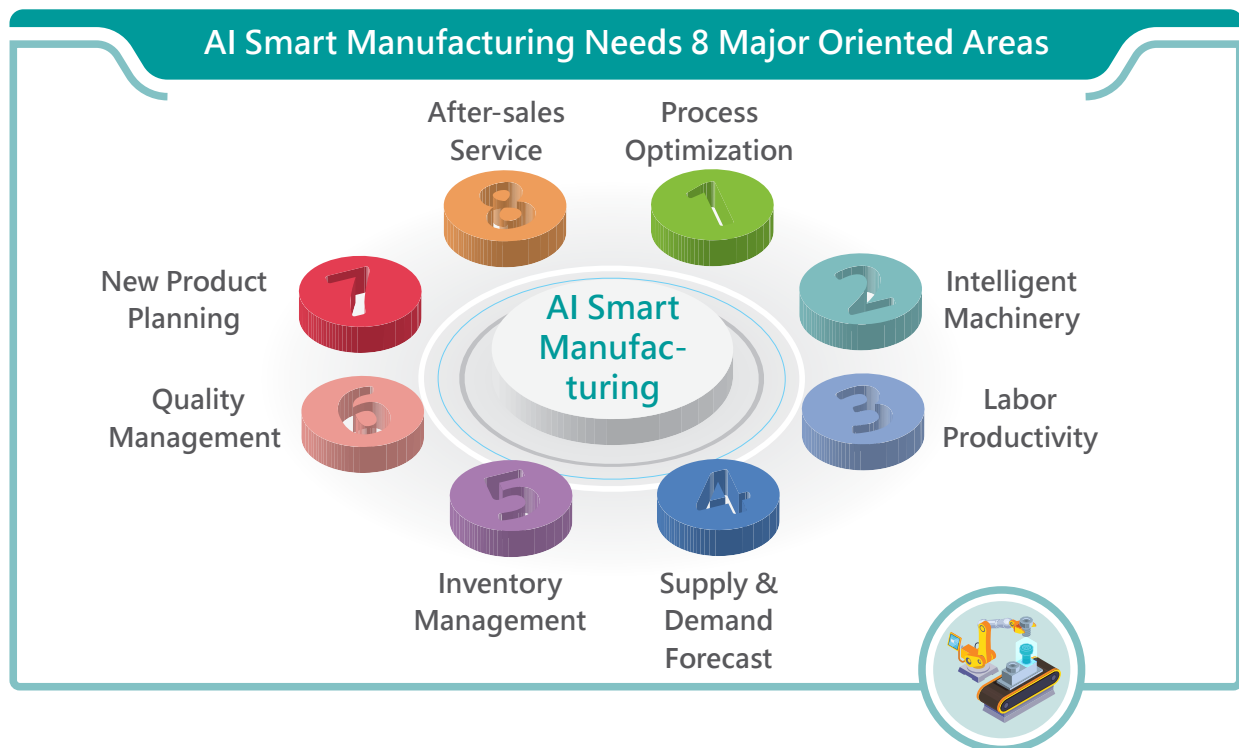
Acceleration of Biomedical Industry Innovation Program in the Central Region



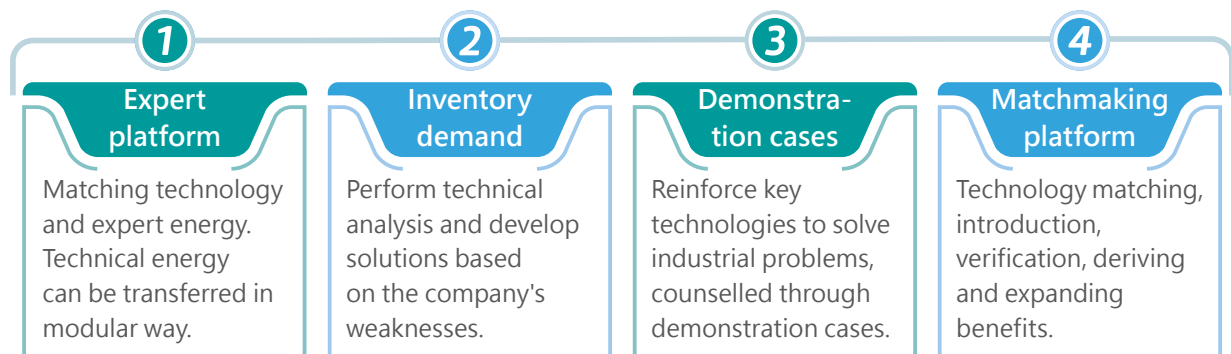
## ▶ CTSP Industrial AI Smart Manufacturing

In order to assist park manufacturers and guide the development of AI smart manufacturing, the Bureau specially commissioned the Industrial Technology Research Institute to handle the Industrial Artificial Intelligence at CTSP - Application Scheme of Intelligent Manufacturing Technology and provide free diagnosis of the AI Application in Smart Factories for key industries in the Park. Through on-site factory visits, the manufacturers' AI technology needs in 8 major oriented areas, application maturity and inventory technical pain points are determined, strengthening key technologies and

solving industrial problems. In addition, through the preparation of a platform for industry-university-research experts, technical analysis was carried out based on process weaknesses, demonstration cases were constructed and then imported into different industries for verification. The platform is used to match the technology and expert energy, so that the technical energy can be transferred in a modular way to facilitate replication and diffusion.



### Promotion Mission Statement



This project assisted 7 manufacturers in the development of 4 major types of AI smart manufacturing technology including Automated Optical Inspection (AOI), smart scheduling, process parameter optimization and quality improvement, and developed 7 Application solution technologies in accordance with the needs of industries and manufacturers, such as multiple feature image detection, key feature spatial image guidance, hybrid artificial intelligence classification. We have assisted 7 manufacturers including Silicon Precision, H.P.B. Optoelectronics, Everest Pharm., and Raystar in solving issues, and will further counsel the park manufacturers in the form of demonstration cases in the future to facilitate the diffusion of technology, simultaneously enhancing manufacturing competitiveness and supporting the upgrading of AI and smart manufacturing technology of park manufacturers.





Industrial Artificial Intelligence at CTSP - Application Scheme of Intelligent Manufacturing Technology Achievement Presentation

## 1.3 Combining Industry, Government, Academia and Research

### ▶ CTSP Industry, Academia and Training Exchange Platform

The CTSP Industry, Academia and Training Association was jointly established by CTSP and Chung Hsing University. It is one of the most important platforms for promoting industry, academia and training cooperation, promoting regional integration goals of industry-academia cooperation and establishing a cooperation network between manufacturers and the academic research community in Central Taiwan. Every year, the CTSP conducts forums, academic lectures and large-scale industry-academia employment fairs, etc., and will further continue to promote the industrial development of Central Taiwan and participate in industry-academia innovation activities, indirectly promoting cooperation between academia and industry.

In response to the impact of the COVID-19 epidemic on development trends worldwide, in 2020, the CTSP organized the Industrial Transformation, Development and Opportunities in the Post-epidemic Era - CTSP Industrial Innovation Industry, Government, Academia, and Research Exchange Symposium, with in-depth discussion from the perspectives of industry, government, academia, and research to share the challenges and opportunities faced by park manufacturers in the post-epidemic era, which stimulates new opportunities for industrial development.

In order to promote the development of industrial innovation and application, the CTSP also assisted in holding 2 innovation technology forums and 2 industry-academia matchmaking exchange meetings. Scholars from many universities and related fields attended to present innovative research results. Park manufacturers were invited to share development trends, technology applications and practical experience, to build a research and development matching platform for academic and industrial circles, while taking this opportunity to enhance and activate the industrial energy of the Park.



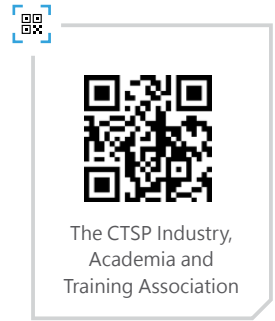
Industrial Transformation, Development and Opportunities in the Post-epidemic Era - CTSP Industrial Innovation Industry, Government, Academia, and Research Exchange Symposium



Innovation Technology Forum



Industry-Academia Matchmaking Exchange Meeting



## ► Taiwan Robot Industry-Academia Alliance

In order to promote the development of Taiwan's robotics industry, the Taiwan Robot Industry-Academia Alliance held a launching ceremony at the National Taiwan University Hospital International Conference Center on August 13. A total of 66 companies and schools including HIWIN and TECO joined the alliance. The ceremony was attended by representatives of the Ministry of Education, Ministry of Science and Technology, Bureau of Science and Technology under the Executive Yuan, Industrial Development Bureau under the Ministry of Economic Affairs, Industry Professional Assessment System (iPAS), and Deputy Director-General of the CTSP Bureau, etc., who together with the organizer's 3 directors, Taiwan Automation Intelligence and Robotics Association, jointly pressed the start button to announce the official launch of the Taiwan Robot Industry Academia Alliance. In the future, TAIROA will continue to make use of the Alliance to develop talent, licenses, competitions, industry-academia cooperation, corporate identity, talent matching, cross-industry cooperation, etc., further looking forward to more cooperation opportunities with CTSP in a more comprehensive mutual push between industry, government and science to upgrade Taiwan's industrial automation.





## ► Research and Development of Sophisticated and Innovative Products

In order to encourage and assist the park manufacturers to create innovative technologies, the CTSP Bureau promoted the Science Park R&D and Advanced Industry-Academia Collaboration Program, and further encouraged manufacturers to combine the R&D energy of academic research institutions to jointly conduct cooperative research on industrial heterogeneous integration and key technologies to stimulate Industry differentiation and high added value, cultivate high-quality R&D manpower required by the industry, and enhance national economic development and industrial competitiveness. A total of 4 subsidized R&D plans were approved in 2020, with an approved subsidy amount of NT\$11.56 million. In order to encourage park manufacturers to actively innovate, research and develop new products, special awards for excellent manufacturers' innovative products were set up.

2020 Innovative Products Awards		
<b>Biotechnology</b>	<b>Precision Machinery</b>	<b>Optoelectronics</b>
GeneReach Biotechnology Corp. AUO Crystal Corp. CH Biotech R & D Co., Ltd.	Gallant Precision Machining Co., Ltd.	AU Optronics Corp. – Taichung Factory H.P.B. Optoelectronics Co., Ltd. UVAT Technology Co., Ltd. - CTSP Branch

## 1.4 Strengthening International Cooperation

### ► Technology Exchanges and Visits

In order to move towards international development and enhance international influence, the CTSP Bureau is committed to matching domestic and foreign manufacturers, promoting visits and exchanges, international investment and participation in the activities of international science park organizations and associations, hoping to establish an international cooperation with a total of 16 science parks and the Asian Science Park Association (ASPA), including the United Kingdom, Spain, Russia, Japan, South Korea, Vietnam, China, India, Thailand and Germany. CTSP also joined three international science park organizations, ASPA, IASP and AURP, as well as the Federation of International Robot-Sport Association (FIRA), and actively participates in various international annual conventions to publish topics, increase international exchanges and cooperation, and actively recruit talent, technology and knowledge exchange platforms.

In order to deepen ties with sister parks, the CTSP Bureau conducted the following in 2020 :

- Formed the CTSP Taiwan-Indonesia Collaboration Platform with research units in the Park to jointly promote cooperation with the Agency for the Assessment and Application of Technology (BPPT) of Indonesia.
- The CTSP, Hsinchu Science Park and a sister park in India, Karnataka Innovation and Technology Society, held a video conference to discuss the implementation details of a memorandum of cooperation.
- Receiving many heavyweight VIPs such as the Israel Economic and Cultural Office in Taipei, the Honduran Embassy, and the Commercial Office of the Australian Office in Taipei to expand the space for international scientific and technological cooperation.

In order to promote good sustainable development, the CTSP Bureau has joined domestic and foreign industrial and commercial organizations in order to enhance exchanges with various enterprises and obtain the latest industrial and commercial information.

### CTSP Bureau Foreign and Domestic Cooperating Organizations

	Organization Name	Serving as
<b>Domestic</b>	Chinese National Association of Industry and Commerce, Taiwan	Member
	Taiwan Industrial Technology Association	Member
	Academia - Industry Consortium for Science Parks in Central Taiwan	Member
<b>Foreign</b>	Asian Science Park Association (ASPA)	Director
	International Association of Science Parks (IASP)	Member
	Association of University and Research Parks (AURP)	Member
	Federation of International Robot-Sport Association (FIRA)	Member



International Cooperation and Exchanges





## ▶ External Marketing and Active Investment Promotion

In order to continue promoting the development of Taiwan's high-tech industry, the CTSP Bureau is committed to domestic and foreign investment and marketing of the CTSP, actively seeking potential high-tech manufacturers, and encouraging understanding of the overall investment environment of the CTSP. In 2020, a total of 22 manufacturers were introduced to the CTSP with the total investment amount expected to be as high as NT\$ 9.147 billion.

Active attraction of investment	Domestic investment	Overseas investment	CTSP Marketing
A total of 22 manufacturers were introduced to CTSP for investment.	Held 9 investment promotion briefings.	Attended the CES exhibition in the US and solicited investment from vendors.	Participated in Taipei International Optoelectronics Week and 2020 Asia Biotechnology Exhibition to display the business performance of the CTSP and establish and strengthen the image of a high-quality park.

In terms of 2020 domestic investment promotion, 9 briefings were held in the Zhubei Biomedical Park, Nangang Industrial Zone Manufacturers Association, National Formosa University, CTSP Chung Hsing Park, Grand View Hotel in Yuanlin City, and Taipei Optoelectronics Exposition, etc. In addition, for the marketing of CTSP as well as investment and industrial promotion, the Bureau actively participated in large-scale domestic exhibition activities, including the Taipei Optoelectronics Exposition and 2020 BIO Asia–Taiwan, to show the business performance of CTSP and establish and strengthen the image of a high-quality park.



CTSP Erlin Park Investment Promotion Briefing Meeting Group Photo

In addition, in order to attract overseas high-tech manufacturers investment, the CTSP attended the CES exhibition in the United States in January 2020 for investment promotion. CTSP Accelerator led the CTSP Innovation team to participate in this exhibition, jointly demonstrating the innovative R&D energy and scientific and technological strength. In addition, a Science Park Joint Investment Promotion Seminar was held at the exhibition site to promote Taiwan's high-quality industrial environment and use the opportunity to invite manufacturers from all over the world to invest in Taiwan. During the meeting, the CTSP, Industrial Research Institute (ITRI) Incubation Center and the US incubator, 10X Innovation Lab, signed a memorandum of cooperation to further integrate international new innovation resources, creating the foundation for new startups from Taiwan to enter the US market.



2020 CES Three Science Parks Joint Investment Promotion Briefing Group Photo

## 1.5 Innovation Creates New Dreams

In order to implement an innovative economy and promote the transformation of the Park, the Ministry of Science and Technology initiated the From IP to IPO (FITI) incentive program to bridge the gap between innovation and entrepreneurship, assisting new startup teams to realize their dreams. The CTSP accompanies each team to grow and develop and actively provides solid guidance through the FITI Camp. Following three full days of brainstorming, the startup teams confirm their business model and ensure that the product is marketable. By means of consultations, lectures, forums and team workshops on different topics, practical guidance is offered to allow in-depth discussion with domestic and foreign industry professionals, strengthening the team operation model plans, and actively promote the development of innovation and new ventures in the Park.

In 2020, 45 groups of teams were selected for the FITI program to receive counselling from CTSP. Of these, 5 teams won the Outstanding Entrepreneurship Award, 8 teams won the Entrepreneurship Potential Award, 9 new startups were introduced into CTSP (one of which is already a park manufacturer) and assisted 31 teams to participate in entrepreneurial competitions to win awards or obtain government subsidy programs, as well as aided in matching the 2019 FITI team 7Cplay (now renamed Lightning Speed) to be selected for the Chunghwa Telecom 5G Startup Accelerator project. Other FITI teams raised about NT\$55 million in a total of 15 new matchmaking sessions. One of the teams mentored in 2019, the Turing Chain, also set up the Taiwan E-Portfolio Alliance at the Institute for Information Industry together with 20 educational institutions to offer blockchain graduation certificates. In addition, CTSP organized more than 10 matchmaking meetings, symposiums, and “Loser Alliance” exchange meetings, and led the team to visit t.Hub Taipei in Neihu and Taiwan Startup Terrace in Linkou, etc., to provide new entrepreneurs with diverse, cross-domain exchanges, converging new opportunities with new ventures.

As of the end of December 2020, 17 groups of start-up companies have entered the innovation and entrepreneurship field, a total of 190 FITI selected teams have been coached, and 94 teams have established companies.

### 2020 From IP to IPO (FITI) Winning Teams

Item	Round 1	Round 2
Outstanding Entrepreneurship Award NT\$2 million per team	Jingyi refinement	AIDirect
	Turing Chain	Tellurium
		Pin-I Biotech
Entrepreneurship Potential Award NT\$250,000 per team	Mingjiao Technology	KOLpower
	BaTalk	ActuaViz
		Raclean
	PackAge+	BMV
		MosAuto



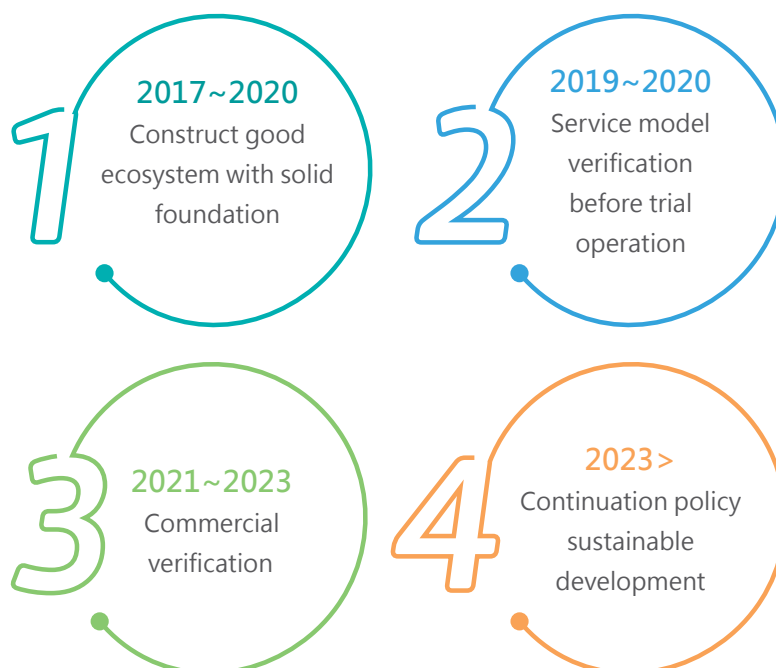
From IP to IPO (FITI) Program

The CTSP Bureau counseled startup teams to bravely enter the From IP to IPO (FITI) program competition of the Ministry of Science and Technology with great results.

## 1.6 Integration of Technological Creativity and Self-production

With the purpose of “cultivating the talent needed by a new generation of future industries and allowing self-production education to take root” as the establishment purpose of the CTSP self-production hub, the construction of a basic environment for smart robots has been completed. The CTSP continues to cultivate talent through experiential learning integrated with self-production hubs within accelerators, cultivating cross-domain talents for smart robots. The vision is to create a one-stop innovation and entrepreneurial ecosystem, derived from industry upgrades, industry chains, accelerated cultivation and talent cultivation, as well as other major policy axes to promote the upgrading of the CTSP smart robot-related industries and improve the innovation and entrepreneurship ecosystem. By the end of 2020, it has attracted more than 60,000 visits.

In order to continue the policy mission, the CTSP self-production hub has publicly selected the Industrial Technology Research Institute as an independent operating team, which will continue to operate independently from 2021, thereby promoting the upgrading of smart robot-related industries in the CTSP and verifying the financial and economic feasibility of the proposed operating project and activity scale.



In 2020, the CTSP focus was on AI, robotics and other related technologies, and introducing accelerators for entrepreneurship cultivation, assisting spin-off startups to become scientific undertakings in the Park, which created output value and employment opportunities. From 2017 to 2020, CTSP accumulatively attracted or coached 1,474 teams for the use of equipment and self-manufacturing plans (short-term and intermediate-level), attracted 99 teams to develop robot-related application plans (long-term and professional-level), produced 107 key technologies or products, assisted in the establishment of 49 robot-related startups or incubation centers and accelerators, created 485 job opportunities, and cultivated 19,673 talent positions in the smart robot and automation industry.

The CTSP Bureau held an online live broadcast joint achievement exhibition named the AI Assemble – CTSP AI Show to help the public quickly understand how AI will affect life in the future, such as with smart mobile fleets, how virtual and real integration technologies operate in unmanned factories. Also, with smart land and air vehicles, how does AI biologists assist farmers in farming with technology and wisdom, and further how AI deep learning technology is introduced into new drug development or how AI robots can flip teaching in the era of smart Education 4.0.



AI Assemble - CTSP AI Show  
Online Achievement Exhibition



Mechanical Arm  
Tool Central Point  
Measuring Instrument



Unmanned ground vehicle  
development



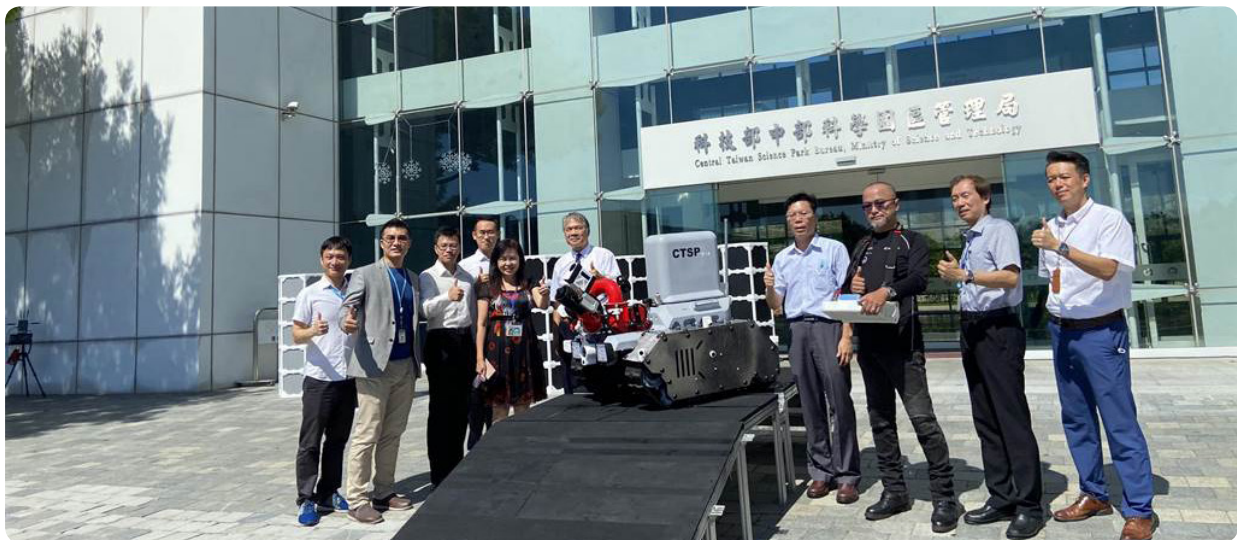
AI Robotics Hub at  
CTSP



## ► Science Park Guarded by AI

The AI Disaster Prevention Smart Robot exhibited by the CTSP AI Robotics Hub on September 21, 2020 is the first integrated application developed based on the requirements of the high-tech factory facilities of the Science Park by using the equipment of the AI Robotics Hub. The finished prototype was verified and guided by the Industrial Technology Research Institute and a professor of National Chung Hsing University as well as other experts. The implementation was completed in half a year, with field verification carried out by park manufacturer AU Optronics. This project demonstrated that through the integrated application of technology, in addition to improving disaster relief efficiency and safety, more valuable intelligent multi-functional disaster relief capabilities can be developed after expanded promotion, creating a more secure investment environment for park manufacturers and enhances the disaster prevention and response performance of various departments.

The AI Disaster Prevention Smart Robot launched by CTSP offers the functions of remote control, eight-directional radar obstacle detection, hazardous gas detection, intelligent visual fire source detection and identification, and other functions such as the unique AI automatic swivel system water cannon and anti-flip ladder functions. The body is equipped with a lightweight, simplified and user-friendly interface design. In a fire situation, compared with firefighters approaching at a distance of 8 to 10 meters, the Robot is able to perform at a distance of up to only 5 meters. In the future, with proper promotion, it can better secure the safety of the front-line firefighters and reduce the risks involved in their work. A patent is currently in the process of being applied for the prototype, while at the same time, a version 1.5 optimization and upgrading plan is being implemented. The next stage will be based on application needs for customized project development.



The Central Taiwan Science Park Bureau Announced the AI Disaster Prevention Smart Robots in 2020

## ▶ CTSP Smart Innovation and Entrepreneurship Competition

In order to stimulate the use of imagination and creativity in the student teams of domestic colleges and universities, conceive innovative technologies, goods or services, as well as cultivate a new generation of industry startup teams, the Bureau organized the CTSP Smart Innovation and Entrepreneurship Competition, focusing on three areas of smart machinery, smart medicine and artificial intelligence. The first competition in 2020 attracted 81 groups of new and innovative teams. The top 22 teams competed for the newcomer-of-the-year award in the May finals with a targeted marketing 180-second elevator pitch, i.e. introducing products, technologies, services or concepts in a short period of time to attract investors after listening to the briefing wanting more details, which is extremely challenging for the still young student team. Eventually, the National Yunlin University of Science and Technology's "Yuntech Catch You" team earned the top spot a prize of NT\$100,000.

The competition was held for the second time, and attracted 46 groups of new creation teams from all over Taiwan, while 17 new creation teams passed the preliminary review to advance to the finals. The winning team was selected at the CTSP AI Robotics Hub in October. In order to expand and encourage internal innovation, this competition was not limited to only student teams, so the qualifications were further opened to companies with development potential in the initial stage of establishment. In the end, MeansGood Agricultural Biotechnology Company walked away with the first prize and a bonus of NT\$100,000.

In order to continue to foster outstanding potential new startup teams and construct an innovation and entrepreneurship ecosystem in Central Taiwan, the winning teams selected in the finals will be further incubated by the CTSP AI Robotics Hub Accelerator through a series of coaching mechanisms and deepened links with the industry to effectively connect the critical mile between new innovation and the industry.



Group Photo of the Director-General with Judges Panel



Group photo of the Director-General, judges and participating teams



# Core Policies

Lorem ipsum dolor sit amet  
 consectetur adipiscing elit.

## Policy 2: Integrity Governance

- 2.1 Compliance with Laws and Regulations
- 2.2 Park Supply Chain
- 2.3 Information Security Management





+

+

Lorem ipsum dolor sit amet,  
 consectetur adipiscing elit.

+

Lorem ipsum dolor sit amet,  
 consectetur adipiscing elit.

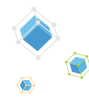
200.25  
195.01  
153.00

+


+

+

W O R K



As a public agency, the CTSP Bureau follows The Freedom of Government Information Law to protect the public's right to know. All affairs are administered in accordance with the law and confirmed by announcements and instructions, and further follow the Ethics Guidelines for Civil Servants Regulations set by the Executive Yuan to enable civil servants to perform their duties in an honest, self-sufficient, and impartial manner, and also administrate according to the law, putting an end to all corruption cases, implementing internal control systems, creating a friendly and fresh image with clean, law-abiding and dedicated service. With information development, come many information security issues. In order to reduce the information security risk and to maintain agile and complete information, thereby improving the overall quality of information services, the security of related data, information communication systems, equipment and networks, the CTSP cooperates with the Executive Yuan to encourage various agencies to strengthen the security management of information communication, and to establish a safe and reliable electronic government.

Corresponding Material Topics	Corresponding SDGs	Management Objectives and Policies
<ul style="list-style-type: none"> <li>› GRI 419 : Socioeconomic Compliance</li> <li>› GRI 307 : Environmental Compliance</li> <li>› GRI 205 : Anti-corruption</li> </ul>		<ul style="list-style-type: none"> <li>› Ensure that the Bureau does not violate the various economic, environmental and social laws and regulations.</li> <li>› Administer according to the law and limit the risk of possible violations of various laws and regulations.</li> </ul>

Commitments and Goals
<p><b>Short-term Goals</b></p> <ul style="list-style-type: none"> <li>› Continue to abide by various laws and regulations. Hold 5 sessions of environmental protection law and regulation explanatory meetings in 2021, and provide education and training related to park businesses.</li> <li>› Strengthen integrity governance, prevent conflicts of interest and implement risk control.</li> </ul> <p><b>Medium and Long-term Goals (3+ years)</b></p> <ul style="list-style-type: none"> <li>› Continue to implement the promotion, education and training of environmental and socio-economic regulations related to the Park business, with the hope of zero violations of major laws &amp; regulations.</li> <li>› Build the vision of clean governance and an honest society.</li> </ul>

Responsible Units
<p>Civil Service Ethics Office, Environment and Labor Affairs Division, Information Room</p>

Invested Resources
<ul style="list-style-type: none"> <li>› Each responsible unit regularly conducts identification of relevant laws and regulations and establishes corresponding management measures, while also assisting in publicity and business execution.</li> <li>› Organize workshops and seminars on relevant laws and regulations of the Park to help park manufacturers understand legal issues.</li> <li>› Annual training on environmental, anti-corruption and ethics related laws and regulations.</li> <li>› Establish a database of corruption risks for the organization, and assess that the base of operations includes up to 100% of all parks of the Bureau.</li> </ul>

**Complaints Mechanism**  
 Civil Service Ethics Office, Whistleblower email and phone number

- Management System and Evaluation Mechanism**
- ▶ Relevant procedures are stipulated in accordance with the Civil Servant Work Act, the Act on Recusal of Public Servants Due to Conflicts of Interest, and the Executive Yuan's Ethics Guidelines for Civil Servants.
  - ▶ Establish an internal control task force and internally audit operations in accordance with the internal control system.
  - ▶ Comply with relevant business regulations, such as environmental protection regulations, labor standards laws and other relevant government regulations.
  - ▶ The Civil Service Ethics Office compiles the Institutional Integrity Risk Assessment Report, completes the event risk assessment form and the personnel risk assessment form, and conducts regular assessment and revision.

- 2020 Performance**
- ▶ No violation of economic, environmental and social laws and regulations occurred.
  - ▶ A total of 10 environmental protection issues and regulations briefings, and 13 park business counseling meetings were handled.
  - ▶ According to the Act on Recusal of Public Servants Due to Conflicts of Interest, a total of 14 applications for self-recusal were submitted, 8 civil servants' integrity ethics code cases were accepted and registered, and 2 anti-corruption advocacy seminars were handled.
  - ▶ The Bureau has conducted a total of more than 1,600 inspections of public project and factory construction sites.

## 2.1 Compliance with Laws and Regulations

### 2.1.1 Regulatory compliance

This Bureau is a public agency, a non-profit institution, and does not apply anti-competitive behavior, nor violate antitrust or monopoly laws. It follows The Freedom of Government Information Law to protect the public's right to know, and all affairs are administrated in accordance with this law, as well as the Legislation in the administration of civil servants to handle all duties and business. The CTSP has always maintained a neutral administrative attitude towards politics, and no political contributions are made. None of the sewage treatment plants commissioned by the Bureau to operate on its behalf have had major leaks, and there were no violations of environmental protection laws and regulations. There were no violations of economic, environmental or social laws and regulations in 2020.

#### ▶ Transparent Procurement Operations

In order to enhance the professional knowledge of colleagues in procurement and the requirements for avoidance of conflict of interest, to be able to comply with the avoidance of conflict of interests in the process of procurement operations, ensure the fairness of procurement operations, improve the quality and efficiency of the procurement business of the Bureau, and to implement the transparency of procurement, the following actions were taken in 2020 :



- › Continued to conduct lectures and seminars on the Enforcement Rules of the Government Procurement Act-Related Laws and Regulations Promotion Briefings as well as the Enforcement Rules of the Government Procurement Act - Deficiency of Procurement Audits in order to diligently deal with the relevant knowledge and skills of purchasing operations, strengthen the main points of attention in various operations, complete the procurement procedures, and maintain the fairness and openness of government procurement operations.
- › Improved the Bureau's evaluation and selection procedures for the most favorable bid evaluation, planned the operation schedule appropriately according to the particular nature of each case, and handled the preliminary review opinions of the working group in advance to complete the selection work. Furthermore, before any selection meeting, attending members were asked if there were any unavoidable reasons for recusal, and the selection members were requested to sign and submit the Procurement Selection Committee Affidavit, paying more attention to whether the selection committee and the manufacturers have any vested interest relationship, and reminded the selection committee of their responsibilities in a timely manner to avoid situations that affect the fairness of procurement.
- › On August 14, 2020, the Procurement Improvement and Review Meeting was held aimed at further promotion of the Precautions for Procurement Cases and Procurement Anti-fraud Measures to make colleagues pay more attention to related government procurement errors, and uphold the principles of fairness and openness in handling procurement.
- › In 2020, the CTSP Bureau researched and compiled the Integrity Helper handbook, containing common anti-corruption risk cases, purchase precautions, the Ethics Guidelines for Civil Servants Regulations, conflict of interest avoidance and other related laws and regulations concerning integrity in order to further strengthen clean government knowledge and ability, as well as those matters that should be paid attention to when performing official duties.
- › Increased the promotion of the relevant provisions of the Act on Recusal of Public Servants Due to Conflicts of Interest in the CTSP Bureau's e-bulletin, with a total of 14 self-recusal applications filed accordingly in 2020.

## 2.1.2 Anti-corruption Policy

As a government department the CTSP Bureau follows all government laws and the principle of administrative neutrality. Employees should also have a full understanding of and abide by the Civil Servant Work Act and the Executive Yuan's Ethics Guidelines for Civil Servants Regulations as well as other relevant laws and regulations. The civil servants of this Bureau should administer in accordance with the law and avoid any conflicts of interest. It is forbidden to accept donations, banquets and dinners, special relationship lobbying of any kind from stakeholders. The relevant processing procedures for the foregoing behaviors should be clearly stipulated, and clearly follow the standards, making civil servants distinguish right from wrong, and ensuring integrity, self-sustainability, impartiality, and public interest in the performance of duties.

In order to implement an early warning mechanism and integrity risk management, the various anti-corruption operations are planned and executed by the CTSP Bureau Civil Service Ethics Office. Related issues of integrity are implemented in accordance with the Ministry of Justice Agency

Against Corruption annual governance goals for the sake of clean government with zero tolerance for corruption. The Civil Service Ethics Office of this Bureau handles the following business every year :

1. Institutional Integrity Risk Assessment Report : In accordance with the operational principles of corruption prevention, eradication, and re-corruption prevention, the Institutional Integrity Risk Assessment Database is updated every year, with the base of operations including up to 100% of all parks of the Bureau.
2. Makes use of the Bureau's Civil Service Ethics Office mailbox to publicize important anti-corruption policies and messages to fully 100% of all colleagues to strengthen publicity before specific holidays and festivals and pay attention to complying with the Ethics Guidelines for Civil Servants Regulations, and the concept of clean government.
3. Performs business audits : Through the implementation of audit operations, existing internal and external risks are identified in advance to prevent and reduce possible crises, with the aim of achieving a perfect system.
4. Acts as an early warning system for potential risk events or personnel breach : In the event of potential risk events or personnel breach, immediately report to a supervisor, taking preliminary precautions and then mentioning the internal control system of the Bureau.
5. Advocates corporate anti-corruption : Jointly organizes the Seminar on Promoting Business Trade Secret Regulation & Practice with the Ministry of Justice and the Taichung District Prosecutors Office, as well as the Central Taiwan Manufacturers Trade Secret Seminar in conjunction with the Ministry of Justice Investigation Bureau Taichung City Field Office. The CTSP also conducts Corruption Impression Index (CPI) anti-corruption publicity, urging companies to fundamentally integrate law-abiding business concepts and improve the protection of their own business secrets, so as to maintain industrial ethics and competitive order, and reconcile social public interests.
6. Strengthens the supervision and auditing mechanism of procurement cases : All bidding documents of this Bureau have stipulated anti-corruption regulations on conflicts of interest avoidance. All CTSP Bureau procurement cases are filtered and summarized by cross-comparison analysis every six months, and a procurement analysis report is prepared. If an abnormal situation is discovered, a Consolidated Table of Violations and Errors in Procurement Cases is completed and reported to the Department of Government Ethics of the Ministry of Science and Technology, and included in follow-up tracking to prevent the occurrence of abuses.
7. Researches and edits the Integrity Helper handbook : Compiles common anti-corruption risk cases, Ethics Guidelines for Civil Servants Regulations, and avoidance of conflicts of interest and other anti-corruption-related laws and regulations in order to strengthen the knowledge and ability of clean government, and the matters that should be paid attention to when performing official duties, assisting colleagues in administering according to the law.
8. Carefully handles public (manufacturer) reports and petitions : Actively investigates and prevents fraud by investigating and dealing with park businesses related public reports and petition cases carefully, and report the investigation to the Director by documentation as well





as providing a letter to the petitioner, to maintain a clean and honest image of this Bureau, and use it to understand the areas where this convenient service need to be improved, and develop improvement plans to provide reference for related organizations.



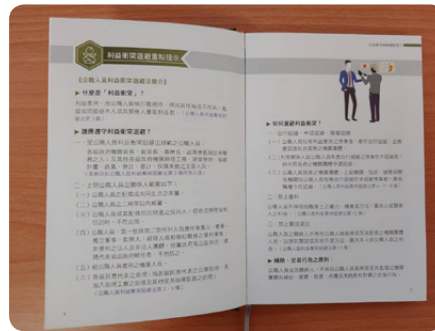
Seminar on Promoting Business Trade Secret Regulation & Practice



Central Taiwan Manufacturers Trade Secret Seminar



Integrity Helper handbook



Civil Service Ethics Office

### Civil Service Ethics Office Whistleblower Hotline :



Tel : 04-25658588 Ext. 6801, 6811 or 6813

Email : discipline@ctsp.gov.tw

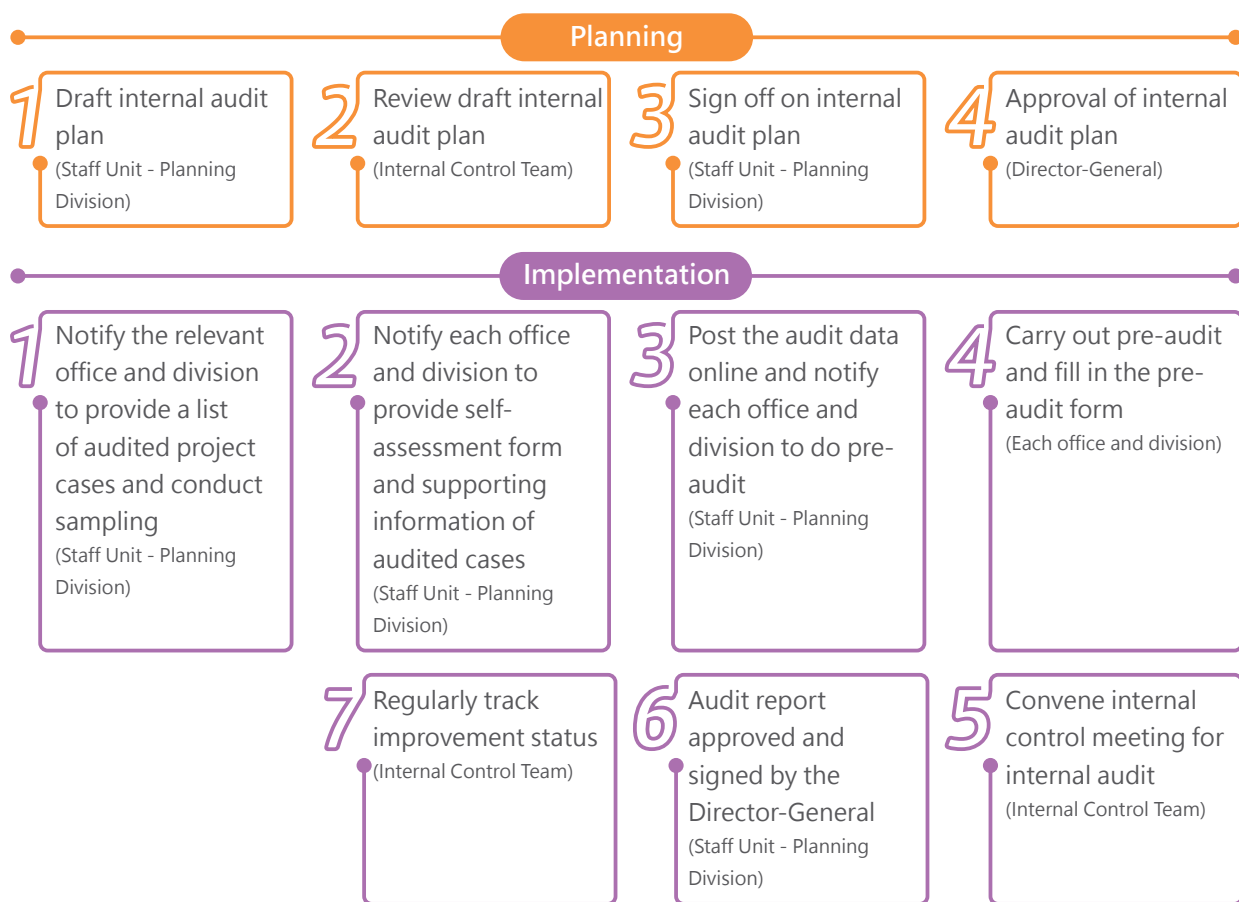
Fax : 04-25658822

## 2.1.3 Internal Control

The CTSP Bureau conducts business in line with the relevant regulations on internal government control issued by the Executive Yuan, and actively promotes various internal control work. The CTSP Bureau established an internal control task force, with the Deputy Director-General serving as convener, the Chief Secretary as the deputy convener, and the directors of various units serving as members of the committee. The planning and implementation of internal control operations are carried out by each office and division according to the nature of the business, while staff work is performed by the Planning Division. The internal control task force meeting, in principle, is held once every three months to review the internal control opinions submitted by the Control Yuan, the National Audit Office and the Ministry of Science and Technology, review the internal control system, plan and conduct self-assessment and internal audits, and handle the signing of the internal control declaration.

This Bureau conducts internal audit operations every year to check the establishment and implementation of internal control, provide timely improvement suggestions, or provide suggestions or early warning opinions on the economy, the efficiency and effectiveness of the use of agency resources, and major challenges related to management and future performance, in order to detect and prevent abnormal events in real time, so as to reasonably ensure normal business operations. After the audit is completed, the audit report is to be completed within 2 months and sent to the Director-General for approval. Any internal control deficiencies and the implementation of reform proposals are to be tracked regularly.

### CTSP Bureau Annual Internal Audit Operations Implementation Process



## 2.2 Park Supply Chain

The CTSP Bureau's approach to supplier management, in addition to complying with the Enforcement Rules of the Government Procurement Act, is also to conduct on-site inspections on relevant regulation compliance of the social and environmental aspects. There are also relevant regulations and norms for the management of park businesses such as annual labor inspections, factory visits, environmental supervision, holding promotional meetings and other management actions. Furthermore, the Bureau responds and manages according to the material topics of the relevant stakeholders, which shows the importance and significance of sustainable development to the CTSP Bureau and related value chain partners.



## ► Compliance with the Government Procurement Act

All procurement projects of this Bureau for various projects, labor services, and property are subject to bidding in accordance with the Enforcement Rules of the Government Procurement Act. After each unit requiring procurement generates a list of recommendations for selection committee members on the Public Construction Commission website, the head of the business unit will appoint the selection committee. Vendors are then selected based on the principles of transparency, fairness and competitiveness.

The procurement contracts of this Bureau follow the model procurement contracts provided by the Public Construction Commission, and contain relevant legal norms and ethical regulations, including insurance, employer responsibility, the People with Disabilities Rights Protection Act, and the protection of specific ethnic groups' rights to work according to the Indigenous Peoples Employment Rights Protection Act, etc., and are 100% in line with human rights conditions. Winning bidders in 2020 are all companies registered in Taiwan. The procurement categories are divided into property, engineering, and labor services. The number of purchases in each category, the purchase amount, and the percentage of the total annual amount are shown in the following table :

Year	2018			2019			2020		
Item / Category	Number of Procurement Projects	Amount (NT\$1,000)	Ratio of annual total amount	Number of Procurement Projects	Amount (NT\$1,000)	Ratio of annual total amount	Number of Procurement Projects	Amount (NT\$1,000)	Ratio of annual total amount
Property	58	251,083	9.68%	14	136,423	2.79%	18	73,845	2.25%
Engineering	29	1,753,168	67.57%	31	2,174,690	44.59%	26	2,352,598	71.52%
Labor Services	74	590,198	22.75%	68	2,566,488	52.62%	69	862,807	26.23%

## ► Supplier Performance Management

In 2020, when reviewing this Bureau's official car rental procurement case, it was found that the vendor had violated the vehicle insurance contract and was suspected of illegality, and then was asked to recover the paid premium difference according to the contract. The vendor details were published on the Taiwan Buying Network bulletin according to the Enforcement Rules of the Government Procurement Act as a prohibited vendor, and the suspected illegality was referred to the judiciary for investigation according to the law.

In order to improve the procurement expertise of colleagues, this Bureau organized the 2020 Seminar of Government Procurement Act - Deficiency of Procurement Audits on September 18, 2020, and gave a special lecture on "The Essentials and Common Mistakes of Purchasing Contract Insurance" to enhance colleagues' understanding of the tender contract insurance agreement of each procurement case and the matters needing attention in handling insurance, strengthen the literacy of colleagues related to procurement laws and regulations, and improve the quality and efficiency of procedures for handling cases with this Bureau's procurement.

In addition to strengthening the promotion of relevant management performance matters, the Bureau also paid attention to reinforce its performance. At the 29th meeting of the Internal Control Team of this Bureau on July 22, 2020, revision of the inspection procedures for insurance in the internal control ZZ05 Procurement Business system of this Bureau were discussed and approved, including the relevant insurance inspection status of each procurement case in the inspection/acceptance record, to further strengthen the anti-fraud effectiveness of the Bureau's contract performance management, and protect the rights and interests of this Bureau.

## ► Contractor Environmental Inspection

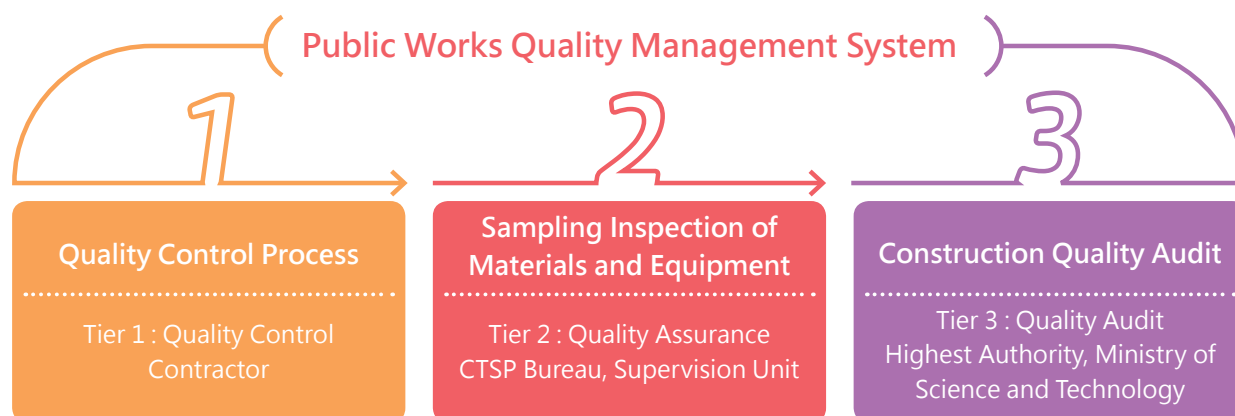
All public projects of this Bureau are open to public tender and the contractors handle all the construction work. The contractor's construction plan and matters to be handled shall be checked before the construction begins according to the contractual division of powers and responsibilities



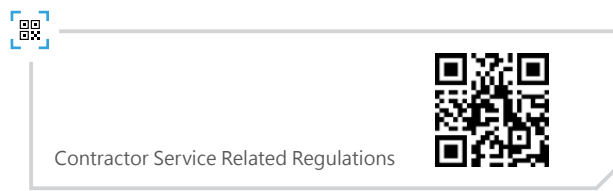
as prescribed in the contract. To reduce issues related to responsibility violations of the competent authority during the construction period, reasonable expenses for environmental protection are listed in the contract by the Bureau.

During the construction period, the contractor shall conduct all environmental protection and water and soil conservation work in accordance with environmental regulations and water and soil conservation laws and provisions in the contract, as well as in accordance with the principles of ecological engineering. In addition to the contract terms, the contractor shall follow the construction plan and construction schedule network diagram, and also regularly conduct construction reviews, safety health and environmental protection meetings, and coordination and organization meetings to control the progress and quality, safety and health, environmental protection, disaster prevention during flood season, emergency response, ecological conservation, maintenance of traffic, cultural heritage protection and other relevant issues on a monthly basis.

In order to strengthen the quality management of public works, this Bureau follows the three-tier quality management structure system of public works construction quality management. The project manager shall send personnel to the construction site from time to time to supervise the construction of the project. If there are any deficiencies, it is the responsibility of the contractor to improve the response and verify such by the contractor supervision unit, which is then archived for future reference after being assessed as acceptable. If the competent authority visits the construction site to perform supervision, assessment or various inspections, and imposes fines or suspends work in accordance with the Soil and water Conservation Act or other environmental protection and soil and water conservation related laws, the contractor shall be responsible for paying the fines and making improvements until the competent authority agrees.



Additionally, no matter whether it is the construction of a new plant or an expansion project for an existing manufacturer, both will involve construction site management operations. Therefore, to effectively control construction projects, it is required to standardize sites by properly installing appropriate pollution prevention and control facilities to ensure that the work site complies with the Water Pollution Control Act and various air pollution control regulations, in order to reduce the impact of the construction on neighborhood residents. This Bureau conducts inspections on public works construction sites in the Park and self-constructed factories from time to time every year. According to statistics, there were more than 1,600 inspections in 2020.



### ► Erlin Park Public Works

With the continuous development of Central Taiwan Science Park as a whole, the Erlin Park site project is continuously underway. Therefore, the Bureau attaches great importance to how to effectively control and standardize the construction projects and requires the installation of appropriate pollution protection facilities to reduce air pollution such as dust, and reduce the inconvenience the construction projects bring to the public. To this end, the Bureau cooperates with the Park development construction work and conducts inspections of construction sites from time to time. In accordance with the relevant provisions of the Water Pollution Control Measures and Test Reporting Management Regulations, the construction site shall check the Construction Site Runoff Wastewater Pollution Reduction Plan before construction and submit it to the competent authority for approval. For the Siangshihliao and Wanhe farm settlements, it shall cooperate with construction control to prevent the impact of long-term operation of high-noise machinery and tools.

The Park has adopted the Mobile Pollution Source Autonomous Management Plan to improve the control of exhaust emissions from diesel transportation vehicles used in transportation activities as an environmentally friendly measure. The Bureau requires all business units in this park to provide Stage 4 (inclusive) diesel or Stage 3 diesel vehicles with smoke filters used in transportation activities in the Park.

Key Management Projects		
Construction site signage	Site perimeter fence	Material stacking and covering
Paved roads	Cover ground to prevent dust	Site entrances and exits
Exterior dust cover over construction structure	Upper level materials conveyance	Transportation vehicles with material securing and covering equipment



Bare work surface areas are covered with netting to prevent dust



Vehicle washing platform at the entrance and exit of the construction site



## 2.3 Information Security Management

### ► Information environment protection

With the continuous innovation of the internet and technology, the CTSP Bureau, as a government agency, has passed ISO 27001 : 2013 Information Security Management and BS 10012 : 2017 Personal Information Management verification standards, regular information security and health inspections, organized internal information security, social engineering education and training, annual information security seminars, etc., and continue to be updated on software and hardware equipment, with relevant preventive measures implemented. In response to the COVID-19 epidemic in 2020, information security seminars were conducted online, and held seminars on the CTSP core corporate expertise, Know-how, covering the aspects of legal regulations, protection establishment, maintenance methods, illegal effects, relief procedures, practical sharing and reconnaissance personnel education and training, comprehensively improving pre-prevention and post-mortem reduction. In the past three years, this Bureau has not had any leakage of important information.

The CTSP Bureau also planned various information security seminars to strengthen the concept of information security :

Policy	Reconnaissance	Resources
<p>The Bureau and Ministry of Justice worked together to assist manufacturers to establish a protection mechanism to protect business secrets, providing thematic seminars on Trade Secret Protection and Criminal Investigation and Protection of Trade Secrets and System Improvement, assisting the enterprises to construct a comprehensive trade secret protection framework from the perspectives of defining legal requirements, breach of responsibilities and corporate remedies.</p>	<p>To enhance the professional knowledge of internal investigators, co-organized the Trade Secret Protection and Criminal Investigation training seminar with the National Police Agency to conduct pre-prevention and publicity measures to reduce post-incident damage, enhance corporate protection awareness, strengthen investigation cooperation procedures, and strengthen evidence preservation.</p>	<p>The Ministry of Justice Investigation Bureau and private trade secret experts cooperated to hold a keynote speeches regarding Corporate Operation Information Protection - Leakage Warning and Risk Identification and Corporate Intelligence Strategies and Digital Value Layout, etc., to provide companies with individual counseling, establishing a Know-how protection network for the core technology of the enterprises, hoping that enterprises plan early and make good use of resources such as government and private experts.</p>



Corporate Intelligence Strategies and Digital Value Layout



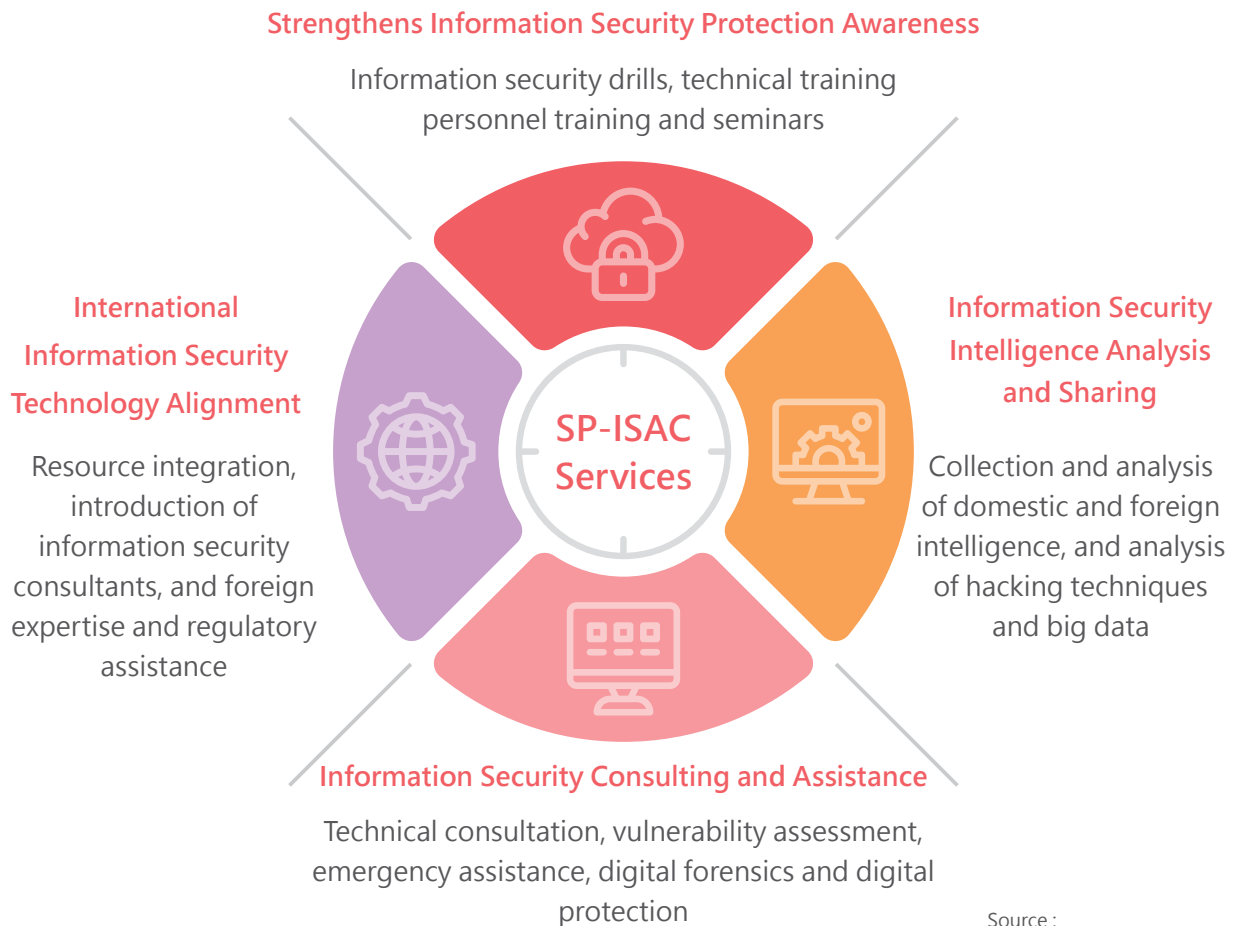
For further information security related policies, please refer to the CTSP official website.



## ► The Science Park Information Sharing and Analysis Center

The Science Park Information Sharing and Analysis Center (SP-ISAC) as planned by the Ministry of Science and Technology is exclusively dedicated to the Hsinchu, Central Taiwan and Southern Taiwan Science Parks. Through research and analysis, the sharing of information security knowledge and integrating international information security technology, technical training, personnel training, services such as seminars and assistance in information security drills, park manufacturer's information security management personnel can grasp the latest attack methods and propose countermeasures, achieve early warning, improved assistance, emergency response and other protection targets, while strengthening the internal information security management and protection capabilities of the Park.

In order to assist park manufacturers to build a comprehensive information security defensive network, an online information security seminar lecture was held in 2020, and three technical experts who have served in the information industry for many years were invited to present speeches. The seminar content included : Building an information security defensive network, strengthening internal and external defensive boundaries, SP-ISAC connecting and fighting against ransomware, and new blueprints for information security response, providing insightful analysis of information security defensive work. On the same day, about 40 CTSP manufacturer representatives, related businesses and information personnel were invited to participate online, while 10 participants attended enthusiastically on site.



Source :  
National Center for High-performance Computing

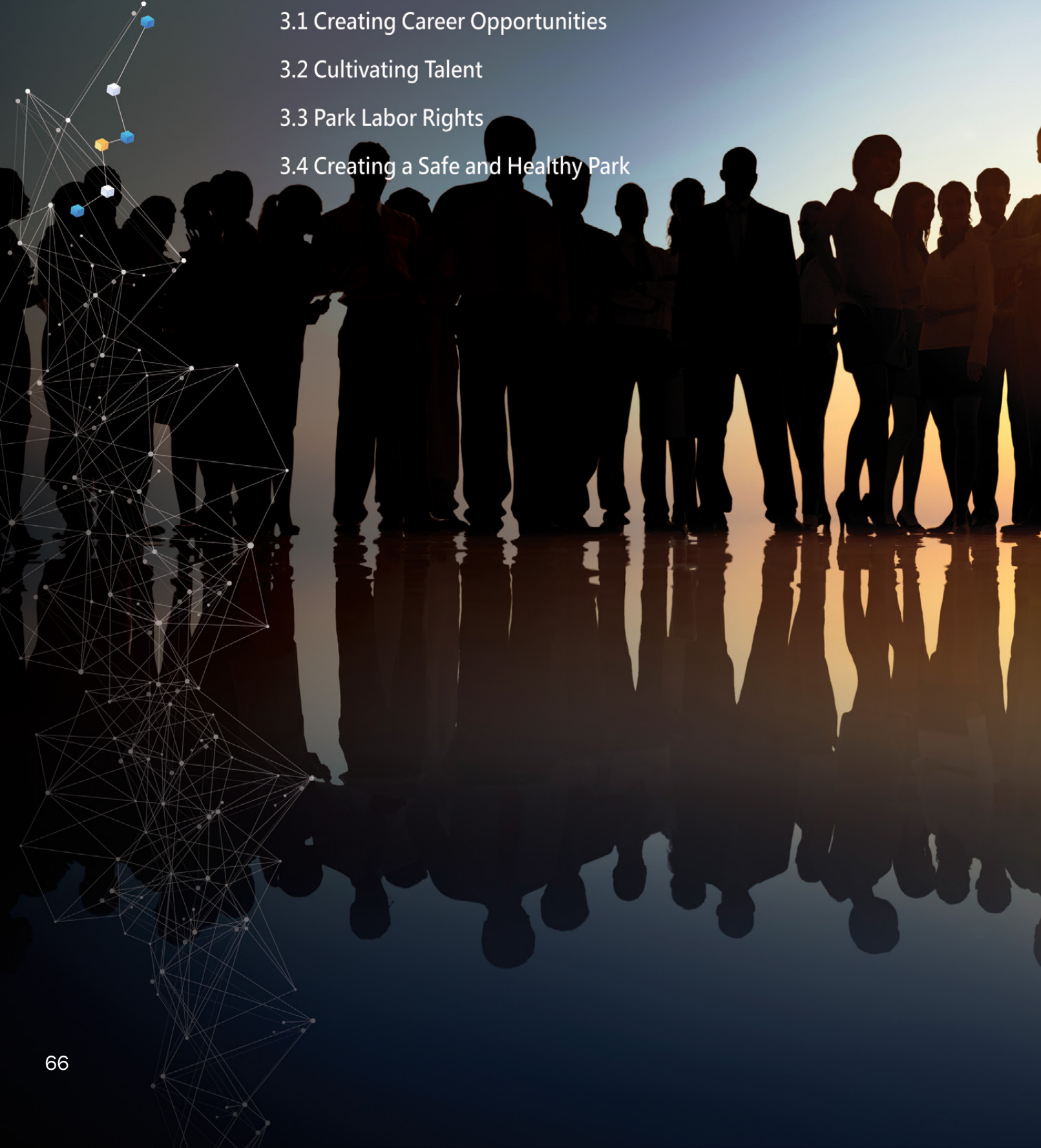
# Core Policies



Lorem ipsum dolor sit amet, consectetur adipiscing elit.

## Policy 3: Workplace Safety and Health

- 3.1 Creating Career Opportunities
- 3.2 Cultivating Talent
- 3.3 Park Labor Rights
- 3.4 Creating a Safe and Healthy Park








200.25  
195.01  
153.00



In order to assist park businesses in recruiting high-quality talent and building a healthy workplace, the CTSP Bureau organized recruitment events to attract all kinds of talent, matching overseas talent to return to Taiwan to contribute their expertise, actively cultivating high-quality R&D manpower, and promoting occupational safety and health related work in the Park. The CTSP Bureau also handles various labor inspection plans and labor complaints in the Park, actively solving park labor disputes with appropriate laws and reasonable solutions, and combining various activities to promote and implement the protection of labor rights, and most importantly promote labor health and construct a working environment that is friendly, healthy, and humanized.

Corresponding Material Topics	Corresponding SDGs	Management Objectives and Policies
<ul style="list-style-type: none"> <li>▶ Safe Workplace Audits</li> <li>▶ CTSP Labor Relations</li> </ul>	  	<ul style="list-style-type: none"> <li>▶ Establish a good working environment to attract talent to work in the Park.</li> <li>▶ Prevent manufacturers from violating human rights and labor-related laws and regulations, and reduce occupational safety risks.</li> <li>▶ Carry out the cultivation subsidy plan and provide new creation and cultivation resources.</li> </ul>

Commitments and Goals
<p><b>Short-term Goals</b></p> <ul style="list-style-type: none"> <li>▶ Continue to conduct at least 4 publicity briefings related to labor laws and regulations, and conduct a total of 88 sessions of labor condition inspections (including work gender equality inspections), and labor law compliance visits in 2020.</li> </ul> <p><b>Medium and Long-term Goals (3+ years)</b></p> <ul style="list-style-type: none"> <li>▶ Actively promote a harmonious labor-management relationship in the Park, promote enterprise workplace equality, and build the CTSP Park into a friendly workplace.</li> <li>▶ Construct a sustainable and disaster-free, healthy workplace environment, with zero workplace injuries and occupational accidents.</li> </ul>

Responsible Units
<p>Environment and Labor Affairs Division</p>

Invested Resources
<ul style="list-style-type: none"> <li>▶ The Environment and Labor Affairs Division undertakes the general publicity of labor laws and regulations, and carry out inspections of park manufacturers.</li> <li>▶ Organizes labor law promotion meetings, labor conditions inspection, labor supervision and inspection, occupational safety and health-related project counseling plans, occupational safety and health-related laws and regulations training and briefing sessions.</li> <li>▶ Handle the Science Park Talent Cultivation Subsidy Program and Science Park Professional and Technical Talent Training Program.</li> </ul>

**Complaints Mechanism**  
 Whistleblower Hotline : 04-25658588, Director-General's mailbox, and communications from other agencies

**Management System and Evaluation Mechanism**

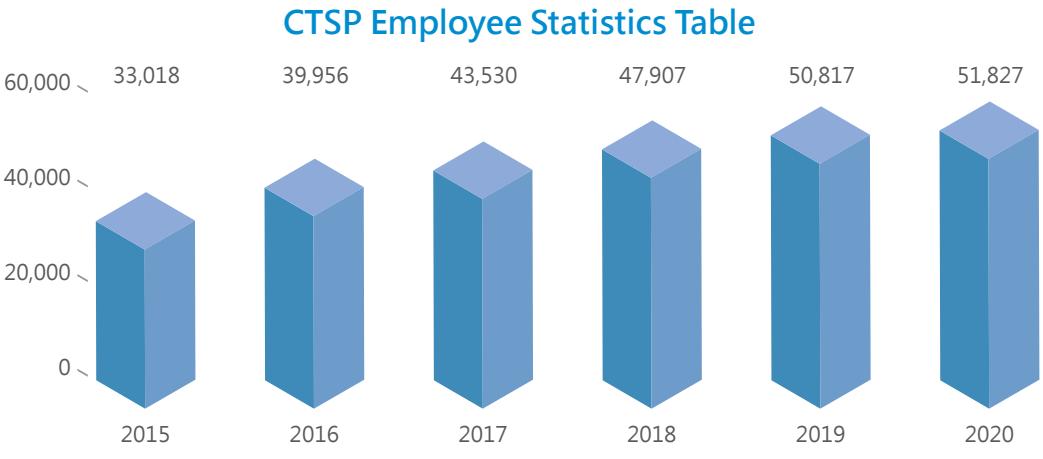
- › Inspections of the labor conditions of park manufacturers are conducted in accordance with the Labor Standards Act, Act of Gender Equality in Employment, Labor Pension Act, Labor Insurance Act, Employee Welfare Fund Act and other related laws and regulations.
- › Implement labor supervision and inspection in accordance with relevant occupational safety and health regulations.

**2020 Performance**

- › Held 36 various talent recruitment activities.
- › Organized 3 labor law promotion meetings and conducted 73 labor conditions inspections (including gender equality inspections).
- › Implemented a total of 12 special inspection plans and 557 labor supervision and inspections under the labor supervision and inspection plan.
- › Handled 2 occupational safety and health related project counseling plans, and 12 occupational safety and health related laws and regulations training seminars.

### 3.1 Creating Career Opportunities

As the number of CTSP manufacturers has grown year by year, the number of employees in the Park has also continued to increase. In December 2020, the number of employees has reached 51,827, an increase of 1.99% from 2019. The semiconductor industry accounted for 40.23% of the number of employees, followed by the optoelectronics industry with 35.92%. According to the distribution of education level, the proportion of employees with a college degree or above was as high as 77.05%, while by gender, the proportion of males and females was 65.62% and 34.38% respectively. As of the end of 2020, 26 manufacturers have entered the first phase of the Erlin Park. With the continuous increase in the number of manufacturers, the number of employed people will continue to increase in the future, resulting in the promotion of local prosperity.





In order to assist park institutions in recruiting high-quality talent and promote the employment of locals in the Park, the CTSP Bureau cooperates with the Central and local governments to provide complete and customized employment matching services. As this has been postponed due to the COVID-19 epidemic, the number of job vacancies was slightly less than in previous years, however there is still a demand for talent.

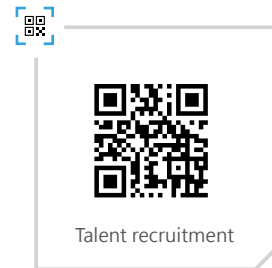
Manufacturers' joint recruitment event	Single-manufacturer recruitment event
<p style="text-align: center;"><b>2 events</b></p> <p>On April 25 and August 1, 2020, two Manufacturers' Joint Recruitment Events were held with the Taichung City Employment Services Office. A total of 36 companies offered more than 1,392 job vacancies, with a matching rate of 49%.</p>	<p style="text-align: center;"><b>34 events</b></p> <p>With the Workforce Development Agency of the Ministry of Labor, Yunlin-Chiayi-Tainan Branch and the Taichung City Employment Services Office, we assisted park manufacturers to hold single-manufacturer micro-talent events to meet their individual manpower recruitment needs.</p>



Recruitment event group photo



Constant stream of job-seekers at the recruitment event



### ► Overseas Talent Bridging Program

Under the current trend of global talent competition, in response to Taiwan's industry, academia and research sectors' needs for forward-looking scientific research talent and the expectations of overseas talent returning to Taiwan, the Bureau cooperates with the government in promoting forward-looking infrastructure and industrial innovation. For example, the Ministry of Science and Technology handles the bridging plan for the return of overseas talent, actively promotes the online supply-demand matching mechanism between overseas scholars and domestic industry-academia-research institutes, arranges for overseas scholars to return to Taiwan to participate in Overseas Talent Domestic Exchange Meetings to visit manufacturers and research institutions and have discussions and exchanges, creating opportunities for face-to-face matchmaking between industry-academia-research institutes and high-level talent. In order to encourage overseas scholars to return to Taiwan for employment development, the Bureau arranges incentives for industrial innovation and stimulates technological advances as the goal plan.

Considering that the COVID-19 epidemic is not yet over, and in order to avoid group activities increasing the risk of infection, the 2 sessions of the 10-day LIFT O2O Conference originally planned to be held were changed to online video format and renamed the LIFT2.0: 2020 International

Online Matching Meeting, providing free online meeting room link information, including online industry-academia-research institute seminars, experienced scholars' talks about inter-term stay in Taiwan, PhD-level talent career planning resume courses, as well as health care and professional consultation.

## 3.2 Cultivating Talent

In order to meet the needs of park manufacturers for recruiting and training technical personnel and to improve the professional knowledge and skills of CTSP Park manufacturers' employees, the CTSP Bureau continues to hold the CTSP and Advanced Research Park Professional and Technical Personnel Training Program every year, and totally developed the photovoltaic and solar energy fields, technology operation and management field, semiconductor technology field, and biomedical field. There are also five types of courses in the field of precision mechanics. Not only do they provide multiple learning channels for the employees of the park manufacturers, but also assists manufacturers in the Park to improve the quality of on-the-job manpower and cultivates outstanding professional and technical personnel, building the core and key capabilities of the employees in the Park. In 2020, the Bureau continued the original physical courses and offered a total of 19 training courses in 5 categories, with a total of 599 attendees. The Bureau also begun to promote digital learning courses, focusing on other science and technology, and business management fields, providing convenient access for employees in the Park. The online learning method effectively saves time and space, and achieves the purpose of high-efficiency learning. The overall satisfaction survey index of the students after class is over 90%, and the average satisfaction of the course content to work practicability and promotion of future development is over 90%, showing that the course content and execution quality of this program as a whole meet the needs of employees and manufacturers.

### ► Science Park Talent Cultivation Subsidy Program

All colleges and universities around the Park were encouraged to jointly offer modular and corporate internship courses through industry-academia cooperation. The practical needs of manpower in the technology industry were mastered, and practical experience through corporate internship opportunities were increased. In addition, through corporate internship opportunities increase practical experience, enhanced the employment function of prospective graduates, shortening the gap between the workforce in the science and technology industries, effectively filling the manpower gap required, thereby implementing the program for high-quality talent taking root. In 2020, subsidies for a total of 13 module courses and corporate internship courses in 8 schools, with a subsidy amount of NT\$8 million was approved, and it is estimated that the total number of trainees reached 684.



## 3.3 Park Labor Rights

### ► Promoting Labor Rights

The CTSP Bureau is committed to building a friendly park. In 2020, a total of 3 publicity meetings were held on the Labor Standards Act, Act of Gender Equality in Employment, and the Regulations for the Allocation and Management of the Workers' Retirement Reserve Funds. The Employment Discrimination Review and Gender Employment Equality Committee was also set up. If any gender equality complaints are received, a meeting is to be held for deliberation in order to build a friendly workplace in the Park. On the other hand, the Bureau cooperates with the Ministry of Labor to handle various labor condition inspection plans and labor complaints in the Park, and continues to strengthen labor condition inspections to ensure the protection of labor rights. Regarding labor disputes in the Park, the Bureau adopts a positive mediation attitude, guiding both labor and management to follow the law, eliminating labor disputes with appropriate laws and reasonable solutions.

In addition, in order to promote the proper leisure activities of the workers in the Park, cultivate a sports atmosphere, and promote the physical and mental health of the workers, this Bureau held the CTSP Cup Softball Tournament, basketball games and road running activities in 2020.



The AUO Mustangs competed against the Taiwan Meiguang for the championship, striking hard!



SPIL competes against TSMC and scores points on inside pass!

### ► Workplace Equality

The CTSP Bureau guarantees equal employment opportunities for employees in its jurisdiction, prevents employers from discriminating against job applicants or employees, or has gender-based unfair treatment, and eliminates gender discrimination in the workplace. Article 2 of the Implementation Rules of the Employment Service Act and Article 5 Item 1 of the Gender Equality in Employment Act stipulates the establishment of the Employment Discrimination Review and Gender Employment Equality Committee of the Central Taiwan Science Park Bureau under the Ministry of Science and Technology. In 2020, one such review meeting was held, and in the meeting, in addition to the explanation of the Park's gender equality work, one case of gender equality appeals was considered. The result of the review was that the Gender Equality in Employment Act was not violated.

On September 16, 2020, in order to strengthen and implement related human rights issues, the Bureau followed The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)

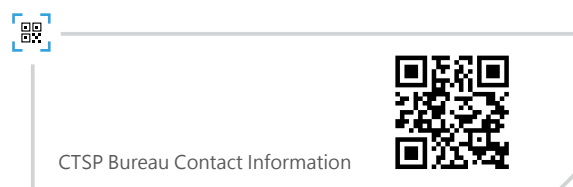
and conducted a seminar on the promotion of workplace equality related laws and regulations. The lectures included the Act of Gender Equality in Employment, the prevention of sexual harassment and other related laws and regulations. The Taichung City Government Health Bureau was also invited to promote Creating a Friendly Breastfeeding Environment in the Workplace in order to enhance the professional knowledge of the manufacturer personnel and promote the equal employment rights in the workplace. There were 26 manufacturers participating in this seminar.

This Bureau actively counsels park manufacturers to promote equal rights in the workplace, and annually organizes the Outstanding Public Institution evaluation activity on Promoting Equal Rights in the Workplace to encourage enterprises to actively implement labor laws and regulations and build a harmonious working environment. In the 2020 event, Gallant Precision Machining Co. earned the Special Award, and Taiwan Nitto Optical Co. and Winstar Display Co. the Outstanding Award. In addition to statutory matters, the promotion of other workplace equality issues includes the promotion of gender wage equality and the Female Executives Association, flexible work arrangements, priority parking spaces for pregnant women and exclusive dust-free clothing, etc. The intention to promote equal rights in the workplace can be seen everywhere.

### ► Labor Complaints Status

Inspections of the labor conditions of public institutions in the Park are continuously implemented in accordance with labor complaints, the Ministry of Labor's project inspection plan and custom inspection plans. The inspections check for violations of the Labor Standards Act, Act of Gender Equality in Employment, Labor Pension Act, Labor Insurance Act, Employee Welfare Fund Act and other laws, which stipulate that if there are violations found, the business unit will be notified to immediately improve and be punished according to law.

A total of 55 labor complaints were received in 2020 (reporting public institutions for violating labor laws and regulations). For those complaints which were suspected of violating the law, personnel were dispatched to perform labor condition inspections. Among these, a total of 16 were fined in accordance with the law with 5 cases related to overtime work, 5 cases not paid for overtime work, and 6 violations of the Labor Standards Act. In addition, notice was sent to the complainant of the inspection results and the circumstances of the ruling, and the business units were also instructed to make improvements. The other 39 cases were as a result of the complainant's misunderstanding of the laws and regulations and no violations of the law were found. The relevant regulations were explained in detail in reply to the complainant. In 2020, a total of 73 labor conditions inspections (including gender work equality inspections) were conducted, and 23 cases were fined according to law. Of these 10 cases were for overtime work, 5 cases were not paid for overtime work, and 8 cases were of other violations of the Labor Standards Act. In 2020, there were no violations of regulations on gender equality in work, employment discrimination, etc. by the park manufacturers.





### 3.4 Creating a Safe and Healthy Park

In advocating occupational safety and health, counseling, and performing labor inspections, the Park adopts a one-stop service and advance safety assessment and guidance mechanism through information technology to strengthen business units' self-management and expansion of the full staff participation mechanism. In addition, diversified use of disaster prevention resources is utilized in order to effectively improve the overall safety and health standards of the Park, promote labor health and labor inspection efficiency, and construct a safe, healthy, and humanized labor environment.

The health and safety status of workers in the CTSP in 2020 was as follows : There were 83 disabling injuries at a frequency rate of 0.89 and a severity rate of 8. There were 2 deaths attributed to work-related occupational disasters, including 1 case by falling and another of being caught in machinery. In addition to conducting occupational disaster investigations in accordance with the law and writing a report to the Occupational Safety and Health Administration of the Ministry of Labor for review, counseling was given to the public institutions to make improvements and strengthening the concept of occupational safety and health. Related occupational disaster cases are expanded to publicize the knowledge of the park manufacturers to review similar risks in the factory and take preventive measures to prevent the same disaster from recurring.

#### ► Occupational Safety Advocacy

In order to promote a culture of industrial safety in the Park, the CTSP Bureau actively counsels the CTSP Association for Occupational Safety and Health Promotion which is divided into seven major occupational safety families. Through the method of large factories leading small factories, regular meetings are held every quarter to promote safety and health laws, exchange disaster prevention information, share safety and health management experience, discuss chemical management and emergency response to accidents, and mutual support for rescue facilities, etc., giving full play to the role mutual support plays in emergency response to accidents.



## Implementation Status of Occupational Safety and Health in 2020

Project Counselling Plan	2 plans
Laws and Regulations Training and Briefings	12 sessions
Workplace Safety Performance Unit and Health Promotion Visits	1 session
Occupational Safety and Health Seminars	1 session
Labor Supervision and Inspection Plans	12 items
Labor Supervision and Inspections	557 sessions in which 20 were found in violation of Occupational Safety and Health Act, with 5 work suspensions



Occupational Safety and Health Seminar



Smart Technology Occupational Safety and Health Exhibition



Toxin and Chemical Disaster Professional Response Operation-level Training



Visits of Outstanding Industrial Safety Units



## ► Physical and Mental Wellbeing of Park Workers

The CTSP Bureau's industrial and commercial service building has an employee clinic on the first floor of the Central Taiwan Science Park. It is operated by the affiliated hospital of China Medical University. It also has outpatient clinics for occupational medicine, Chinese and Western medicine, and rehabilitation. In 2020, there were a total of 4,734 outpatient visits. In addition to outpatient clinics, it also handles various health promotion advocacy such as first aid education and training for personnel, breast ultrasound exam, pap smear test, adult health exam, abdominal ultrasound, oral cancer prevention, sports, mental health, physical fitness, vaccination, and other lectures and consultations, etc. Professional medical doctors are also invited to the Park companies with 10,695 special consultations conducted in 2020 for the physical and mental health of the workers in the Park and improving the occupational health promotion work of the park manufacturers.

## ► Disaster Prevention Drills

The Bureau actively integrated the disaster emergency response capability of various manufacturers in the Park, and established the CTSP Emergency Response Joint Defense to Major Disasters to integrate the disaster prevention and disaster prevention mechanisms of the Government, military and park manufacturers, with the goal of CTSP becoming model for joint disaster prevention.

In 2020, this Bureau cooperated with Air Liquide CTSP Branch, Air Products CTSP Branch, and Linde LianHwa Chung Kang Branch to hold disaster prevention and response drills, and invited the Taichung City Government Fire Bureau, Environmental Protection Bureau, and the EPA Environmental Incident Specialist Teams (EIST) of Central Taiwan, the Park Police Unit, Employee Clinic, and the park manufacturers jointly participated in the disaster situation defense drill. The disaster scenario was a traffic accident caused by a collision of a truck carrying toxic chemicals due to an earthquake, resulting in personal injury and emergency handling of the leakage of three chemical substances.

During the compact and lifelike exercise process, the Bureau completed the disaster notification procedures, set up a forward command post, stopped chemical leakage and disposal, activated the Emergency Response for Joint Defense to Major Disasters, and conducted decontamination and handled the aftermath. The performance of the exercise personnel, emergency response team personnel of various units and the results of the intensive training of the firefighters were very reliable. Through this exercise, the contingency procedures were actually put in operation, and a good coordination and communication mechanism between various disaster rescue units and the Park joint defense manufacturers was established to improve the overall safety protection and response efficiency of the Park and create a safe investment environment for the CTSP.



2020 CTSP Emergency Response Joint Defense Drill



Gas Cylinder Leak Operation



# Core Policies

## Policy 4: Climate Action

4.1 Risk Management

4.2 Climate Change Disaster Prevention and Adaptation

4.3 Energy Resources Management

Special Column: Green Building Ecological Community



+

>Lorem ipsum dolor sit amet,  
consectetur adipiscing elit.

+

>Lorem ipsum dolor sit amet,  
consectetur adipiscing elit.

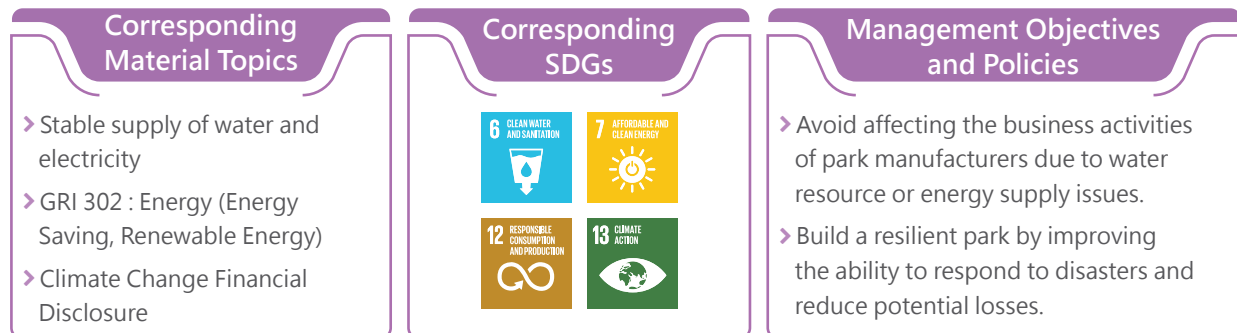
200.25
195.01
153.00

+

+



Environmental protection and climate change are important issues that currently require joint efforts by people around the world. The tightening of domestic environmental regulations and the increase in energy costs and restrictions have caused operational impacts. As a government agency, the CTSP Bureau, in addition to cooperating with the competent authorities to create green energy, should also assist with counselling and educating park manufacturers on the concepts of energy conservation, resource recycling, pollution prevention and ecological conservation, in order to implement the coexistence and co-prosperity concept of science park development and environmental protection.



### Commitments and Goals

#### Short-term Goals

- › Increase photovoltaic installation capacity by 1.25 MW.
- › Continue to council park manufacturers in conserving water and electricity. Achieve the various water reclamation rate goals for different industrial processes in the Park (such as 85% for the semiconductor and optoelectronic industries).
- › With the initial operation of the Erlin Park, a reclaimed water treatment system with a capacity of 200 metric tons per day (completed in September 2020) has been set up, which can treat the sewage of the initially stationed manufacturers. This reclaimed water supply is to be used for non-human contact purposes, including : plant cooling water, toilet flushing, road cleaning, cooling, and landscape supplement water or green land irrigation, etc. in the Park.

#### Medium and Long-term Goals (3+ years)

- › Installed solar energy equipment will bring the cumulative solar photovoltaic installation to 76.77 MW by 2025.
- › Promote experience exchanges, technical upgrades, and pursue the optimization of water and electricity use for park manufacturers. Under the principle of rationalization of energy use efficiency, promote further increases in the water reclamation rate of various industrial processes in the Parks.
- › In line with the Erlin Park operation, set up a water resource regeneration center and binary water supply pipelines in phases (20,000 metric tons per day in final phase). Reclaimed water uses : plant cooling water, toilet flushing, road cleaning, cooling, and landscape supplemental water or green space irrigation, etc. The supply and demand of reclaimed water in the Park will be reviewed on a rolling basis, with dedicated management to be set up to provide to manufacturers or reclaimed water business operators in neighboring areas for improved efficiency. During the first-stage of the Erlin Park Water Resources Center project 5,000 tons of civil engineering works were set up and 2,500 tons of treatment equipment purchased. The construction started in December 2020 and is expected to be completed in December 2023.
- › Other CTSP bases (Taichung, Houli) will cooperate with the planning schedule of the regional reclaimed water development project (such as Shuinan, Fengyuan) to jointly promote the use of water resources.

### Responsible Units

Environment and Labor Affair Division, Construction Management Division, Land Development Division, Water, Power and Gas Supply Committee, Climate Change Identification Team

### Invested Resources

- ▶ The Construction Management Division provides guidance on water and electricity conservation for the manufacturers in the Park.
- ▶ The Construction Management Division formed the Water, Electricity and Gas Supply Committee in coordination with trade associations
- ▶ In 2021, the "Climate Change Identification Team" will be established.
- ▶ Participate in the Drought Disaster Emergency Response Team meeting held by units at all levels.
- ▶ In response to the Central Government's Green Energy Roofs Project energy policy, jointly promotes solar power generation with park manufacturers.
- ▶ Form a manufacturer visit working group to handle the manufacturer's visit plan, which is carried out by visiting the factory or holding a symposium. In addition to conveying the policies and plans promoted by this Bureau, it also has an in-depth understanding of the problems faced by the manufacturers, and cares about the needs of the manufacturers, shows concern about their needs, and offers solutions.

### Complaints Mechanism

Director-General's mailbox

### Management System and Evaluation Mechanism

- ▶ Implemented according to the Bureau's Directions for the Internal Control Task Force, Internal Control System, Operation Directions for Disaster Prevention Notification and Description of Emergency Response Team Operation for risk management and crisis handling related operations.
- ▶ The planning team collects monthly statistics on the water and electricity consumption of the Park manufacturers.

### 2020 Performance

- ▶ There were 3 plants counselled regarding water conservation with a total water-saving potential of 646,780 tons/year, which can reduce 97.02 metric tons of CO<sub>2</sub>e/year.
- ▶ 5 power-saving counselling sessions were held, with a total energy-saving potential of 10,485 thousand kWh/year, which can reduce 5,336.87 metric tons of CO<sub>2</sub>e/year.
- ▶ The water recovery rate of different parks was 85.6% in Taichung Park, 80.0% in Houli Park, 91.3% in Qixing Park, 93.3% in Huwei Park, and 100.0% in Erlin Park, respectively.
- ▶ The cumulative solar power generation capacity of the CTSP Park exceeded 46.33MW.
- ▶ Taichung Park obtained the Diamond Level Certification of EEWH-EC Mark of Ecological Community Evaluation System.





## 4.1 Risk Management

In order to comply with Central Government policy, the handling of relevant risk management and crisis management operations are based on this Bureau's Directions for the Internal Control Task Force, Internal Control System, Operation Directions for Disaster Prevention Notification and Description of Emergency Response Team Operation. In addition, an Internal Control Task Force has been set up, with the Deputy Director-General serving as the convener, the chief secretary as the deputy convener, and the heads of each unit as team members. Meetings are held every three months. As for the rolling review of risk project operations, the Director-General shall preside over the meeting, and in principle shall convene once a year.

### CTSP Bureau Major Risk Identification Profile

Catastrophic (3)	12. Earthquake disaster 13. Drought risk 14. Typhoon risk 15. Park flooding		
Critical (2)	7. Environmental Impact Assessment (EIA) commitments have not been implemented. 9. Employee corruption case occurs, affecting Bureau image. 16. Controversy over a construction and maintenance project. 17. Maintenance and management of public facilities. 19. Operational fund financing interest rates rises sharply. 22. Misconduct in handling procurement procedures due to carelessness. 24. News media risks.	1. Case has passed EIA, but appeal or litigation pending by environmental protection groups. 4. Major fires, chemical spills, environmental pollution or toxic disasters encountered by park manufacturers. 5. Mishandling of large-scale dismissal of labor, damaging labor rights and leading to labor disputes. 6. Sewage treatment facilities stop operating without warning or sewage pipeline ruptures. 10. Poor water conditions or unscheduled water outage. 11. Unscheduled abnormal power supply. 20. The amount of soil and stone generated by plant construction and large number of construction vehicles exceeds amount specified in the EIA. 21. Fire breaks out in a residence (dormitory) in the Park.	
Minor (1)	3. Manufacturers fail to devote themselves to R&D in accordance with the development trend of global high-tech industries, reducing competitiveness, thus failing in the industrial cluster effect.	2. Affected by economic climate, business conditions of park manufacturers are poor, affecting investment benefits of park development and labor employment. 18. Incidents involving protests groups occurred in the Park. 23. Leakage of known official secrets or stored in the office.	8. Abnormal information security events.
Impact Level Incidence Rate	Very Unlikely(1) Occurs only under special circumstances	Likely(2) May occur under some circumstances	Almost Certain(3) May occur in most cases

### Distribution of Risks :

1. Extremely dangerous risks : Require immediate action. → The probability and impact of risk distribution are of Level 3-3.
2. High risks : Management needs to supervise own plans drawn up and provide resources. → The risk distribution is of Levels 2-3, 1-3, 2-2, 3-2, and 3-1.
3. Moderate risks : Scope of management responsibility has to be clearly defined. → Risk distribution probability and degree of impact are of Level 1-2 and 2-1.
4. Low risks : Handled according to general procedures. → Risk distribution probability and degree of impact are of Level 1-1.

The Bureau has designed and reviewed the control operation worksheets based on risk assessment results, audit opinions in the Final Reports from the National Audit Office in previous years, cases of (proposed) corrective measures by the Control Yuan, and general business (including cross-functional) stipulated by the competent authorities. The 9th edition of the Internal Control System was amended on February 3, 2020, and 13 individual businesses, 5 common businesses and 1 cross-functional business were formulated, and control operation worksheets of a total of 19 businesses have been established. Each division or room shall handle it accordingly, with the head of each responsible for the implementation promotion and supervision of related businesses.

## 4.2 Climate Change Disaster Prevention and Adaptation

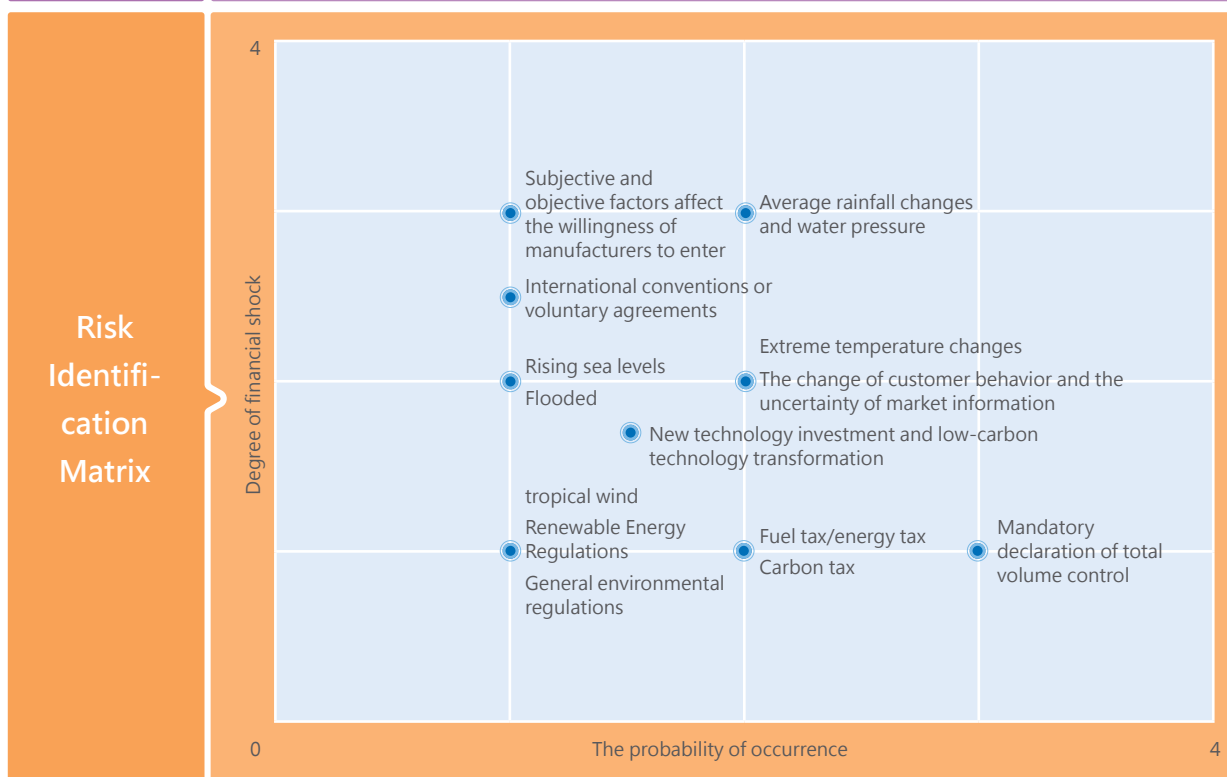
Facing increasingly severe risks of climate change, which may have an impact on the production and operation of park businesses, and in response to climate change issues, the CTSP Bureau has set up a Climate Change Identification Team in 2021 to implement and plan corresponding management actions for energy resource supply risks and natural disaster risks. The CTSP Bureau has assessed the risks, opportunities and possible financial impacts of the Park's transition to a low-carbon economy based on the framework of the Task Force on Climate-Related Financial Disclosures (TCFD) guidelines.

### CTSP Bureau TCFD Framework Response





<b>Governance</b>	The Climate Change Identification Team of this Bureau serves as management unit for the relevant financial impacts of climate change.
<b>Strategies</b>	After identifying climate-related risks and opportunities, response strategies are discussed with relevant units, and financial impacts on CTSP are evaluated (for example, the implementation of smart street lighting systems to reduce energy costs, the implementation of smart disaster prevention and water systems to reduce disaster losses and costs, etc.)
<b>Risk Management</b>	<p>The CTSP Bureau bases its assessment on climate-related risks and opportunities provided by the TCFD. Climate-related risks are divided into two categories : (1) Transition risks related to low-carbon economy, and (2) Physical risks related to climate change.</p> <p>Adaptation to climate change creates opportunities including improved resource utilization efficiency and cost reduction, adoption of low-carbon energy, development of new products and services, entering new markets, and improved resilience of the supply chain. The Climate Change Identification Team of this Bureau assesses climate-related risks and opportunities based on the level of impact on park operations and the probability of occurrence.</p>
<b>Indicators and Goals</b>	Park businesses are encouraged to introduce ISO 14064-1 : 2018 (GHG Inventory) and participate in the CDP (Carbon Disclosure Project) to establish annual greenhouse gas inventory capabilities and use carbon footprint as the basis for environmental management of the Park.



After assessment by the Climate Change Identification Team, average rainfall changes and water pressure has been listed as major climate change risks, which is managed by the Construction Division. The risk impact and related responses are described in the following table :

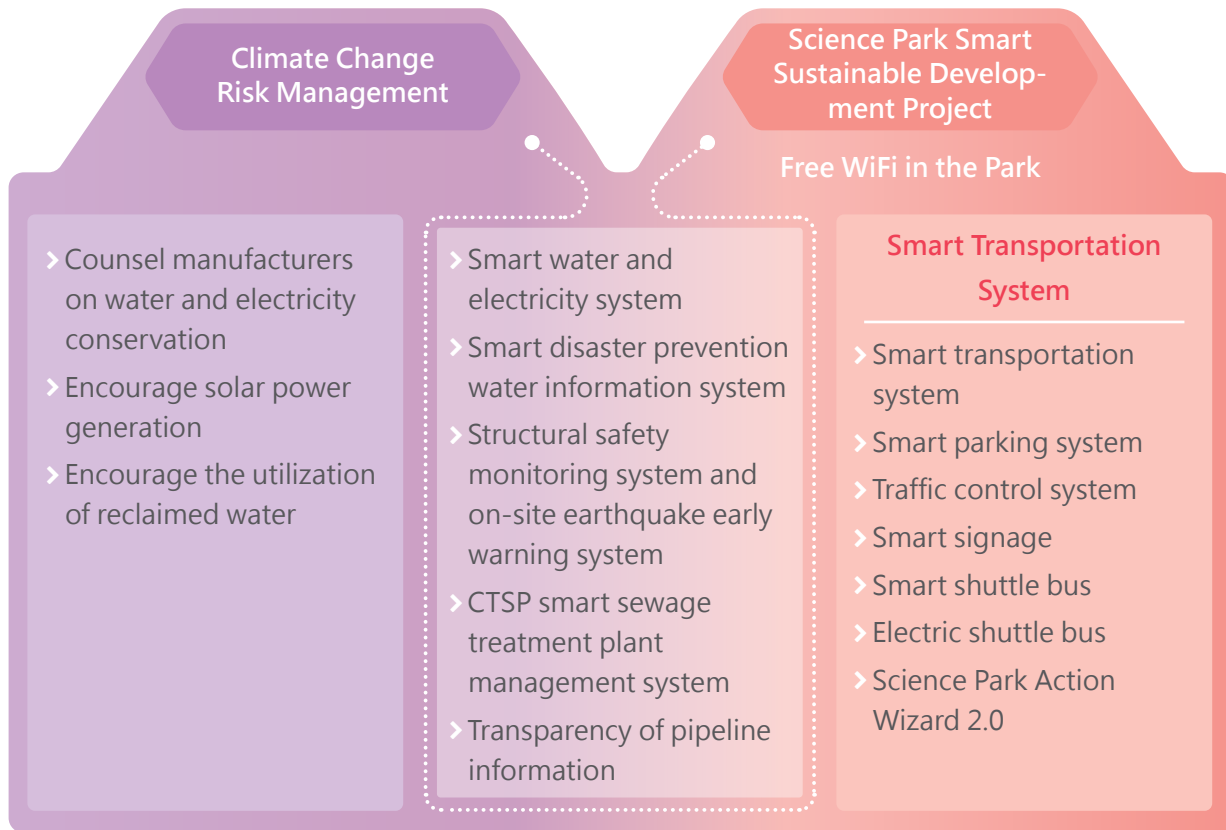
### Climate Change Risk Strategy

Item	Description
Risk Location	Park institutions
Risk Type	Operational risk
Risk Project	Average rainfall changes and water pressure
Types of Financial Impacts	As direct costs increase, manufacturers' willingness to enter the Park decreases
Risk Description	<ul style="list-style-type: none"> <li>› Extreme weather increases the average number of dry days per year</li> <li>› Insufficient reservoir water storage capacity may affect production line operation due to water restrictions</li> </ul>
Time Limit	Long-term
Possibility	Potential
Influence Level	Great
Potential Financial Impact	<ul style="list-style-type: none"> <li>› Water transportation expenditure during droughts</li> <li>› Expenditures for operational readiness of wells</li> </ul>
Financial Impact Statement	Business losses caused by work stoppage by the park manufacturers
Risk Response Measures	<ul style="list-style-type: none"> <li>› Take the initiative to counsel park manufacturers about water conservation</li> <li>› Matching reclaimed water plants to increase water supply for manufacturers</li> </ul>
Risk Response Cost	<ul style="list-style-type: none"> <li>› Administrative expenses for water conservation counselling.</li> <li>› Expenditures on pipeline construction from reclaimed water plant (approximately NT\$58.27 million/year)</li> <li>› Water transportation costs (approximately NT\$ 500/ton of water, based on the water consumption of the CTSP five major parks of 150,000 tons per day, of which 5-10% of the water volume is estimated to be transported by water trucks at a daily cost of about NT\$ 3.75-7.5 million)</li> </ul>

In addition, this Bureau continues to respond to the operational challenges and opportunities brought about by climate change through the implementation of various plans. At the same time, relevant information concerning climate change is introduced into operational and investment decision-making. Since 2014, we have been counseling manufacturers on implementing water and electricity conservation measures to improve the overall utilization efficiency of energy resources. In recent years, we have also encouraged manufacturers to make use of emerging solar energy and reclaimed water resources to reduce the risk of interruption in the supply of energy resources. Furthermore, we have also committed ourselves, together with our suppliers, to green procurement, facilitating the realization of solutions to climate change, to reduce greenhouse gas emissions, and to implement social responsibility for sustainable development.



The Bureau has introduced the forward-looking technology into the smart management of the Park, integrating Information and Communication Technology (ICT), successively building intelligent disaster prevention water regimes, earthquake early warning systems, and updating park pipeline maps to the geographic information system database, in the hope of minimizing losses when disaster strikes.



#### Smart Water and Electricity System Establishment plan

Smart technology and Internet communication capabilities provide safe lighting and energy saving, real-time control of water supply. To avoid wasting water resources, the establishment of a smart water management display platform was completed, including the Taichung Park smart water system which was completed in February 2020 engineering.

#### Smart Disaster Prevention Water Information System

This system can interpret the results of water conditions within the following 6 hours or 72 hours and assess flood risk, formulating decision-making support scripts in the face of typhoons and natural flood disasters. When disasters occur, drones are used for inspection, and the returned photos are scanned via an AI image recognition system, allowing the Bureau to dispatch personnel for inspection and repairs as soon as possible. In addition, LINE water information disseminating bots are used for push notifications of real-time warning messages and decision-making suggestions.

### CTSP Smart Sewage Treatment Plant Management System

This system combines the Smart Sewage Discharge Emergency Response Control System and Smart Sewage Treatment Plant Management System to ensure that the annual discharged water quality meets national effluent standards and the stricter environmental assessment standards. Water quality (volume) monitoring systems and cameras were installed at important nodes in the sewer to collect big data for analysis, which is all combined with multimedia such as a web page, multi-media wall, text messages, and LINE and display bots, to provide rapid decision-making solutions. In addition, a reclaimed water treatment pilot plant was also built with smart remote control to effectively solve the sewage treatment problem at CTSP.

### Structural Safety Monitoring and On-site Earthquake Early Warning System

In order to enhance the earthquake disaster and emergency response capabilities of the Park, an On-site Earthquake Early Warning System was deployed in the five major parks of the CTSP Bureau. By making use of the speed difference between seismic P waves and S waves, early detection of a few seconds to tens of seconds can be made to issue an early warning for an earthquake. The Structural Safety Monitoring System is set up in the office building of the Bureau. Sensors record the dynamic response of structures during earthquakes in real time, synchronously integrate into the data center for analysis, and quickly provide structural assessments to help determine whether personnel need to evacuate or can continue to work safely.

### Transparency of Pipeline Information

In addition to pipelines general daily civilian use, this Bureau also has special industrial gas pipelines required for the manufacturing processes of the park manufacturers. This Bureau has established a Facility Inspection Notification System for management of park facilities. Inspectors who find damage can immediately make reports for repairs to be made, and the repair staff will submit the latest updates after the completion of the work. In addition, the Bureau built a new broadband pipeline maintenance system, providing units with online applications, notifications, and inquiries, so as to improve the efficiency of administrative operations.



CTSP Disaster Emergency  
Response Center





## 4.3 Energy Resources Management

The water used by the CTSP comes from Taiwan Water Corporation (TWC). The water source of each Park differs due to TWC scheduling. The water sources of the Parks at CTSP are detailed as follows : Liyutan Reservoir and Techu Reservoir for Taichung Science Park and Houli Science Park; the existing tap water system for Erlin Science Park; Chi-Chi Weir for Chung Hsing Science Park; Linnei Water Treatment Plant and Hushan Reservoir for Huwei Park. According to the Aqueduct Water Risk Atlas of the World Resources Institute the whole of Taiwan falls under Low - Medium (1-2) risk, and none of the Parks are located in any national or international protected areas. The water intake is from legal water sources applied for authorization from the Government, which does not have significant impact on water resources.

Year / Item	2018	2019	2020
Power Consumption (kWh)	7,749,679,846	10,486,214,360	11,593,947,254
Power Consumption (GJ)	27,898,847	37,750,371	41,738,210
Power Use Intensity (GJ/NT\$100 million)	3,849	4,735	4,459
Intake Water (IW) (million liters)	50,132	49,617	53,442
Water Consumption (million liters)	50,132-40,827 =9,305	49,617 - 37,922 (excl. Chung Hsing Park) =11,695	53,442 - 39,762 (excl. Chung Hsing Park) =13,680
Intensity of Intake Water (million liters/NT\$100 million)	6.92	6.22	5.71

Notes :

1. The denominators of Power Use Intensity and Intensity of Intake Water equal the CTSP's total annual turnover for the year (the turnover for 2020 reached NT\$ 935.979 billion).
2. Every kilowatt of electricity = 1kWh = 3,600 KJ
3. Water consumption = Water intake (used) - drainage
4. Water consumption does not include that of Chung Hsing Science Park.

### 4.3.1 Counseling to Conserve and Develop New Energy Resources

In order to effectively manage the water and electricity consumption of the Park, the Ministry of Science and Technology Science Park Water and Electricity Guidance and Control Measures are implemented to save water and electricity for park users and manage them with flexible scheduling and diversified development to improve the efficiency of water and electricity use in the Park. There are mainly five aspects that Science Park users need to pay attention to : water and electricity application mechanism, water use records and related information retention, contingency measures and cooperation items in case of shortages, water and energy saving measures, and counseling and rewards, as well as control measures for breach of obligations.



Ministry of Science and Technology Science Park Water and Electricity Guidance and Control Measures

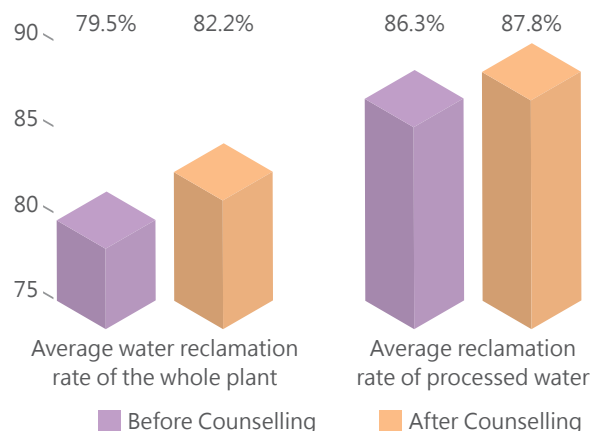


## ► Park Water Conservation Counselling

In order to alleviate the potential impact water resources may have on production in the Park, the Bureau continues to provide counselling and advocacy related to water conservation and reclamation, all working in conjunction to contribute to the environmental protection of the earth. In 2020, water conservation counselling was provided to 3 manufacturers. Prior to counselling, the total water consumption of the 3 manufacturers was 10,189 CMD, and the reasonable water consumption after counselling was 8,417 CMD. The total water saving potential of the 3 plants is 646,780 tons/year. In addition, based on the CO<sub>2</sub>e emissions from every cubic meter of water announced by the Taiwan Water Corp., when converted to the benefits of the energy conservation and carbon reduction measures, each ton of water saved can reduce CO<sub>2</sub>e emissions by approximately 0.15 kg, reducing 97.02 metric tons of CO<sub>2</sub>e per year.

### 2020 Water Conservation Counselling Performance

Year	2020	
	Before Counselling	After Counselling
Average water reclamation rate of the whole plant	79.5%	82.2%
Average reclamation rate of processed water	86.3%	87.8%



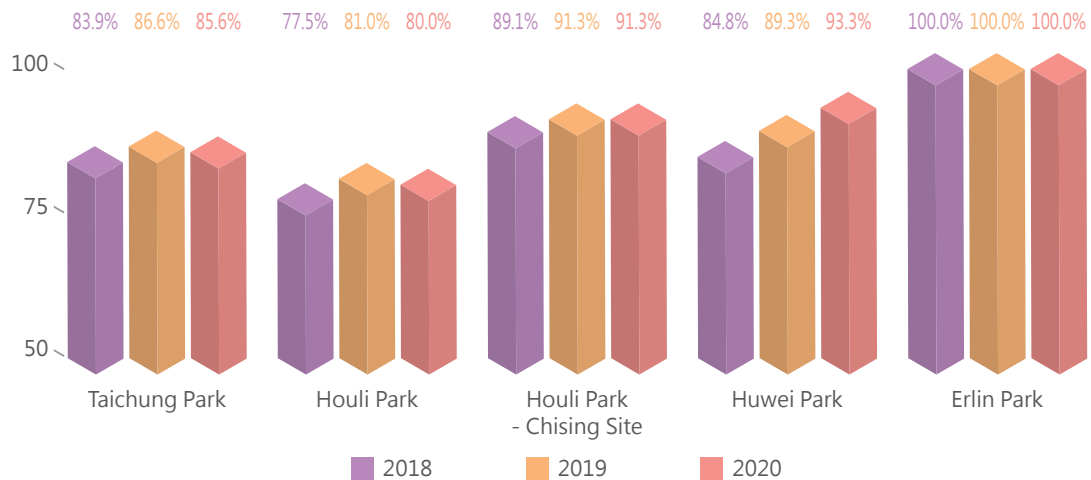
Park / Year	2018	2019	2020
Taichung Park	83.9%	86.6%	85.6%
Houli Park	77.5%	81.0%	80.0%
Houli Park – Chising Site	89.1%	91.3%	91.3%
Huwei Park	84.8%	89.3%	93.3%
Erlin Park	100.0%	100.0%	100.0%

Notes :

1. Reclamation rate (Reuse rate) = Amount of reclaimed water / (Original water withdrawal + Reclaimed water) \*100
2. Chung Hsing Science Park is a new park established in 2019. It is positioned as a research and development park during the planning stage, and water is mostly used for people's livelihoods. (65.4%)



### Water Reclamation by Park



### ▶ Park Energy Conservation Counselling

The Bureau has conducted energy conservation field counselling every year since 2014. As of 2020, a total of 35 manufacturers have been coached. The energy consumption of park manufacturers is mainly electric. In 2020, there were 5 manufacturers counselled, with an energy saving potential totaling 10,485 MWh, and a total saving rate of 1.11%.

### ▶ Green Energy Roofs Project

In response to the energy policy of the Central Government's Green Energy Roof Project, the CTSP worked with park manufacturers to promote solar power generation, which not only makes good use of the existing building areas of the factory buildings, but also saves additional land use space and implements the concept of co-existence and co-prosperity between the development of the science parks and environmental protection. In 2020, Leadwell, Jinray, High Power Opto, Minima, TSMC, Glorytek, Waferlock, etc. were newly added to the project with a total capacity of 4.67MW solar power panels installed on the factory roofs. The cumulative capacity of the CTSP solar power generation installation has exceeded 46.33MW by the end of 2020.

### ▶ Renewable Water Resources

Taiwan is ranked 18th in the world for water shortages. It is limited by geographical conditions, global climate change, socio-economic development, and rising environmental awareness. The development of emerging water resources is not easy. The Executive Yuan has set the policies of increased sourcing, reducing usage, managing resources and backup storage as well as other specific practices, while promulgating the regulations on the development of renewable water resources through legislation, making reclaimed water a new option for industrial water use strategies. CTSP supports water regeneration programs in accordance with the Reclaimed Water Resources Development Act and related sub-laws.

### Taichung Park

In 2017, plans were drafted to coordinate the use of recycled water from the Taichung City Shuinan Water Resource Recycle Center to improve water quality. The park manufacturers are environmentally friendly, promote circular economy, and implement sustainable development social responsibilities. After active investigation by CTSP and further matching of potential water suppliers in the area, the Taichung Park plans to use Shuinan reclaimed water, which is expected to provide 10,000 tons of water per day from 2023.

### Erlin Park

Low-water-use industries are selected to enter the Park, and water resource center is planned. After the manufacturer's managed wastewater is treated at the Water Recycling Center until it meets the stricter recycled water quality standards, the water is reused in the Park for various purposes, including cooling water supplement, toilet flushing water, road cleaning, watering of plants and grassland, etc. It is also provided to water-requiring units in accordance with regulations, providing water sources and other non-human contact water for environmentally friendly purposes to suppress dust. With appropriate wastewater treatment, it is suitable for the appropriate use of various non-human contact purposes inside and outside the area, so that all waste water can be reused. It is a reasonable utilization method with environmental protection benefits.

## 4.3.2 Providing Stable Water and Power

The CTSP Bureau coordinated with park industrial associations to form a water, electricity and gas supply committee to actively participate in the communication, coordination, suggestion and tracking of various businesses between the power, water, and gas supply companies and the park manufacturers, with the goal of providing stable energy resources for the park manufacturers.

### ► Drought Relief Measures

In recent years, Taiwan has repeatedly suffered from droughts, and water rationing has been implemented around Taiwan. In order to reduce the impact of water rationing on park manufacturers, not only are the park manufacturers requested to cooperate with water conservation measures such as the collection and storage of rainwater for later utilization and increasing the water reclamation rate during difficult times, the Bureau also actively discusses countermeasures with the trade associations in the Park and the Water Resources Agency of the MOEA to increase the existing water storage capacity of the Park distribution reservoir, and also coordinates the establishment of additional water intake points. At the same time, real-time water level information is disclosed on the Bureau's official website, enabling park manufacturers to understand water conditions in a real-time manner.





During a period of drought, a Drought Emergency Response Team is formed with an online platform, the CTSP Drought Relief and Response Zone, to disclose online, real-time water conditions, providing water supply monitoring signals, reservoir storage levels and regular meeting minutes. The Taichung Science Park and Houli Science Park have also prepared public water storage facilities (distribution reservoir and elevated water tower) and commissioned professionals for the operation and management, so as to make full use of the water storage facilities to store water and provide adequate water supply during periods of drought for manufacturers' production use. Regarding water supply pipeline network maintenance in the Park, the Taiwan Water Corporation 4th District Management Office set up a flow meter catch basin for the water supply network in the Park to carry out leak detection and preventive measures to reduce water leakage losses.



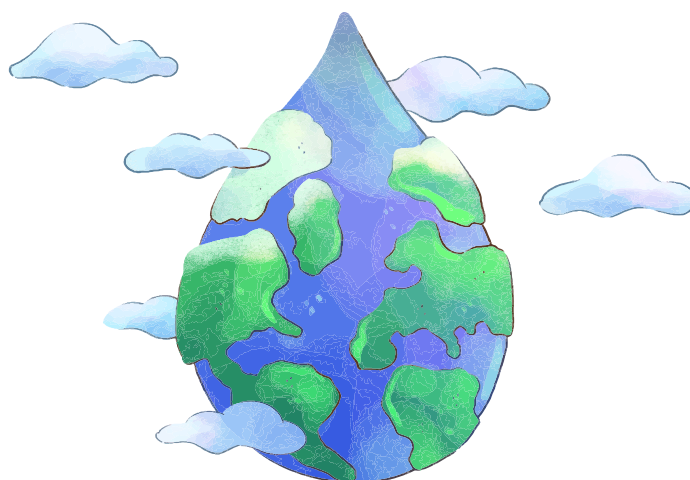
CTSP Drought Relief and Response Zone



During the drought relief period of 2020, the CTSP regularly participated in Drought Disaster Emergency Response Team working meetings held by the Central Region Water Resources Office, the Water Resources Agency, and the Ministry of Economic Affairs, with a total of 35 sessions to fully grasp the dynamics of the water conditions and cooperate with water conservation policy advocacy. In addition, consumption inventory and water saving control for major water users in the Park were also carried out.



Drought Relief Working Conference



Since the establishment of the CTSP in 2004, it has endeavored to promote a sustainable environment with the hope of achieving symbiosis and co-prosperity with environmental protection. The CTSP has many achievements for the Park buildings under its jurisdiction. As of 2020, 11 buildings have obtained the Green Building Evaluation System in Taiwan-also called the EEWH system-Diamond Award, 6 have obtained the Bronze Award, 12 are qualified, 6 are exempt from assessment, 1 Diamond-level smart building, 1 Diamond-level ecological community, and 4 obtained the Green factory award of the Ministry of Economic Affairs.

The CTSP Taichung Park passed the Eco-Community EEWH-EC Mark Diamond Certification in May 2020. There are five indicators for ecological communities. Due to stringent conditions, currently only a few communities in Taiwan have obtained the Ecological Community badge. The Science Park applies to three of them, including ecology, energy saving, waste reduction, and health and comfort. This Bureau has undergone 2 years of preparations. Collecting information on the Park and communicating with the resident manufacturers, the Taichung Park finally obtained full marks in ecological, energy-saving and waste reduction indicators, and was honored to obtain the Eco-Community Diamond-level certification.



# Core Policies



Learn more about our  
environmental reporting at:

## Policy 5: Environmental Management

- 5.1 Total Mass Based Control
- 5.2 Air Pollution and Greenhouse Gases
- 5.3 Sewage Discharge
- 5.4 Waste disposal
- 5.5 Environmental Monitoring







200.25  
195.01  
153.00



The CTSP Bureau has never slackened on environmental protection. While operating the Park, it has strengthened guidance to check air and water pollution and the wastes of the park manufacturers in order to comply with relevant environmental protection regulations. Each Park must comply with the content of the Environmental Impact Assessment document and review conclusions. The CTSP is committed to minimizing the environmental impact, and regularly implementing environmental monitoring, with the ultimate goal of not affecting the ecology, environment and people's lives.

Corresponding Material Topics	Corresponding SDGs	Management Objectives and Policies
<ul style="list-style-type: none"> <li>› GRI 303 : Water and Effluents</li> <li>› GRI 306 : Waste</li> <li>› GRI 305 : Emissions</li> <li>› Circular Economy</li> </ul>	 	<ul style="list-style-type: none"> <li>› To prevent the pollution from the operation activities of the park manufacturers from exceeding the environmental load, to continue to build the spirit of co-prosperity, to carry out relevant control of the park manufacturers, and to work hard to create a sustainable environment.</li> <li>› Follow Total Mass Based Control to monitor the environmental impact in the Park.</li> </ul>

### Commitments and Goals

**Short-term Goals**

- › The overall sewage treatment rate in the Park at 100%.
- › Erlin Park to promote the optimization of water reclamation and reuses all reclaimed water.
- › The rate of proper disposal of waste to reach 100% .

**Medium and Long-term Goals (3+ years)**

- › Continue providing guidance and check that park manufacturers comply with environmental protection permit documentation requirements as well as discharge water quality standards.

### Responsible Units

Environment and Labor Affairs Division

### Invested Resources

- › The Environment and Labor Affairs Division is responsible for the review of various environmental protection permits, handling on-site inspections and tracking counseling, and implementing environmental quality monitoring.
- › Set up sewage treatment plants in various parks and entrust professional organizations to operate them.
- › Check whether the park manufacturers regularly declare air pollution fees, emissions, regular inspections, or industry-specific regulations.
- › After the development of the Park, the environmental supervision team of each Park will continue to supervise it.
- › In order to understand the current status of various environmental factors other than the EIA documents, this Bureau continues to supplement and monitor some items.

**Complaints Mechanism**  
 Free environmental protection hotline : 0800-777795

**Management System and Evaluation Mechanism**

- › In accordance with the Water Pollution Prevention Measures Plan and Permit Application Review Management Measures, review the water pollution prevention and control measures plans of the park manufacturers.
- › The waste disposal plan is checked from time to time according to the Waste Disposal Act.
- › Prior to the development of the Park, various environmental assessment review reports were submitted in accordance with the operating procedures stipulated by the Environmental Impact Assessment Act.


**2020 Performance**

- › A total of 18 EIA tracking and supervision meetings were held in each Park.
- › The recycling rate of industrial waste in the Science Park reached 94.4% (including recycling).
- › No major leakage or arbitrary dumping occurred.
- › Both air pollution and sewage discharge met the environmental impact assessment commitment value.
- › The carbon reduction measures in the Park amounted to 5,433.89 metric tons of CO<sub>2</sub>e/year. Completed 81 waste inspections and source reduction publicity sessions, and handled 1 publicity meeting on recycling technology and regulations.
- › The total purchase amount of this Bureau's environmental protection products is NT\$2,027,000, accounting for 100% of the total purchase amount.
- › Handled 15 sessions of counseling and verification by the reuse agency.

### 5.1 Total Mass Based Control

The CTSP Bureau has never slackened on environmental protection, and strengthened guidance to check the wastegas, wastewater discharge, and waste disposal (replacement) of the park manufacturers in order to comply with relevant environmental protection regulations. The development of each Park must comply with the content of the Environmental Impact Assessment document and the review conclusions and commitments. The CTSP further requires park manufacturers to do a good job of independent management, pollution prevention equipment, operating procedures and environmental protection business management, and become learning benchmarks in their various fields.

In addition, this Bureau established a management system for the use of hazardous chemicals confirmed by the health risk assessment based on the review conclusions of the Environmental Impact Manual of the Taichung Park Expansion Land Development Plan, and referred to the spirit of the Registration, Evaluation, Authorisation and Restriction of Chemicals (EU REACH) system. The key points of chemical substance control operations have been set, and a total of 111 chemical registration codes have been issued by 2020. In addition, this Bureau has also established an online chemical declaration platform for business units to understand the use of chemical substances by various manufacturers.



Online chemical declaration platform



## ► Environmental Protection Permit Review

The Central Taiwan Science Park implements Total Mass Based Control. Businesses that want to settle in CTSP must submit an estimate of the total amount of pollution at the investment application stage. If a larger total amount is required after the official stage, it should apply for a change again. This Bureau will process the application and it will be processed and reported to the local competent authority according to the overall total amount of the Park. According to statistics, there were 71 total pollution application and change cases in 2020, and a total of 69 cases have been passed (including the applications in 2019 and passed in 2020).

In order to facilitate the application of environmental protection permits by manufacturers in the Park, a one-stop service mechanism is adopted in the Park. Since 2003, this Bureau has successively applied to the Environmental Protection Agency for entrusting the review of permits for each Park, so that manufacturers stationed in the Park can quickly obtain the environmental protection documents required for production. In 2020, a total of 132 applications for environmental protection documents were accepted, and a total of 123 cases were passed (including applications in 2019 and passed in 2020).



Environmental protection document application and review process

## ► On-site Inspection and Follow-up Counseling

After a permit is issued, on-site inspection and tracking is the basic method for implementing permit management and promoting the control of the total amount of pollution. In addition to understanding whether each business unit is actually performing according to the permit content, and further reviewing the blind spots in the system. It is indeed feasible to standardize the operation of various businesses in accordance with the contents of the license, and is also conducive to the promotion of overall environmental quality and sustainability. In 2020, the CTSP Bureau conducted a total of 212 permit inspections. Those who were found to be inconsistent with the permit after the inspection by this Bureau were sent a letter requesting the business to make improvements and submit the relevant application documents to handle the permit change or change. In addition to the staff of this Bureau, experts and scholars in related fields are also invited to assist in the inspection operations to ensure that the recycling agencies outside the Park properly dispose of the waste generated by the Park businesses and prevent the outside world from being concerned about environmental pollution in the Park.



Fixed pollution source permit verification



Water pollution source permit verification



Waste disposal plan review



Checking by reuse institutional experts and scholars

This Bureau conducts flue exhaust sampling tests of park manufacturers at night or on holidays, and monitors whether the exhaust gas emitted by park manufacturers complies with regulations through a qualified inspection agency certified by the Environmental Protection Agency. The 2020 test results were in compliance with relevant regulations.



Random test operation at night of manufacturer



Manufacturer's day-time random test operation





## ► Environmental Protection Laws and Regulations Advocacy and Consulting Services

In response to frequent updates or amendments to various environmental protection related laws and regulations, this Bureau will hold various legal promotion briefings from time to time every year to strengthen business attention and comply with various environmental protection laws and regulations. In 2020, a total of 5 legal promotion briefings and one environmental protection forum, 2 energy conservation and carbon reduction education promotion meetings, 2 environmental protection related topics briefings, 4 on-site counseling meetings for park manufacturers, and 9 on-site counseling meetings for experts and scholars in park manufacturers were held.

In addition, the Bureau also provides consulting services on environmental protection business for park manufacturers. Through face-to-face communication with the industry or case-by-case counseling, we can understand the difficulties of the industry in the process operation or in the writing of environmental protection documents, and then assist in finding solutions. In 2020, we offered consulting services in a total of 987 cases.



Briefing Session on Promotion of Waste Recycling Technology



Environmental Seminar

## 5.2 Air Pollution and Greenhouse Gases

In order to implement Total Mass Based Control in the Park, the CTSP Bureau will continue to perform counseling and verification operations after the fixed pollution source installation permit and operation permit are issued. Regular inspections and declarations or industry-specific regulations, for example, air pollution fee, emission declaration, periodic inspection declaration or industry-specific laws, etc., for businesses that do not comply with the license content are conducted, and the Bureau then immediately sends a letter to the business requesting improvement, and re-examine it at a later stage.

### Fixed pollution source operating permit approved emissions

Unit : metric ton

Year	2018	2019	2020
Nitrogen oxides (NOx)	359.34	323.57	323.02
Sulfur oxides (SOx)	89.02	96.11	78.54
Volatile Organic Compounds (VOCs)	389.47	383.34	367.78
Granular	89.42	107.43	91.95

Notes :

1. The air pollution approved emission data listed above is the total value of each Park, and the above values are also lower than the emission commitment value in the EIA document.
2. If the EIA has relevant control standards and regulations, it will be handled in accordance with the EIA commitment value.

## ► Greenhouse Gas Inventory and Reduction

The CTSP Bureau counted the greenhouse gas emissions in 2019 from the top 15 manufacturers accounting for the total turnover of the Park as shown in the table below. Among these 15 manufacturers, the first batch of 6 manufacturers that should check their registered greenhouse gas emissions (operational control rights-the base year is mainly based on the inventory check of each factory), which is required to be completed the entire factory previous greenhouse gas emissions at the end of August each year. For those inventory and registration of greenhouse gas emissions that are not required to be regularly, there are 3 companies checked and registered by entrusting third-party inspections while the remaining 6 are independent inventories.

### 2019 Annual gas emissions that account for the top 15 companies in the Park's total turnover

Number of manufacturers	15 companies
Scope 1 (10,000 metric tons of CO <sub>2</sub> e)	80.37
Scope 2 (10,000 metric tons of CO <sub>2</sub> e)	494.13
Total emissions (10,000 metric tons of CO <sub>2</sub> e)	574.5
Turnover (NT\$100 million )	7,610.42
Emission intensity (10,000 metric tons of CO <sub>2</sub> e/NT\$100 million)	0.075
Notes : 9 companies have been verified externally and 6 companies have not been verified. The unverified manufacturers are based on the announcement content of version 6.0.4 of the Greenhouse Gas Emission Coefficient Management Table of the Environmental Protection Agency. The CO <sub>2</sub> e equivalent conversion GWP value quotes the GWP value announced by the Intergovernmental Panel on Climate Change (IPCC) for the fourth time in 2007. The parameters quoted are used to explain the calculation basis.	

In addition, this Bureau requires manufacturers stationed in Houli Park to conduct regular greenhouse gas inventory and reporting operations based on the EIA document of the Houli Park, and implement the greenhouse gas inventory and statistics of Houli Park in September each year. (data statistics for 2020 have not been completed before the issuance of this report). Among the manufacturers in Houli Park, there are only 2 of the first batch of manufacturers that should check their registered greenhouse gas emissions (operational control rights; the base year is based on the inventory check of each factory), while the rest perform self-inspection.

The above-mentioned CTSP Houli Park greenhouse gas inventory inspections are conducted in accordance with ISO 14064-1 and the greenhouse gas inspection guidelines. The carbon dioxide emission coefficient is calculated in accordance with the statistical method of the National Greenhouse Gas Inventory Guidelines (referred to as IPCC 2006 Guidelines) formulated by the IPCC, and the GWP value according to the regulations of the Environmental Protection Agency. The warming potential of the fourth assessment report of the IPCC in 2007 should be adopted after 2016.



### CO<sub>2</sub>e Emissions in Houli Park

Year	2018	2019
Scope 1 (10,000 metric tons of CO <sub>2</sub> e)	17.68	11.49
Scope 2 (10,000 metric tons of CO <sub>2</sub> e)	89.08	97.64
Total emissions (10,000 metric tons of CO <sub>2</sub> e)	106.76	109.13
Turnover of Houli Park (NT\$100 million)	1,332.17	1,334.92
Emission intensity (10,000 metric tons of CO <sub>2</sub> e/NT\$100 million)	0.08	0.08

Every year, this Bureau implements energy-saving and water-saving technical counseling for park manufacturers, indirectly reducing carbon dioxide emissions in the Park, reducing CO<sub>2</sub>e emissions by approximately 5,433.89 metric tons in 2020.

### 2020 Park carbon reduction measures

Item	Water conservation counseling	Power conservation counseling
Saving potential	646,780 metric tons / year	10,485kW / year
Carbon reduction	97.02metric tons CO <sub>2</sub> e / year	5,336.87 metric tons CO <sub>2</sub> e / year
<b>Total</b>	<b>5,433.89 metric tons CO<sub>2</sub>e / year</b>	

Note :

1. According to the announcement of the water company, for every ton of tap water saved, about 0.15 kg of CO<sub>2</sub>e emissions can be reduced.
2. The data of each plant is provided at the end of December 2020, and the electricity emission coefficient is calculated at 0.509kg CO<sub>2</sub>e/kWh (according to the 6.0.4 version of the Greenhouse Gas Emission Coefficient Management Table of the Environmental Protection Agency).

## 5.3 Sewage Discharge

### ▶ Water management by manufacturer

The management of water pollution prevention measures at the manufacturer's end is in accordance with the Management Measures for the Use of Sewage Treatment and Sewerage in Science Parks. The waste and sewage of each manufacturer in the Park must be pre-treated to meet the management standards before it can be discharged into the sewer system of the Park. As for the relatively large-scale business entities in the Park, the CTSP Bureau assists in reviewing the manufacturer's water pollution prevention and control measures plan by experts and scholars to ensure that the sewage pretreatment facilities installed in the Park's businesses meet the expected benefits of the water quality management standards. After a permit is issued, the CTSP conducts counseling and verification work from time to time. According to statistics, in 2020, there were 143 companies in Taichung Park, 15 companies in Houli Park-Houli Base, 2 companies in Houli Park-Chising Base, and 10 companies in Huwei Park.

## 2020 Allocation of wastewater discharge

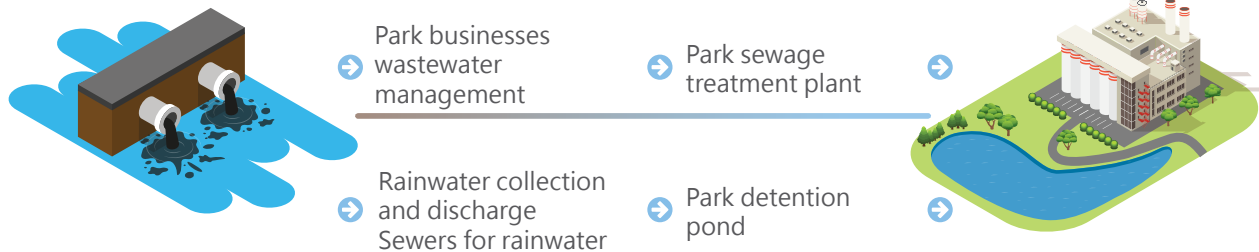
Unit : m<sup>3</sup>/day (CMD)

Project\Park	Taichung Park	Houli Park- (Houli Base)	Houli Park- (Chising Base)	Huwei Park
EIA approved total	145,000	57,000	39,000	16,000
Total distribution	131,210	20,618	20,282	4,964
Total approved amount	134,541	20,163	15,088	2,099

### ► Sewer System and Sewage Treatment

The Park's under the jurisdiction of this Bureau have built a complete rainwater and sewage sewer system. Waste water from the Park businesses is included in the Park's sewage sewer system, properly treated by the sewage treatment plant, and discharged before it meets the national discharge water and strict environmental assessment standards. In addition to rainwater collection in public areas, the rainwater drainage system must include designs for rainwater collection pipelines when building plants, and a rainwater drainage inlet is to be incorporated into the rainwater drainage system, discharged into the Park's floodwater retention basin and then into the receiving water body. The Bureau regularly schedules sampling and inspection plans for the sewage sewer system of each Park to understand the status of the system and ensure that its water quality is normal.

#### Sewer rainwater and sewage separation



The wastewater treatment plants in the Park adopt the tri-step-treatment method of sewage, using standard activated sludge biological treatment units (Taichung and Houli wastewater treatment plants adopt AO biological nitrogen removal system, and Huwei wastewater treatment plant adopts contact aeration method). Chemical coagulation and physical filtration treatment unit I added in the subsequent unit to improve the quality of secondary treated water, reducing the impact on the receiving water body.

### ► 100% Compliance with the water release standards and environmental impact assessment commitments

Sewage plants in the Parks operate in compliance with regulations, properly treating wastewater, and controlling the amount and quality of discharged water. There are no livelihood and irrigation water intakes downstream of the discharge site. In 2020, the quality of the discharged water from the wastewater treatment plants in each Park is far superior to the discharged water standards and



the stricter standards of environmental assessment commitments, and the total amount of pollution discharged is also below the upper limit of total pollution, which will not affect the water body and biodiversity.

Before the completion of the Water Resource Center, the sewage in the Erlin Park was recycled and reused by the manufacturers. At present, there is only one manufacturer stationed in Erlin Park. The companies in Chung Hsin Park focus on research and experimental industries, and no process wastewater is produced. The wastewater from the laboratories of the manufacturers in the Park is entrusted to the qualified manufacturers for cleaning and transportation, and the domestic sewage is taken into the sewage sewer of the Park and sent to the Zhongzheng Road Sewage Treatment Plant for proper treatment and discharge.

### Discharge data of sewage plants in each Park in 2020

Project/Park		Taichung Park	Houli Park - Houli Base	Houli Park - Chising Park	Huwei Park
Discharge location		Dadu River	Da-an River	Da-an River	Xinzhuangzi Drainage Channel
Annual discharged water (million liters)		31,944	4,893	2,658	316
Average daily discharge (CMD)		87,277	13,365	7,261	863
BOD <sub>5</sub> (mg/L)	Discharged water standard	25	25	25	30
	EIA commitment value	20	10 (7-day average)	10	20
	Average monitoring value	3.0	2.1	2.0	2.0
COD (mg/L)	Discharged water standard	80	80	80	100
	EIA commitment value	80	80	60	80
	Average monitoring value	34.2	31.1	26.7	25.4
SS (mg/L)	Discharged water standard	25	25	25	30
	EIA commitment value	20	10 (7-day average)	10	20
	Average monitoring value	5.1	6.0	1.4	1.7

## 5.4 Waste disposal

Businesses in the Park under the jurisdiction of this Bureau must report waste output and storage information online after obtaining a waste disposal plan permit. This Bureau also conducts inspections from time to time, and checks whether the wastes that are cleared and transported by the business have obtained proper disposal documents certified by the disposal agency, ensuring that there is no random dumping of waste after leaving the factory. General industrial waste is mainly sent to private treatment facilities for processing, or follow the Waste Disposal Act by adopting relevant regulations for resource recovery and reuse. Hazardous industrial waste is transported to the industrial waste comprehensive treatment center under the guidance of the Ministry of Economic Affairs or qualified Class-A private waste disposal facilities shall handle the disposal or follow the relevant regulations on recycling.

The waste disposal volume of the businesses in the Park under the jurisdiction of CTSP is as follows: Among them, general industrial waste is still the main form. Hazardous industrial waste treatment handled by the Park manufacturers outside the Science Park all complies with the Basel Convention. General and hazardous industrial wastes are mainly used for recycling.

Composition of waste	On site		Departed	
	Waste generation (tons)	Processing method	Waste generation (tons)	Processing method
<b>Hazardous waste</b>				
Harmful sludge	0	—	281.01	Curing treatment
	0	—	175.05	Reuse
Hazardous solvent waste	0	—	33,798.87	Reuse
	0	—	23,142.8	Physical treatment
	0	—	6,122.95	Heat treatment (except incineration)
	0	—	4,515.28	Incineration
Other hazardous waste	4,674.80	Chemical treatment	84,734.96	Reuse
	0	—	2,017.28	Chemical treatment
	0	—	1,339.14	Incineration
	0	—	925.85	Physical treatment
	0	—	705.22	Washing treatment
	0	—	62.22	Stabilization
	0	—	43.01	Curing treatment
	0	—	0.22	Heat treatment (except incineration)



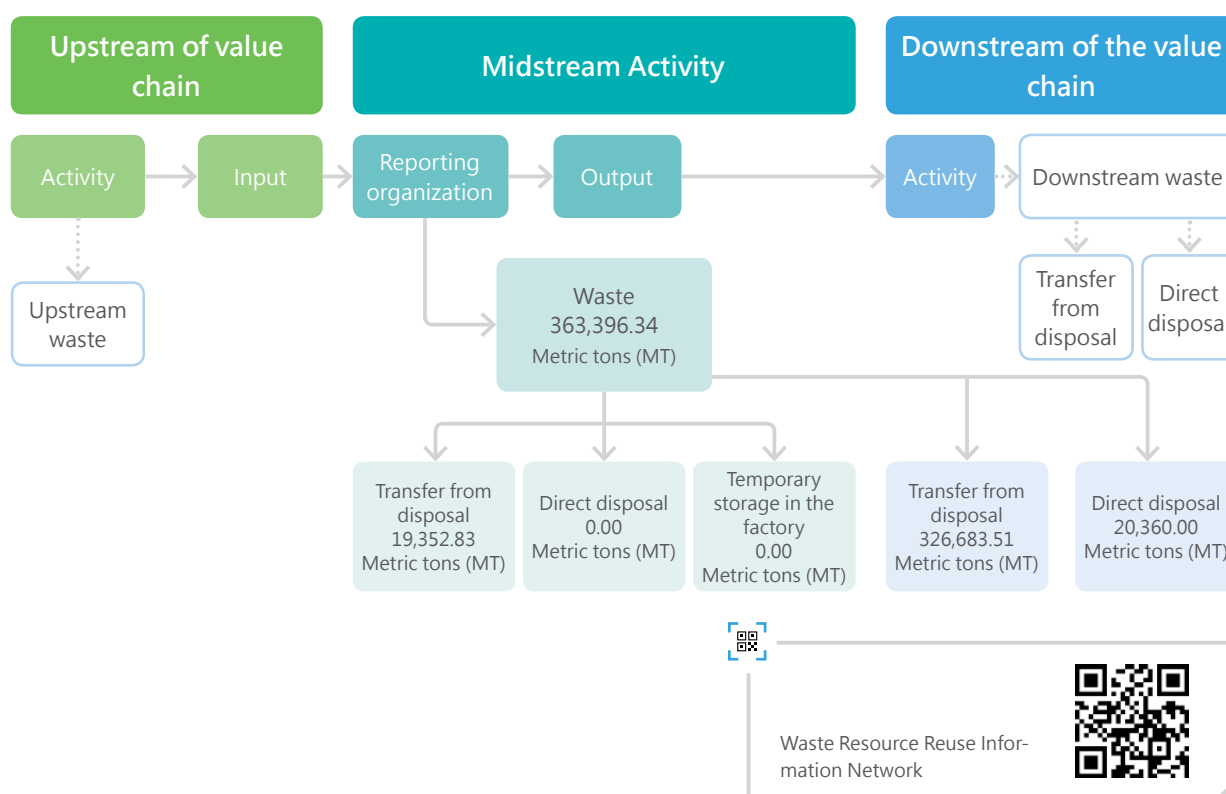
Composition of waste	On site		Departed	
Item	Waste generation (tons)	Processing method	Waste generation (tons)	Processing method
<b>Non-hazardous waste</b>				
Non-hazardous sludge	0	—	26,585.60	Reuse
	0	—	18,415.32	Heat treatment (except incineration)
	0	—	4,186.16	Physical treatment
	0	—	1,461.03	Incineration
	0	—	34.68	Curing
	0	—	10.60	Stabilization
	0	—	2.82	Burying
Non-hazardous solvent	150.73	Chemical treatment	20,441.46	Reuse
	0	—	7,717.33	Incineration
	0	—	5,435.36	Physical treatment
	0	—	230.59	Heat treatment (except incineration)
Other non-hazardous waste	14,527.30	Chemical treatment	90,024.87	Reuse
	0	—	6,218.45	Physical treatment
	0	—	3,635.68	Incineration
	0	—	800.38	Burying
	0	—	434.76	Stabilization
	0	—	354.03	Washing treatment
	0	—	160.04	Chemical treatment
	0	—	22.05	Curing treatment
	0	—	8.44	Heat treatment (except incineration)

Note :

1. For the composition of waste, please refer to the Waste Disposal Plan classification (A/B/C/D/E/R... etc.).
2. The unit of measurement is in metric tons.
3. Types of recycling operations include preparation for reuse, recycling and other recycling operations.
4. Description of the type of recycling includes downgrade utilization, upgrade utilization, composting or anaerobic digestion.
5. Other recycling operations include changing the purpose of use or refurbishing.
6. Types of disposal methods include incineration (including energy recovery), incineration (excluding energy recovery), landfill and other disposal operations.
7. Other disposal operations include dumping, open burning or deep well injection.
8. "On-site" means within the physical boundary or administrative control of the reporting organization; "off-site" means outside the physical boundary or administrative control of the reporting organization.

Waste composition	Hazardous waste		Non-hazardous waste		Total
	On site	Off site	On site	Off site	
Transfer during disposal	4,674.80	151,623.20	14,678.03	172,060.31	343,036.34
	156,298.00		186,738.34		
Direct disposal	0	6,240.66	0	14,119.34	20,360.00
	6,240.66		14,119.34		
<b>Total</b>	162,538.66		200,857.68		363,396.34
<b>Total waste</b>	363,396.34				
<b>Resource ratio</b>	94.40%				

1. Transfer during disposal : preparation for reuse, recycling, and other recycling operations; Direct disposal : incineration (including energy recovery), incineration (excluding energy recovery), burial, other disposal operations  
 2. The calculation method of the resource utilization ratio is the amount of recyclable waste processed/total waste x 100%.



### ► Sewage treatment plant sludge removal

The removal and treatment of the sludge produced by the sewage treatment plants in the Parks under the jurisdiction of this Bureau shall be handled by qualified removal and treatment organizations in accordance with the relevant regulations of the Waste Disposal Act, and the output shall be declared to the Environmental Protection Agency in accordance with the regulations of the EPA. According to the official website of the Bureau, the sludge removal and treatment documents (one



original & 2 copies) are issued when the sludge leaves the factory, and the transportation vehicle is also equipped with a GPS tracking system to track the sludge flow direction. Subsequently a proper treatment certificate issued by a qualified treatment agency shall be obtained. In addition, this Bureau's sewage treatment plants sometimes follow the vehicle to confirm and ensure the sludge is indeed cleared and transported to the entrusted qualified treatment agency.



GPS vehicle track record for sludge removal and transportation of sewage to treatment plant (Houli)



Sewage treatment plant sludge removal truck accompanied by vehicle (Houli)



GPS vehicle track record for sludge removal and transportation of sewage to treatment plant (Taichung)



Sewage treatment plant sludge removal truck accompanied by vehicle (Taichung)

## ► Recycling

This Bureau actively assists and coaches park manufacturers in waste reduction and reuse, and conducts selection and recognition of outstanding business units for waste reduction and resource recycling in the Park. It expects to substantially assist park manufacturers in reducing the output of terminal waste, provide recommendations on source reduction and waste recycling technologies, improve waste recycling rate, gradually turning the CTSP Park into a resource recycling ecological park. In 2020, two outstanding manufacturers of waste reduction and resource recycling and two outstanding personnel were selected. Following praise by the Bureau, the outstanding manufacturers were invited to share their experience. The results of promotion can be divided into two main axes for explanation:

### Encourage manufacturers to reuse

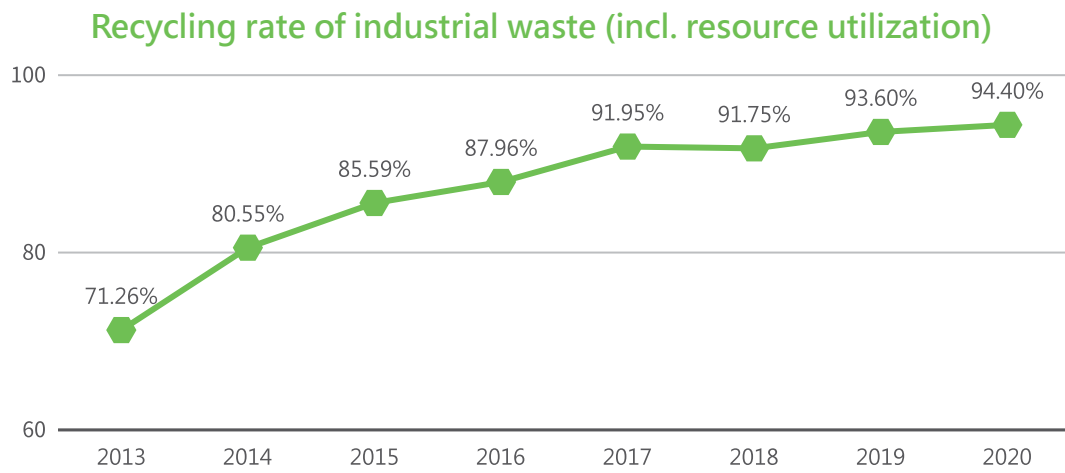
Continue to publicize source reductions and encourage and guide the park manufacturers to submit applications for reuse. Experts and scholars are invited to conduct site surveys and review. The reuse agencies will make amendments based on the review opinions and approved by the committee members.

- In 2020, a total of 4 reuse applications were approved. The waste reuse rate in the Parks under this Bureau increased to 94.4%, and the reuse agencies declared a total of approximately 28,155.83 metric tons of reuse.
- In 2020, 81 waste inspections and source reduction publicity sessions were completed, and one recycling technology and regulation publicity meeting was conducted.
- In 2020, the purchase amount of this Bureau's environmental protection products totaled NT\$2,027,000, accounting for 100% of the total purchase amount.

### Tracking counselling reuse agency

After this Bureau has issued a re-use license case, apart from routine inspections, experts and scholars will be invited to conduct follow-up and counselling work.

- In 2020, 15 sessions of counseling inspections for reuse agencies were conducted.



Briefing session on promotion of waste recycling technology



Reuse application site survey review meeting



Institutional experts and scholars of recycling to track and counsel

## 5.5 Environmental Monitoring

### Environmental protection tracking and supervision

According to the Environmental Impact Assessment Enforcement Rules, the competent authority of the purposed business should track the activities during the process or after the completion of the development. Therefore, the Ministry of Science and Technology established an environmental impact assessment tracking team for the development of the science park, which is composed of experts, scholars, and representatives of the park manufacturers and agencies. In 2020 they performed 2 follow-up meetings to this Bureau.

Before the development of the CTSP Park, the environmental impact assessment documents were submitted for review in accordance with the Environmental Impact Assessment Enforcement Rules, and the Environmental Impact Assessment briefing was handled in accordance with the procedures. Active communication with all walks of life, and the review was passed, the Environmental Assessment documents and commitments were indeed followed. Taichung, Houli and Erlin parks were all handled in accordance with the key points of environmental protection supervision, and an environmental protection supervision team was established. A total of 16 experts and scholars (including environmental engineering, soil and water conservation, and health risks), 13 NGO representatives, 24 local leaders and 4 representatives of local authorities, 4 representatives of manufacturers, and 61 external committee members participated in order to enhance the extensive participation of environmental protection supervision, regularly hold supervision meetings, and continue to track the development of the Park.





## 2020TSP Development plan environmental assessment review, tracking and supervision meeting handling situation

Organizer	Category	Conference Name	Sessions
Environmental Protection Agency	EIA supervision On-site inspection	On-site inspection of environmental impact assessment and supervision of the environmental impact specifications of each Park's development plan	6
	EIA supervision	Central Taiwan Science Park Houli Park (Houli Base) Development Plan Environmental Impact Assessment Review Conclusion Implementation Supervision Group Meeting	0
Ministry of Science and Technology	Environmental Assessment Tracking	Environmental Impact Assessment Tracking Group for the Development of Science Parks of the Ministry of Science and Technology meeting	2
CTSP Bureau	EIA supervision	Central Taiwan Science Park Taichung Park Environmental Protection Supervision Group meeting	4
	EIA supervision	Central Taiwan Science Park Houli Park (Houli Base and Chising Base) Environmental Protection Supervision Group meeting	4
	EIA supervision	Central Taiwan Science Park Erlin Park Environmental Protection Supervision Group meeting	2
<b>Total</b>			<b>18</b>



CTSP Houli Park Environmental Protection Supervision Group 4th Meeting



Environmental Assessment Tracking Team Meeting of the Ministry of Science and Technology - Erlin Park Site Investigation

### ► Handling of environmental protection petition cases

This Bureau has set up a free environmental protection complaint hotline - 0800-777795, which is manned 24-hours a day by special personnel, and to then go to the scene to conduct inspections and handling operations. In 2020, a total of 13 complaints from the public were accepted, including 7 complaints about air, 5 for noises, and 1 of abandonment. The Bureau immediately went to deal with the issues after receiving the petitions. All petition cases in 2020 have been closed.

### ► Environmental quality monitoring

In order to effectively prevent pollution emissions and minimize the impact of park operations on the environment, the CTSP Bureau conducts various environmental monitoring every year in accordance with the environmental monitoring plan contained in the EIA document, including air

quality, noise, vibration, and water quality, surface water quality, groundwater quality, sediment, soil, ecology, traffic volume and cultural assets, etc. Of these, 2,021 monitoring sessions were conducted in 2020. The environmental monitoring results of this Bureau are open and transparent, and are published on the CTSP Park Environmental Information Integration Network for public viewing.

In order to understand the current status of various environmental factors other than the environmental assessment documents, this Bureau added some supplementary monitoring points in 2020, including air quality, noise and vibration, discharge water quality, surface water quality, groundwater quality and other items, of which 756 monitoring sessions were carried out in 2020.



Air Quality Monitoring - Taichung Park Photochemical Monitoring Station



Air Quality Monitoring-Houli Park - Qixing Base General Air Quality Monitoring Station



Noise and vibration monitoring



Water quality



Surface water quality



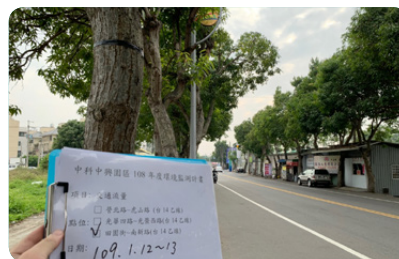
Groundwater quality



River bottom sediment



Soil quality



Traffic flow

In addition, in order to improve the credibility of the data, this Bureau also planned parallel monitoring in 2020, which included general air quality, acid-base gas, peculiar smells, flue detection (including night detection), civilian wells, etc., and synchronous detection is carried out from time to time, ensuring the quality of monitoring data. In order to understand the manufacturers' night emissions situation, on April 7 and October 22, 2020, this Bureau performed the night flue inspections together with the environmental protection supervision team members (local chiefs), and the test results were not abnormal. It is hoped that through irregular inspections, we can truly understand the impact of the Park operation on the environment.



Environmental Information Integration Network



# Core Policies



Learn more about our  
community activities etc.

## Policy 6: Social Interaction

6.1 Convenient Life in the Smart Park

6.2 Good Neighborliness and Friendly Environment

Special Column : CTSP 17th Anniversary Celebration



6.3 Promoting AI Education







In order to enhance the friendship between the park manufacturers and the surrounding areas and build a friendly park with ecological co-prosperity and harmony, the CTSP Bureau creates leisure and recreation spaces for community residents, conducts ecological surveys in each Park regularly every year, and endeavors to make use of the retention pond ecological park to reserve more suitable environments for the growth and habitat of animals and plants. At the same time the Bureau organizes Science Park tours and good neighborliness activities between park manufacturers and neighboring communities, promoting environmental education, developing educational curriculum programs, and assisting and tutoring in the development of smart robots in related fields, thereby actively cultivate domestic students.

Corresponding Material Topics	Corresponding SDGs	Management Objectives and Policies
<ul style="list-style-type: none"> <li>› GRI 413 : Local Communities</li> <li>› GRI 203 : Indirect Economic Impacts (Park Infrastructure Construction)</li> </ul>	 	<ul style="list-style-type: none"> <li>› Strike a balance between economic growth, environmental protection and social harmony.</li> <li>› Construct software and hardware facilities in the Park to improve the quality of services and continue to implement the work of good neighborliness.</li> </ul>

Commitments and Goals
<p><b>Short-term Goals</b></p> <ul style="list-style-type: none"> <li>› Regularly interact and communicate with community residents, while continuing park construction.</li> <li>› Phase I construction of the standard factory buildings in Huwei Park is expected to be completed in November 2021.</li> </ul> <p><b>Medium and Long-term Goals (3+ years)</b></p> <ul style="list-style-type: none"> <li>› Continue environmental education work for the 3 sewage plants, and hold 7 neighborhood events as part of the national clean home campaign.</li> <li>› Continue to implement ecological communities to maintain sustainable development and a friendly environment.</li> </ul>

Responsible Units
<p>Environment and Labor Affairs Division, Land Development Division, Construction Management Division</p>

Invested Resources
<ul style="list-style-type: none"> <li>› Plan the construction of the Park according to needs.</li> <li>› Organize various labor recreational and welfare activities.</li> </ul>

Complaints Mechanism
<p>Toll free hotline for environmental complaints : 0800-777795, Director-General's mailbox</p>

Management System and Evaluation Mechanism
<ul style="list-style-type: none"> <li>› Smart Sustainable Development Plan for the Science Park</li> </ul>

### 2020 Performance

- › Completed the setup of 179 wireless network hotspots in the Park, with an achievement rate of 293%. The whole project was accessed 1,202,358 times by the end of 2020.
- › The total number of passenger rides on the CTSP Shuttle Bus reached 118,959 in 2020, which is equivalent to a reduction of 119 metric tons of CO<sub>2</sub>e emissions.
- › From the first date of operation to the end of 2020, the electric vehicles in Huwei Park have provided 14,750 rides and traveled 30,867 kilometers.
- › A total of 69 environmental education activities in Taichung, Huwei and Houli Park Sewage Plants were conducted, with a total of 2,538 people participating.
- › Together with CTSP Cinema, good neighborliness activities were held 20 times.

## 6.1 Convenient Life in the Smart Park

### ▶ Smart Park

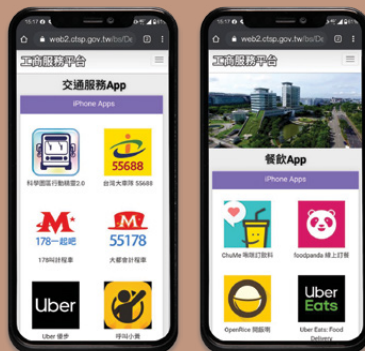
Every inch of land in the CTSP is continuously managed by Bureau personnel. In order to allow the park manufacturers, visiting guests and the public to enjoy a good network environment, business services, park art appreciation and detailed traffic information, the Bureau builds the following facilities :

#### Free Wi-Fi in the Park

Wi-Fi hotspots have been set up in the public spaces of the CTSP for the convenience of park manufacturers, visitors and employees to use the Internet for free. To date (December 2020) of the project, a total of 179 wireless network hotspots have been completed, with an achievement rate of 293%, and has been accessed a total of 1,202,358 times (from December 2016 to the end of December 2020).

#### Business Service Platform Website

A total of 31 manufacturers have been stationed in the Bureau's Industrial and Commercial Service Building by the end of December 2020, with an occupancy rate of 98.86%, encompassing financial, medical, employment, postal, transportation, catering, corporate finance, as well as accounting and law firms and other related industrial and commercial service industries, enhancing operational efficiency. In order to enhance the industrial and commercial service information of each Park, the Bureau established the Business Promotion Platform Website. This platform has three main functions : Mobile App download, industrial and commercial service information and related links.

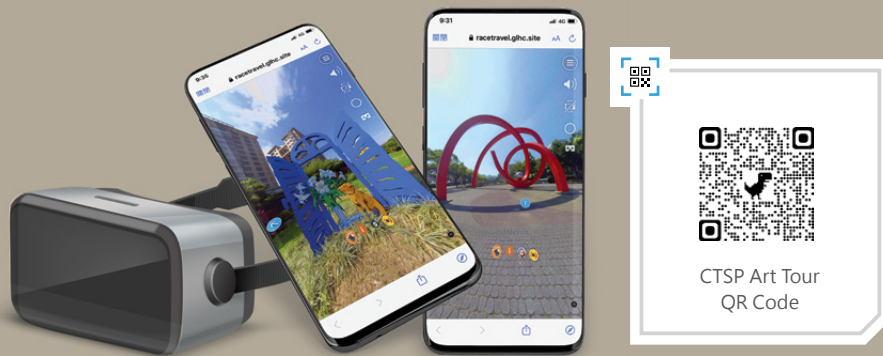




**CTSP Art Tour:  
Smart Digital  
Surround-  
View Guide**

In response to the development and operation history of the CTSP and the humanistic care contained within, the achievements of past public art projects are continued with digital collection import technology aimed at local memories and intellectual assets in five dimensions : people, culture, land, property, and scenery. In the first stage, a total of 8 public art works in Taichung Park and 1 in Houli Park are expected to be incorporated into a 3D Smart Digital Surround-View Guide to CTSP, so that VIPs and those unable to visit the Park in person can enjoy it online. The beauty of the art works in the Park, and the establishment of a 3D Guide Info Station in the Park, guides visiting VIPs and the public to cross the limitations of time and space, helping them enjoy the beauty of CTSP through 3D virtual reality surroundings at specific scenic spots, creating a benign science, technology and humanistic interaction, thus achieving the purpose of expanding the benefits of the public art installation project.

In the future, we will continue to introduce the Bureau's public buildings, parks and other cultural landscapes in Taichung, Huwei, Houli, Chising, Erlin and Chung Hsing Parks into this 3D smart scenic spot guide system.



**Bonded  
Business  
Management  
System**

In order to enhance the efficiency of administrative services, and in line with the Science Park Bonded Business Management Measures, which was revised and implemented on June 4, 2020, the CTSP has improved the bonded business management system. In addition to the full electronic application of bonded businesses, the competitiveness of the manufacturers in the Park will be enhanced.

1. The bonded business management system is established in line with laws and regulations. The system includes operations for exporting bonded goods, commissioned processing operations for bonded goods, scrapping operations for bonded goods, and operations for transferring (yielding) bonded machinery and equipment, etc. In 2020 the total number of applications was 529.
2. This simplifies the process of coordinating with the revision of the law. For example, the cases of bonded goods leaving the zone are checked through the system, and the cases that belong to the customs review are filtered, and they are directly sent to the customs review terminal by electronic transmission to speed up the review. After the amendment of the law in 2020, the system reviewed 82 cases sent directly to the customs, saving personnel time and waiting time for manufacturers.

**New Customs e-Service System**

The new e-Service System for customs clearance of imported and exported goods in the Park is now online, which further enhances the convenience and accuracy of the park business. The system can precisely facilitate the application of the three-in-one format of import and export trade customs clearance information, the active message transmission module, and bidding customs clearance system, forming the highly digitalized park service operations.

**Smart Transportation System**

The CTSP Bureau has developed a smart transportation system in the Park, containing real-time links to traffic information management, public transportation and parking lots. As of December 2020, the Science Park Action Wizard 2.0 had been downloaded more than 56,000 times. The Huawei Park electric vehicles have served 14,750 passenger rides and traveled 30,867 kilometers, while the CTSP shuttle bus has provided a total of 118,959 passenger rides, which is equivalent to a decrease of 119 Metric tons of CO<sub>2</sub>e emissions.

中科建置智慧交通

Traffic Control System

Smart Parking System

Smart Shuttle Bus

Science Park Action Wizard 2.0

Smart Signage

Download the Science Park Action Wizard 2.0

► Park Construction

In order to make Park functions more convenient and complete, providing banking, convenience stores, restaurants, large conference halls, and entertainment venues, the CTSP continues to improve related construction and services in the Park. The following were completed in 2020 :

The Kenanaiqin Bridge completed and open to traffic

The Kenanaiqin Bridge , which resembles a harp, connects the east-bound connection road of Zhonke Road to Taichung Park, has been completed and opened to traffic, which connects the east-bound section of Zhonke Road, Taichung Park via Provincial Route 74 directly to Shuinan Economic and Trade Park in the urban area. Avoiding turns and detours saves 15 to 20 minutes of driving time, while the beautiful scenery lit at night makes for a convenient sightseeing trip.



### Erlin Park Police Station

In order to meet the needs of the police service and development of the Erlin Park, CTSP Erlin Police Branch was added next to the original Erlin Public Works Office. In May, the Director-General and the Chief of the Second Special Police Corps jointly presided over the opening ceremony. The new Station will provide better transportation and public security services for the manufacturers and their employees in the Erlin Park.



### CTSP staff dormitory introduces 7-11 vending machines and EZPost boxes

In order to add new living functions to the singles dormitory in Taichung Park and provide residents with a more convenient living environment, the Bureau introduced 7-11 vending machines and EZPost mailboxes of Chunghwa Post in the social hall on the first floor of the dormitory.

### First iBike station in Houli Park

In August 2020, Houli Park's first iBike station was opened. The Taiwan Micron Station was donated by CTSP Houli Park manufacturer Taiwan Micron to the Taichung City Government Transportation Bureau and incorporated into the Taichung City's iBike system for operation. It can be enjoyed by both park employees and the general public together.



## 6.2 Good Neighborliness and Friendly Environment

### ► Good neighbors, friendly neighbors

To enable the local community to know more about the science park, the Bureau organizes good neighborly exchange visits in Taichung, Houli, Huwei, Erlin and Chung Hsin Science Parks to enhance exchanges between the park manufacturers and the neighboring communities. In 2020, various labor recreational and welfare activities were held, including 20 sessions of film appreciation at CTSP Cinema, the CTSP Cup basketball and softball competitions, Mid-Autumn Festival sale, and so on, to promote the physical and mental health of employees in the science park through these activities.



CTSP Cup Basketball Tournament



2020 Da'an Beach Cleaning Activity

On September 26, 2020, for the seventh year the Bureau co-organized a beach cleaning activity with the Guike Community Development Association of Da' an District, Taichung City. In addition to the participation of community residents and volunteers, the park manufacturers were also again invited to clean up the litter along the coast and restore the rich and diverse marine biological resources, providing a complete ecological conservation environment and improving the quality of community life. With the concerted efforts of about 280 people, about 50 bags of garbage were collected, including large sized waste such as tires, plastic, styrofoam and plastic cups, and others that are not easily biodegradable in the environment.

### ► Health Risk Assessment and Epidemiological Investigation

According to the four major health risk assessment steps in the Technical Guidelines for Health Risk Assessments announced by the Environmental Protection Agency, this Bureau conducted five health risk assessments in Taichung Park, four in Houli Chising Park, and one in Erlin Park in 2020. Taking into account the operating needs of park manufacturers, Chising Park will continue to implement health risk assessments from 2020.

In order to take care of the community residents, Chising Park has continued to implement the Good Neighbor Health Care Project for residents in Houli District and Da' an District since 2011, providing



free health checkups for eligible residents. In 2020, 42 advocacy sessions, 846 telephone interviews and 738 health check-ups were conducted. From 2011 to 2020, a total of 274 publicity sessions, 5,763 telephone interviews and 4,144 health check-ups were handled. In addition, after Chising Park started operation, an epidemiological follow-up survey is conducted every 5 years. According to the commitment of the Chising Park Phase II environmental assessment, an additional survey was conducted in 2019. As of 2020, a total of 2,152 questionnaire surveys and blood biochemical tests have been carried out.



Implementation of the Good Neighbor Health Care Project

### ► Keeping Watch : The Water Environment Patrol Team

The CTSP Bureau was invited by the Environmental Protection Bureau of Yunlin County to set up the Water Environment Patrol Team at the Huwei Science Park Sewage Treatment Plant. In addition to providing environmental protection expertise, experience and technology, the CTSP Bureau also uses the Patrol Team to perform the work of guarding adjacent rivers and waters, effectively grasp the changing trends of river water quality and quantity, and increase the environmental sensitivity of the patrol team through the gradual accumulation of local river inspection experience. Subtle changes in the river can be detected and notified as soon as possible to prevent illegal discharge or dumping by industry or public, implementing the effectiveness of good neighborly relations. In July 2020, they participated in the Clean Stream Activity of the Xinhwei River section of Erlun Township, Yunlin County.



River Patrol Team - Clean Stream Activity

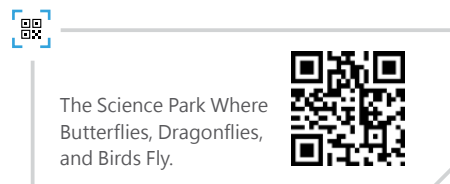
## ► The Science Park Where Butterflies, Dragonflies, and Birds Fly

Although there are many high-tech factories, the CTSP has planted more than 50,000 trees of 230 species. The ecological green network connecting the Park spans an area of about 170 hectares. There are 6 kilometers of bicycle lanes and 21 buildings in the Park that have obtained EEWB Green Building Certification. In addition, there are 10 water retention ponds to create a friendly environment.



CTSP Bureau promotion of ecology achieves results, with compilation and publishing of The Science Park Where Butterflies, Dragonflies, and Birds Fly.

After years of careful management and operation by colleagues and maintenance vendors, the Park has been transformed from loess to greenery. In 2020, a book of ecological observation records for Taichung Park, The Science Park Where Butterflies, Dragonflies, and Birds Fly, was published. The team spent a year on record compilation. The content of this book is mostly provided by colleagues and park maintenance vendors who observed the ecological environment of the Park's rich and diverse species during the maintenance period, recording every touching moment. It was prepared by Tsai Shao-bin, the former head of the landscape maintenance department of the CTSP Bureau. The content includes 60 species of butterflies, 26 species of dragonflies and 85 species of birds recorded as of the end of August 2020. It is hoped that this book can become a guide tool and an introductory illustration for people walking through the Park ecology.



## ► Ecological Paradise

Maintaining the ecology of the Park is one of the firm principles of the CTSP Bureau. In accordance with the EIA commitment, it regularly conducts ecological surveys in each Park (Taichung, Houli, Erlin, and Chung Hsing) every year, and records the rich species in the Park. Taiwan is right on the migration path of East Asian migratory birds. The number of northern migratory birds that come to spend winter is often higher than that of summer migratory birds that come here to breed in summer. In addition, the resident birds of Central Taiwan have the habit of descending in winter, therefore, the total number of birds in autumn and winter is mostly higher than in other seasons.

The surrounding environment of the Park is mostly grassland or farmland, with mostly common species recorded. Because amphibians reproduce in spring and summer, the number of species is the largest in during those months. The water area monitoring locations are the special water outlet of Houli Park and the downstream of the sewage discharge outlet of Ching Hsing Park. The project includes fish, benthic organisms, aquatic insects, and phytoplankton.



**Taichung Park**

<p style="text-align: center;"><b>Protected Species</b></p> <p>Level 2 Protected Species : Crested myna, Black-winged kite, Crested goshawk, Crested honey buzzard, Collared Scops-Owl</p> <p>Level 3 Protected Species : Brown shrike</p> <p><b>Expansion Land :</b></p> <p>Level 2 Protected Species : Crested myna, Collared scops owl, Besra</p> <p>Level 3 Protected Species : Brown shrike</p>	<p style="text-align: center;"><b>Endemic to Taiwan</b></p> <p>Reptiles : Swinhoe's japalura</p>
--	--

**Houli Park**

<p style="text-align: center;"><b>Protected Species</b></p> <p>Level 3 Protected Species : Brown shrike found in Houli and Chi Hsing Farm</p>	<p style="text-align: center;"><b>Endemic to Taiwan</b></p> <p>Fish : Acrossocheilus paradoxus, Spinibarbus hollandi, Opsariichthys pachycephalus, Rhinogobius candidianus</p>
---	--

**Erlin Park**

<p style="text-align: center;"><b>Protected Species</b></p> <p>Level 2 Protected Species : Black-winged kite, Crested honey buzzard, Crested serpent eagle, Crested goshawk, Eastern buzzard, Common kestrel, Peregrine falcon</p> <p>Level 3 Protected Species : Oriental pratincole, Brown shrike, Checkered keelback,</p>	<p style="text-align: center;"><b>Endemic to Taiwan</b></p> <p>Reptiles : Taiwan scimitar babbler, Swinhoe's japalura, Takydromus stejnegeri</p>
--	--

**Chung Hsing Park**

<p style="text-align: center;"><b>Protected Species</b></p> <p>Level 2 Protected Species : Crested goshawk, Crested serpent eagle, Collared scops owl</p> <p>Level 3 Protected Species : Brown shrike</p>	<p style="text-align: center;"><b>Endemic to Taiwan</b></p> <p>Amphibians : Central Formosa toad, Temple tree frog, Taiwan treefrog, White-lipped Treefrog</p> <p>Fish : Formosan stripe dace, Acrossocheilus paradoxus, Opsariichthys pachycephalus</p> <p>Reptiles : Swinhoe's japalura, Takydromus stejnegeri</p>
---	--



Black-winged kite



Crested goshawk

### ► Nesting with Peace of Mind

In accordance with the EIA commitments, the Bureau has set up 10 bird nesting boxes in Guang Fu Elementary School (Chung Hsing New Village), Guangrong Elementary School, Guanghua Elementary School, the Education Center and Hushan Farm. In 2019, in addition to the records of the of *Hemidactylus frenatus*, Formosan Giant Flying Squirrels were found in 2 locations, and a protected bird, *Otus bakkamoena*, was observed in a nest box, with hatching recorded. In addition, the Bureau also set up 13 nest boxes in Huwei Sewage Treatment Plant and Guangfu Elementary School (Huwei Township), mainly provided for bat breeding, winter hibernation and general inhabitation. Furthermore, cases of use by other creatures were also observed, including *Hemidactylus frenatus*, *Erthesina fullo*, *Heteropoda venatoria* and *Polypedates megacephalus*.



*Petaurista philippensis grandis*  
in nest box



Scops owl laying eggs in nest box

### ► Deeply Cultivate Environmental Education Activities

CTSP Bureau's sewage treatment plants in Taichung, Huwei, and Houli Park have all been certified by the Environmental Protection Agency as environmental education facilities. They actively promote environmental education to make local residents better understand the role of sewage plants, and at the same time take root in the development of elementary and middle school education courses, run certification courses, invite students from neighboring schools to participate in course programs and provide suggestions for improvement, convey the function of environmental protection and education of sewage treatment plants. The plants not only achieve the effect of close friendship and good neighborliness, but also serves the purpose of environmental education. In 2020, a total of 69 environmental education activities in Taichung, Huwei and Houli Park Sewage Plants were organized, with a total of 2,538 people participating.

<b>Taichung Park Sewage Treatment Plant</b>	Environmental education courses	180 people in 6 sessions
	Environmental education related visits	294 people in 8 sessions
	General visit activities	616 people in 12 sessions
	Neighboring environmental education partners to promote related activities	292 people in 4 sessions



**Houli Park Sewage Treatment Plant**

**Environmental education courses**  
**General visit activities**

279 people in 12 sessions  
183 people in 6 sessions

- Completed and passed the field evaluation of environmental education facilities in September.
- Signed a letter of intent for cooperation with 8 neighboring schools, and signed a memorandum of cooperation with 5 neighboring fields.

**Huwei Sewage Treatment Plant**

**Environmental education courses**  
**General visit activities**  
**Outdoor teaching activities**

260 people in 11 sessions  
128 people in 3 sessions  
306 people in 7 sessions



Lesson plan experience - Taiwan Micron : Know the water source



Lesson plan experience - Houli Elementary School : When we mix together



Lesson plan experience - YunTech



Environmental Education Course Experience - Pinghe Elementary School and Guo-an Elementary School



General Visit - National Taichung University of Education In-service Continuing Education Credit Class Primary and Secondary Teachers Group



Summer camp activities - Dadu Mountain and Water Time Journey



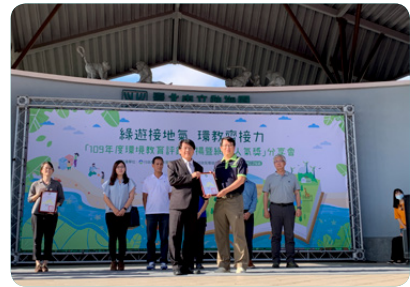
Field Evaluation of Environmental Education



Promotional Activities -  
50th Anniversary of Earth Day-  
Green Action GO! Love Taichung



Promotional Activities -  
National River Day 2020 -



2020 Environmental Education  
Evaluation and Recognition

### ► CTSP National Experimental High School

The National CTSP Experimental High School (CTSP EHS) was established to serve science park institutions and provides educational resources that meet international standards. Since the establishment of the school in 2010, it has just passed the first ten years. During this period, it also established a junior high school in 2016 and a bilingual department in 2019, establishing the first national bilingual school in Central Taiwan.

The CTSP EHS is planning combinations of technology and humanities to enable students to grow in the innovative spirit of the Science Park. In addition to inspiring students' innovative concepts and practices, it also takes into account the cultivation of humanities, creating an ideal and distinctive educational environment for students, and has now become a prestigious school for students in Central Taiwan. The school building of the Elementary School Department is currently underway. It is expected that the elementary school will accept enrollment in the 2025 school year.

Enrollment targets include CTSP Park businesses, research institutions, innovation and incubation centers, the CTSP Bureau, CTSP experimental high school employees' children and students enrolled in neighboring school districts around the Park, etc. The priority order of admission is set with reference to the National Science Industrial Park Experimental High School. As the individual differences of students are quite large, the learning environment will consider each individual student's needs.



The CTSP celebrated its 17th anniversary and kicked off in August with the CTSP 17 Full of Miracles Anniversary Celebration. The event was hosted by the Director-General of the CTSP Bureau, and 17 VIPs were invited to beat drums with powerful sound, performing CTSP 17 Shake the Future and jointly shake up the CTSP's vision of creating sustainable industry innovation. Specially invited were the AUO's A-Team club dance performers and the Houli Saxophone Philharmonic Club to perform the finale performance, showing the Park's technology and humanities, work and life, sharing the joy of CTSP growth. A series of activities including the CEO Master Forum, Mid-Autumn Festival sale, road running activities, park ecology introduction and bird watching activities and industrial safety and environmental protection month were also held in September.

A Park anniversary celebration road run event was held in the CTSP Shuikutou Park. Nearly 500 park employees and their relatives swarmed into the Park for the event. The Director-General hosted the opening ceremony, warmed up with the runners on the spot, and the race officially started under the Director-General's starting shot. With the route 5.1 kilometers long, it is hoped that in addition to participating in this activity, it can encourage workers to use their time outside of work to do outdoor activities, relax their minds and bodies, and release stress appropriately. In order to promote the landscaping and greening achievements of the Park's years of construction and maintenance, an ecological introduction and bird watching activities were also held, mainly introducing the Park's birds, ecological environment, and bird watching related knowledge and information, allowing the employees of the manufacturers and colleagues of this Bureau, who cannot always have the opportunity to walk around the Park, to better understand the ecological environment.

In October, the 2020 Environmental Protection Seminar was held, inviting domestic experts to lecture on sludge energy application, air quality analysis, and the former director of Taichung City Environmental Protection Bureau to lecture on Taichung City Climate Change Governance, providing park manufacturers, surrounding universities and colleges or teachers and students from CTSP colleagues practical knowledge.



Seventeen executives and VIPs beat the drums at the same time, blessing CTSP's grand vision



Director-General of CTSP Bureau and guests kick off the road running event



The CTSP Bureau Construction Division chief uses a telescope to watch birds

## 6.3 Promoting AI Education

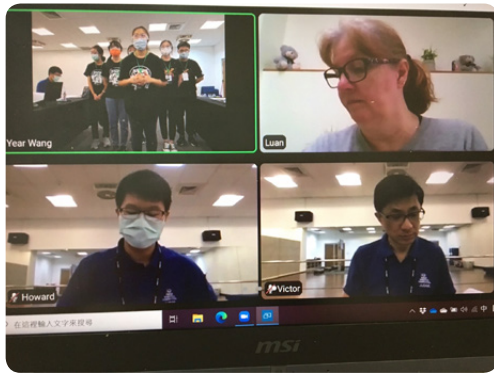
The CTSP Bureau spared no effort in coaching and providing a stage for the First Robotic Competition (FRC) team to show off their results, actively improving the domestic competition specifications, and officially won the first 2020 FRC Science Park Taichung Regional Competition in Taiwan, freeing domestic teams from the stress of travelling abroad. Many domestic students competed with teams from various countries and held the Kick off Problem Solving Camp and Consultation Conference. 48 teachers and students from all participating teams from all over Taiwan were called on to gather at the CTSP AI Robotics Hub and connect with the FIRST Robotics Program headquarters in the United States. In January, the competition topic was announced for the first time, and the night battle synchronized for the first time also with uninterrupted problem-solving for 14 hours! After solving the problems overnight, this Bureau specially invited professors from the Department of Mechanical Engineering of National Taiwan University to discuss countermeasures and assist the coaches in bringing the Kick off machine parts for the competition questions back to the teams for practice.



All participating teams focused on watching the competition topic announced by the FIRST headquarters in the United States

The subsequent FRC regional competition was postponed due to the gradual increase in the COVID-19 epidemic. In order to assist the domestic FRC team to continue to improve, an FRC training course was held again in July, and the instructor of the Mingdao High School team who won the second place in the 2019 FRC Australian regional competition was hired to set up training courses at CTSP AI Robotics Hub, demonstrating this Bureau's determination to assist the domestic teams to compete in the world robot arena.

In response to the enthusiasm and perseverance of the participating students, the CTSP Bureau continued to strive for proposals from the FIRST headquarters in the United States. In November, the CTSP Bureau, backed by its outstanding epidemic prevention performance and technological strength, contributed to the world's first 2020 FRC Science Park Taichung 5G Digital Pilot Regional Competition! 28 domestic high school teams competed on the field and through online live broadcasts, global domestic and foreign FRC competitors could watch the games together across time and space and epidemic restrictions. It also allowed the world to see Taiwan's first competition model. The two-day live broadcast reached nearly 20,000 viewers.



Participating teams conduct remote interviews with foreign judges through 5G connection

Over the past 3 years, the close contact between teachers and students of each team and the CTSP and participation in competitions and activities has stimulated deep friendships between the teams. After the end of the competition, as many as 20 teams gave enthusiastic feedback, expressing their gratitude for allowing Taiwanese students to still enjoy the games and learning during the epidemic, while thanking the CTSP for making these games take shape and investing a lot of effort, which is of great significance to these students. There were also student teams who thanked the CTSP Bureau for organizing FRC events after the games, leaving them with precious memories and experiences.



Teams participating in the 2020 FRC Science Park Taichung 5G Digital Pilot Regional Competition in November

### ► FRC elites from all over the world gather for exchanges

The CTSP AI Robotics Hub actively cultivates domestic students' skill development in smart robot-related fields. In August, the FRC team went back to their parents' homes to share the activities, and invited outstanding elites from Taipei First Girls' High School, Mingdao High School and Nangang High School to share, exchange and teach others how to enter prestigious universities at home and abroad by participating in FRC competitions. At the same time, the deputy dean of National Taiwan University and professors of Chung Hsing University were invited to share the universities' views on selecting special talent, and conduct Q&A exchanges with students on the spot.



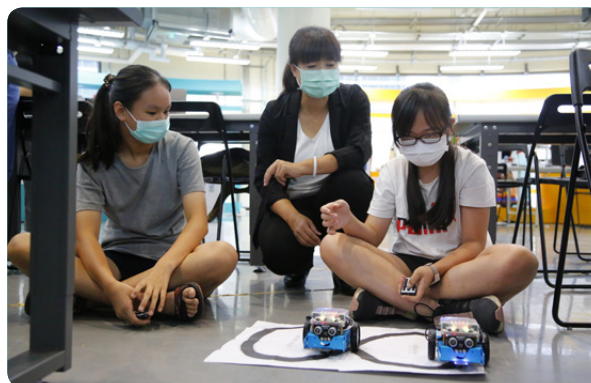
The Deputy Director-General of CTSP Bureau and FRC shared a group photo with attending VIPs

### ► Summer Experience Courses for Children

The CTSP Bureau cooperated with the Central Taiwan Joint Service Center of the Executive Yuan to invite five elementary schools in Central Taiwan : Nantou City Kangshou Elementary School, Caotun Town Caotun Elementary School, Puli Township Puli Elementary School and Dacheng Elementary School, and Changhua Minsheng Elementary School to join 4 AI Robotics Hub Visit and Experience Course activities. The course used the mBot robot, which is easy to arouse students' interest in learning, through the easy-to-use Scratch programming language, and the lively teaching methods of the instructor, with graphical programming language and logical thinking, so that students participating in the course could easily write programs to control mBot robots, taking this opportunity to inspire students' interest and ability in self-built robots. A total of 103 students participated.



Coding teaching



mBot Operation



# Future Outlook



The Central Taiwan Science Park is the youngest science park in Taiwan. Since its establishment in 2003, CTSP turnover has grown year by year under the joint efforts of the Bureau and manufacturers to reach NT\$935.9 billion in 2020. The Park is under continuous development and expansion, and successfully plays the role of core leader and pioneer of the high-tech development in Central Taiwan.

Looking forward to the future, in addition to strengthening scientific and technological forward planning and the needs of economic development, the CTSP will continue to introduce new capabilities and other emerging industries with development potential, enabling national resources to play a greater role in the development projects of the science park, further combining industry, academia and research cooperation mechanisms to create sustainable benefits, and prompting manufacturers to devote themselves to innovative research and development. Faced with future challenges, the CTSP considers innovation orientation, environmental protection, friendly community relations, and an international vision as the ultimate goals of the Park.

As a next step, the CTSP is committed to diligently combining innovative elements and encouraging new ventures. We hope to build the CTSP into the world's most competitive science park through the following goals :

- ▶ Encourage high-tech industries to reach new heights  
Develop related raw materials industries through the existing component industry to enhance the overall industrial depth of the Park. Assist in the integration of production, academia and research resources to strengthen R&D capabilities. Introduce high value-added industries to encourage R&D and innovation. Strengthen cooperation with international science parks to integrate with the world. Actively recruit overseas talent and cultivate high-quality human resources.
- ▶ Construct sustainable operation and a high-quality investment environment  
Plan an ecological park with humanistic spaces. Promote a further increase in the water recovery rates of various industrial processes in each Park. Cooperate with regional reclaimed water development plans and jointly promote the use of water resources. Provide a high-quality and convenient living environment. Create a highly efficient and humanized operating mechanism.
- ▶ Give full play to the industrial cluster effect  
Combine regional resources and surrounding industries, strengthen the cluster effect of characteristic CTSP industries, and concentrate capabilities to enhance the competitiveness of the Park.
- ▶ Construct an innovation and entrepreneurship base  
In line with the Innovation and Entrepreneurship Incentive Program promoted by the Ministry of Science and Technology, the CTSP will leverage the precision machinery and optoelectronic industries in the Central Region to provide competitive support for innovation and entrepreneurial teams, and integrate the resources of the CTSP stationed industrial innovation and incubation center, providing a competitive support system for regional innovation, and by combining industry, academia, and research cooperation mechanisms, create sustainable benefits to promote the Central Taiwan Science Park to become an industrial innovation corridor in central Taiwan.

# Appendix



Appendix I : Operation Overview of CTSP Bureau

Appendix II : Verification statement

Appendix III : Global Reporting Initiative (GRI) Index





>Lorem ipsum dolor sit amet,  
consectetur adipiscing elit.

+

>Lorem ipsum dolor sit amet,  
consectetur adipiscing elit.

200.25  
195.01  
153.00

+

+

+



## Appendix I : Operation Overview of CTSP Bureau

### Personnel Structure

The CTSP Bureau is a government agency and all personnel are full-time employees. 100% of the employees are civil servants and residents of Taiwan. There are no part-time or temporary employees. The total number of employees in the past 3 years is shown in the table below. As of the end of December 2020, the total number of employees of this Bureau is 140, including 119 national examination appointees, 6 workers, 3 mechanics, 1 driver and 11 hired personnel. This Bureau encourages the recruitment of employees with disabilities and promotes measures for a friendly workplace. In 2020, a total of 4 people with disabilities will be recruited, including staff and contractors, accounting for 2.92% of the total number of employees, in compliance with relevant laws and regulations on employment.

Staff composition over the past 3 years

Year		2018		2019		2020	
Category	Age / Gender	Male	Female	Male	Female	Male	Female
Personnel	29 & less	4	5	3	3	5	0
	30-49	39	34	38	36	37	38
	50 & up	23	16	21	16	21	18
	Subtotal	66	55	62	55	63	56
Hired	29 & less	0	1	0	0	0	0
	30-49	3	5	2	2	2	2
	50 & up	1	7	1	6	2	5
	Subtotal	4	13	3	8	4	7
Engineering	29 & less	0	0	0	0	0	0
	30-49	2	5	2	3	2	3
	50 & up	26	6	2	2	3	2
	Subtotal	28	11	4	5	5	5
<b>Total</b>		177		137		140	

Note :

1. Engineering-level personnel include : workers, mechanics, and drivers.
2. In 2020, male employees accounted for 51.43% and female employees accounted for 48.57% of the total. The proportion of employees under the age of 29 was 3.57%, the proportion of employees aged 30-49 is 60%, and the proportion of employees over 50 is 36.43%.

### Employee distribution over the past 3 years

Year		2018	2019	2020	
Item / Gender	Age	(people)	(people)	(people)	
Supervisors above team leader level	Male	29 & less	0	0	0
		30-49	0	0	1
		50 & up	6	6	5
	Female	29 & less	0	0	0
		30-49	0	0	0
		50 & up	4	4	4
Supervisors not above the team leader	Male	29 & less	4	3	5
		30-49	42	40	38
		50 & up	18	16	18
	Female	29 & less	6	3	0
		30-49	38	38	40
		50 & up	20	18	19
Engineering staff	Male	29 & less	0	0	0
		30-49	2	2	2
		50 & up	26	2	3
	Female	29 & less	0	0	0
		30-49	5	3	3
		50 & up	6	2	2
Total		177	137	140	

### ► New Arrivals and Staff Retention

The CTSP Bureau recruits (employs) employees in accordance with the relevant laws and regulations on the appointment of civil servants and the Labor Standards Act, and does not employ child labor (15 years old, under 16 years old). There is no child labor used in outsourced workers who provide labor services. The CTSP Bureau had no child labor incidents in 2020. 100% of the staff of this Bureau are public servants. If the staff asks for leave, moves, retires, or resigns, their business shall be handled in accordance with the Notes for Agency Duties of Various Authorities and other regulations.



### Number of new employees over the past 3 years

Year	2018				2019				2020			
Age / Gender	Nr. of new male entrants	Male new entrant rate (%)	Nr. of new female entrants	Female new entrant rate (%)	Nr. of new male entrants	Male new entrant rate (%)	Nr. of new female entrants	Female new entrant rate (%)	Nr. of new male entrants	Male new entrant rate (%)	Nr. of new female entrants	Female new entrant rate (%)
29 & less	1	25.00%	0	0.00%	0	0.00%	0	0.00%	1	20.00%	0	0.00%
30-49	5	11.36%	5	11.36%	3	7.14%	2	4.88%	1	2.44%	1	2.33%
50 & up	1	2.00%	0	0.00%	0	0.00%	1	4.17%	2	7.69%	3	12.00%
<b>Total number of new entrants</b>	12				6				8			
<b>Total number of employees</b>	177				137				140			
<b>Total new arrival rate (%)</b>	6.78%				4.37%				5.71%			
Notes :												
1. The employees who leave midway are not deducted from the number of new employees.												
2. New recruit rate (%) = the number of new recruits of the category in the current year/the total number of employees in the category at the end of the current year.												

### Number of employees left over the past 3 years

Year	2018				2019				2020			
Age / Gender	Nr. of male turn-over	Male turnover rate (%)	Nr. of female turn-over	Female turnover rate (%)	Nr. of male turn-over	Male turnover rate (%)	Nr. of female turn-over	Female turnover rate (%)	Nr. of male turn-over	Male turnover rate (%)	Nr. of female turn-over	Female turnover rate (%)
29 & less	0	0.00%	1	16.67%	0	0.00%	1	33.33%	0	0.00%	0	0.00%
30-49	3	6.82%	3	6.82%	5	11.90%	4	9.76%	1	2.44%	1	2.33%
50 & up	2	4.00%	0	0.00%	22	91.66%	9	37.50%	2	7.69%	4	16.00%
<b>Total number of resignations</b>	9				41				8			
<b>Total number of employees</b>	177				137				140			
<b>Total turnover rate (%)</b>	5.08%				29.93%				5.71%			
Note :												
1. Resigned employees include employees who have retired, been promoted, changed their positions or transferred to other agencies and left this Bureau.												
2. Turnover rate (%) = the number of turnovers in this category in the current year/the total number of employees in this category at the end of the year.												
3. The reason for the decrease in the turnover rate in 2020 compared to 2019 is that in 2019, we cooperated with the Executive Yuan to revitalize Zhongxing New Village and took into account the cultural assets preservation policy. After the Executive Yuan's letter was verified and transferred in response to the adjustment and transfer of related businesses in Zhongxing New Village, a total of 35 people were transferred to the National Development of the Executive Yuan.												
4. Part of the data was incorrectly placed in the revision and update of this year's report, so there was a case of re-editing compared to the previous year.												

### ▶ Shortest Notice Period

The staff of this Bureau are all civil servants, and contracted staff are hired once a year. The staff members are included in the budgeted posts of various agencies and schools, in accordance with the Regulations on Appointment of Staff by the Executive Yuan and Subsidiaries. The Regulations on the Employment of Contracted Persons by the Agency stipulates that personnel hired by contract must have a public law contractual relationship with the employing agency from the date of employment, and have been approved by the former Labor Committee of the Executive Yuan in its No. 0960130914 announcement, dated November 30, 1996. The Announcement excludes the applicability of the Labor Standards Act, so the minimum notice period stipulated in the Labor Standards Act is not applicable.

### ▶ Human Rights Respect and Care

The CTSP Bureau not only provides employees' rights and interests in accordance with relevant laws and regulations, but also respects internationally recognized human rights regulations, and treats employees fairly and does not discriminate due to gender, race, religion, or political stance. In addition, this Bureau has stipulated the Sexual Harassment Prevention Measures, Complaints and Punishment Points of the Central Taiwan Science Park Administration of the Ministry of Science and Technology, regularly organizes sexual harassment prevention and control activities and provides channels for complaints. In 2020, the CTSP Bureau had no relevant human rights complaints.

In order to maintain good communication with colleagues, in addition to providing employees' complaints channels through the Director-General's mailbox, and through various measures and activities, we listen to the voices of employees in a considerate, warm and respectful manner at any time, understand their needs and solve problems.

- ▶ Strengthen communication and explanations with heads and supervisors through business meetings and related occasions.
- ▶ Proactively provide relevant rights and interests information when colleagues are married, attending funerals, or festivals.

## Salary and Benefits

### ▶ Staff promotion and job vacancies

The internal promotion of the CTSP Bureau's job vacancies is handled in accordance with the Civil Servants Promotion Act, Civil Servants Promotion Law Implementation Rules, and the Ministry of Science and Technology Central Taiwan Science Park Administration Regulations on Staff Promotion and Transfer Operation Regulations, and are calculated based on the promotion scoring table achievement. If it is used in the form of supplementary compensation, it shall be used in accordance with the Civil Servants Employment Act and other laws and regulations, and there is to be no discrimination due to gender, sexual orientation, age, appearance, or physical and mental disabilities.



### ► Salaries and Assessment Subsidies

The CTSP Bureau is a government agency and the board of directors' management mechanism does not apply. However, the salary management is handled in accordance with the law on public servants' salary and the method of public servants' allowances. The standard salary of grassroots personnel is calculated based on the salary of newcomers in the elementary examination, and the local minimum salary is based on a calculated ratio of 1.27, and the ratio of the basic salary for workers to the local minimum salary is 1.1. Therefore, the salary is 100% higher than the minimum wage set by the Labor Standards Act. As for the salaries of male and female civil servants in the bureau, there is no difference based on gender.

The civil servants of this Bureau shall undergo regular performance reviews in accordance with the Civil Servants Performance Appraisal Act and hiring personnel shall be hired in accordance with the Main Points of Work Performance Appraisal for Employment and Contracted Employees of the Central Taiwan Science Park Administration of the Ministry of Science and Technology. The proportion of staff participating in the performance appraisal of this Bureau in 2020 was 100% (Note : Except for when the performance appraisal is not handled for less than half a year in accordance with the Civil Service Performance Appraisal Act). A total of 11 people were hired to participate in the appraisal, and the examination rate is 100%.

### ► Childcare leave without pay

CTSP Bureau employees work in accordance with the Public Educational Personnel Insurance Law. In the event of disability, pension, death, family funeral, childbirth and childcare leave without pay, they can apply for insurance benefits in accordance with the regulations. In case of leave or business trips, the Legal Leave Rules for Public Servants stipulate how it should be handled. When employees have a need to take leave without pay, such as military service, baby-care, family situation, advanced education, etc., they can apply in accordance with the Civil Servants Retention and Non-Pay Measures and related welfare regulations. The statistics of this Bureau for the recent 3 years of child-rearing leave are as follows :

Year	2018			2019			2020		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Actual number of applications for parental leave in that year A	0	2	2	0	0	0	0	2	2
Number of persons who should be reinstated after parental leave in that year B	0	0	0	0	0	0	0	1	1
Actual number of reinstatements in parental leave in that year C	0	0	0	0	0	0	0	1	1
Actual number of reinstatements in multi-year parental leave D	0	3	3	0	1	1	0	1	1

Year	2018			2019			2020		
Gender / Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Number of people who continue to work for one year after reinstatement after parental leave E	0	3	3	0	1	1	0	0	0
Rate of reinstatement after parental leave in the current year % (C/B)	--	--	--	--	--	--	-	100%	100%
Retention rate% (E/D)	--	100%	100%	--	100%	100%	--	--	--

Notes : Cross-years refer to applications for leave without pay in the current year, which may be the previous year or two years.

### ► Employee living allowance subsidy

Employee benefits include bonuses, weddings and funerals, and child education subsidies. In addition to the fixed salary, the staff in the establishment also receive bonuses and subsidies. The bonus part includes performance appraisal, year-end work bonuses, and condolences, which are issued in accordance with the Civil Servants Performance Appraisal Act, 2020 Year-end Work Bonuses for Military and Public Education Staff and other regulations. In addition, civil servants may apply for marriage, funeral, and child education subsidies in accordance with the key points of the national military, public, and educational staff remuneration. As for retirement and pensions, their payment and allocation are all handled in accordance with the Public Servants Retirement Compensation Law and its implementation rules.

### ► Freedom of association

The CTSP Bureau respects the rights granted by employees by law. The freedom of assembly and association is governed by the Civil Servants Association Law. It has never restricted or interfered with employees' rights to freedom of association. This Bureau has so far included the Hong jiao ya Club and Badminton Club.

### ► Staff health

The CTSP Bureau is a government agency that is not regulated by the Labor Trade Union Act or the Occupational Safety and Health Act, has not established any organization, nor has any organization similar to the nature of a trade union existed, and the CTSP Bureau has no personnel at high risk of occupational diseases. Regarding the health and safety status of employees from 2017 to 2020, the rate of work-related injuries, occupational diseases, absenteeism due to work-related injuries, and work-related deaths were all zero.

Employees of this Bureau shall conduct health examinations in accordance with the general health examinations of public servants. Employees over 40 years of age can go through health examinations on public holidays in accordance with regulations. The heads and deputy heads may apply for health examination subsidies every year, and public officials who are over 40 years old can apply for a health check subsidy every two years. In 2020, a total of 11 employees underwent the health check and received the subsidy.



## Employee Training

The CTSP Bureau formulates an annual training program every year, with a view to strengthening the ability of civil servants to continue to be employed and to assist them in managing their retirement career with functional management and lifelong learning programs. The eLearn learning platform does not have statistics on the average training hours by gender. The average training hours per year by staff category are as follows :

Year		2018			2019			2020		
Item / Gender		Total people	Total training hours	Average training hours	Total people	Total training hours	Average training hours	Total people	Total training hours	Average training hours
Management	Male	24	950	40	23	1,269	55	22	1,314	60
	Female	12	482	40	13	687	53	14	746	53
Full-time	Male	42	2,392	57	38	2,479	65	41	2,003	49
	Female	41	2,406	59	40	2,912	73	40	2,115	53
Appointment	Male	3	85	28	3	94	31	4	134	34
	Female	8	172	22	8	308	39	8	218	27
Total		130	6,487	50	125	7,749	62	129	6,530	51

Note :

1. The number of education hours for workers at the industrial level is not actually counted, so it is not included in the table.
2. Management positions refer to full-time employees above section chief.
3. The total number of trainees does not include unpaid employees who stayed for the year.

Civil servants of the CTSP Bureau, in addition to the 20 hours of study hours per person per year that focus on business-related study hours, according to the letter of the Executive Yuan, those who meet certain qualifications can also participate in four weeks of promotion and other training, or in response to business needs, be selected to participate in advanced training or seminars for several days. The main reason for the higher average training hours of management males in 2020 than females is that 4 people have participated in four-week promotion and other training.

The employment period of contracted personnel is based on the principle of one year. Although there is no specified study time limit, they can still choose to take this Bureau self-organized training courses or online e-learning, and business units are also authorized to participate in business-related trainings according to their individual circumstances and job needs. In 2020, the number of study hours for male staff members was more than 30 hours, with 2 people in total. The study tie for female staff members were more than 30 hours, with 4 people in total. In summary, the opportunities for each employee of the CTSP Bureau to receive training each year are not different due to gender or occupation.

### ► Personnel Training

There are 2 basic trainings for civil servants appointed by this Bureau at the beginning of 2020: the basic training handled by the National Civil Service Academy under the Civil Service Guarantee and

Training Committee or entrusted by the training organization (institution) school, and the practical training entrusted for the Employer Organization by the Insurance Training Association. In order to improve the knowledge and skills required by the newcomers, and depending on the nature of the business and training, it is recommended to send newcomers to participate in the relevant training or study of civil servants in a timely manner.

With section chiefs as participants, in 2020, it was recommended to send personnel to participate in the management function application and advanced physical courses, and 3 people attended. With high-level personnel as the target of training, in 2020, 4 staff members were recommended to participate in the physical courses of environmental insight workshop, cross-domain coordination workshop, public communication workshop, and risk management workshop.

### ► Policy and Functional Training

In 2020, a total of 35 sessions were registered in the Civil Service Lifelong Learning Network in 2020, including : Environmental education, two human rights conventions, namely the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights, Legislation and practice in the administration of civil servants, Convention on the Elimination of All Forms of Discrimination Against Women, Public engineering ecological promotion lectures, Press release writing practice workshop, Improving the quality of construction of the bureau's public works, education and training project, on-site observation and visit activities, Procurement and professional seminars on the lack of procurement audits, Science Park International Observation Development Information Sharing Meeting, Traffic safety promotion meeting, Science Park Master Business Seminar, Basic and advanced courses of document and file management.

In 2020, employees participate in courses (including digital) for a total of 3,554 hours. In 2020, the total number of human rights policies training hours for employees was 936 hours. The percentage of all CTSP Bureau employees receiving human rights training was 100% (including official documents, posting announcements, CTSP regulations, etc.).

### ► Information Security Training

In 2020, a total of 8 information security-related courses were conducted, including : IoT and home office information security, personal asset inventory and risk assessment, information security of smart phones and home IoT, information security risk social engineering and ransomware training courses such as operation mode, with a total of 625 hours and 263 sessions.

## Energy consumption

This Bureau cooperates with the Government to promote the four-savings plan, i.e. to save electricity, water, oil and paper respectively, and implement the specific targets set by the Executive Yuan. The energy intensity in 2020 was the same as that in 2019, and the energy use increased slightly. In order to reduce energy consumption, this Bureau will continue to replace energy-saving lights and repair air-conditioning water-cooled mainframes in 2020 in order to reduce electricity consumption, hoping to reduce electricity consumption.

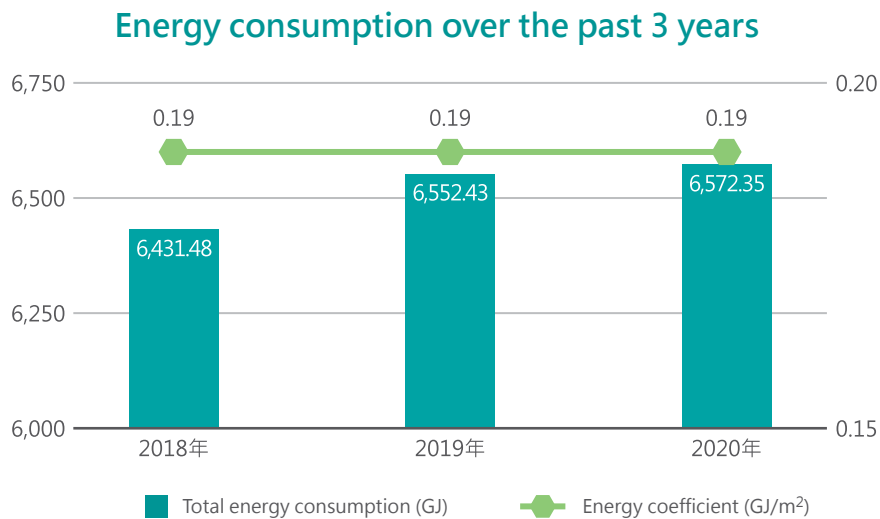


The reason for the slight increase in water consumption in 2020 is the addition and modification of the air conditioning system (including ice storage tanks, etc.) for the Taichung Industrial and Commercial Management Building Air Conditioning Renewal and Improvement Project, which resulted in an increase in water consumption for testing functions.

Year / Item	2018	2019	2020
Electricity (kWh)	1,689,751	1,753,106	1,797,215
Gasoline (liters)	8,143	4,617	4,806
Diesel (liters)	2,351	2,577	1,417
Total energy consumption (GJ)	6,431.48	6,552.43	6,572.35
Energy coefficient (GJ/m <sup>2</sup> )	0.19	0.19	0.19
Water consumption (million liters)	4.11	4.20	4.72
Water intensity (million liters/m <sup>2</sup> )	0.00012	0.00012	0.00014
Online sign-off ratio	54.00%	55.56%	57.66%

Note:

1. The standard unit of organizational measurement is the floor area of the administrative building of the Administration (33,724.91 m<sup>2</sup>).
2. The energy conversion coefficient refers to the calorific value coefficient of various energy sources in version 6.0.4 of the Greenhouse Gas Emission Coefficient Management Table published by the Environmental Protection Agency.



## CTSP Bureau Power and Water Conservation Measures

In order to achieve the goals and requirements of the Executive Yuan's energy-saving and carbon-reduction project, this Bureau implemented power-saving measures including replacing power-saving lamps, controlling the number of light sources in parking lots according to the time of use, replacing LED lamps and installing automatic sensing devices, and using air conditioners, set the indoor air-conditioning temperature to 26-28 degrees, increased the ice melting temperature and shorten the air-conditioning opening time. The annual electricity consumption has been decreasing year by year from 2.02 million kWh since 2009. By 2020, the whole building was opened to increase air circulation and reduce the heat radiation effect. According to statistics, the total annual electricity consumption is 1.79 million kWh, compared with 2009, with an annual decrease of 11.39%.

Regarding water-saving measures, this Bureau adopts methods such as pressure-reduced water supply and reverse osmosis drinking water and water recycling to save water sources. In addition, from time to time, electronic bulletins are used to urge colleagues to implement water-saving measures. The total water consumption in 2020 was 4,720 degrees, which is 8.53% lower than the 5,160 degrees in 2009.





## Appendix II : Verification statement



### INDEPENDENT ASSURANCE OPINION STATEMENT

#### Central Taiwan Science Park 2020 Sustainability Report

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

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

#### Scope

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

1. The assurance scope is consistent with the description of Central Taiwan Science Park 2020 Sustainability Report.
2. The evaluation of the nature and extent of the CTSP'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 Central Taiwan Science Park 2020 Sustainability Report provides a fair view of the CTSP CSR 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 CTSP and the sample taken. We believe that the 2020 economic, social and environmental performance information are fairly represented. The sustainability performance information disclosed in the report demonstrate CTSP's efforts recognized by its stakeholders.

Our work was carried out by a team of sustainability report assurers in accordance with the AA1000AS v3. We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that CTSP'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 CTSP'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.
- 25 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 CTSP 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 CTSP's inclusivity issues.

### Materiality

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

### Responsiveness

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

### Impact

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

### GRI Sustainability Reporting Standards (GRI Standards)

CTSP 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 CTSP'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 CTSP'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

Statement No: SRA-TW-2020014  
2021-06-11

...making excellence a habit.™

Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Ni-Hu Dist., Taipei 114, Taiwan, R.O.C.

A Member of the BSI Group of Companies.





## Appendix III : 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 II.

" \* " indicates major aspects while " ● " indicates external verification.

GRI Category/ Material As- pects	No.	GRI Index	External Veri- fication	Chapter and Section	Page	Omit/ remark
<b>Organizational Profile</b>						
GRI 102 General disclosure 2016	102-1	Name of the organization	●	About This Report	4	
	102-2	Activities, brands, products, and services	●	Introduction to Central Taiwan Science Park	14	
	102-3	Location of headquarters	●	Introduction to Central Taiwan Science Park Editorial Committee	14	
	102-4	Location of operations	●	Introduction to Central Taiwan Science Park	14	
	102-5	Ownership and legal form	●	Introduction to Central Taiwan Science Park	14	
	102-6	Markets served	●	Introduction to Central Taiwan Science Park	14	
	102-7	Scale of the organization	●	Introduction to Central Taiwan Science Park Personnel Structure	14 134	
	102-8	Information on employees and other workers	●	Personnel Structure	134	
	102-9	Supply chain	●	2.2 Park Supply Chain	59	
	102-10	Significant changes to the organization and its supply chain	●	About This Report Introduction to Central Taiwan Science Park	4 14	
	102-11	Precautionary Principle or approach	●	2.1.2 Anti-corruption Policy 4.1 Risk Management	56 82	
	102-12	External initiatives	●	About This Report	4	
	102-13	Membership of associations	●	1.4 Strengthening International Cooperation	42	
<b>Strategy</b>						
GRI 102 General disclosure 2016	102-14	Statement from senior decision-maker	●	Message from the Director-General	6	
	102-15	Key impacts, risks, and opportunities	●	Message from the Director-General	6	

GRI Category/ Material As- pects	No.	GRI Index	External Veri- fication	Chapter and Section	Page	Omit/ remark
<b>Ethics and Integrity</b>						
GRI 102 General disclosure 2016	102-17	Mechanisms for advice and concerns about ethics	●	2.1.2 Anti-corruption Policy	56	
<b>Governance</b>						
GRI 102 General disclosure 2016	102-18	Governance structure	●	Introduction to Central Taiwan Science Park	14	
	102-40	List of stakeholder groups	●	Stakeholder Interaction	16	
	102-41	Collective bargaining agreements	●	Salary and Benefits	137	
	102-42	Identifying and selecting stakeholders	●	Material Topics Identification	20	
	102-43	Approach to stakeholder engagement	●	Stakeholder Interaction Material Topics Identification	16 20	
	102-44	Key topics and concerns raised	●	Stakeholder Interaction	16	
<b>Report Profile</b>						
GRI 102 General disclosure 2016	102-45	Entities included in the consolidated financial statements	●	-	-	CTSP is a government agency, and it does not contain entities included in the consolidated financial statement.
	102-46	Defining report content and topic Boundaries	●	Material Topics Identification	20	
				Material Topic Value Chain and Goals	23	
	102-47	List of material topics	●	Material Topics Identification	20	
	102-48	Restatements of information	●	About This Report	4	
	102-49	Changes in reporting	●	About This Report	4	
				Material Topics Identification	20	
	102-50	Reporting period	●	About This Report	4	
	102-51	Date of most recent report	●	About This Report	4	
102-52	Reporting cycle	●	About This Report	4		
102-53	Contact point for questions regarding the report	●	About This Report	4		



GRI Category/ Material As- pects	No.	GRI Index	External Veri- fication	Chapter and Section	Page	Omit/ remark
GRI 102 General disclosure 2016	102-54	Claims of reporting in accordance with the GRI Standards	●	About This Report	4	
	102-55	GRI content index	●	About This Report	4	
	102-56	External assurance	●	About This Report	4	
<b>Topic-specific disclosure : 200 series (Economic topics)</b>						
<b>*Economic performance (Industrial upgrading)</b>						
GRI 103 Management approach of Economic Performance (Industrial upgrading) 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals	23	
				Policy 1 : Innovation Driven Industries	30	
	103-2	The management approach and its components	●	Policy 1 : Innovation Driven Industries	30	
103-3	Evaluation of the management approach	●	Policy 1 : Innovation Driven Industries	30		
GRI 201 Disclosure of Economic Performance 2016	201-1	Direct economic value generated and distributed	●	Introduction to Central Taiwan Science Park	16	
	201-2	Financial implications and other risks and opportunities due to climate change	●	4.2 Climate Change Disaster Prevention and Adaptation	83	
	201-3	Defined benefit plan obligations and other retirement plans	●	Salary and Benefits	137	
	201-4	Financial assistance received from government	●	Introduction to Central Taiwan Science Park	16	
<b>Market Presence</b>						
GRI 202 Disclosure of Market Presence 2016	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	●	Salary and Benefits	137	
	202-2	Proportion of senior management hired from the local community	●	Personnel Structure	134	
<b>*Indirect Economic Impacts (Infrastructure in the Park)</b>						
GRI 103 Management approach of Indirect Eco- nomic Impacts (Infrastructure in the Park) 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals	23	
				Policy 6 : Social Interaction	100	
	103-2	The management approach and its components	●	Policy 6 : Social Interaction	100	
103-3	Evaluation of the management approach	●	Policy 6 : Social Interaction	100		

GRI Category/ Material As- pects	No.	GRI Index	External Veri- fication	Chapter and Section	Page	Omit/ remark
GRI 203 Disclosure of Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	●	1.6 Integration of Technological Creativity and Self-production	45	
				6.1 Convenient Life in the Smart Park	103	
				6.2 Good Neighborliness and Friendly Environment	106	
				6.3 Promoting AI Education	113	
<b>Procurement Practices</b>						
GRI 204 Disclosure of Procurement Practices 2016	204-1	Proportion of spending on local suppliers	●	2.2 Park Supply Chain	54	
<b>*Anti-corruption</b>						
GRI 103 Management approach of Anti-corrup- tion 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 2 : Integrity Gover- nance	23 48	
	103-2	The management approach and its components	●	Policy 2 : Integrity Gover- nance	48	
	103-3	Evaluation of the management approach	●	Policy 2 : Integrity Gover- nance	48	
GRI 205 Disclosure of Anti-corrup- tion 2016	205-1	Operations assessed for risks related to corruption	●	2.1.2 Anti-corruption Policy	56	
	205-2	Communication and training about anticorruption policies and procedures	●	2.1.2 Anti-corruption Policy	56	
	205-3	Confirmed incidents of corruption and actions taken	●	2.1.1 Regulatory compli- ance 2.1.2 Anti-corruption Policy	55 56	
<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	●	2.1.1 Regulatory compli- ance	55	
<b>*Innovation &amp; Entrepreneurship</b>						
GRI 103 Management approach of Innovation & Entrepreneur- ship 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 1 : Innovation Driven Industrie	23 30	
	103-2	The management approach and its components	●	Policy 1 : Innovation Driven Industries	30	
	103-3	Evaluation of the management approach	●	Policy 1 : Innovation Driven Industries	30	



GRI Category/ Material As- pects	No.	GRI Index	External Veri- fication	Chapter and Section	Page	Omit/ remark
<b>*Investment Promotion</b>						
GRI 103 Management approach of Investment Promotion 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 1 : Innovation Driven Industries	23 30	
	103-2	The management approach and its components	●	Policy 1 : Innovation Driven Industries	30	
	103-3	Evaluation of the management approach	●	Policy 1 : Innovation Driven Industries	30	
<b>Topic-specific disclosure : 300 series (Environmental topics)</b>						
<b>*Energy (Energy Saving, Renewable Energy)</b>						
GRI 103 Management approach of Energy (Energy Saving, Renewable Energy) 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 4 : Climate Action	23 78	
	103-2	The management approach and its components	●	Policy 4 : Climate Action	78	
	103-3	Evaluation of the management approach	●	Policy 4 : Climate Action	78	
GRI 302 Disclosure of Energy (Energy Saving, Renew- able Energy) 2016	302-1	Energy consumption within the organization	●	4.3 Energy Resources Man- agement	88	
	302-3	Energy intensity	●	4.3 Energy Resources Man- agement	88	
	302-4	Reduction of energy consumption	●	4.3.1 Counseling to Con- serve and Develop New Energy Resources Energy consumption	79 141	
<b>*Water and Effluents</b>						
GRI 303 Management approach of Water and Effluents 2018	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 5 : Environmental Management	23 94	
	103-2	The management approach and its components	●	Policy 5 : Environmental Management	94	
	103-3	Evaluation of the management approach	●	Policy 5 : Environmental Management	94	
	303-1	Interactions with water as a shared resource	●	4.3 Energy Resources Man- agement	88	
	303-2	Management of water discharge-related impacts	●	5.3 Sewage Discharge	92	

GRI Category/ Material As- pects	No.	GRI Index	External Veri- fication	Chapter and Section	Page	Omit/ remark
GRI 303 Disclosure of Water and Effluents 2018	303-3	Water withdrawal	●	4.3 Energy Resources Management	88	All water withdrawal is fresh water
	303-4	Water discharge	●	5.3 Sewage Discharge	102	All water discharge is fresh water
	303-5	Water consumption	●	4.3 Energy Resources Management	88	
<b>Biodiversity</b>						
GRI 304 Disclosure of Biodiversity 2016	304-1	Operational sites owned, leased, managed in, or adja- cent to, protected areas and areas of high biodiversity value outside protected areas	●	6.2 Good Neighborliness and Friendly Environment	119	
<b>*Emissions</b>						
GRI 103 Management approach of Emissions 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 5 : Environmental Management	23 94	
	103-2	The management approach and its components	●	Policy 5 : Environmental Management	94	
	103-3	Evaluation of the management approach	●	Policy 5 : Environmental Management	94	
GRI 305 Disclosure of Emissions 2016	305-1	Direct (Scope 1) GHG emissions	●	5.2 Air Pollution and Greenhouse Gases	100	
	305-2	Energy indirect (Scope 2) GHG emissions	●	5.2 Air Pollution and Greenhouse Gases	100	
	305-4	GHG emissions intensity	●	5.2 Air Pollution and Greenhouse Gases	100	
	305-5	Reduction of GHG emissions	●	5.2 Air Pollution and Greenhouse Gases	100	
<b>*Waste</b>						
GRI 103 Management approach of Waste 2020	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 5 : Environmental Management	23 94	
	103-2	The management approach and its components	●	Policy 5 : Environmental Management	84	
	103-3	Evaluation of the management approach	●	Policy 5 : Environmental Management	94	
	306-1	Water discharge by quality and destination	●	5.4 Waste disposal	105	
	306-2	Waste by type and disposal method	●	5.4 Waste disposal	105	



GRI Category/ Material As- pects	No.	GRI Index	External Veri- fication	Chapter and Section	Page	Omit/ remark
GRI 306 Disclosure of Waste 2020	306-3	Significant spills	●	5.4 Waste disposal	105	
	306-4	Transport of hazardous waste	●	5.4 Waste disposal	105	
	306-5	Water bodies affected by water discharges and/or runoff	●	5.4 Waste disposal	105	
<b>*Environmental Compliance</b>						
GRI 103 Management approach of Environmental Compliance 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 2 : Integrity Governance	23 52	
	103-2	The management approach and its components	●	Policy 2 : Integrity Governance	52	
	103-3	Evaluation of the management approach	●	Policy 2 : Integrity Governance	52	
GRI 307 Disclosure of Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	●	2.1.1 Regulatory compliance	55	
				2.2 Park Supply Chain	59	
<b>*Stable Energy Supply</b>						
GRI 103 Management approach of Stable Energy Supply 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 4 : Climate Action	23 78	
	103-2	The management approach and its components	●	Policy 4 : Climate Action	78	
	103-3	Evaluation of the management approach	●	Policy 4 : Climate Action	78	
<b>*Circular Economy</b>						
GRI 103 Management approach of Circular Economy 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 4 : Climate Action	23 78	
	103-2	The management approach and its components	●	Policy 4 : Climate Action	78	
	103-3	Evaluation of the management approach	●	Policy 4 : Climate Action	78	
<b>*Climate Change Financial Disclosure</b>						
GRI 103 Management approach of Climate Change Financial Disclosure 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 5 : Environmental Management	23 94	
	103-2	The management approach and its components	●	Policy 5 : Environmental Management	94	
	103-3	Evaluation of the management approach	●	Policy 5 : Environmental Management	94	

GRI Category/ Material As- pects	No.	GRI Index	External Veri- fication	Chapter and Section	Page	Omit/ remark
<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	●	Personnel Structure	134	
	401-2	Benefits provided to full- time employees that are not provided to temporary or part- time employees	●	Salary and Benefits	137	
<b>Training and Education</b>						
GRI 404 Disclosure of Training and Education 2016	404-1	Average hours of training per year per employee	●	Employee Training	140	
	404-2	Programs for upgrading employee skills and transition assistance programs	●	Employee Training	140	
	404-3	Percentage of employees receiving regular performance and career development reviews	●	Salary and Benefits	137	
<b>Diversity and Equal Opportunity</b>						
GRI 405 Disclosure of Diversity and Equal Oppor- tunity 2016	405-1	Diversity of governance bodies and employees	●	Personnel Structure	134	
<b>Non-discrimination</b>						
GRI 406 Disclosure of Non- discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	●	2.1.1 Regulatory compli- ance 3.3 Park Labor Rights Per- sonnel Structure	55 72	
<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	●	Personnel Structure	134	
<b>Child Labor</b>						
GRI 408 Disclosure of Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	●	2.1.1 Regulatory compliance Personnel Structure	55 134	



GRI Category/ Material As- pects	No.	GRI Index	External Veri- fication	Chapter and Section	Page	Omit/ remark
<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	●	2.1.1 Regulatory compliance 3.3 Park Labor Rights Personnel Structure	55 72 134	
<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	●	2.1.1 Regulatory compliance	55	
<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	●	Employee Training	140	
<b>*Local Communities</b>						
GRI 103 Management approach of Local Communities 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 6 : Social Interaction	23 112	
	103-2	The management approach and its components	●	Policy 6 : Social Interaction	112	
	103-3	Evaluation of the management approach	●	Policy 6 : Social Interaction	112	
GRI 413 Disclosure of Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	●	5.5 Environmental Monitoring	109	
				6.1 Convenient Life in the Smart Park	115	
<b>Public Policy</b>						
GRI 415 Disclosure of Public Policy 2016	415-1	Political contributions	●	2.1.1 Regulatory compliance	55	
<b>Marketing and Labeling</b>						
GRI 417 Disclosure of Marketing and Labeling 2016	417-1	Requirements for product and service information and labeling	●	2.1.1 Regulatory compliance	55	

GRI Category/ Material As- pects	No.	GRI Index	External Verifi- cation	Chapter and Section	Page	Omit/ remark
<b>Customer Privacy</b>						
GRI 418 Disclosure of Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	●	2.3 Information Security Management	64	
<b>*Socioeconomic Compliance</b>						
GRI 103 Management approach of Socioeconom- ic Compliance 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 2 : Integrity Govern- ance	23 52	
	103-2	The management approach and its components	●	Policy 2 : Integrity Govern- ance	52	
	103-3	Evaluation of the management approach	●	Policy 2 : Integrity Govern- ance	52	
GRI 419 Disclosure of Socioeconomic Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	●	2.1.1 Regulatory compli- ance	55	
<b>*Labor Management Relations in the Park</b>						
GRI 103 Management approach of Labor Management Relations in the Park 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 3 : Workplace Safety and Health	23 66	
	103-2	The management approach and its components	●	Policy 3 : Workplace Safety and Health	66	
	103-3	Evaluation of the management approach	●	Policy 3 : Workplace Safety and Health	66	
<b>*Promotion of Safe Workplace</b>						
GRI 103 Management approach of Promotion of Safe Workplace 2016	103-1	Explanation of the material topic and its Boundary	●	Material Topic Value Chain and Goals Policy 3 : Workplace Safety and Health	23 66	
	103-2	The management approach and its components	●	Policy 3 : Workplace Safety and Health	66	
	103-3	Evaluation of the management approach	●	Policy 3 : Workplace Safety and Health	66	



## Appendix IV : Sustainable Development Goals (SDGs) Index

Item	Sustainable Development Goals	Chapter and Section	Page
Goal 1	End poverty in all its forms everywhere.	Active Implementation of Sustainable Development Goals (SDGs)	27
Goal 3	Ensure healthy lives and promote well-being for all at all ages.	Active Implementation of Sustainable Development Goals (SDGs) 6.2 Good Neighborliness and Friendly Environment	27 119
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	Active Implementation of Sustainable Development Goals (SDGs) 3.2 Cultivating Talent 6.2 Good Neighborliness and Friendly Environment 6.3 Promoting AI Education	27 71 119 127
Goal 5	Achieve gender equality and empower all women and girls.	Active Implementation of Sustainable Development Goals (SDGs) 3.3 Park Labor Rights	27 72
Goal 6	Ensure availability and sustainable management of water and sanitation for all.	Active Implementation of Sustainable Development Goals (SDGs) 4.3 Energy Resources Management 5.3 Sewage Discharge Energy consumption	27 88 102 141
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all.	Active Implementation of Sustainable Development Goals (SDGs) 4.3 Energy Resources Management Energy consumption	27 88 141
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	Active Implementation of Sustainable Development Goals (SDGs) Policy 1 : Innovation Driven Industries Policy 3 : Workplace Safety and Health	27 30 66
Goal 9	Build resilient infrastructure, promote inclusive and Sustainable industrialization and foster innovation.	Active Implementation of Sustainable Development Goals (SDGs) Policy 1 : Innovation Driven Industries Policy 6 : Social Interaction	27 30 112

Item	Sustainable Development Goals	Chapter and Section	Page
Goal 10	Reduce inequality within and among countries.	Active Implementation of Sustainable Development Goals (SDGs) 3.3 Park Labor Rights	27 72
Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable.	Active Implementation of Sustainable Development Goals (SDGs)	27
		4.3.1 Counseling to Conserve and Develop New Energy Resources	88
		6.1 Convenient Life in the Smart Park	115
Goal 12	Ensure sustainable consumption and production patterns.	Active Implementation of Sustainable Development Goals (SDGs)	27
		Special Column : Green Building Ecological Community	83
		Policy 5 : Environmental Management	94
Goal 13	Take urgent action to combat climate change and its impacts.	Active Implementation of Sustainable Development Goals (SDGs)	27
		Policy 4 : Climate Action	78
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.	Active Implementation of Sustainable Development Goals (SDGs)	27
		6.2 Good Neighborliness and Friendly Environment	119
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.	Active Implementation of Sustainable Development Goals (SDGs)	27
		2.1 Compliance with Laws and Regulations	55
Goal 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development.	Active Implementation of Sustainable Development Goals (SDGs)	27
		Policy 1 : Innovation Driven Industries	30



## Central Taiwan Science Park Bureau, Ministry of Science and Technology 2020 Sustainability Report Editorial Committee

Publisher : Dr. Maw-Shin Hsu, Director-General

Editorial  
commissioner : Wen-Fang Shih, Zheng-Zong Xu, Li-Chun Peng

Editorial Team : Jenn-Chun Chu, I-Mei Huang, Chih-Feng Chuang, Li-Fen Chen,  
Shih-Yin Liu, Hao-Cheng Jian, Han-Liang Wei, Wan-Chiao Chen,  
Pei-Jing Chen, Jhe-Min Lin, Tzu-Ya Huang, Wan-Ying Wen,  
Shi-Ling Chao, Kai-Jen Lin, Chih-Chun Wang, Kuan-Hung Chen,  
Yi-Chia Ho, Hao-Wei Chang, Yu-Wen Tu, Jing-Jing Huang,  
Hsin-Yung Hung, Hsiao-Wei Wu, Chieh-Li Yang, Li-Mei Dai,  
Min-Hui Qiu, Jun-Xian Yu, Wan-Yu Wu, I-Ling Wu

Publisher Central Taiwan Science Park Bureau, Ministry of Science and  
Technology

Address No. 2, Jhongke Rd., Situn District, Taichung City 40763,  
Taiwan (R.O.C.)

Telephone 04-2565-8588

Website <http://www.ctsp.gov.tw/>

CSR Website <http://www.ctspcsr.com.tw/>

Date of Issuanc August, 31, 2020





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