



FSP 全漢企業

2021
Sustainability Report





With a commitment to overall environmental management such as environmental protection, pollution control, and green production, as well as the implementation of the due care of a good administrator, FSP not only continues to expand economic development that includes environmental sustainability, but also strives for “low carbon,” “waste reduction,” and “low pollution” development actions, in hopes of creating more value for the environment and products as well as achieving a balance between operations and environmental sustainability.

In order to fulfill environmental responsibility and improve environmental performance, we have incorporated the ISO 14001 Environmental Management Systems at our main factories and obtained the ISO 14001 certification. Each year, FSP formulates environmental, safety and health goals and management plans via the environmental system, and ensures the implementation of environmental, safety and health management based on the PDCA cycle.

After evaluating the possible environmental impact of manufacturing processes in accordance with environmental protection laws and regulations, we continue to make improvements to our core efforts in “climate change and greenhouse gas inventory,” “energy management,” “water resources,” and “waste management.”










Environmental Management Policies, Targets and Performance

★ Achieved

☆ Not achieved

Management item	Management policy	Management target	Target achievement status
 Hazardous substances	<ol style="list-style-type: none"> 1. Implement and comply with the IEQC QC 080000 Quality Management System standards. 2. Follow customer requirements and comply with regulatory requirements. 3. Adhere to HSF processes and make continuous improvements. 	Reduce the use of hazardous substances	<p>Implemented hazardous substance management using the green product management (GPM) platform, where 5,918 parts were approved and a cumulative total of 52,165 approved parts have been placed under management in 2021, while 52 hazardous substances were identified and placed under management in the same year</p>
 GHG emissions	<p>We are committed to implementing GHG inventory, reduction, and control so that we can accurately keep track of our GHG emissions and carry out voluntary GHG reduction plans based on our inventory results.</p>	<p>With 2010 as the base year for GHG emissions,</p> <ol style="list-style-type: none"> 1. Achieve a 4% average annual reduction in total GHG emissions compared to the base year 2. Achieve a 50% reduction in total GHG emissions by 2025 	<ol style="list-style-type: none"> 1. Achieved a 38% average reduction in total GHG emissions in 2021 compared to the base year. 2. Obtained the ISO 14064-1 verification statement
 Energy	<p>Promote efficiency improvement in energy management and prioritize the purchase of energy-saving equipment before replacing equipment to meet regulatory requirements.</p>	<ol style="list-style-type: none"> 1. Achieve a 50% reduction in total electricity consumption by 2025 2. Achieve a 4% energy conservation rate each reporting year compared to the base year in line with the GHG management target starting in 2019 	<p>Achieved a 6.89% increase in 2021 compared to 2020</p>
 Water resources	<p>Implement water resources management measures, prioritize the purchase of water-saving equipment before replacing equipment, reduce waste of water resources, and organize employee awareness campaigns.</p>	<p>Achieve a 1% reduction in total water consumption compared to the previous reporting year</p>	<p>Achieved a 0.32% decrease in 2021 compared to 2020</p>
 Waste	<p>Take into account product cycle requirements to reduce waste disposal and improve environmental performance; implement outsourced waste management by appointing qualified vendors to manage waste according to the location of waste processing facilities; and properly manage and record waste production, sorting, collection, recycling, and transportation based on the environmental management system.</p>	<p>Achieve a 1% reduction in total waste compared to the previous reporting year</p>	<p>Achieved a 15.62% increase in 2021 compared to 2020</p>





With the deteriorating earth's environment causing climate change, we need to pay serious attention to the use of energy amid our ongoing utilization of earth's resources. From a disaster perspective, risk analysis and extreme events are critical issues concerning the impact of climate change on the electronics industry.

Identifying Climate Change Management Risks and Opportunities

With our vision to "become the world's leading provider of green energy solutions that penetrates people's lives and contribute to the environment," we closely integrate sustainability with environmental protection. As climate change is gradually affecting the global environment and human survival in recent years, global trading companies have been forced to confront the impact of climate change. Hence, FSP has established the ESG Management Team to set medium- and long-term targets based on the concept of sustainability and actively roll out various management measures, such as energy conservation and carbon reduction, with a view to moving towards climate change mitigation and FSP's adaption to climate change.

Medium- and long-term targets:

Step 1 Climate change response strategies

Through our ESG Management Team, we continue to include the possible impact of climate change in our overall operational considerations and estimate the probability of occurrence and the impact of risks. At the same time, we also formulate corresponding responses and crisis handling mechanisms.

Step 2 Climate change risk assessment and identification

FSP has carried risk assessment with regards to the 16 risk factors listed during a joint discussion with the ESG Management Team based on the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

a. Carbon economy (e.g., carbon tax and carbon trade)	i. High temperature or heat wave
b. Energy tax	j. Haze
c. Mandatory emissions reporting	k. Snowstorm
d. Voluntary reduction agreement	l. Drought
e. Carbon cap and trade	m. Goodwill (brand identity)
f. Product efficiency regulations and standards	n. Changes in consumer behavior
g. Typhoon or torrential rain	o. Supply chain management
h. Earthquake or tsunami	p. Political and economic attention

Step 3 Identification of climate change risks and opportunities and corresponding countermeasures

While adapting to climate change, we also ought to ponder upon our competitiveness and seize business opportunities. Therefore, FSP has identified a number of climate change risks and opportunities as detailed on the next page:







Risk category	Consideration	Risk		Opportunity		Countermeasure
		Description	Level	Description	Level	
Regulatory requirements	Carbon economy (e.g., carbon tax and carbon trade)	Increased operating costs	High-low	Promote the development of green energy industries and improve energy-saving technologies among companies	Medium	Search for feasible provisions through identification of laws and regulations in management systems, organize regulatory awareness campaigns, and carry out revision of standards to minimize the possibility of regulatory violations.
	Energy tax		Medium		Low	
	Mandatory emissions reporting	Increased equipment investment costs	Medium-low	Speed up carbon reduction and the acquisition of carbon credits among companies	Low	Establish communication and propose recommendations on government policy requirements so that the system is fair and reasonable.
	Voluntary reduction agreement		Medium-low		Low	Take a GHG inventory each year to achieve organizational reduction targets
	Carbon cap and trade	Limited production capacity	Low-high	Slow down industrial expansion to improve the health of industries	Low	Keep abreast of changes in relevant domestic and foreign laws and regulations after the Paris Agreement and assess response measures within the Company.
	Product efficiency regulations and standards	Failure to meet customer requirements and seize business opportunities due to a lack of product efficiency	High-low	Boost demand for high-efficiency and energy-saving products	Low	Evaluate feasible technologies and materials for product design and minimize energy consumption among products.
Extreme weather	Typhoon or torrential rain	Probability of occurrence and severity of natural disasters affect production and operations	Low	Maintain the Company's product competitiveness and boost customer confidence	Medium	<ul style="list-style-type: none"> Establish emergency response measures and reduce loss of personnel and property. Minimize losses caused by natural disasters with commercial insurance.
	Earthquake or tsunami		Medium		Medium	
	High temperature or heat wave		Low	Improve the ability to protect production sites	Low	
	Haze		Low		Low	
	Snowstorm		Low		Low	
	Drought		Low		Low	Conserve water, increase rainwater and wastewater reuse, and establish emergency response measures for water resources.
Economic activities	Goodwill (brand identity)	Poor image leads to sales and stock price setbacks	Medium-low	Provide high-efficiency products and actively engage in carbon management to not only meet customer requirements, but also enhance the value of high-quality brands	Medium	<ul style="list-style-type: none"> Meet regulatory requirements in operating locations, establish channels of dialogue with competent authorities and stakeholders, and engage in communication in good faith. Evaluate suppliers' GHG management and reduction actions, and include them as one of the bases for rating the Company's procurement strategies. Increase the proportion of renewable energy use within the Company.
	Changes in consumer behavior	Reduced demand for energy-saving and carbon-reducing products	Medium-low	Boost demand for eco-friendly products and identification with such products	Medium	
	Supply Chain Management	Poor mitigation and adaptation affect operating costs	Medium-high	Slow down industrial expansion to improve the health of industries	Medium	
	Political and financial attention	Political and economic changes affect corporate probability	Medium	Keep track of climate change developments and climate justice movements in operating locations, and make operational responses and adjustments in advance to minimize their impact on company operations	Low	





Greenhouse Gas Management

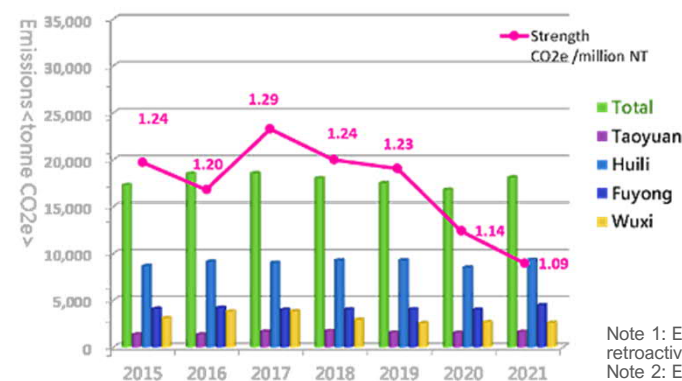
In an effort to slow down climate change, we have taken our own GHG inventories each year since 2011, and also passed external verification of GHG inventories. In 2021, our major production plants achieved 100% external verification. With a view to promoting and keeping track of carbon emissions in our subsidiaries in line with the requirements set forth by competent authorities as well as integrating carbon emissions into our sustainable development strategies, we have formulated climate change management strategies and green development targets while carrying out various GHG reduction activities. Future carbon reduction targets will be evaluated and set by reference to the methods adopted by the Science-based Targets Initiative (SBTi).

Management	Primary strategy	Targets
Promote low-carbon and green manufacturing 	<ul style="list-style-type: none"> Take an inventory of Scope 1, 2, and 3 GHG emissions according to the ISO 14064-1 standards and pass external verification Continue to promote various innovative energy conservation and carbon reduction projects Actively participate in the CDP questionnaire Use renewable energy 	<ul style="list-style-type: none"> Reduction target: Achieve a 50% reduction in total GHG emissions by 2050, with 2010 as the base year for GHG emissions Achieve 100% renewable energy use and carbon neutrality by 2050
Increase energy use efficiency 	<ul style="list-style-type: none"> Promote the ISO 50001 Energy Management Systems 	<ul style="list-style-type: none"> Promote the optimization of power systems and improve the energy efficiency of equipment on an ongoing basis

Statistics on the inventory of various types of GHG emissions in 2021:

	Taiwan headquarters	Huili Plant	Fuyong Plant	Wuxi Plant	Total emissions	Percentage
Scope 1 direct emissions	153.25	579.19	344.40	294.59	1,371.42	7.57%
Scope 2 indirect emissions	1,494.82	8,766.99	4,158.12	2,319.31	16,739.25	92.43%
Total	1,648.07	9,346.18	4,502.52	2,613.90	18,110.67	100.00%

GHG emissions at FSP's factories in previous years



Note 1: Emission intensity is indicated retroactively from 2021 to previous years
 Note 2: Emission intensity is calculated using the Group's operating revenue

Note 1: Direct GHG emissions (Scope 1 emissions): This category of GHG emissions includes emissions from fuel combustion in stationary equipment, manufacturing processes, mobile combustion sources on various modes of transportation, and fugitive emission sources (e.g., refrigerants and firefighting equipment). The total direct GHG emissions was 1,371.42 metric tons of CO₂e per year, accounting for 7.57% of the Group's total GHG emissions.

Note 2: Indirect GHG emissions (Scope 2 emissions): This category of GHG emissions primarily includes emissions from purchased electricity and purchased steam. The total indirect GHG emissions was 16,739.25 metric tons of CO₂e per year, accounting for 92.43% of the Group's total GHG emissions.





Direct Energy

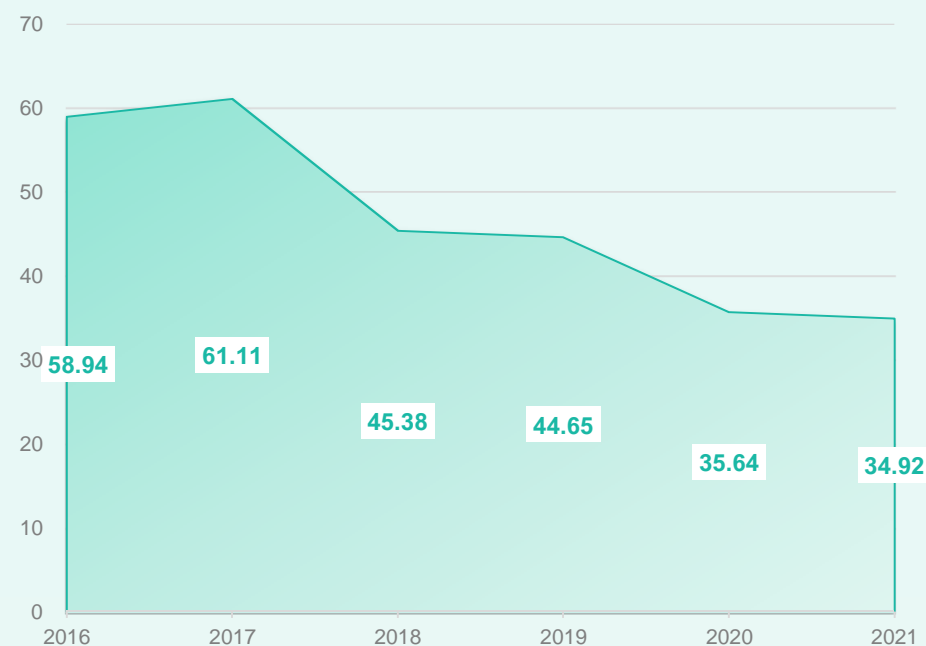
While developing high-efficiency and high-power density power supply products, FSP enhances management in manufacturing processes using monitoring systems via regional power systems. At the same time, FSP improves and reduces energy consumption, as well as engage in environmental protection and sustainable development through energy conservation.

At FSP, direct energy is primarily used in company vehicles and emergency generators, and the use of direct energy is on a decline from year to year.

Overview of direct energy consumption at FSP's factories: (Unit: kiloliter)

	2016	2017	2018	2019	2020	2021
Headquarters	11.76	12.79	13.49	10.89	9.6	9.5
Huili	22.24	21.27	13.49	16.52	11.53	10.52
Fuyong	16.17	18.00	10.44	8.14	8.03	7.90
Wuxi	8.77	9.05	9.25	9.10	6.48	6.99
Group total	58.94	61.11	46.67	44.65	35.64	34.92

Consumption of major direct energy sources



(Diesel for vehicles and diesel for emergency generators; Unit: kiloliter)

Group total





Indirect Energy

FSP's indirect energy primarily comes from purchased electricity. As of 2021, FSP has consumed 21,940.92 MWh of electricity cumulatively. In order to fully keep track of our GHG inventory and maintain our carbon reduction performance, we have formulated a host of major energy-saving plans as listed below:

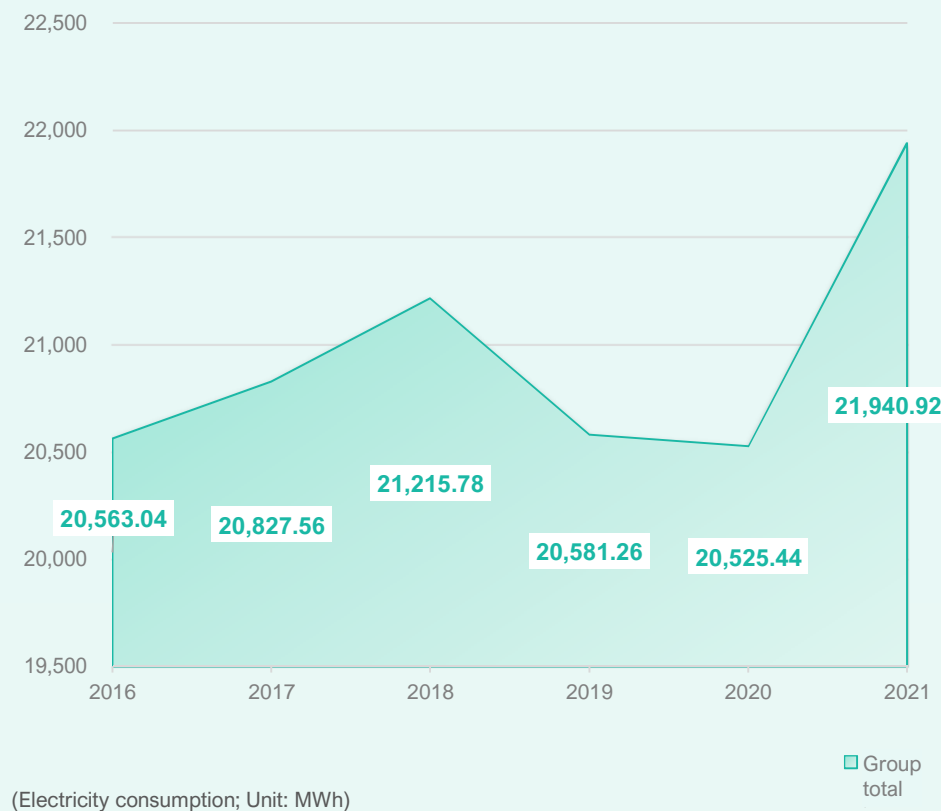
- Improve energy conservation in buildings and carry out upgrading works, and replace exit and evacuation signs with LED ones
- Implement energy recovery in aging factory buildings
- Install sensor lights
- Replace in-person meetings with video conferencing whenever possible
- Use high-efficiency air-conditioners and chillers in new buildings
- Install solar power generation systems on rooftops

With the implementation of the energy-saving program, there is room for FSP to gradually reduce energy consumption from year to year. We also hope to inculcate the concepts of energy conservation and carbon reduction among employees through publicity and turn these concepts into a critical part of our corporate culture.

Overview of indirect energy consumption at FSP's factories: (Unit: MWh)

	2016	2017	2018	2019	2020	2021
Headquarters	2,399.72	2,929.91	2,903.90	2,690.53	2,785.06	2,940.86
Huili	9,552.66	9,410.29	10,550.85	10,508.28	10,018.98	10,901.51
Fuyong	4,327.02	4,112.73	4,459.12	4,496.37	4,647.84	5,170.50
Wuxi	4,283.64	4,374.63	3,301.91	2,886.08	3,073.56	2,928.05
Group total	20,563.04	20,827.56	21,215.78	20,581.26	20,525.44	21,940.92

Consumption of major direct energy sources



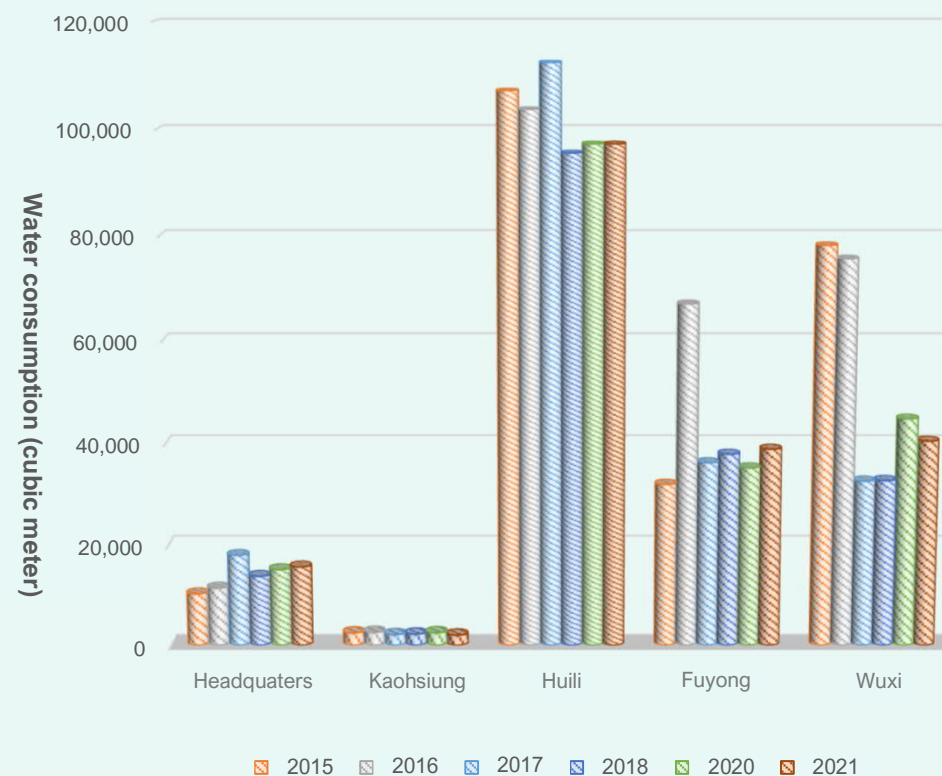


Taking into account clean production and environmental protection, no wastewater is produced in manufacturing processes at each factory. Water consumption at FSP primarily involves domestic water use by employees, so only domestic wastewater is produced at our facilities. We source 100% of our domestic water from government water supply, rather than rivers, lakes, groundwater sources or the sea. Thus, we have no significant influence and impact on water resources and community water use in and around our facilities.

The total water consumption at FSP's factories is illustrated in the following figure. FSP experienced a 5% increase in total water consumption compared to the previous reporting year, due chiefly to an increase in water use by employees in the new R&D building at FSP's headquarters and Wuxi Plant.

As far as domestic wastewater management is concerned, our wastewater is discharged into the sewers and managed by wastewater treatment plants at various industrial areas. Since FSP's factories are located in industrial areas rather than ecologically sensitive areas, our wastewater inspection results comply with local laws and regulations. Therefore, our facilities have no serious effect on the surrounding environment and related natural habitats.

Total water consumption at FSP's factories





Green Design at FSP

FSP's green design philosophy echoes SDG 12 (Responsible Consumption and Production) as it aims to reduce the impact of our operations on the environment and people through waste reduction, recycling, and reuse. On the other hand, we have also set up a green product management (GPM) platform to ensure that our products and materials comply with the relevant rules and regulations.

FSP's green design philosophy covers three themes, namely "incorporating carbon-reducing and efficiency-enhancing design," "developing recyclable and plastic-reducing design," and "devising innovative solutions."





Specific Benefits of Green Design (2021)

Cost Saving

- Simplified design (miniaturization)

After incorporating miniaturized design into external AC/DC power supplies ^[Note 1]

- ✎ Shipping costs for 45W products fell 82%
- ✎ Shipping costs for 150W products fell 37.5%

Energy Saving

- Server power supplies ^[Note 2]

When comparing the energy efficiency of 80 Plus Gold-certified and 80 Plus Bronze-certified power supplies, the energy efficiency of 80 Plus Gold-certified power supplies increases by 3.08% at 50% load. These server power supplies can save up to 640 MWh of electricity based on calculations made using shipments of server power supplies.

- External AC/DC power supplies ^[Note 3]

When evaluating the energy saving benefit of the new generation of external power supplies according to the CEC Level IV requirements that meet the EU energy efficiency standards for external power supplies, these external power supplies is found to be able to save up to 270 MWh of electricity based on calculations made using shipments in 2021.

Carbon Reduction

- Consumer power supplies ^[Note 4]

According to the database provided by the Environmental Protection Administration, Executive Yuan (R.O.C.), the new generation of consumer power supplies can reduce 4,125 kg of CO₂e based on calculations made using shipments in 2021.

- External AC/DC power supplies ^[Note 3]

According to the database provided by the Environmental Protection Administration, Executive Yuan (R.O.C.), the new generation of external power supplies can reduce 18,840 kg of CO₂e based on calculations made using shipments in 2021.

Note 1: Based on comparisons between FSP045-D1UP3 and FSP045-A1BR2 and between FSP150-ABBN3 and FSP150-AJCU3.

Note 2: Based on comparisons between HD2-820 (Bronze) and HG2-850 (Gold).

Note 3: Based on comparisons between FSP150-ABBN3 and FSP150-AJCU3.

Note 4: Based on comparisons between HPT2 and HPT3.





Being primarily in the less-polluting electronics and information technology industry, FSP does not face any issue related to wastewater and waste gas from manufacturing processes. At the same time, zero waste is also the ultimate goal of waste management at FSP. With the management strategies of reducing the total amount of waste and engaging in resource recovery from waste, FSP replaces the existing end-of-pipe treatment model with recycling and reuse, turning waste into useful resources. In addition, FSP's factories have dedicated personnel in place to take charge of waste management, and submit online reports on their status of waste management on a regular basis in compliance with regulatory requirements.

FSP's waste management model is detailed as follows.

Waste Management Model at FSP

In 2021, FSP produced 262.12 tons of waste, including domestic waste, in total, a 15% increase from the previous reporting year, due chiefly to an increase in waste produced by our factories in China.

5.7 Environmental Protection Expenditure

Since FSP does not belong to a highly polluting or energy-consuming industry, our environmental protection expenditure primarily covers expenses related to resource recycling, waste disposal and treatment, and verification of environmental systems. FSP's total environmental protection expenditure in 2021 was NT\$4,131,094.

	Type of waste	Description	Treatment method	Final disposal method
Type of waste and disposal method in 2021	General industrial waste	Used adhesive tapes, used sponges, used soldering iron tips, and office waste	Outsourcing of waste management to qualified waste disposal and treatment vendors	Sanitary landfill or incineration
	Hazardous industrial waste	Mixed metal scrap, waste printed circuit boards (PCBs), waste ting slag, waste electronic parts, liquid chemical waste, etc.	Outsourcing of waste management to qualified waste disposal and treatment vendors	Sanitary landfill or incineration
	Paper	Magazines, newspapers, photocopying paper, printing paper, cartons, etc.	Recycling vendors	Reuse
	Iron and aluminum cans	Iron and aluminum cans, and styrofoam	Recycling vendors	Reuse
	Normal glass	Beverage bottles	Recycling vendors	Recycling and reuse
	Normal plastics	Beverage bottles, waste containers, and plastic containers	Recycling vendors	Recycling and reuse
	Kitchen waste	Composting kitchen waste and kitchen waste as pig feed	Catering vendors	Fertilizers
	Other recyclable resources	Toner cartridges, batteries, and light tubes	Recycling vendors	Recycling and reuse

