Sino-American Silicon Products Inc.

2021

Sustainability Report

Contents

About This Report

Report Axis

The main business items of Sino-American Silicon Products Inc. (hereafter "SAS") and its subsidiaries include R&D, design, manufacturing, and sales of semiconductor silicon materials and components, photovoltaic and communication wafer materials, as well as technical services for photovoltaic power generation system integration and installation. Since 2017, SAS has taken the initiative to compile a Corporate Social Responsibility report (renamed as Sustainability Report in 2021). Based on its long-term and in-depth interactions with the local communities and engagement with stakeholders, SAS has disclosed the relevant information on material issues regarding the four aspects of corporate governance, economy, environment, and society, as well as execution & improvement results in the report in addition to presenting the future vision and goals in terms of sustainable development.

Report Editing and Final Draft

SAS compiles and organizes relevant information and edits its Sustainability report by following organizations and procedures as below.

- Sustainability Report Task Force

  The main members include the President's Office and the EHS Management Department. The task force is in charge of promoting energy environment-related matters, overall planning, information compilation & organization, communication & integration, and editing & revisions.

- Editing Procedures, Review, and Final Draft

  The initial draft of the President's Office and the EHS Management Department shall be distributed to all unit members (ESG committee members) and the Audit Office for review, and then delivered to the Chairperson (chair of the ESG committee) for publication finalization after review.

Reporting Basis

The content structure of this report primarily refers to the "Sustainability Reporting Standards" issued by the Global Reporting Initiative (GRI) and the core indicators for the semiconductor industry in the "Sustainability Accounting Standards" issued by the Sustainability Accounting Standards Board (SASB), as well as the "Compiling the Sustainability report according to the semiconductor industry category indicators and the "Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies" to prepare the sustainability report. This report also conforms to the Rules Governing the Preparation and Filing of Corporate Sustainability Reports by TWSE Listed Companies. Key issues of concern to stakeholders are disclosed and responded to in relevant chapters based on materiality analysis results.

Report Boundaries and Reporting Period

The reporting period and scope of this Sustainability report released by Sino-American Silicon (SAS) are defined as follows:

Publication time: June 2022

Coverage time: January 1, 2021 to December 31, 2021

Scope of coverage: The scope of this report includes the performance data, financial status, and sales performance of SAS Headquarters, Chunan Branch, Yilan Branch, SUNRISE Branch, and semiconductor business group GlobalWafers Co., Ltd. (hereafter "GlobalWafers"); which are consistent with the consolidated financial scope of the Company's annual report. Other subsidiaries are also included in addition to the companies listed above. The entities included in this report account for over 80% of the consolidated revenue. The financial data is verified by KPMG according to International Financial Reporting Standards (IFRS), and the calculation unit is New Taiwan Dollar (NTD).

The environmental performance disclosed primarily involves the Chunan Branch, Yilan Branch, and GlobalWafers (with the largest number of plants and the most significant impact on the environment compared to other subsidiaries). The contents also disclose SUNRISE Branch's solar power generation system performance. The social performance topic includes the Headquarters, Chunan Branch, Yilan Branch, SUNRISE Branch, and GlobalWafers.

In addition, because GlobalWafers has compiled a separate sustainability report; the relevant contents mainly cover the Headquarters, Chunan Branch, Yilan Branch, and SUNRISE Branch; and include the performance statistics of GlobalWafers. The internal units provide the relevant performance data, compiled, and presented in an internationally accepted indicator calculation method.

Note: The GlobalWafers Co., Ltd. referred to in this report covers GlobalWafers Headquarters, GlobalWafers Chunan Plant, GlobalWafers Taisil Branch, GlobalWafers Japan Co., Ltd., MEMC Japan Ltd., MEMC Korea Company, Kunshan Sino Silicon Technology Co., Ltd., MEMC Electronic Materials Sdn. Bhd., GlobiTech Incorporated., MEMC LLC, MEMC Electronic Materials S.p.A, Topsil GlobalWafers A/S, GlobalWafers Singapore Pte. Ltd.

In the future, SAS will release sustainability reports on an annual basis and provide electronic files of the report in the Sustainability section of the corporate website for viewing and download.

Previous publication time: June 2021

Report Assurance

A third-party independent verification agency has verified the Enterprise Sustainability Committee of SAS in order to strengthen the GRI Standards compliance for this report while enhancing the transparency and credibility of the sustainable management information. DNV has verified this report to comply with the GRI Standards' core compliance options as well as the DNV VeriSustain medium assurance level verification standard requirements. The verification statement is detailed in the appendix. The financial performance data is publicly released after CPA certification, consistent with the data presented in the Company's annual report.

Contact

Should you have any comments or suggestions regarding this report, please feel free to contact us in one of the following ways:

Sino-American Silicon Products Inc.

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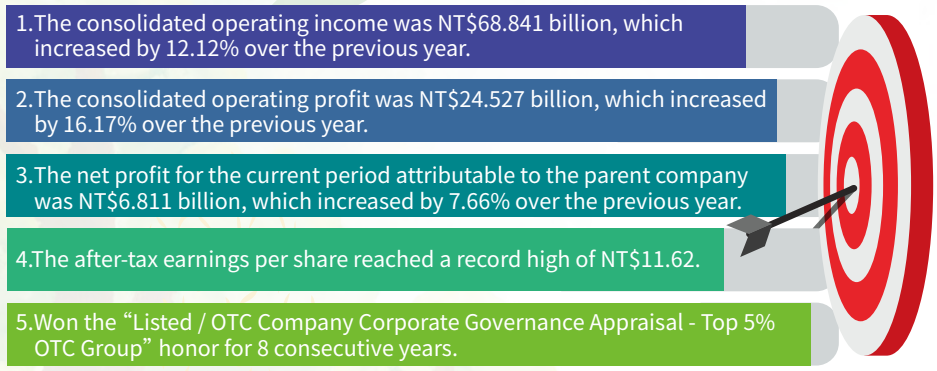
Message from the Chairperson

As the climate change impacts intensify, renewable energy plays a critical role in carbon neutrality. Net-zero carbon emissions have become the international development trend, and Taiwan must inevitably develop renewable energy. As a comprehensive green energy supplier, Sino-American Silicon Products Inc. (SAS) has extended its business scope to cover the green power production, energy storage, and green energy resale fields. We have taken practical actions to support and respond to the net-zero transformation objectives for Taiwan and worldwide by adhering to our pledge to achieve 100% renewable energy utilization by 2050 for the SAS Group and its subsidiaries.

In addition to corporate sustainability operations, SAS is also committed to its social responsibilities by ensuring corporate governance, environmental protection, employee care, etc. The goal is to exert the positive influence of SAS in the industry and society to create the sustainable values of economic growth, environmental protection, and social progress.

Rising Revenues and Sustainable Governance

In 2021, the overall solar energy industry still faced various new and old challenges other than the sharp rise in upstream material prices due to the labor and material shortage resulting from the pandemic. The Chinese government imposed the Dual Control System of Total Energy Consumption and Energy Intensity also pushed up the overall costs. As the world enters the post-COVID-19 era, the demand for solar installations in various countries has increased significantly. In addition to providing high-efficiency monocrystalline cells, modules, and downstream power plant maintenance, SAS has also actively invested in energy storage, renewable energy, and other fields to ensure stable solar energy supply chain operations. SAS has also actively deployed into various key industries of the semiconductor industry chain to expand high-value businesses, and the operating results in 2021 were outstanding!



Global climate change issues have received more attention in recent years, and green power has become the future energy trend. Taiwan's solar power plant installations are expected to continue to grow this year due to the vigorous green energy policy promotion by the Taiwanese government. SAS will actively develop solar power plants while building smart grids to accelerate corporate operation profitability. Regarding corporate governance, we constantly refine our performance to strengthen our commitment to the pursuit of sustainable operations.

Forward-looking and Industry-leading Technologies

To provide customers with high-quality solar cells, the SAS R&D team has improved the maximum conversion efficiency of N-type monocrystalline cells to 23.0%. The average mass production efficiency for P-type monocrystalline cells reached 22.60% in 2021. The average conversion mass production efficiency for P-type monocrystalline cells is expected to increase by 22.80% in 2022. Moreover, the Yilan branch is expected to invest in a large-size (M10) solar cell production line in 2022. As the market demands expand to large-sized cells (M6, M10) in the future, our rich R&D experiences will enable the Company to quickly develop solar cell products that meet customer needs and the types of solar cells mentioned above.

Create a Green Energy Environment to Achieve Net Zero Carbon Emissions

The "Global Risk Report 2022" published by the World Economic Forum early this year indicated that under the continuous threat of COVID-19, the key of the global risks include weak climate action, increased cyber risks, etc. Five of the ten most critical global risks are environmental related, the top three are all environmental risks, and the climate action failure tops the list. Even if all developed countries abide by the substantial emission reduction pledge in 2030, we still cannot reach the target of less than 1.5° C in temperature rise. The governments and enterprises of major carbon emission countries will require enormous willpower, creativity, and climate actions to turn this situation around. 2021 was a particularly important year. As COVID-19 continued to spread across the globe and efforts were being made to prevent and fight the epidemic, the SAS Group and its subsidiary GlobalWafers Group have released their renewable energy declaration to reflect their action and determination for carbon reduction. The goal was to set the RE100 goals for each phase and work toward achieving the Group's Net Zero Emission goal by 2050.

Employee Care and Public Cause

2021 remained a challenging year, and COVID-19 added more uncertain factors to the market environment. Undauntedly, SAS has continued to focus on innovative R&D, reduce costs, and develop in the direction of strength accumulation. Good corporate governance and focus on social responsibility are the core impetus for the Company's existence. SAS will go all out to realize its pledge of a friendly workplace, environmental protection, and social care. Our goal is to contribute to ecological environment fortification.

SAS is committed to creating a safe, healthy, and friendly workplace; upholding the pledge to respect and provide people-oriented care for employees; abiding by the government's labor laws; creating a comprehensive salary and welfare system; guaranteeing a friendly working environment; and ensuring the safety of employees at work. Emphasize employee career development and physical and mental health by planning diversified training courses to improve employee knowledge and skills and pay attention to the balance of work & life for employees. With all efforts, we hope to build a blissful healthy workplace and continue to pursue excellence together with our employees, in face of fiercely challenging global competition.

The SAS Group has been actively participating in various public welfare activities for a long time in terms of social welfare. We are committed to caring for disadvantaged groups and remote indigenous tribe issues. Each year, SAS has held a rural fundraising and care event to send care and support to more regions and help more children in rural areas. Even the COVID-19 crisis did not affect the Group's determination and mission to assist children in remote villages. We have expressed our love in practical ways, practiced corporate responsibility by taking care of the society, fulfilled the various specific actions and results in terms of corporate social responsibility, and demonstrate our determination to achieve the sustainable operation target.

Chairperson of Sino-American Silicon Products Inc.

徐秀蘭

Affirmations and Honors

Corporate Governance

Won the “Listed / OTC Company Corporate Governance Appraisal - Top 5% OTC Group” honor
(8 consecutive years)

Environ-ment

Chunan Branch won the Diamond Grade Green Building Label

Chunan Branch Plant 2 Obtained the Green Factory Label

Society

Obtained the “Common Health Magazine” CHR Corporate Health Responsibility Label

Sino-American Silicon

Company Profile

Sino-American Silicon Products Inc. (hereafter "SAS") was established on January 21, 1981, as a professional wafer manufacturer. SAS operates two major business groups - semiconductor business group and solar energy business group. On October 1, 2011, SAS divided its semiconductor silicon wafer operations independently under GlobalWafers Co., Ltd. (hereafter "GlobalWafers). Subsequently, SAS started to focus on the solar energy field with production lines for solar silicon ingots, solar silicon wafers, solar cells, and modules. SAS also engages in downstream power generation system businesses to become one of the most comprehensive vertical-integrated companies nationwide.

We are committed to the intensive R&D of advanced technologies, and actively launching new-generation solar cell products with high conversion efficiency has always been our main key to success as it continues to attract niche customers. Through the strategic goal of vertical industry integration, SAS can achieve the multiplier benefits of comprehensive upstream, midstream, and downstream industry integration while expanding the global deployment for terminal solar systems. SAS aims to play a key role in the solar energy and green environmental protection fields while creating greater benefits for the Company's shareholders and employees.

On August 1, 2014, we acquired Sunrise Global Solar Energy Co., Ltd., a high-performance solar cell manufacturer. Meanwhile, we acquired the solar energy module manufacturer Aleo Solar GmbH in Germany, which Sunrise Global acquired on May 16, 2014.

In 2015, we were actively involved in the global solar energy generator plant investment. Via our subsidiary, SAS Sunrise Inc., we constructed the 50MW solar energy generator plant in Palo, Leyte, the Philippines, which was later officially running in a commercial capacity in May 2016.

GlobalWafers is a key subsidiary of SAS. In 2016, GlobalWafers successfully acquired Denmark's Topsil Semiconductor Materials A/S (hereafter "Topsil") and SunEdison Semiconductor Limited (hereafter "SunEdison"). Since then, its product field has successfully advanced from CZ to large-size epiwafers, polished silicon wafers, silicon-on-insulator wafers, and FZ semiconductor wafers. We have combined GlobalWafers' top operating model, marketing advantages, and diversified product supply with SunEdison's global bases and product R&D capacities to establish more comprehensive product lines. Our operating headquarters is located in the Hsinchu City of Taiwan. Our global distribution bases include Taiwan, mainland China, Japan, South Korea, Malaysia, the United States, Italy, Denmark, and Singapore.

SAS Basic Information

Date of Establishment	January 21, 1981
Capital	NTD 5.86 billion
Main Product and Technology	Solar ingots, solar wafers, solar cells, solar modules, solar power generation system operations, and silicon material application products
Employee No.	SAS (headquarters & Chunan, Yilan, FZtech branches): 647 employees
Chairperson & CEO	Hsiu-lan Hsu
Vice Chairperson / Deputy CEO	Tang-liang Yao
President	Tang-liang Yao
Headquarters	4 F., Hsinchu Science Park, No. 8, Industry East 2nd Road, East District, Hsinchu City
Operating Bases	Headquarters : 4 F., Hsinchu Science Park, No. 8, Industry East 2nd Road, East District, Hsinchu City Chunan Branch : Hsinchu Science Park, No. 6, Kezhong Road, Chunan Township, Miaoli County Yilan Branch : No.1, Sec. 2, Ligong 1st Rd., Wujie Township, Yilan County FZtech Branch : Hsinchu Science Park, No. 6, Kezhong Road, Chunan Township, Miaoli County
Affiliated Enterprises	SAS affiliates are engaged in the following industries: semiconductor and wafer manufacturing, solar cell and module manufacturing, and solar power generation system services

Note: The number of employees is calculated based on those still working at the headquarters and branch as of 2021.12.31 (excluding subsidiary employees).

Shareholders Structure

Shareholders / Structure Quantity	Government Agencies	Financial Institutes	Other Juridical Persons	Natural Persons	Foreign Institutes and Foreigners	Total
No. of People	7	67	418	94,212	453	95,157
Shareholding (shares)	17,509,450	101,389,243	85,259,597	252,459,723	129,603,638	586,221,651
Shareholding Percentage	2.99%	17.30%	14.55%	43.06%	22.10%	100.00%

Data base date: 2022.4.24

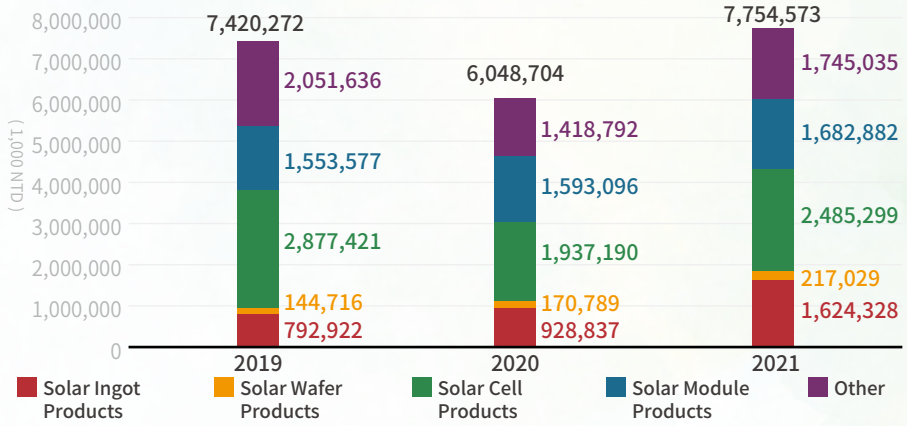
SAS is able to grow and produce high-efficiency solar wafers, cells, and modules products under the concept of integrity and boldly facing the challenges. SAS has actively entered the system end to achieve the vertical industrial integration benefits and expand its solar business deployment, allowing SAS to become one of the most successful domestic professional green energy solution suppliers in the nation. SAS is constantly looking for the next growth momentum, and hopes to pursue sustainable operation and growth with customers and suppliers. At present, our products are primarily sold in Asia, Europe, America, and other regions. SAS is committed to further strengthening environmental protection, and is expected to become the top technologically leading green energy solution provider worldwide.

Market and Services

- Solar Energy Industry

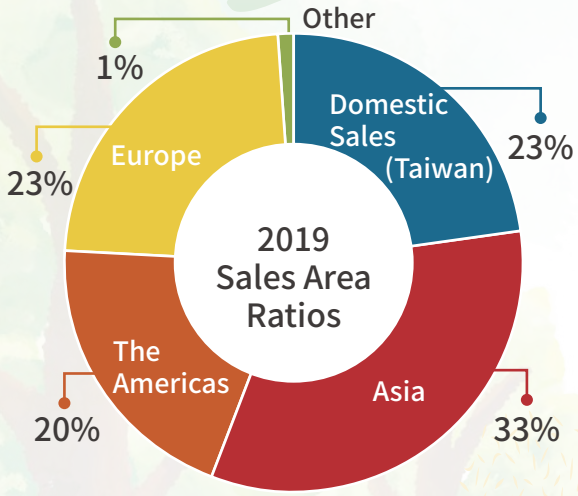
Product Sales

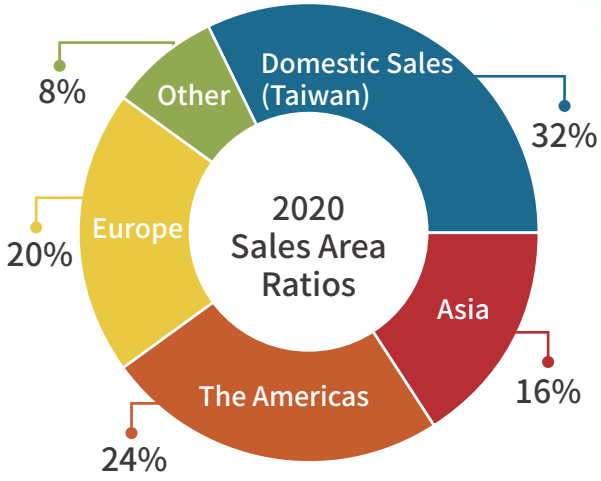
The effects of COVID-19 and the lack of workers and raw materials have caused the upstream raw materials to soar. The energy policy adjustments and tariff barriers in various countries have also pushed up costs. Fortunately, there is an international consensus on energy transition. Many countries have declared their commitment to achieving carbon neutrality or zero carbon emissions within a certain period. Taiwan has also set a goal of net-zero carbon emissions by 2050. Renewable energy and green production have become critical strategies for carbon neutrality. In addition to providing high-efficiency monocrystalline cells, modules, and downstream power plant maintenance; the SAS Group has cultivated the solar energy supply chain by developing and enhancing the cost to price ratio of solar products and constructing a strong competitive position via technology and product size differentiation strategies.

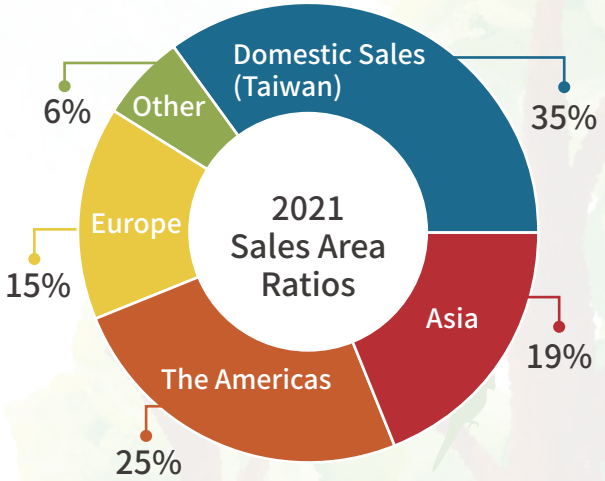


Sales Area Ratios

In recent years, the international proclamation of green energy use, Taiwan's response to new zero emissions, and large electricity consumers' strategies have increased renewable energy sales in Asia. Green energies are also sold with efficient and diversified products at diversified sales regions. The proportion of sales is evenly distributed in Europe, the United States, and Asia. The Americas are the highest and account for about 25%, and domestic sales account for about 35%.



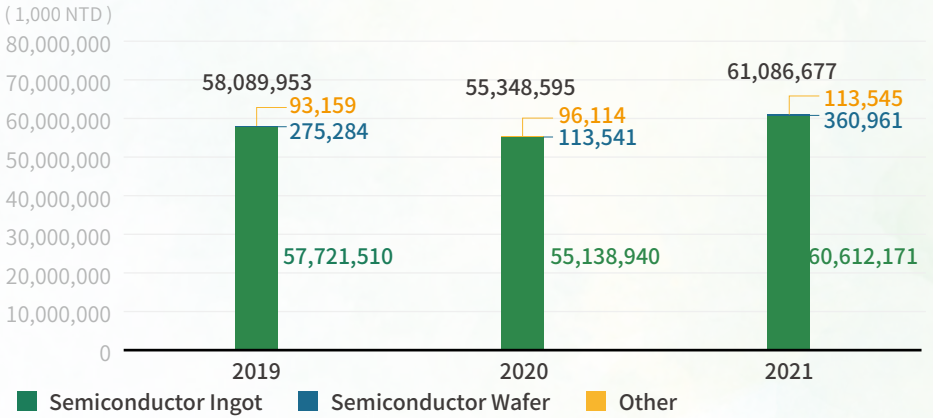




-Semiconductor Industry

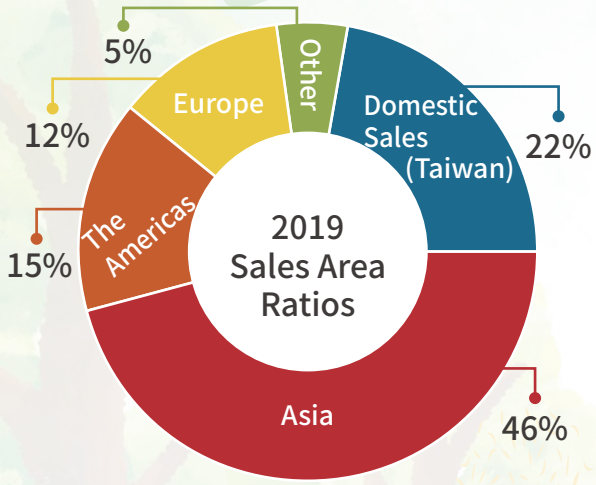
Product Sales

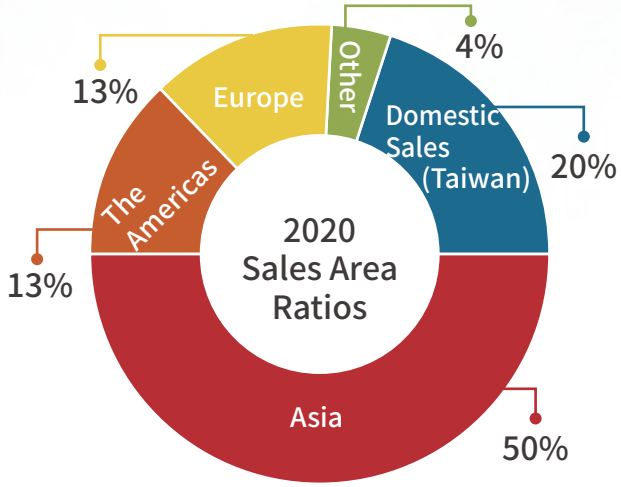
The strong growth of consumer products and the remote operation patterns brought by the COVID-19 pandemic drove the demand for semiconductors. With the contributions from the technology trends like AI, 5G, and EV, the subsidiary GlobalWafers Group has produced with full capacity throughout the entire year. By actively allocating the capabilities worldwide and utilizing deployments to different locations in each country, the Company has maintained secure and stable shipments, comprehensively improved quality and customer satisfaction, and met the market demands. In 2021, the semiconductor business delivered record-high results, with an annual turnover of NT$61.1 billion.

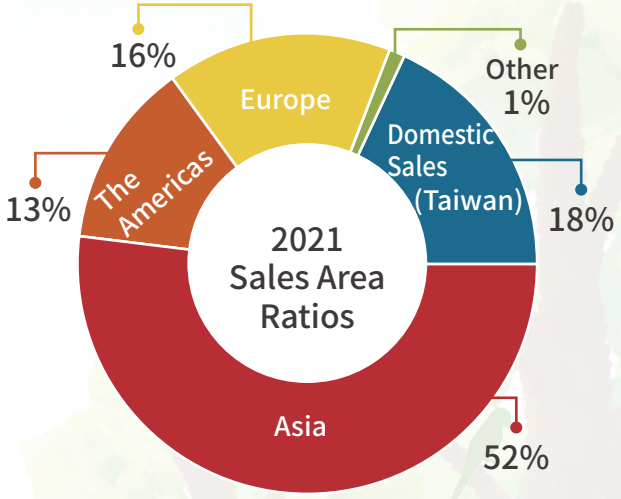


Sales Area Ratios

Through its M&A efforts over the years, GlobalWafers has successfully gained the existing customer orders from the acquired companies and a global sales network. The sales revenue ratio of sales regions has become balanced and stable.







Company Philosophy

SAS adheres to a philosophy of integrity, constant innovation, customer satisfaction, and giving back to society. It also strives to provide superior quality, technologies, and services, while striving for sustainable operations and growth in close cooperation with customers and suppliers. It aims to create outstanding value for shareholders and employees and fulfill its corporate social responsibility.

Honesty and Integrity

SAS upholds integrity and strictly observes corporate regulations and social and ethical norms to honor its commitment to the active implementation of its ethical management policy.

Constant Innovation

The development of new-generation ultra-high performance products is accelerated and corporate competitiveness is strengthened through innovative concepts and business models, a firm grasp of opportunities and pursuit of new knowledge, as well as a deep commitment in developing advanced technologies.

Customer Satisfaction

In the field of technology, strategy, and profitability, the company builds mutually beneficial cooperative relationships with its customers to create a win-win environment conducive to collective growth.

Giving Back to the Society

SAS embraces a spirit of giving back to society, shows concern for underprivileged groups, and actively participates in social welfare and environmental protection to fulfill its corporate social responsibility.

Participation in External Associations

Associations/Organizations	Participant	Members	Roles
Taiwan Photovoltaic Industry Association	●	●	Chairperson
Solar PV Generation System Association		●	
Chinese Professional Management Association		●	
Chinese Professional Management Association of Hsinchu		●	
Taiwan Science Park Association of Science and Industry		●	
The Institute of Internal Auditors — Chinese Taiwan		●	
Computer Audit Association — Chinese Taiwan		●	

Sustainable Management

Sino-American Silicon Products Inc. (SAS) has adhered to the business philosophy of "integrity, professionalism, innovation, and outstanding services" in order to achieve the triple-win vision of "growth with customers, pursue excellence with employees, and create value for shareholders." SAS has also focused on its social responsibilities while strengthening sustainable corporate operations in hopes to create sustainable value for economic growth, environmental protection and social progress.

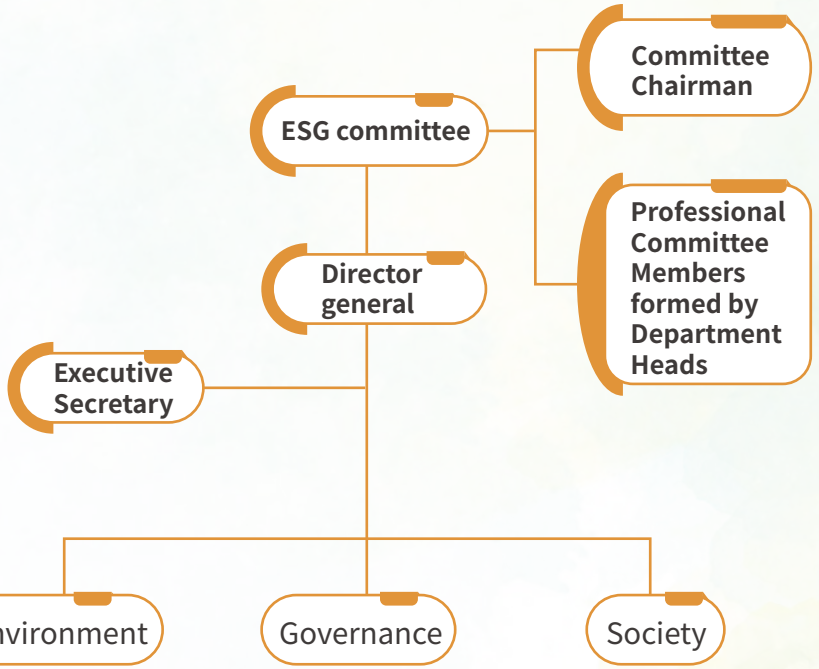
SAS has formulated the Company's Corporate Social Responsibility Best Practice Principles for compliance in order to fulfill corporate social responsibility; promote economic, environmental, and social progress; and achieve the goal of sustainable development. The goal is to enable the Company to actively practice corporate social responsibility while engaging in business operations in order to comply with international trends; take the corporate citizenship responsibility to enhance the national economic contribution; improve the quality of life for employees, communities, and society; and promote corporate responsibility based competitive advantages. The Company shall fulfill its corporate social responsibility by implementing corporate governance, developing sustainable environment, maintaining social welfare, strengthening corporate social responsibility information disclosure, etc.

Sustainable Organization

To achieve the goal of sustainable operation and fulfill corporate social responsibility, SAS established the "Corporate Sustainability Development Committee" in April 2016 as the highest-level corporate social responsibility implementation organization for the Company. The organizational structure of the committee is shown in the figure below. The committee chair was originally held by the president but was switched to the board's chairperson in June 2020 due to organizational changes. The committee members comprised of department heads in order to coordinate the development direction of the Company's corporate social responsibility and sustainability goals. To reflect the international development trends and high attention to ESG governance, the sustainability organization was renamed the "ESG Committee" in 2022. The board's chairperson still holds the committee chair position to facilitate the promotion and strengthen the implementation of sustainable goals.

The ESG Committee is the highest-level sustainable management and supervision organization within SAS. The ESG Committee has established professional subcommittees (added as needed) to execute the environmental, social, and governance actions. An implementation committee is set up to achieve short-term goals during the early phases of a project. Two promotion committees, the Greenhouse Gas Inventory and Reduction Promotion Committee as well as the TCFD Promotion Committee, are currently established according to needs. After the project is over, it will be transferred to various professional committees to integrate the concerns from different departments and implement the various sustainable issues. The project will be regularly tracked, inspected, and reviewed. Each year, the chairperson reviews the performance achievement rate and continues to explore improvement possibilities, and the various departments will join forces to achieve the corporate sustainability commitment. In addition, the committee reported to the board of directors on August 5, 2021, regarding implementation priorities, annual goals, and implementation results of the year.

Sustainable Organization



- Energy efficiency enhancement
- Greenhouse gas checks and disclosure
- Pollution prevention and management
- Energy conservation and water recovery technology development
- Resources recycling management
- Waste reuse advocacy
- Green manufacturing process / Clean production
- Green buildings / Green factories

- Strengthen the board of directors' competency
- CSR info transparency
- Rights protection of stakeholders
- Internal control and risks management
- Finance and operation performance management
- Occupational ethics and integrity principles
- Supply chain management

- Employee care and benefits policies
- Diversified work opportunities
- Friendly workplace and labor-management communication
- Community concern and charity participation
- Cooperative education / Industry-academic collaboration
- Customer service / satisfaction level
- Customer privacy / asset protection
- Product safety

Major Sustainability Issue Identification Process

SAS is open to accommodate all kinds of opinions and reference the sustainability report guidelines issued by the Global Reporting Initiative (GRI) to define the report content by following such principles as stakeholders inclusiveness, sustainability context, materiality and completeness.

Stakeholder inclusiveness: We communicate with stakeholders and respond to their reasonable expectations.

Sustainability context: Use the GRI Standards to reveal the improvement and performance of SAS in terms of economic, environmental, and social conditions.

Significance: Collect the opinions or concern topics of stakeholders, and submit them to the ESG committee to identify their importance.

Completeness: Major topics and their scope, boundary, and timeline are confirmed.

Identification
6 Major Types of Stakeholders

Based on the Company's operating features and through cross-departmental discussions, 6 major categories of stakeholders are identified. They include staff members, customers, shareholders (investors), suppliers (contractors), government agencies (Science Park Bureau, Environmental Protection Bureau, Environmental Protection Administration, Energy Conversation Bureau, Ministry of Labor, etc.), and the media.

Collect
13 Sustainability Topics

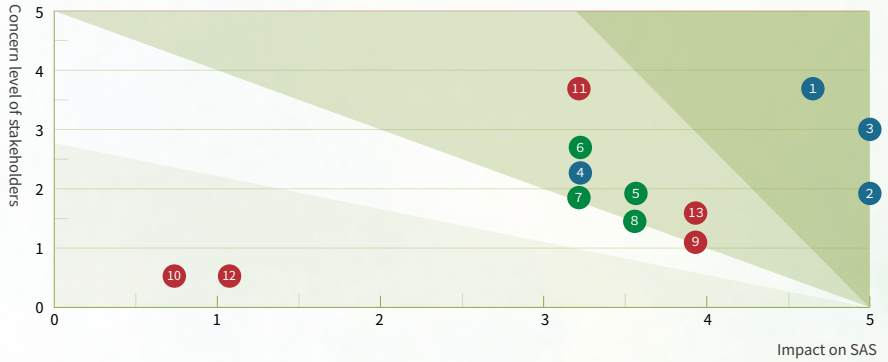
The president's office, sales office, procurement office, administrative office, and related external units as well as the stakeholders interactive experience and communication records shall collect the issues of concern to employees, customers, shareholders (investors), suppliers (contractors), government agencies (Science Park Bureau, Environmental Protection Bureau, Environmental Protection Administration, Energy Conversation Bureau, Ministry of Labor, etc.), and media. Moreover, refer to the official website for survey results on the issues of concern to stakeholders.

Materiality
11 Material Issues

Various team representatives of the Company's ESG Committee shall consider the degree of stakeholders concern on the issue, the impact of the topic on the Company as well as the external society, environment, and economy; and assess the "degree of stakeholders concern" and "impact on SAS" for the issue. Plot a materiality matrix based on the "degree of stakeholders concern" and "impact on SAS,"and list topics with high degree of concern and impact as material issues.

We will disclose the management approach for the material sustainability issues in this report. Other issues that do not have a major impact will be disclosed as a summary or may not disclosed in this report.

Material Issue Analysis



Economic Aspect

Serial No.	Issues	Material
1	Legal Compliance (including economic, environmental and social aspects)	V
2	Corporate Governance	V
3	Economic Performance	V
4	Integrity and Ethics / Anti-corruption	V

Environmental Aspect

Serial No.	Issues	Material
5	Energy Resources Consumption and Reduction (including energy conservation and carbon reduction measures)	V
6	GHG emissions	V
7	Waste Management (including reuse)	V
8	Pollution Prevention (air and water)	V

Social Aspect

Serial No.	Issues	Material
9	Employee education & training	V
10	Local Job Opportunities	
11	Friendly workplace (including occupational safety and hygiene, occupational health)	V
12	Labor's Human Rights	
13	Product quality and customer satisfaction	V

Boundary and scope of material issues

	Material topics	Boundary - within the organization						Boundary - outside the organization	Corresponding GRI standards	Corresponding chapters
		Sino-American Silicon				Subsidiary				
		Headquarters	Chunan Branch	Yilan Branch	FZtech Inc. Branch	GlobalWafers Wafers	Other Subsidiary			
Economic Aspect	Regulation compliance (including economic, environmental and social aspects)	O	O	O	O	O			GRI 419 GRI 307	1.1.4 Legal Compliance
	Corporate Governance	O	O	O	O	O			GRI 102-Governance	1.1. Corporate Governance
	Economic Performance	O	O	O	O	O	O		GRI 201	1.2 Operation Performance
	Integrity and Ethics / Anti-corruption	O	O	O	O	O			GRI 102 - Ethics and Integrity GRI 205	1.1.2 Integrity & Ethics
Environmental Aspect	Energy resources consumption and reduction (including energy conservation & carbon reduction)		O	O	O	O			GRI 301 GRI 302 GRI 303 GRI 305	3.2 Energy Management and Development 3.3 Raw Material and Water Resources Management
			O	O	O	O	O	O	GRI 302	3.2.3 Renewable Energy Development
	GHG emissions		O	O	O	O			GRI 305	3.1 Carbon Management
	Waste Management (including reuse)		O	O	O	O			GRI 306	3.4 Pollution Prevention and Waste Reduction Management
	Pollution Prevention (air and water)		O	O	O	O			GRI 305 GRI 306	3.4 Pollution Prevention and Waste Reduction Management
Social Aspect	Employee education & training	O	O	O	O	O			GRI 404	4.3 Education and Training
	Friendly workplace (including occupational safety and hygiene; workplace health)	O	O	O	O	O			GRI 403	4.4 Friendly Workplace
	Product quality and customer satisfaction		O	O	O				GRI 102-43	2.2 Customer and Product Services

Note: FZtech Inc. was merged into SAS on 2019.12.12, and became the FZtech Branch on 2020.1.3. Therefore, its organizational boundary incorporated into SAS as a subsidiary.
Other subsidiaries: Including all subsidiaries in the consolidated financial report other than those associated with "GlobalWafers" (based on companies listed in the "About this Report" coverage remarks).

Stakeholders' Engagement

Employees

Significance to SAS

Employees are the Company's most important assets. Only by taking good care of the employees will both parties grow in sync with each other.

Communication Frequency / Method

★ Various Organization Meetings/ Irregular
★ Company Notice Board / Irregular
★ Internal Website and Emails / Irregular
★ Performance Appraisal
★ Labor-management Meetings / 4 Times Per Year
★ Various Complaint Boxes or Hotlines/ Irregular

Issues of concern

*Salary
*Benefits
*Work Environment
(including occupational safety and hygiene, and healthy workplace)

Our Responses

Employees are the Company's most important asset, and the Company attaches great importance to communication channels with employees. In 2020, we constructed a human resources area, increased the consultation options and paths for colleagues, and regularly held labor-management meetings to listen to the voices of colleagues.

* To attract and retain outstanding talents, the Company has offered competitive salaries and set the salary adjustment standards each year according to the relevant data.
* The Company has established an exclusive restaurant to provide employees with free meals during their working hours. In addition to labor insurance, the Company also provides group insurance, childcare leave, and other benefits that are better than those required by the law; and established a welfare committee to help employees to obtain more benefits such as employee travel, year-end party, emergency relief, sickness subsidies, and special contract stores.
* The Company adheres to the concept of "Ensuring the Safety and Health of the Employee Work Environment," and uses the organization system operation to create a healthy and safe working environment for employees.

Shareholder/Investor

Significance to SAS

All shareholders are the company's investors. The company will handle all disclosed information with fairness as the principle.

Communication Frequency / Method

★ Shareholders meetings, institutional investors conferences, domestic investment institute seminars, and face-to-face communication meetings / a total of 7 meetings were held in 2021
★ Company Annual Report / Once Per Year
★ News announcement on company websites and the Market Observation Post System / Irregular
★ Collecting and replying to messages via telephone or emails / Irregular

Issues of concern

*Economic Performance
*Corporate Governance
*ESG Performance
*Integrity and Ethics / Anti-corruption

Our Responses

*Continue to use our stable financial structure and rich management experience to practice performance management and operational improvement, and improve the overall operational performance.
* Establish and strengthen close interaction and communication channels with investors, domestic and foreign media, cooperation, and major shareholders.
*Continue to improve corporate governance performance and realize the commitment of sustainable operation.
*"Integrity management is achieved by the compliance with laws and regulations."So, the Company has actively organized education and training as well as integrity management policy advocation, promoted the integrity policy and its importance to directors and employees.

Customers
Significance to SAS

Company's main source of revenue

Communication Frequency / Method

★Business Meetings / Irregular
★Customer Satisfaction Survey / Twice a Year
★Customer Audit / Irregular
★Customers Quality Meeting / Once a Month
★Telephone or E-mail Appeals or Complaints / Irregular

Issues of concern

*Price
*Quality
*Delivery period
*Environment & sustainability responsibility
*Occupational health and safety

Our Responses

*Adhere to the spirit of "customer satisfaction." The quality assurance unit must conduct interviews and propose the corresponding improvement plan for customer survey items with lower satisfaction.
*Actively understand customers' voices. When customers make various demands, the organization must evaluate and discuss feasible solutions in order to "meet the requirements."

Government Agencies
Significance to SAS

(Science Park Bureau, Environmental Protection Bureau, Environmental Protection Administration, Energy Conversation Bureau, Ministry of Labor, etc.)

We need to maintain an open and pleasant communication relationship to express our determination of complying with regulations

Communication Frequency / Method

★Correspondence of Official Documents, Meetings (Public Hearings or Conferences) / Irregular
★Communicating and Meeting with Associations or Unions / Irregular
★Unscheduled Plant Audit / Irregular

Issues of concern

*Regulatory Compliance
*Add / Revise Regulation Announcements
*Environmental Permit Review / Verification
*Regulations (Draft) Interpretation and Communication

Our Responses

*Purchase Legal Cloud to grasp the regulatory updates.
*Participate in competent authority regulatory meetings and understand the requirements.
*Communicate with competent authorities through association or union channels.
*Cooperate with the competent authority for plant visits or unscheduled plant audits.

Suppliers / Contractors
Significance to SAS

Are the Company's partners and need to maintain the same ideals as ours in order to provide services in line with our needs

Communication Frequency / Method

★Business Meetings / Irregular
★On-site Audit / Irregular
★Collecting and replying to messages via telephone or emails / Irregular

Issues of concern

*Price
*Suppliers / Contractors Management Regulations

Our Responses

*Reduce costs by implementing supplier localization.
*Establish a supplier evaluation management process.
*Formulate contractor management procedures and establish a contractor construction management system to systematically manage all contractors who have entered the plants.

The media
Significance to SAS

We establish a contact channel with the media and provide non-scheduled, correct, fair and objective industry and corporate news

Communication Frequency / Method

★ Publish news / average of 2-3 press releases each quarter
★ Sporadically receive interviews by the media and provide industry news / Irregular

Issues of concern

*Company Development Direction
*Economic Performance

Our Responses

*Contact the media irregularly to let media professionals understand the Company's industry and operating performances through interviews.
*Issue a press release on revenue and investor conference.
*Provide transparent information disclosure to comply with the completeness, real-time, and fairness principles.

Material Issues and Sustainability Goals

ESG Performance

Aspects	Material issues	2022 targets	2021 targets	2021 targets Achievement Status
Economic Aspect	Corporate Governance	* Maintain ranking in the top 5% of all listed OTC companies during governance appraisal	* Maintain ranking in the top 5% of all listed OTC companies during governance appraisal	V Goal Achievement
	Integrity and Ethics / Anti-corruption	* Maintain 0 corruption incidence rate	* Maintain 0 corruption incidence rate	V Goal Achievement
	Operational Performance	* Continuous operating profit * Maintain a good financial structure	* Continuous operating profit * Maintain a good financial structure	V Goal Achievement V Goal Achievement
	Regulation compliance	* Implement legal compliance inspections for overseas subsidiaries * Implement personal data protection operation inventory for domestic plants	* Complete inventory and improvement of internal regulations compliance for all departments in Taiwan	V Goal Achievement
Environmental Aspect	Energy resources consumption and reduction GHG emissions	* Chunan Branch annual power saving rate > 1% * Chunan Branch introduced factory smart energy management * Yilan Branch annual power saving rate ≧ 800,000 kWh * Yilan Branch introduced the ISO 50001 power management system * Optimized the climate change risk and opportunity assessment mechanism	* Chunan Branch annual power saving rate > 1% * Yilan Branch annual power saving rate ≧ 800,000 kWh * Chunan Branch established the ISO 50001 power management system * Chunan Branch obtained the green factory label * Introduced the climate change risk and opportunity assessment mechanism * Optimized greenhouse gas inventory and strengthened disclosure of GHG emissions from transportation and products used by the organization	V Goal Achievement X Goal not achieved (Note 1) V Goal Achievement V Goal Achievement V Goal Achievement V Goal Achievement
	Pollution prevention	* 100% of the prevention (production) equipment meets the emission standard requirements * Chunan Branch recycled over 50% of the wastewater from drilling process	* Chunan Branch recycled over 50% of the wastewater from drilling process * Yilan Branch improved the quality of the wastewater discharged - COD <200 mg/L (standard 480 mg/ L) - SS<150 mg/L (standard 320 mg/L) - Nitrate nitrogen <40 mg/L (standard 50 mg/L)	V Goal Achievement V Goal Achievement
	Waste Management	* Chunan Branch's waste recycling rate for the whole plant has reached 85%	* The frequency of activated carbon replacement in Yilan Branch's organic air pollution treatment system is reduced by 30% (lower the output of waste activated carbon)	X Goal not achieved (Note 2)
Social Aspect	Employee education & training	* Yilan Branch general course attendance rate ≧ 85% * Chunan Branch education and training program implementation rate 100%	* Yilan Branch general course attendance rate ≧ 85% * Chunan Branch education and training program implementation rate 100%	V Goal Achievement V Goal Achievement
	Friendly workplace (including issues like occupational safety and hygiene, occupational health)	* Operations for newly listed chemical substance (HF) are 100% compliance * Yilan Branch has established a safe isopropyl alcohol storage environment * Special group care and tracking management 100% * Chunan Branch health management course ≧ 10 sessions	* Chunan Branch added labor-saving devices to the drill station to reduce the risk of musculoskeletal injuries to employees * Establish the charging safety-related mechanism in the plants * Special group care and tracking management 100% * Chunan Branch health management course ≧ 10 sessions	V Goal Achievement V Goal Achievement V Goal Achievement V Goal Achievement
	Product quality and customer satisfaction	* Customer satisfaction survey "quality aspect" Chunan Branch score > 8.5 Yilan Branch score > 8.0 * Customer satisfaction survey "services aspect" Chunan Branch score > 8.5 Yilan Branch score > 8.5	* Customer satisfaction survey "quality aspect" Chunan Branch score > 8.5 Yilan Branch score > 8.0 * Customer satisfaction survey "services aspect" Chunan Branch score > 8.5 Yilan Branch score > 8.0	V Goal Achievement V Goal Achievement

Notes: 1. Yilan Branch's actual annual electricity saving is 298,000 kWh 2. Actual carbon replacement frequency is reduced by 14%

Economic KPI

Information disclosure and corporate governance appraisal and rating of TWSE listed companies

2013 Information disclosure appraisal A

2014 Information disclosure appraisal A+

Ranking in the top 5% of all listed OTC companies in the 1st corporate governance appraisal

2015 Ranking in the top 5% of all listed OTC companies in the 2nd corporate governance appraisal

2016 Ranking in the top 5% of all listed OTC companies in the 3rd corporate governance appraisal

2017 Ranking in the top 5% of all listed OTC companies in the 4th corporate governance appraisal

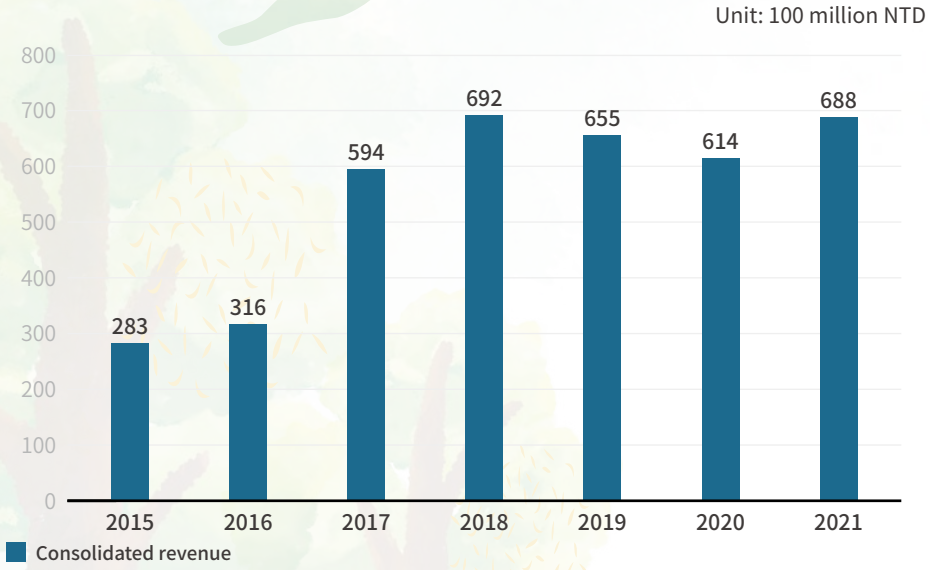
2018 Ranking in the top 5% of all listed OTC companies in the 5th corporate governance appraisal

2019 Ranking in the top 5% of all listed OTC companies in the 6th corporate governance appraisal

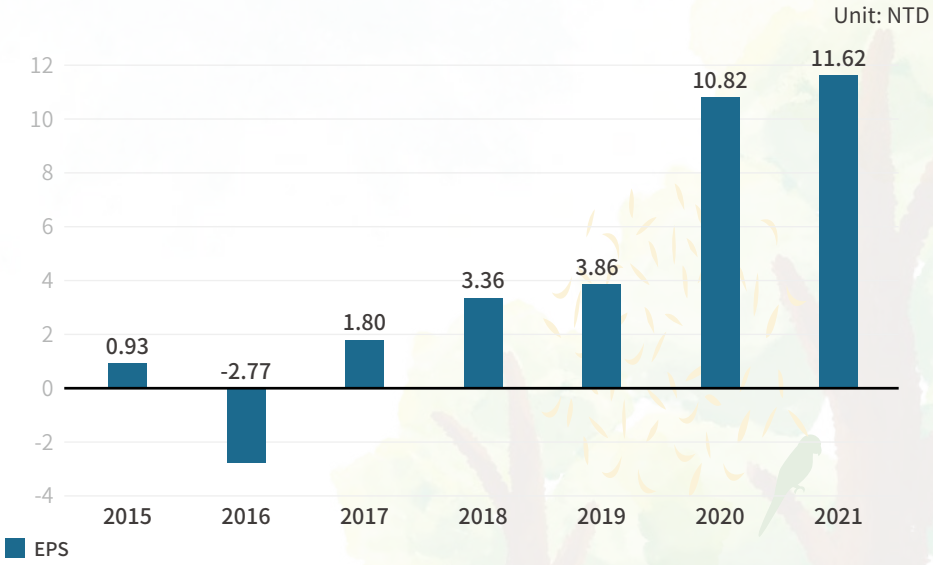
2020 Ranking in the top 5% of all listed OTC companies in the 7th corporate governance appraisal

2021 Ranking in the top 5% of all listed OTC companies in the 8th corporate governance appraisal

Operating Revenue (Consolidated Revenue)

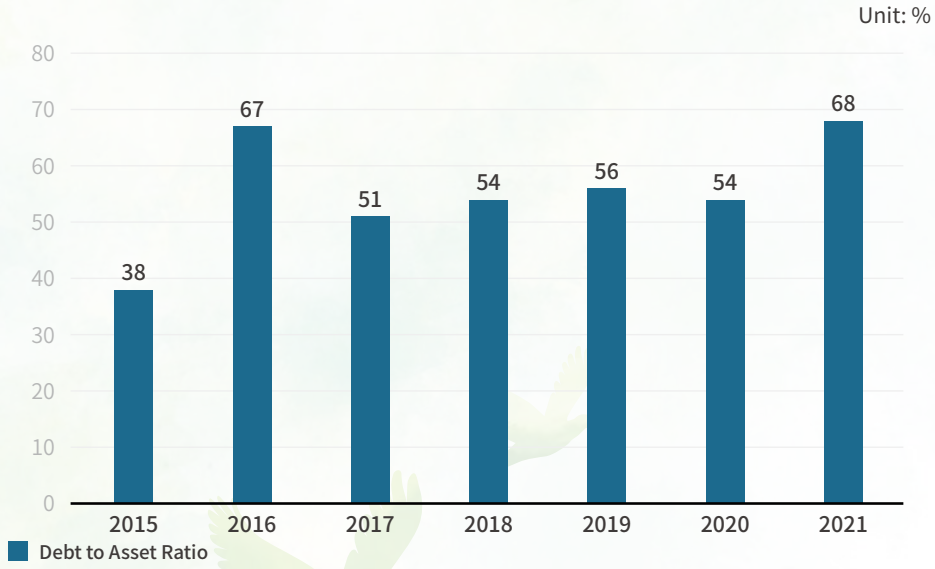


Earnings Per Share (EPS)

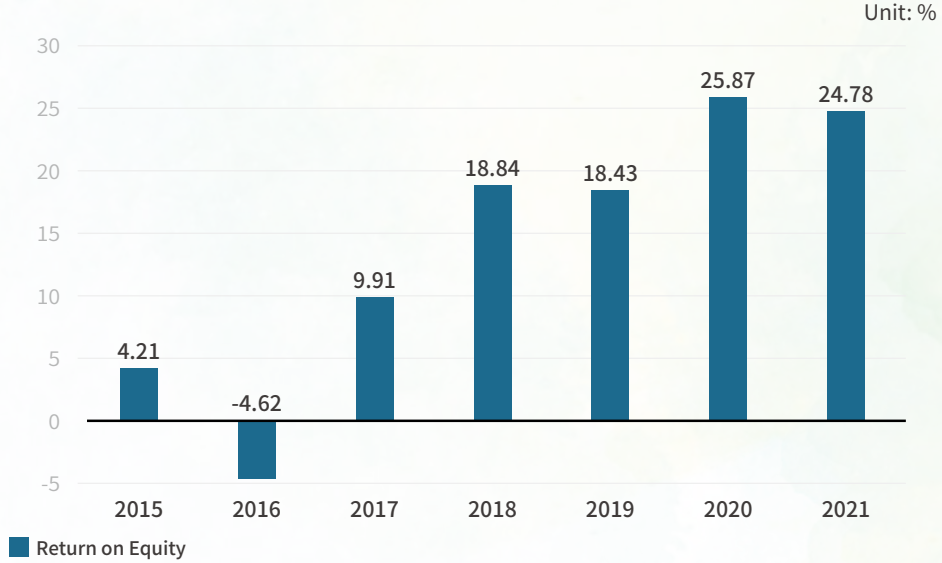


Economic KPI

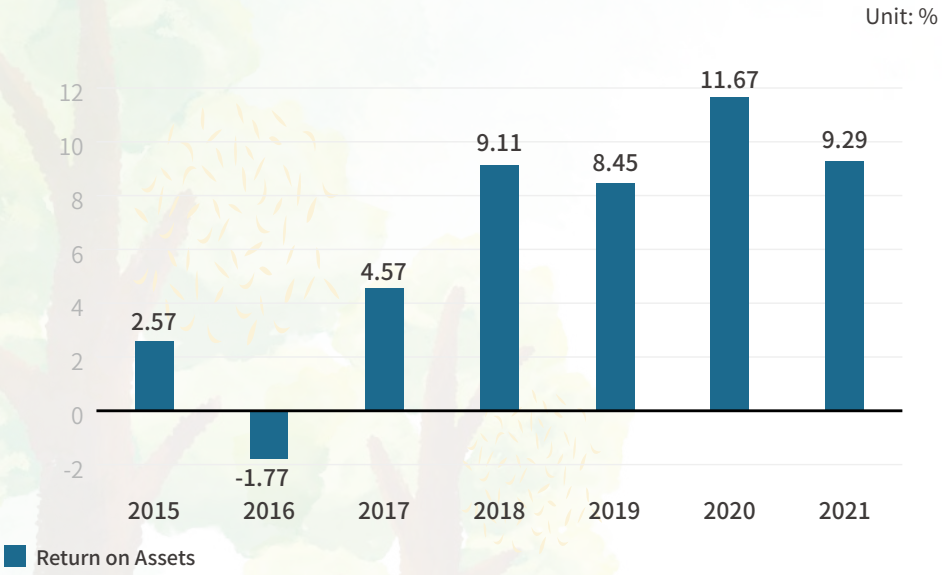
Debt to Asset Ratio



Return on Equity

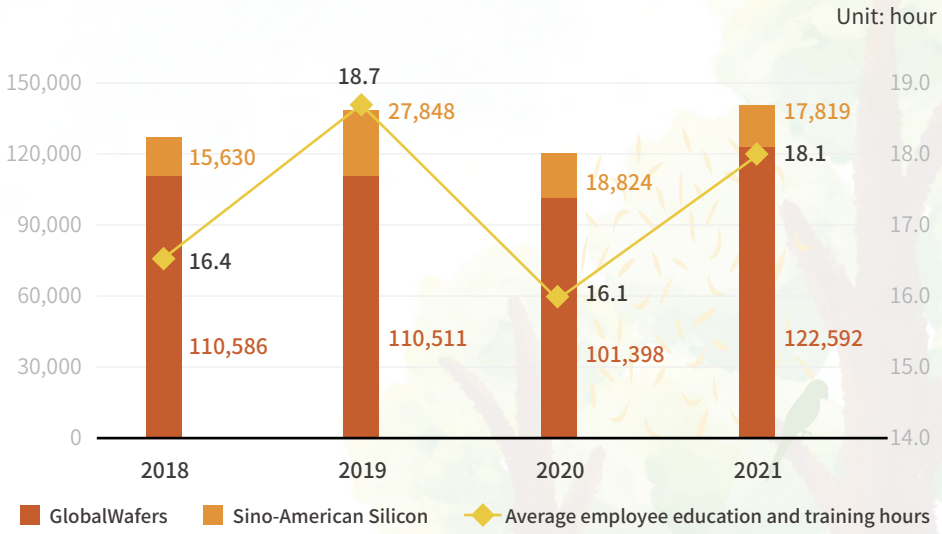


Return on Assets



Social KPI

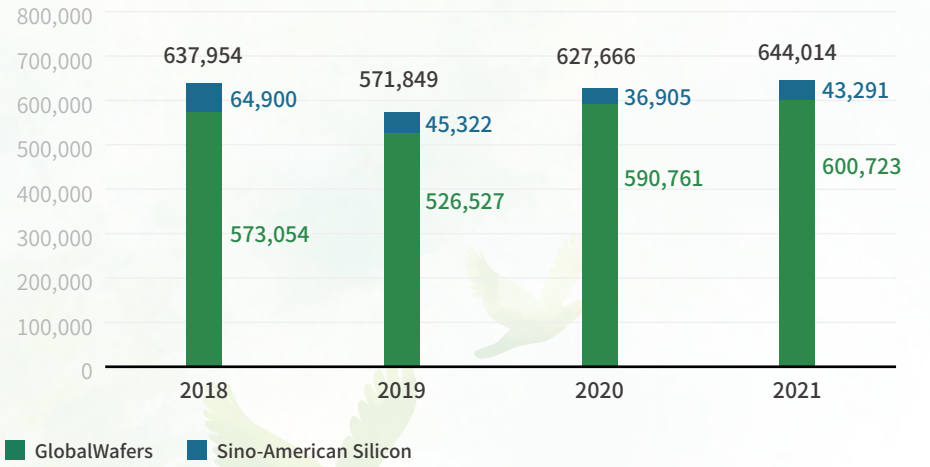
Education and Training Hours



Environmental KPI

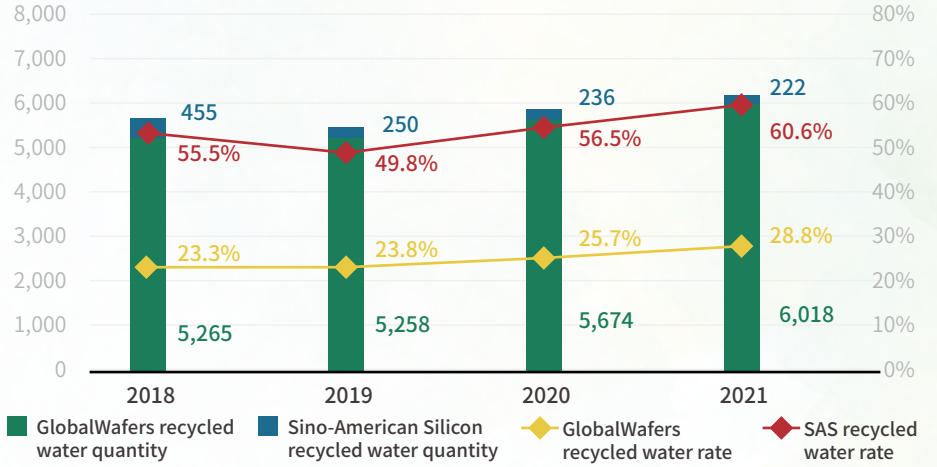
Carbon dioxide equivalent

Unit: ton CO_2e/yr



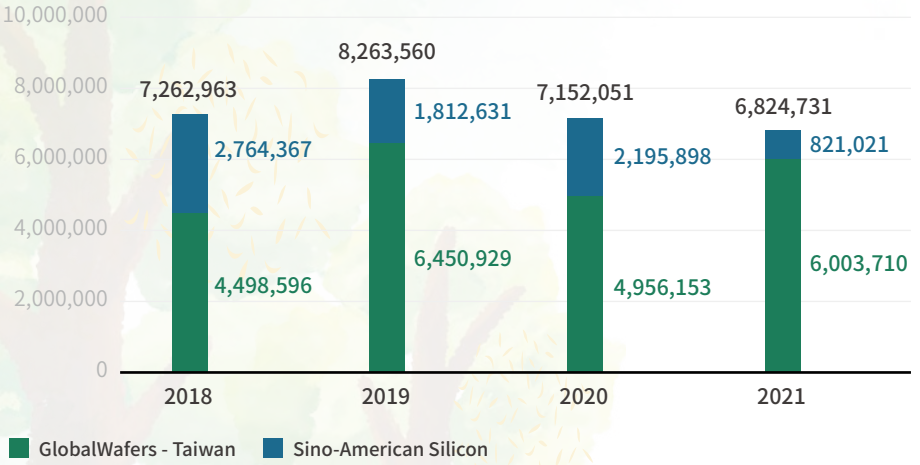
Recycled water

Unit: KM^3



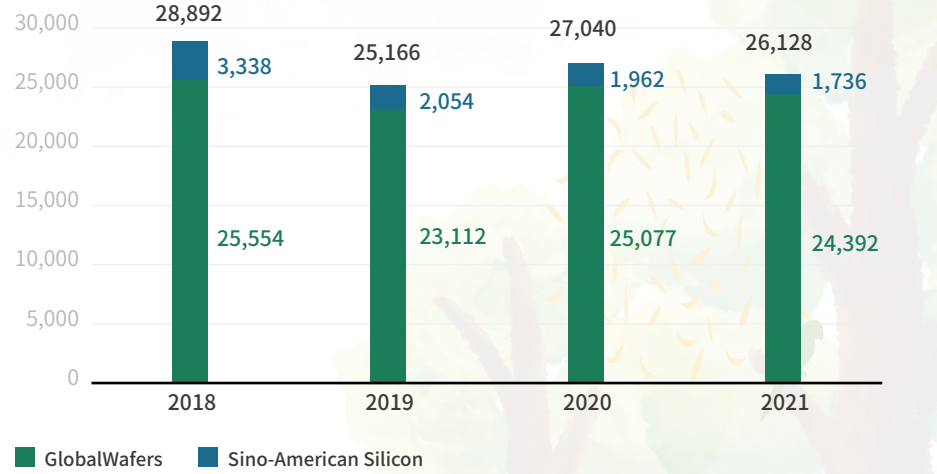
Power conservation effects

Unit: kWh



Waste recycle and reuse

Unit: Ton



Governance and Operation

Material Topic Strategy and Performance

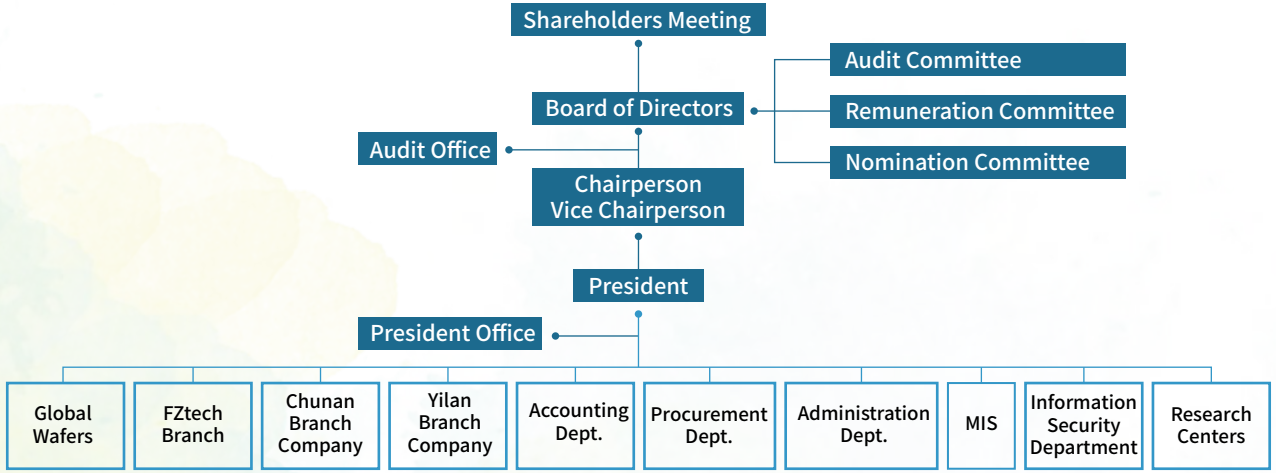
Material topics/chapters	Strategies of Sino-American Silicon	2021 Key results	2021 Targets	Targets reached	2022 and future targets
Corporate governance/ 1.1 Corporate Governance	‣ Uphold the corporate culture of ethical management ‣ Promote the long-term integrity management policy ‣ Strengthen information disclosure transparency	‣ Won top 5% of all listed OTC companies during corporate governance appraisal for 8 consecutive years	‣ Maintain ranking in the top 5% of all listed OTC companies during governance appraisal	V	‣ Maintain ranking in the top 5% of all listed OTC companies during governance appraisal
Moral integrity (anti-corruption)/ 1.1 Corporate Governance	‣ Develop a rigorous internal regulation management mechanism to minimize integrity risk ‣ Actively organize education and training as well as promotion integrity management policies ‣ Establish reporting channels and whistleblower protection system	‣ Maintain 0 corruption incidence rate	‣ Maintain 0 corruption incidence rate	V	‣ Maintain 0 corruption incidence rate
Operational performance/ 1.2 Operation Performance	‣ Adjust strategy according to the market ‣ Innovative R&D, reduce costs, and accumulate strength	‣ Continual profit growth	‣ Continuous operating profit ‣ Maintain a good financial structure	V V	‣ Continuous operating profit ‣ Maintain a good financial structure
Legal compliance/ 1.1 Corporate Governance	‣ Continuous education, training, and advocacy ‣ Regular inventory self-evaluation system ‣ Strengthen internal organization and rectification ‣ Implement cross audits within the group to discover potential risks and improve internal management		‣ Complete inventory and improvement of internal regulations compliance for all departments in Taiwan	V	‣ Implement legal compliance inspections for overseas subsidiaries, and personal data protection operation inventory for domestic plants

1.1 Corporate Governance

Sino-American Silicon (SAS) has long promoted ethical operation policy and strengthened information disclosure transparency in order to uphold the ethical corporate culture. In the past 8 consecutive years, SAS has received the honor of ranking among the top 5% of all listed OTC companies during corporate governance appraisal, which demonstrates SAS' determination to pursue sustainable corporate operations.

1.1.1 Corporate Governance Structure

SAS Organizational Chart



Note: FZtech Inc. was merged into SAS on 2019.12.12, and became the FZtech Branch on 2020.1.3.

Summary of key points for the corporate governance organization

* Among the 10 directors, 3 are independent directors
* Among the 10 directors, 1 is a female director
* The Audit Committee and Remuneration Committee both consist of independent directors
* The Nomination Committee has 5 members of whom 3 are independent directors
* The organizational charter of all committees is publicly disclosed in the corporate website
* The board of directors and the functional committees have conduct annual self-performance evaluations and disclose the evaluation results on the company website
* A corporate governance supervisor has been established to implement corporate governance and strengthen the functions of the board of directors

Board Operations

Sino-American Silicon's board of directors consists of 10 directors with rich knowledge and experience, of which 3 are independent directors. Each director's solid academic background and industry experience enable them to fulfill their supervision and management responsibilities while making prudent business decisions. Important decision-making proposals related to the board of directors are submitted to the audit committee for initial review and discussion before they are sent to the board of directors for resolution. Board resolutions are published on the Company's website to enhance Company information transparency and protect shareholders' rights.

To enhance the professional knowledge and legal literacy of the Company directors, the directors must continue to participate in relevant refresher courses during their tenure and take at least 6 hours of refresher courses per year.

Board of Directors Member Diversification

The Company values gender equality for the board of directors, with the target of at least one seat held by a female director. The board members have working experience and expertise in operation management, knowledge of the industry, finance, and strategy management to implement the diversified policy of board members.

Recusal by Board Members

The Rules of Procedure for Board of Directors Meetings and the organizational charter of the Audit Committee contain the following provision: If a director or a juristic person that the director represents is an interested party in relation to an agenda item, the director shall state the important aspects of the interested party relationship at the respective meeting. When the relationship is likely to prejudice the interest of this Corporation, that director may state his/her opinions and respond to inquiries but shall not participate in discussion or voting on that agenda item and shall recuse himself or herself from the discussion or the voting on the item. The said director may also not exercise voting rights as proxy for another director.

The election of SAS directors (including independent directors) shall be conducted via the candidate nomination system pursuant to Article 192-1 of the Company Act, whereby the shareholders meeting shall elect the directors from a list of candidates. In 2021, the SAS board of directors has convened a total of 7 meetings with an average attendance rate of 94%. The board organization and board members' professional and educational background and attendance records are illustrated below:

Main academic (experience) background and attendance status of board members in 2021

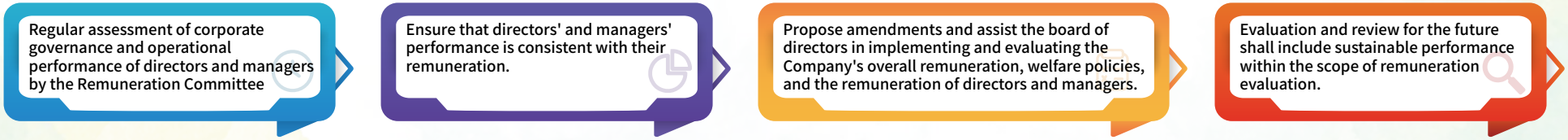
Title	Name	Gender	Primary professional (educational) background	Actual no. of presence (in attendance)	No. of presence by proxy	Actual presence (attendance) rate (%)	Notes
Chairperson	Hsiu-lan Hsu	Female	MA in Computer Science from University of Illinois President of Sino-American Silicon	7	0	100%	Reelected on 2020.06.24
Vice Chairperson	Tang-liang Yao	Male	MA Degree from the Management and Research Institute of Tamkang University / Assistant Manager of Manufacturing Department of Xuxing Technology Corporation / President of Sino-American Silicon Products Inc.	7	0	100%	Reelected on 2020.06.24
Director	Ming-kuang Lu	Male	Honorary Doctor of Engineering, NCTU / Honorary Doctor of Engineering, Tatong University / Completed Entrepreneur Training Course, NCCU MBA Program President of Lite-On Semiconductor Corp. / President of Xuxing Science and Technology Corporation/ Vice President of Xuli Corporation / Chairperson and CEO of SAS / Academician of ITRI	7	0	100%	Reelected on 2020.06.24
Director	Wen-Huei Tsai	Male	Accounting Department, National Chengchi University Director of Hongdian Medical Science and Technology Corporation / Director of ENE Technology Inc.	6	1	86%	Reelected on 2020.06.24
Director	Feng-Ming Chang	Male	Master of Computer Engineering, USC / Master of Economics, Texas A&M University Director of TECO Electric & Machinery Co., Ltd. / Director of Syntec Scientific Corp.	7	0	100%	Elected on 2020.06.24
Director	Kai Jiang Co., Ltd Representative: Hau Fang	Male	MA in International Business Management from National Chengchi University Vice President of Taiwan United Medical Inc.	7	0	100%	Reelected on 2020.06.24
Director	Kun Chang Investment Co., Ltd Representative: Edward Andrew Ow	Male	Department of Energy Economics, U.C. Berkeley Chairman of Edison's Co., Ltd. / Director of VIA Faith and Love Charity Foundation / Director of Chinese Christian Faith and Love Foundation	5	2	71%	Representatives elected on 2020.06.24
Independent Director	Jin-Tang Liu	Male	Bachelor of Accounting, Tamkang University CPA of KPMG / 21st Council Member of CPA Associations R.O.C. (Taiwan) / Teaching Assistant, Tamkang University	7	0	100%	Elected on 2020.06.24
Independent Director	Hou-Chung Kuo	Male	PhD, Electrical Engineering and Computer Science, University of Illinois, Urbana-Champaign	6	1	86%	Elected on 2020.06.24

Title	Name	Gender	Primary professional (educational) background	Actual no. of presence (in attendance)	No. of presence by proxy	Actual presence (attendance) rate (%)	Notes
Independent Director	Shao-Lun Li	Male	PhD in Materials Science, University of California Executive Vice President of Lam Research / Director of TVBS / Supervisor of HTC Corporation / President of Chander Electronics corp.	7	0	100%	Elected on 2020.06.24

Please refer to SAS 2021 Annual Report for information on directors concurrently holding positions in SAS and other companies, director remuneration, and board resolutions.

Remuneration committee

SAS has established a Remuneration Committee to implement a systematic salary scheme. The Remuneration Committee is in charge of formulating and reviewing performance assessment and remuneration policies, systems, standards, and structures for directors and managers.



In 2021, a total of 2 meetings, with an average attendance rate of 100%：

For the organizational charter of the Remuneration Committee, please refer to the SAS corporate website

For details on Remuneration Committee resolutions, please refer to the SAS 2021 Annual Report

Audit committee

SAS has established an Audit Committee composed of all independent directors to strengthen the corporate governance internal supervision mechanism. The main responsibilities of the Audit Committee are to review and discuss the Company's financial reports, qualification review and selection (dismissal) of CPA, independence and performance, CPA public expense, implementation and amendment of the Company's internal control system, legal compliance, control the Company's existing or potential risks, etc.

In 2021, a total of 7 meetings, with an average attendance rate of 100%.

For the organizational charter of the Audit Committee, please refer to the SAS corporate website

For details on Audit Committee resolutions, please refer to the SAS 2021 Annual Report

Nomination Committee

SAS has established a Nomination Committee to improve the functions of the Company's board of directors and strengthen the management mechanism. The committee is composed of 5 directors, of which 3 are independent directors. The main responsibilities of the Nomination Committee are to construct and develop the organizational structure of the board of directors and various committees; seek, review, and nominate candidates for directors and senior managers based on the professional knowledge, technology, experience, gender, and other diverse backgrounds as well as the independence needs of board members and senior managers; and formulate and review the directors' training plans and succession plans for directors and senior managers.

A total of one meeting was held in 2021, with an average attendance rate of 100%.

For the organizational charter of the Nomination Committee, please refer to the SAS corporate website

For details on Nomination Committee resolutions, please refer to the SAS 2021 Annual Report

Performance Assessment

The Company has performed annual performance evaluation work in accordance with the "Board of Directors and Functional Committee Performance Evaluation Method" in order to implement corporate governance, enhance the functions of the company's board of directors and functional committees, and establish performance targets to enhance operational efficiency. An evaluation report shall be submitted to the board of directors before the end of the first quarter of the following year. The 2021 performance evaluation results have been submitted to the board of directors' report dated March 17, 2022, and the 2021 board of directors and functional committee performance evaluation results of excellent.

Board of directors

- Submission of motions to the board of directors for discussion in accordance with the laws.
- Comply with Directors' Avoidance of Conflicts of Interest.
- Review the Company's accounting system, financial status and financial reports, audit reports, and tracking status.
- Board directors and certification accountants conduct communication. In events of new accounting bulletins or major adjustments in financial reports, there will be meetings for Q & A with accountants and for discussions.
- Assessment and monitoring of existing or potential risks.
- Whether board directors have all completed the training hours as required by governing authorities.
- Attendance rate of each board meeting is 2/3 and above.
- Over 1/2 directors attended the shareholders meeting .
- Board directors and the company's management executive maintain an excellent communication channel.

Remuneration committee

- The Remuneration Committee chairman is able to direct meeting proceedings and thereby ensures effective and efficient discussions and resolutions.
- All Remuneration Committee members possess professional knowledge of the industry and compensation management competence.
- All remuneration committee members are all fully aware of the core targets of the organizational operation, and familiar with all remuneration plans within the company as well as all composition factors of the board directors' and managers' salaries.
- Formulate and regularly review the company's salary policies, systems, standards and structure.
- The assessment results of the board directors' and managers'performance indicators are applied as the key basis for remuneration planning and distribution so as to make objective and fair decisions.
- Formulate and regularly review the board performance assessment system to see if it connects with the payment guidelines for the board emoluments.
- Regularly report to the board of directors the remuneration committee's discussion and resolutions.

Audit committee

- Clear understanding of the roles and responsibilities of the entire Audit Committee and its individual members.
- Regularly report to the board of directors the audit committee's activities, problems uncovered and relevant suggestions.
- All Audit Committee members possess professional knowledge of the industry including diverse experience and professional backgrounds.
- Annually and regularly review the audited and non-audited public funds and services provided by certification accountants and affirm the scope of audit services provided.
- Review, along with certification accountants, any audit-related problems and challenges, as well as response of the governing authorities.
- Regularly meet with internal auditor to assess the effectiveness of internal audit results. Meet with individual auditors at least once a year or whenever necessary.
- During the review process, the audit committee effectively identify and assess major risks and evaluate the necessary steps to take for risk control.
- Has evaluated and monitored the company's existing or potential risks.
- Review with prior approval of proposed transactions with interested parties to ensure conformity to relevant policies and report approved transactions to the board.

Nomination Committee

- Provide due care as good managers, faithfully perform their duties, and submit their suggestions to the board of directors for discussion.
- Seek, review, and nominate candidates for directors and senior managers based on the professional knowledge, technology, experience, gender, and other diverse backgrounds as well as independence needs of board members and senior managers.
- Construct and develop the organizational structure of the board of directors and the various committees; and conduct performance evaluations of the board of directors, committees, and directors in order to evaluate the independence of independent directors.
- Formulate and review director training and succession plans for directors and senior managers.

1.1.2 Integrity & Ethics

Core Values

"Honesty and integrity" is one of the core values of SAS. Sino-American Silicon has formulated the relevant specifications and communication mechanisms for all directors, managers, and colleagues to follow in order to establish an honest business environment. Rigorous management mechanisms are executed to minimize the risk of dishonesty, create value for customers, and achieve benefits for the shareholders and stakeholders.

Internal Regulation System

To implement integrity management, SAS has established important internal regulations such as "Code of Integrity Management," "Code of Ethical Conduct," and "Integrity Management Operating Procedure and Action Guideline" to stipulate specific items that SAS directors, managers, and employees must pay attention to during business operations. These contents cover integrity management, ethical behavior, prohibition of unreasonable hospitality or improper interests, prohibition of intellectual property rights infringement, prohibition of anti-competition behaviors, and conflict of interests. These documents are published on the Company website and internal website for colleagues to review at any time to improve law compliance and professional ethics awareness for all colleagues.

Sino-American Silicon revised the "Code of Ethical Conduct" on November 4, 2021, to meet the practical operation and management needs. The revisions included adding the provisions regarding reporting the destruction of public assets and the handling thereof, company asset protection, and increasing the attention of employees when using the Company's assets to ensure the Company's assets may be effectively and legally used for the Company's business and the operating expenses are not increased due to negligence.

For marketing and procurement colleagues, the Company has reiterated the importance of "ethics and integrity" via "Sales Management Measures" and "Procurement Management Measures" and established a comprehensive business law compliance mechanism covering topics such as fair competition, due diligence, trade control (trading counterparty, subject matter, purpose of use, cash flow, and relevant trade control and restrictions of major trading countries), anti-corruption, anti-bribery, and conflict of interests prevention and exemption mechanism. The Company also uses supply chain control to ensure compliance with conflict-free minerals provisions.

In addition to signing "Intellectual Property Rights and Confidentiality Agreements" with employees, the marketing and procurement units are also required to sign non-disclosure agreements (NDAs) before cooperating with suppliers and customers in order to prevent acts of information-related dishonesty such as disclosing company secrets to others. Employees are also prohibited from inquiring or collecting non-job-related company operation secrets in order to fully protect the sensitive or confidential information of business partners. Sino-American Silicon has established the "Personal Data Protection Management Measures," regularly implements personal data inventory, and practices personal privacy confidentiality obligations with the highest ethical standards.

Anti-Corruption

Sino-American Silicon insists on "3 Nos": No bribe offering, no bribe receiving, and no bribe demanding. The "Code of Integrity Management" clearly stipulates that colleagues shall not directly or indirectly provide, promise, request or receive any improper benefits during the process of engaging in business activities. The "Integrity Management Operating Procedure and Action Guideline" further provides clear codes of conduct for colleagues, and the key points include: (1) If payment is provided or promised due to threat or intimidation, record the process, report to the supervisor, and notify the compliance unit. (2) If others provide or promise illicit benefits, return or refuse the offer, and report to the supervisor and notify the compliance unit. If it cannot be returned, hand it over to the legal compliance unit for processing within 3 days from the date of receipt.

In 2021, SAS conveyed the correct concept to all new employees, directors, and supervisors above the departmental level via "Integrity Management" education and training courses to enhance legal compliance awareness and ensure all corruption risks are properly controlled. In detail, SAS spares no effort in conveying the following code of conduct to colleagues:

Sino-American Silicon has adopted the "self-legal-compliance evaluation," "e-mail tracking," "qualitative interviews," "donation review," and other dishonest behavior risk assessment mechanisms to identify units and personnel with a higher risk of corruption. The marketing and procurement units are the first-line external contact units due to their business attributes, so they are faced with more internal/external incentives and opportunities for dishonest behaviors (i.e., cash, gifts, services, entertainment, facilitating fees). They are identified as having a higher risk of corruption by the Company. As such, SAS has stipulated the "anti-bribery and anti-corruption" clauses in the "Sales Management Measures" and "Procurement Management Process" measures to prohibit any bribery and corruption such as direct or indirect requests, appointments, deliveries, requests, or acceptance of bribes, any unreasonable gifts, entertainment, or other improper benefits from any third party. In case of violation, the violator must face criminal and civil liabilities in addition to punishment according to the Company's employee Reward and Punishment Provisions. If the Company has suffered damages due to such actions, the violator must also compensate the Company for the losses thus incurred.

In addition to the aforesaid internal risk control measures, SAS also urges all suppliers and customers to adopt the highest corruption prevention standards, and sign written "Supplier Code of Conduct" or "Customer Code of Conduct" documents to declare the "anti-bribery and anti-corruption" concepts to all of the Company's transaction partners. The Company requires suppliers and customers not to pay or accept bribes to the Company or its representatives in order to prevent improperly influencing transaction decisions under any circumstances. In addition, the Company shall also instruct its marketing and procurement personnel to fill-in the "Customer/Dealer/Agent Integrity Management Evaluation Form" and "Supplier Integrity Management Evaluation Form" before establishing business relationships, which shall serve as the basis of transaction risk evaluation by the Company.

The employees of SAS shall obtain a high level of knowledge about anti-corruption behaviors through continuous education and training. In 2021, there were no employee-related corruption incidents.

For Code of Integrity Management and other internal regulations, please refer to the SAS website.

Recusal for conflicts of interest

Sino-American Silicon attaches great importance to ethical integrity. The Company formulated the "Code of Integrity Management," the "Integrity Management Operating Procedure and Action Guideline," and the "Code of Ethical Conduct" to provide that when directors, managers, and other interested parties participating or attending a board of directors meeting has a conflict of interest with the proposals listed by the board of directors; the conflict of interest shall be explained to the board of directors. If such conflict of interest is harmful to the Company, said person shall be recused and shall not act on behalf of other directors to exercise their voting rights.

To effectively prevent conflicts of interest, SAS has stipulated that its employees shall not use their positions in the Company to obtain improper benefits for the following persons or companies:

- Employee himself/herself, spouse, parents, children, or relatives within the second degree of kinship;
- Enterprises in which the aforementioned personnel directly or indirectly enjoy consderable financial benefits;
- An enterprise in which the employee serves concurrently as the chairman, director, independent director, or senior manager;

SAS has provided appropriate channels for directors, independent directors, or managers to proactively explain whether they have potential conflicts of interest with the Company.

Education and Training

SAS believes that "integrity management is achieved by the compliance with laws and regulations." So, it has actively organized education and training as well as integrity management policy advocation, promoted the integrity policy and its importance to directors and employees. The goal is to ensure all colleagues fully understand and comply with the policies, execute operations according to the highest standards, and practice the core value of "Honesty and Integrity" in daily work. Specific course contents offered in 2021 related to ethics and integrity are as follows:

- 1 hour of education and training for new directors on the "Legal Overview of Insider Trading and Insider Equity Transfer." The contents include insider trading law analysis (constitutive elements, major news disclosure method and time period, judicial opinions) and insider equity transfer law analysis (The obligation to declare before/after the event, and maintaining the number of shares held by directors and supervisors).
- 2 hours of "Integrity Management Education and Training" for new directors. The contents include trade secret protection, competition law topics, anti-bribery and corruption, conflicts of interest prevention, and KYC/export control.
- 1 hour of "New Employee Education and Training" for new employees. The contents include integrity management and code of ethical conduct, and an overview of insider trading laws.
- The contents of education and training on "U.S. Trap Topic Sharing" for solar power business division supervisors and executive directors include the analysis of the U.S. Foreign Corrupt Practices Act (FCPA), the long-arm jurisdiction of foreign laws and huge fines, the Alstom bribery case, and their revelation to our nation's companies.

1.1.3 Professional Independent Internal Audit Operation

The Audit Office is subordinate to the board of directors. Its mission is to assist the board of directors and managers in designing appropriate internal control mechanisms to promote smooth company operations, reasonably ensure the operational objectives are met, and ensure the following goals are achieved:

- Operation effectiveness and efficiency (profitability, performance, asset security protection, etc.).
- Ensure reports are reliable, timely, transparent, and compliant with relevant regulations (the so-called "reports" include internal and external financial reporting and non-financial reports).
- Compliance with relevant laws and regulations.

The Company's internal auditors must uphold the spirit of detachment and independence, perform their duties with an objective and fair standpoint, and provide due care as professionals. In addition to regularly reporting the audit results to the Audit Committee (independent directors), the audit supervisor must also attend the board of directors' meeting to present the reports. The internal auditors must perform their duties according to honesty and credibility principles and abide by the "Code of Practice on Internal Audit" and "Code of Ethics for Internal Auditors."

Implementation items include:

- Internal control system setup and self-assessment: Assist managers in designing appropriate internal control mechanisms and conduct "Internal Control System Self-assessment." Each department shall evaluate the internal control status for its responsible area. The goal is to achieve the self-examination effect and strengthen the internal control concept for the evaluation department. To promote the applicability of self-assessment items and improve self-assessment operation efficiency, the internal auditors shall use electronic questionnaires to strengthen the connection between operations and processing efficiency in addition to referencing other internal company evaluation activity results to supplement the evaluation items.
- Annual audit plan formulation and execution: Formulate the annual audit plan vis risk assessments, perform the audit for the various operating procedures based on the Company's business activities, identify process defects, and make recommendations during operations to ensure the internal control proficiency.
- Audit project review and recommendations: Perform project inspections in response to potential risks (including fraud and corruption) identified by senior executives, and make recommendations to improve internal control integrity.
- Discovery and discussion of audit matters: Discuss improvement measures with the inspected unit based on the audit findings. Continue to track the follow-up improvement status to realize internal control implementation.
- Audit operation execution report: Report the auditing results to the Audit Committee and board of directors, convey the weakness of the internal control and obtain instruction to improve the supervision effectiveness for enhanced corporate governance.
- Subsidiary related audit operation: Audit or review subsidiary audit reports according to the size of the audit organization set up by each subsidiary and track the review results

1.1.4 Legal Compliance

In addition to formulating the relevant policies and provisions according to the domestic and foreign laws and regulations; SAS has also strictly required all employees to comply with and understand the relevant laws and regulations via continuous education, training, promotion, and the regular inventory & self-evaluation system in order to effectively and continuously promote the concept of legal compliance and ethics for all colleagues. In addition, SAS has also continued to strengthen internal reorganization and rectification while requiring each plant within the Group to perform cross-auditing to identify potential risks from different perspectives and improve internal management. In 2021, SAS organization suffered one penalty matter, which received a penalty fine of NT$60,000 as a result of Hsinchu Science Park Administration's March 25, 2021 investigation against GlobalWafers' Taisil Branch for the "November 4, 2019 worker fell and injury due to poor walkway clearance" case.

To comply with the regulations for various sectors, SAS has stipulated respective policies or guidance.

- The president's office has established a good communication channel with the relevant competent authorities.
- After verification, the legal department shall observe the legal trends, review the latest regulations and proclamations, track the law and regulation developments, and notify the relevant departments to formulate the necessary response measures. If a relevant department raises questions, the legal department shall study the related regulations and provide the correct responses after communicating and confirming with the competent authority.

- Establish various work systems and management standards that can meet or exceed the various labor laws and regulations, develop high-quality labor conditions and communication mechanisms, and ensure good labor-management interactions with colleagues.
- Valuing employee salaries and benefits; proactively cultivate talents; implement labor laws; ensure employees'rights. For major policy changes, remuneration & benefits, leave system changes that may impact the rights of our employees; employees will be notified, prior to implementation via labor-management meetings, electronic newsletters, or announcements on the HR notice board to ensure employees'rights.

- Main policy documents: Staff Employment, Business Secret Confidentiality, and Intellectual Property Rights Ownership Contract; Code of Ethical Conduct; and Intellectual Property Rights and Confidentiality Agreement.
- Management mechanism: Education on the importance of intellectual property and business secrets though posters and slogans, employee training and education, and signing of confidentiality agreements with employees in charge of relevant operations.

- Main policy documents: Code of Integrity Management, the Code of Ethical Conduct, and the Integrity Management Operating Procedure and Action Guideline.
- Management mechanism: Incorporate the relevant regulations into employees' education and training content so that all colleagues can follow a clear code of conduct.

- Main policy documents: Identification and management of environmental protection, occupational safety and health related laws and regulations as well as other requirements.
- Management mechanism: Review the compliance with changes in environmental protection, Occupational Health and Safety, energy management, and other related laws and regulations or other requirements each month; and regularly assess compliance with other applicable regulatory requirements.

We have provided guidance on the relevant laws and regulations to our employees each year to enhance employees' awareness of compliance with laws and regulations and offered the relevant health care and environmental protection as well as safety and hygiene courses. The courses provided in 2021 include:

Regulation compliance

- Internal Personnel Education and Training:

  Insider trading law analysis, including the constituent elements, the method and timeliness of major information disclosure, and judicial practice insights. We also teach the internal personnel about the Securities and Exchange Act, including the declaration obligations before/after the fact and maintaining the number of shares held by directors and supervisors. The teaching subjects include directors, supervisors above the departmental level, the president's office colleagues, and new employees.

- Education and training in the industry case for infringement of trade secrets:

  The content included an introduction to the Trade Secrets Act, an analysis of the violations in the case, and the enlightenments (Dos and Don'ts). The teaching subjects are the board's chairperson and the solar energy business system director.

- Integrity management education and training:

  The content includes trade secret protection, fair trading, anti-bribery and anti-corruption, conflict of interest prevention, export control, and other major compliance issues closely related to the technology industries. The teaching subjects include directors, supervisors above the departmental level, and new employees.

Health Care

- Life Heart Guidance Promotion Conference
- How to Hold Down Blood Pressure Using Daily Diet
- Don't Be Kidnapped by Negative Emotions, Connect with Your Heart to Adjust the Pressure
- Say Goodbye to liver Illness _ Liver Health Lecture
- Hyperlipidemia Prevention Healthy Diet Webinar
- On-site First Aid Emergency Response and Chemical Splash Course
- CPR+AED Practical Education and Training Course

Environmental Protection, Safety, and Hygiene

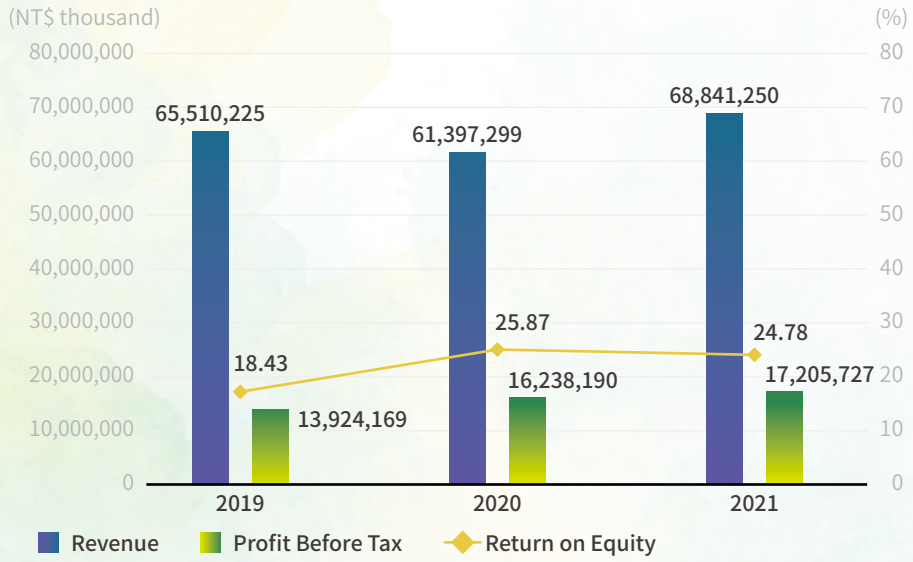
- Environmental Safety and Health Management System Education & Training
- Greenhouse Gas Inventory
- Chemical Identification and Protective Equipment Description
- Education and Training on Dangerous and Hazardous Material Operations
- Safety and Health Hazard Identification & Risk and Opportunity Assessment Form
- Automatic Inspection Education and Training
- Traffic Safety Advocacy
- Education Training on Operation Safety in Restricted Space
- Respiratory Protection Education Training and Fitness Test
- Safety Management of Contractors' In-factory Construction (including In-factory Control Operation Applications)
- Education and Training for Construction Entry Application Procedures
- Introduction to Fire Fighting System and Operational Practical Precautions
- Energy Management System Education and Training (Energy Review, Internal and External Issues, and Stakeholders)
- Hydraulic Aerial Cage Education Training
- Introduction to High-pressure Gas Specific Equipment and Operation Precautions
- 2nd Energy Management System Education and Training
- Education and Training on Organize Personnel Changes and Related Hazardous Chemicals
- Occupational Health and Safety Education and Training (Transportation Equipment Charging Safety and IR Chart Understanding)

1.2 Operational performance

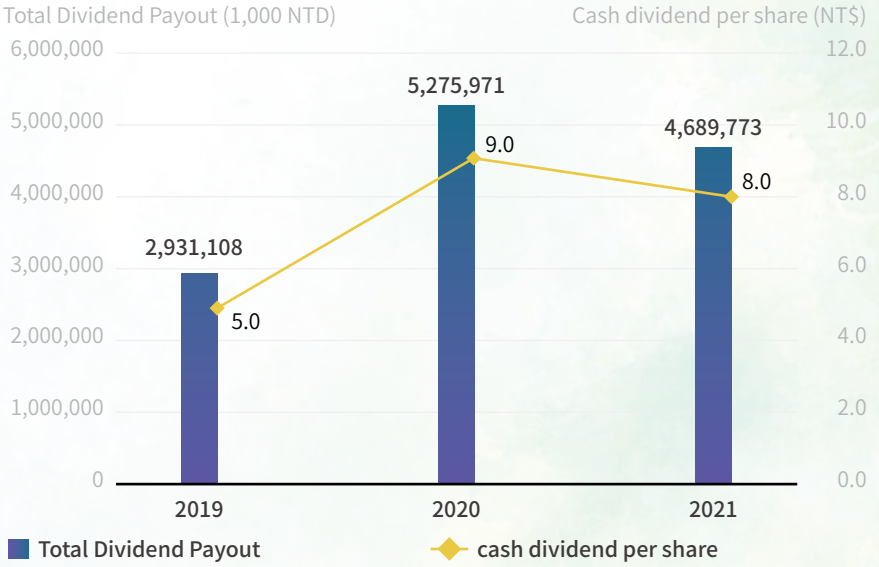
Although the world was still under the impacts of COVID-19 in 2021, the industrial chain has been readjusted, and efforts have been made over the past year to create a coexistence model with the virus. The market has gradually recovered, and the demand for solar energy and semiconductors soared. In addition to prudently operating the existing supply chain, SAS has also cultivated the downstream system businesses, strengthened vertical integration to improve operating profit margin, and actively deployed into energy storage and renewable energy fields to diversify risks and enhance solar products' cost performances via diversified operations. In 2021, 100% of the output was produced in our own factory. They include 550,024 kg of ingots, 35,820 kg of wafers, 521,860 kg of batteries, and 322,000,000 kg of modules. In the semiconductor field, high-end chips are in short supply due to demands from 5G, electric vehicles, and the Metaverse. 100% of the subsidiary Globalwafers production capacity comes from its own factory. Under the full load condition, the total outputs in 2021 were 2,903,161 (KSIE wafer) & 4,779,420 (Kg Crystal). The results were outstanding to say the least! Under the concerted efforts of all colleagues, SAS was able to buck the trend despite the effects that lack of workers and raw materials, foreign exchange losses, soaring freight costs, and COVID-19 had on profit performance and set the second-highest combined revenue in history. Our EPS also hit a new record high with brilliant operating results! The consolidated revenue of the Group reached NT$68.841 billion in 2021, which increased by NT$61.397 billion (12.1% increase) compared to 2020. The after-tax net profit attributable to the parent company was NT$6.811 billion, and the after-tax earning per share was NT$11.62.

For details on the Company's operating performance and financial information, please refer to SAS' 2021 Consolidated Financial Statements.

Financial performance (Consolidated)

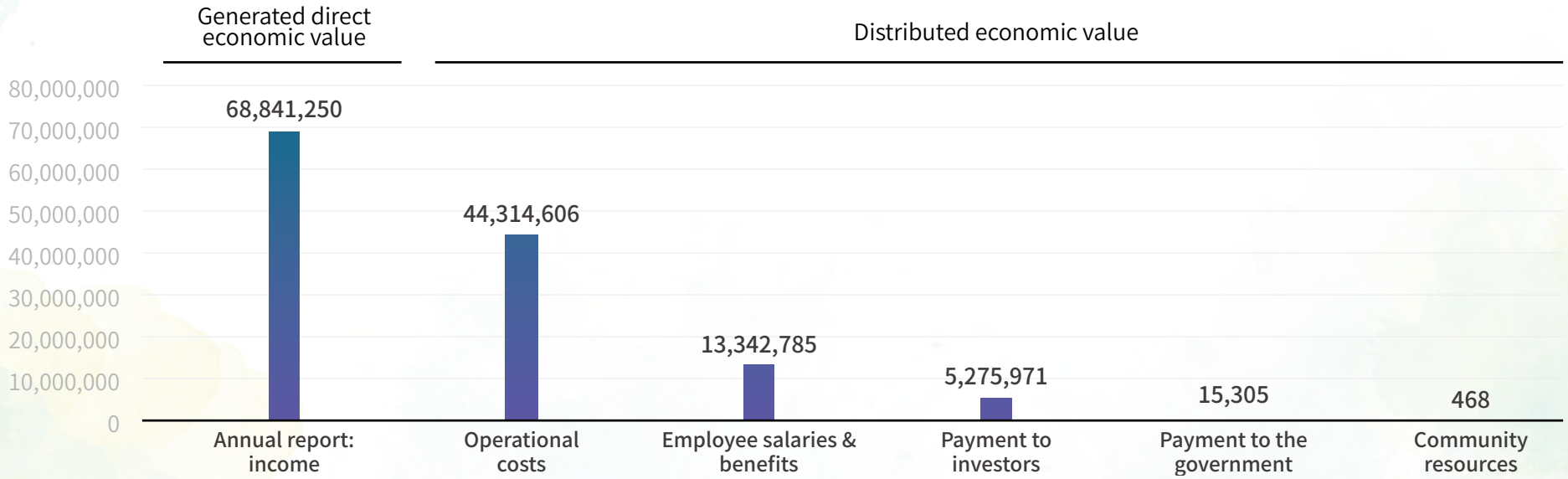


Cash dividends



2021 Economic Value Analysis

Unit: NT$ Thousand



Overall economic environment and industry trends

The frequencies and impacts of extreme climates are increasing day by day, and renewable energies have become a key role in carbon neutrality. Various countries have established green policies and climate goals to adopt renewable energies. With the reasonable price and innovative technologies, solar energy has the competitiveness to replace conventional fossil fuels; and with the share of more than a half growth volume, it also becomes the key force of renewable energies. Furthermore, the domestic demands are hot as the Taiwan government announced to achieve net-zero emission by 2050. Sino-American Silicon actively expands the diversified sites, such as aquavoltaics, agrivoltaics , to solve the biggest problem of land restriction, and expands the establishment of solar power plants, to shift from a pure manufacturer to a diversified energy application and services, catch the opportunities derived from the energy-storage and green power, for expanding the scale and becoming the leading and well-rounded green energy supplier. The demand for the solar energy industry will continue to grow under the global carbon reduction trend. The stable operation of SAS in the solar industry and the continuous strategic layout expansion in the semiconductor industry chain will create a strong profit foundation for the overall performance of SAS.

1.3 Risk Management

Sino-American Silicon's risk management organization has regularly reported the Company's risk environment, risk management priorities, risk assessment, and countermeasures during audit committee meetings in response to the rapidly changing business environment and to ensure the Company's stable operation and sustainable development. The chairperson of the audit committee also reports to the board of directors regarding the various operational and financial strategies, hazardous and potential risks, and the risk control measures adopted. Sino-American Silicon has also formulated risk management policies and procedures to assess and monitor its risk-taking ability, risk-bearing status, risk response strategies, and compliance with risk management procedures.

Risk Management Organization Framework

- Board of directors:

  As the Company's highest risk management unit, the board of directors aims to ensure legal compliance according to the overall business strategy and environment, promote and implement the Company's overall risk management, and clearly understand the risks faced by securities firms' operations, ensure risk management effectiveness, and take the ultimate responsibility for risk management.

- Senior management:

  Responsible for planning and executing the board of directors' risk management decisions and coordinating cross-departmental risk management interactions and communications to reduce strategic risks.

- Various functional units:

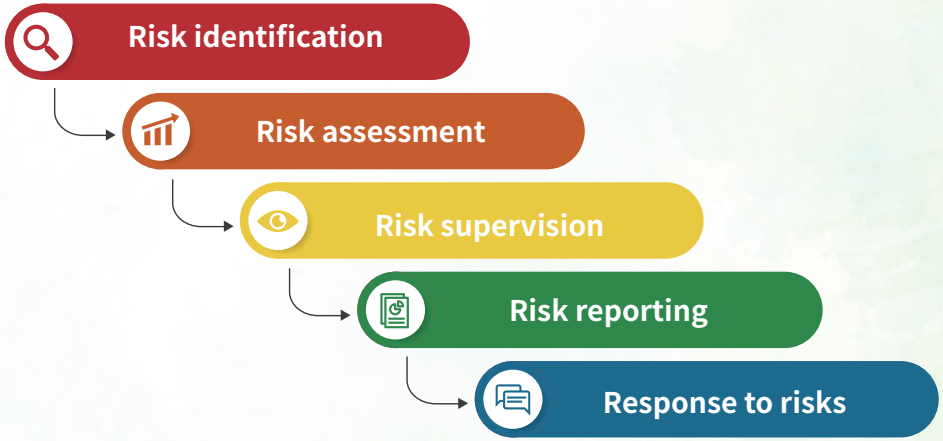
  Responsible for analyzing, managing, and monitoring related risks within the subordinate units and ensuring that risk control mechanisms and procedures are effectively implemented.

- Internal audit:

  This independent unit is subordinate to the board of directors. It assists the board of directors in supervising and executing the risk management mechanisms, inspects the risk implementation response and control by functional unit, and provides suggestions for improvement in risk monitoring.

Risk Management Process

SAS' risk management procedure includes risk identification, risk assessment, risk supervision, risk reporting, and response to risks. With this risk management procedure, we aim to implement and facilitate the company's risk management strategies effectively.



SAS has stipulated an assessment method for risks management for the referencing of risks management. Regarding quantifiable risks, we adopt rather stringent statistics analysis and technique for analysis management and manage such quantifiable risks with a progressive method. Risks that are more difficult to quantify are measured using the qualitative method. Text descriptions are used to express the possibility of risk incidences and the extent of their impacts. The relevant operational and operational risk management information is disclosed in the Company's annual report and Company website.

SAS keeps 3 major emerging risks identified in 2020: climate change, information security, and epidemic infectious diseases. The Company has formulated corresponding risk strategies and implementation mechanisms for all aspects of its corporate operations based on their possible impacts to ensure that the risks can be effectively controlled.

Climate Change

In December 2015, nearly 200 countries have strengthened their response to the threats posed by climate change through the "Paris Agreement," and greenhouse gas emission mitigation has become a key topic for global economic development. In June 2017, the Financial Stability Board (FSB) has published the Task Force on Climate-Related Financial Disclosures (TCFD). We have followed the 4 core elements (governance, strategy, risk management, metrics & targets) under the framework recommended by TCFD to reveal the climate change related information.

Climate-related Financial Information Disclosure Framework

Sino-American Silicon's ESG Committee members have collected the risk and opportunity information related to climate change, and incorporated the stakeholders' concerns. The ESG Committee team members would identify and score the topics, and report the results in the ESG Committee meeting held every year. The relevant team members would formulate the management practices and goals in response to the risks (major topics), and report the results to the latest board of directors meeting.

Climate-related risks and opportunities

Type	Climate-related risks	Potential financial impacts	Response measures and goals
Transformation risks	Policy and regulations (1) Greenhouse gas emission volume disclosure responsibility Current and revised energy regulations	Increase operating costs Policy changes leading to write-offs and early scrapping of existing assets	- Continue to track and identify trend changes in laws and regulations (1) - Develop low-carbon & renewable energy (2) (7) · Continue to deploy solar power plants, and actively execute planning and investment for roof-type, ground-type, and water-surface-type solar power plants. Introduce a water surface buoyancy solar power generation system to reduce the water surface temperature and significantly improve the power generation efficiency of solar power panels. · It is estimated that the 100% renewable energy application target can be achieved by 2050. - Energy and resource application management and energy-saving measures · Communicate with customers and strive to obtain customer certification, put the silicon edge materials produced by the processing unit back into use for the crystal growth phase to reduce the amount of pure silicon materials used, and reduce raw material costs as well as product carbon emissions. (3) (4) (8) · Optimize wastewater treatment to control the dosage of calcium carbonate and reduce the amount of calcium fluoride sludge. Established that the total amount of wastes from the plants treated using the resource method ≧ 85%. (4) · A hybrid energy system was built on the roof of the Chunan plant to replace part of the purchased electricity with solar power. (10) (14) · Continue to formulate energy-conservation measures, and the annual energy-saving rate of each plant area must be at least > 1% each year. (14) - R&D and optimization of products and services · Polysilicon wafer process has switched from Slurry to DW in order to improve production efficiency, and significantly reduce the amount of carrying agent used as well as the waste cutting oil (mud) output. (4) (15) · Improve the conversion efficiency of N-type & P-type monocrystalline cells. (3) (11) (12)
	Technology (2) Low carbon technology investment and transformation	Capital investment in technology development	
	Market (3) Preferences and changes in customer behavior (4) Rising costs for raw materials and waste disposal	Changes in consumer preferences resulted in a decline in demand for goods and services Changes in income combinations and sources Investment cost increase	
	Reputation (5) Industrial stigmatization	Decline in demand for goods/ services	
Physical risks	Immediacy (6) Increased frequency and severity of extreme weathers (typhoons, heavy rainfalls) Long-term (7) Average temperature rise	Production capacity decline or interruption Operating cost increase	
Type	**Climate-related opportunities**	**Potential financial impacts**	
Resource efficiency	(8) Recycle & reuse (9) Reduce water resource consumption	Reduce operating costs	
Energy source	(10) Use low-carbon energy	Reduce operating costs	
Products and Services	(11) Develop low-carbon products and services (12) R&D and innovation of products and services	Increase income through demand for low-carbon products and services Improve competitive position to reflect changes in consumer preferences	
Market	(13) Make good use of public sector incentives	Partner with the public sectors to enter new markets and increase revenue	
Resilience	(14) Energy plans and energy-saving measures (15) Resource substitution and diversity	Reduce operating costs	

Note: Response measures and targets are corresponding to the Climate-Related Risk Codes

Information Security

According to the 2019 World Economic Forum Risk Report, large-scale cyber attacks and data theft have become one of the top 10 risks. In 2020, many well-known companies worldwide and in Taiwan also have virus extortion incidents that resulted in significant losses. Therefore, companies have strengthened their information security operations without delay. Sino-American Silicon has continued to optimize its information security management system and enhance its information security defense capabilities in order to ensure effective information security practices as well as reduce the risk of ever-changing and novel information security attacks. Sino-American Silicon has adopted the PDCA cycle operation model to achieve the objectives and provide continuous improvement, established information security monitoring and vulnerability scanning systems to prevent external hacker intrusions and internal secret theft, and implemented strict software and hardware control (including Internet and personal information equipment) to ensure personal data and internal confidential data protection and security.

The information security management and control mechanism is implemented in three major aspects (as follows) to ensure effective information security protection and reduce risks.

- Information System Security Management
  - Install endpoint protection software on servers and personal computers or laptops, and automatically update virus definitions or signatures.
  - Construct email security gateway equipped with information security modules such as spam filtering, malicious file detection, and phishing email detection in order to enhance email attack protection.
  - Important systems and databases are regularly backed up and stored off-site to ensure data availability.
  - The information system vulnerability scanning is conducted periodically, and the holes in the loop of the system are fixed.
  - The computer operating systems or servers are updated for securities based on the cyber risks.
  - Established a firewall in the internal network and set up firewall rules to protect important information systems.
  - Performed annual disaster recovery exercise drill for important application systems.
- Information System Access Control
  - Strictly control the application system and file access setting permissions to ensure information confidentiality.
  - Formulate and implement account/password complexity principles, and update passwords regularly to ensure the validity of identity authentication.
  - For employees who have resigned and changed departments, the information department shall adjust the permissions according to documents to ensure real-time and correct data permission & authorization.
  - The Company has established the management procedures for non-employees (suppliers and contractors) to apply for accounts and access the systems. Once the application is approved, access will be granted for them to enter the system, and the handling status is recorded.
  - No personal terminal device is permitted to be connected with any external storage medium.
  - Personal computers are prohibited from connecting to the Company's network and resources, and the device authentication management mechanism is established.
- Network Security Management
  - Established a firewall to protect the network's external connections, and analyzed the firewall's anomaly records to strengthen protection.
  - A multi-loop mechanism is adopted to connection to the Internet and the Company's internal network interface in order to prevent disconnection.
  - An information service monitoring platform has been set up to monitor network traffic and connection status, which can resolve any network related problems in real time.
  - The information department delivers security reminders to all colleagues irregularly to remind colleagues to remain alert for the emails received in order to prevent the increasingly serious phishing and malicious fraud letter problems.
  - The internal staff's computers all must have anti-virus software installed. Once the anti-virus control platform finds a virus, it will send a notification letter to the IT personnel for computer virus removal.
  - The remote connection to the internal network when the employees are out of the office is limited to these compliant with the cyber security controls. Only these employees who are required to perform the necessary tasks may connect to the Company via remote connection via an authorization, and the VPN security connection with multi-factor authentication must be applied.

Pandemic Infectious Disease

2021 was still ravaged by COVID-19. SAS has strengthened the epidemic prevention measures in the factory area at the first instance to ensure the health and safety of all employees and stabilize the normal wafer production chain operations. The various departments have joined forces to formulate epidemic prevention strategies for the factory area, executed comprehensive epidemic prevention actions, complied with the government's prevention measures, inventories epidemic prevention resources, and regularly adjusted anti-epidemic activities according to the global epidemic status to ensure health and safety of the workplace.

We took a multi-pronged approach to epidemic prevention and employee care for the factory. In addition to executing the high-standard corporate epidemic prevention mechanism to ensure uninterrupted production line operations, we have also continued to practice multiple care measures to ensure the safety of all employees, exert a positive influence on the enterprise, and join forces with everyone to fight the epidemic.

1. Employee care: When the local epidemic broke out in May 2021, SAS immediately took epidemic prevention as its top priority and purchased the "statutory infectious disease health insurance" for its employees. The scope of protection includes statutory infectious disease coverage, statutory infectious disease inpatient medical coverage, and statutory infectious disease intensive care unit hospitalization medical coverage to maintain the safety and health of every colleague.

Personnel Traffic Division

Area and color separation in public spaces

Personnel Division

Area and color separation for colleagues

- Staff assigned to different color areas cannot appear at the same place simultaneously
- Please use phone or video for communication.
- If different color areas must hold a meeting together, please implement according to the conferenceroom for each color area.
- Office staff must dine in the office seats and dispose of food waste in the designated area.

2. Epidemic prevention information: To enable employees to grasp the real-time epidemic prevention information correctly, the Health Management Center has collected the latest epidemic information at home and abroad periodically and made rolling epidemic prevention measure adjustments in the factory to make real-time announcements according to the COVID-19 status so employees can quickly receive the correct epidemic prevention information.

3. Health monitoring: To reduce employee exposure risks, SAS has set up infrared thermometers at the entrance of each factory area and implemented entry control for risk groups such as people with fever symptoms and suspected exposure history. The goal is to implement employee epidemic prevention and entry control fully.

4. Visitor management: Use electronic bulletins to educate supply chain manufacturers about COVID-19 prevention measures when entering the plants, fully require visitors and contractors to apply for entry into the plants, adjust the scope of activities in the factory to a limited extent depending on the epidemic prevention level, and require everyone to wearing masks throughout the process to protect the safety of employees.

5. Epidemic prevention in the plants: To prevent the infection risks due to crowd gathering, office workers have taken several contingency measures such as: crisscross seating, cabin separation, traffic flow diversion, and working from home to minimize crowd gathering and reduce the frequency of employee contact. (Note: cabin separation, home office, etc., use remote systems to maintain smooth work.)

6. Safe dining environment: The Company has planned epidemic prevention dining lines, table plastic partitions, disposable lunch boxes, and divided the dining area by units to ensure worry-free meal dining safety in the plants.

7. Disinfection in the plants: The Company has formulated public area disinfection and cleaning measures, adjusted the frequency of environmental disinfection and supplied alcohol disinfectant in public spaces, increased internal ventilation, encouraged staff to open windows in confined spaces, affixed adhesive films on top of frequently used buttons, added partitions in restaurants, posted correct hand washing instructions in each restroom, and conducted a regular inventory to ensure that the Company has sufficient anti-epidemic materials.

8. Physical and mental care: COVID-19 has created an atmosphere of anxiety and tension in society. In 2021, SAS introduced the Employee Assistance Program Consortium (EAPC) to provide each employee with 2 free one-to-one consultation services every year. SAS has also regularly passed out psychological growth promotion materials to help employees resolve negative emotions and stress.

2 Innovations and Services

Material Topic Strategy and Performance

Material topics/ chapters	Strategies of Sino-American Silicon	2021 Key results	2021 Targets	Targets reached	2022 and future targets
Product quality and customer satisfaction / 2.2Customer and Product Services	* Practice product safety and non-toxic requirements from upstream supply chain * Produce customized polysilicon related application products through technical cooperation * Establish product quality monitoring mechanism and early warning system * Collect customer feedbacks on service, quality, cost, innovation, etc., as the direction of continuous improvement	* Customer satisfaction score: 9.1 for polysilicon products and 8.7 for solar cells	* Customer satisfaction survey "quality aspect" Chunan Branch score > 8.5 Yilan Branch score > 8.0 * Customer satisfaction survey "services aspect" Chunan Branch score > 8.5 Yilan Branch score > 8.0	V V	* Customer satisfaction survey "quality aspect" Chunan Branch score > 8.5 Yilan Branch score > 8.0 * Customer satisfaction survey "services aspect" Chunan Branch score > 8.5 Yilan Branch score > 8.5 * Continuous technical cooperation with customers to produce more cost-effective silicon material application products, and strive to achieve mass production * The customer service team is searching for ways to improve the yield rate of the current process according to customer requirements * Customer audit zero major deficiencies / main deficiencies * Set "developing new customers, expanding the application and market of silicon material-related products" as top priority and future outlook

2.1 Innovation management

Current state and development trends of the solar energy industry

In the past 5 years, countries worldwide have paid more attention to environmental protection issues under the climate change and global warming impacts. In addition, governments and enterprises of various countries have also vigorously promoted green energy. For example, RE100 vigorously promotes green energy by enterprises, and its members include international companies such as Apple and Google. In addition to the global RE100, governments of various countries also have their own green energy processes. For example, the United States is rich in natural resources (coal, oil, natural gas, etc.), so Trump caused an uproar worldwide by focusing on petrochemical industry development and withdrew from the Paris Agreement in 2017. Despite the White House policy, each state still has its own green energy process, and many companies have voluntarily participated in RE100 or purchased green electricity. Green energy is an important topic in the United States. Japan formulated a denuclearization policy due to its experience from the Fukushima nuclear disaster in 2011. But in 2018, Japan switched to "safer and more stable nuclear energy" rather than outright abandoning it. Although Japan still relies heavily on natural gas and coal, Japan has also endeavored to increase the proportion of renewable energy and set an energy structure target of 18% renewable energy usage rate by 2030. The specific plan is to prepare the "offshore wind power generation equipment equivalent to 10 nuclear power plants (10 million KW)" by 2030. In 2019, mainland China's solar photovoltaic power generation capacity reached 30.11 million kilowatts, and the cumulative installed capacity has grown to 204.3 million kilowatts. In September 2020, Chinese President Xi Jinping pledged at the UN General Assembly that mainland China would achieve carbon neutrality by 2060. It is apparent that mainland China is also committed to promoting renewable energy, and the demand or supply of the solar energy industry is very strong. However, the global solar energy industry is currently facing price competition, technological improvement, and various other challenges as follows:

▸ Mainland Chinese Manufacturers' Production Deployment

Mainland China has vigorously developed the upstream and midstream solar energy industries in recent years. Since the technical requirements of solar energy are lower than those of the semiconductor industry, it is a capital-intensive industry, and "price" plays a significant role in the competition. Therefore, China's large-scale entry into the market has caused a considerable impact. Take the midstream solar cell market as an example. Chinese manufacturers account for 60% of the global market's production capacity. Moreover, due to government subsidies and large output, the price is also low, and competition often requires price cuts that cause many manufacturers to lose profits.

▸ Europe and the United States Build Solar Energy Industry Trade Barriers

It is well known that the European and American countries have high demands for solar energy, and their green energy development and technology are very advanced. Compared to mainland China, the production costs in Europe and the United States are relatively high. Therefore, after the rise of China's solar energy industry in 2008, the pioneers of the solar energy industry in many European countries such as Germany and Italy could not face China's competition and eventually withdrew from the market. Therefore, Europe began to adopt protectionism for the domestic solar energy industry in 2009. In 2011, the United States also began curbing solar panels at dumping prices from China by imposing higher tariffs, affecting Taiwan's solar energy manufacturers to some extent.

▸ Global Solar Industry Subsidy Policy Changes

The solar energy industry is very dependent on government policies. If the green energy or solar energy policies are revised with different governments in power, the increase or decrease of their subsidies will significantly impact the solar energy developments in various countries. For example, Germany has gradually reduced FIT subsidies, almost pushing FIT into history. Taiwan is also promoting green power subscriptions and renewable energy certificates (TREC), and the wholesale purchase rate has a downward trend each year.

▸ Silicon Wafer Manufacturers Sign Long-term High-priced Raw Material Contracts

Taiwan's solar energy industry was booming in 2006, so many companies signed long-term high-priced silicon wafer material contracts to ensure raw material source stability. However, the price of silicon wafers fell after 2008 due to the oversupply in the silicon wafer market. However, the manufacturers who signed high-priced contracts were still in the contract period. So the cost burden increased. Therefore, the current solar energy industry is based on spot price quotations after the 2008 situation.

The Taiwan Photovoltaic Industry Association indicated that the 4 referendum rejections echoed the concerns for nuclear power safety. So actively constructing renewable energy has become the fastest and the only way to meet the domestic enterprises' demands for green electricity. Ms. Hsiu-lan Hsu, the Taiwan Photovoltaic Industry Association chairperson, further indicated that Taiwan's economy is still export-oriented. Well-known international manufacturers or brands such as TSMC, APPLE, NIKE, H&M, and other smartphone, sneaker, and clothing brands have joined RE100. Taiwanese OEM companies for big brands are also required to use renewable energy. So the government should take a more active role in renewable energy development after the referendum. As the most critical segment of Taiwan's renewable energy industry, the Taiwan Photovoltaic Industry Association will fully support the government in promoting solar photovoltaic power plant construction and supplement Taiwan's peak electricity consumption. Although the government's current solar power policy has only announced the capacity targets set for 2025, and there has been no plan for the installation volume after 2025, Taiwan will need more renewable energy to achieve net-zero carbon emissions by 2050. We expect the government to set the various renewable energy targets for the next 30 years and announce them to the industry and the public. Only with the concerted efforts of all people can we achieve the comprehensive energy transformation objective. Domestic solar cell manufacturers mostly hold a wait-and-see attitude under the international large-sized battery module trend. SAS has actively deployed the M10 mass production line to drive the upgrades for Taiwan's modules in response to the policy. The goal is to use this high-efficiency and high-reliability development plan to promote the R&D and mass production of monocrystalline PERC high-efficiency large-size cells in Taiwan, improve product competitiveness, accelerate domestic solar photovoltaic construction, and implement energy policy goals as follows:

1. Energy transformation is a major government policy. The industry is committed to the development of high conversion efficiency solar cells and modules to achieve the 20 GW solar photovoltaic installation capacity target by 2025 and use the land areas effectively.
2. The development of large-scale solar cells can increase the power generation wattage and conversion efficiency of single-chip modules, increase the power generation per unit field, and reduce the construction cost.
3. The size of solar cells used in domestic modules is mainly G1 (158.75 mm), and it will be primarily M6 (166 mm) by next year. However, the international trend is moving towards developing large size M10 (182 mm) monocrystalline. It will become increasingly difficult to obtain G1 and M6 silicon wafers, thereby increasing production costs. This project will directly develop 182 mm (M10) solar cells, which can provide higher conversion efficiency, meet the future domestic market demand, and gain international competitiveness.

▸ Continued innovation and development of cutting-edge products and technologies

SAS has many years of solar crystalline growth experiences. Its high-efficiency polycrystalline quality is unique and industry-leading worldwide, and the Company also possesses thermal field simulation and design R&D capabilities. The A3+ chip developed by SAS in 2011 has dazzled the world stage. In 2012/09, the Company's Aegis wafer solar chip won the Silicon Innovation Award, which is the most representative international award in the solar energy industry. In 2014/09, SAS has obtained the unique global high-efficiency chip technology patent (announcement number: I452185), mass-produced A5+ chips by the end of 2014, and the Company's chip conversion efficiency has continued to lead the world. In 2017, the patented crystal growth technology was awarded with the 2016 National Innovation Silver Award by the Intellectual Property Office, Ministry of Economic Affairs. The company is capable of continuous development of high-quality multi-crystalline solar products.

In terms of development and mass production of monocrystalline high-efficiency solar cells, SAS has continued to provide high-quality and high-conversion-efficiency solar cells and mass-produced large-size solar cells (G1 Ga wafer). SAS has also introduced the new CELCO P+ process technology to increase the battery output wattage by 3% under the same conversion efficiency. SAS is expected to provide larger-sized solar cells (M6/M10) in the market starting in 2022. Under the same conversion efficiency, M10 size solar cells can provide up to 30%+ output wattage (compared to G1 size wafer). The launch of this product is expected to promote the industrial upgrade trend further and offer more high-quality green energy product choices in the domestic solar energy market. Larger-sized single-crystal high-efficiency solar cells have a low light decay effect and a high output wattage feature, which can reduce the power degradation caused by long-term use of solar modules outdoors.

In line with the latest market developments, the adoption of diamond cutting processes for the cutting of solar wafers marks a critical change in the solar energy industry in 2017. SAS started adopting this technology in the fourth quarter of 2017. It has completed 51% conversion in all processes by end of 2017 and 100% conversion by 2018. Diamond cutting processes do not require any oil cutting and therefore help decrease raw material consumption, reduce air pollution, waste generation and transportation-based environmental impact.

As the largest solar market in 2018, China is reorganizing their solar policy, which has curbed the global growth and affected the development of the solar market. The long-term R&D technology experience of SAS has enabled the Company to rely on its solid technical foundation and rigorous processing technology to improve the crystalline quality continuously, enter into the silicon material application product field, and provide product customization according to customer needs to expand the product application field during the period in which the global solar market is sluggish.

The R&D results of SAS are evident based on the number of patent applications. In 2013, the Science & Technology Law Institute had cooperated with Ocean Tomo (an authority in American intellectual capital) to analyze and investigate the management and effectiveness of the intellectual property rights for listed companies in Taiwan and ranked SAS as the "Top 50 U.S. Patent Value for Listed / OTC Enterprises in Taiwan." Although the Science & Technology Law Institute has not updated this appraisal since 2013, the result indicated that SAS had reached the benchmark as a high-value patent enterprise in Taiwan. SAS has continued to cultivate patented technologies. In October 2016, the Company was rewarded patent certificate invention No. I452185 for "Silicon Wafer Manufactured from Silicon Crystal Ingots." SAS has won the recognition and affirmation from the Selection Evaluation Committee of the Intellectual Property Office due to its unique innovation, high practical value, high degree of commercialization, deep market potential, and huge business opportunities. As a result, SAS was able to stand out from the numerous contestants and win the silver medal during the "2016 National Invention and Creation Award" event organized by the Intellectual Property Office, MOEA. The management team of SAS firmly believes that by continuing to strengthen advanced technology R&D and global patent layout, it can grasp the market trend and create a blue ocean market.

R&D Award Records Over the Years

Product Innovation

The extension of the 2019 R&D results includes the continuous silicon material application product developments and the improvement of ultra-high-efficiency monocrystalline silicon solar cells. In the future, the R&D plan will focus on the ultra-high-efficiency large-scale P type monocrystalline silicon solar cells (M10)

Strategic deployment into the renewable energy market

As the global renewable energy power generation industry continues to grow, SAS will certainly be a part of this feast as it has deeply cultivated the solar energy industry for many years. Since 2015, SAS has invested in the solar power industry via its FZtech Branch (formerly FZtech Inc., which was merged by SAS on 2019.12.12 and renamed to SAS FZtech Branch on 2020.1.3). In 2020, the Yilan Branch reestablished the power station development department while expanding the scope of the Group's renewable energy services in four aspects: power generation, maintenance and operation, energy storage, and green energy. SAS is committed to achieving vertical industry integration benefits and expanding solar energy business deployment, making SAS one of the main domestic professional green energy solution suppliers. SAS is constantly looking for the next growth momentum, and hopes to pursue sustainable operation and growth with customers and suppliers.

Four Core Services of Renewable Energy

In addition to investing in the green energy industry, the SAS Group also made a sustainable commitment to the environment in August 2021 and declared to use 100% renewable energy by 2050. The Group has established the "Sustainable Energy Solution Co., Ltd ." based on its long-term investment and understanding of the green energy industry to achieve the "sustainable green energy, prosperous business" concept. The goal is to use the Group's collective resources to provide professional solutions for enterprises needing green electricity due to regulations, border trade agreements, international supply chain requirements, or self-declaration. The Group will also become a key leader in promoting and using domestic green electricity after the promulgation of "The Electricity Act" and "Energy liberalization," and assist enterprises in obtaining green electricity and entering the international market.

Improve the Renewable Energy Construction and Maintenance Management Quality

Due to the number of solar power plants invested, held, and commissioned for construction by SAS, the number of solar power plants under management continues to grow. To improve the overall management quality and efficiency, SAS has developed an online "Solar Power Engineering Management System" in 2021. This online management system includes establishing relevant databases and operational history for 20 years from construction to parallel operation. The goal is to continuously optimize the service quality and scope of SAS' renewable energy services via data accumulation and analysis.

2.2 Customer and Product Services

Customer Service

SAS is firmly committed to providing its customers with the best services and is deeply convinced that an excellent service quality is the key to improving customer satisfaction and consolidating customer loyalty. SAS adheres to a philosophy of sustainable operation. In addition to maintaining business performance, the company also places great emphasis on listening to customers' opinions and satisfying customer demands to earn their long-term support and achieve sustainable operation goals.

SAS is a professional solar wafer and battery manufacturer. In 2019, the Company has focused on developing silicon material-related application products and providing advanced process technology and product services. Our goals are to meet the customers' product needs, emphasize on satisfying customer demands through professionalism, think from the customers' standpoint, provide comprehensive services based on the customers' needs, and achieve customer satisfaction and sustainable operation.

Product quality and customer satisfaction

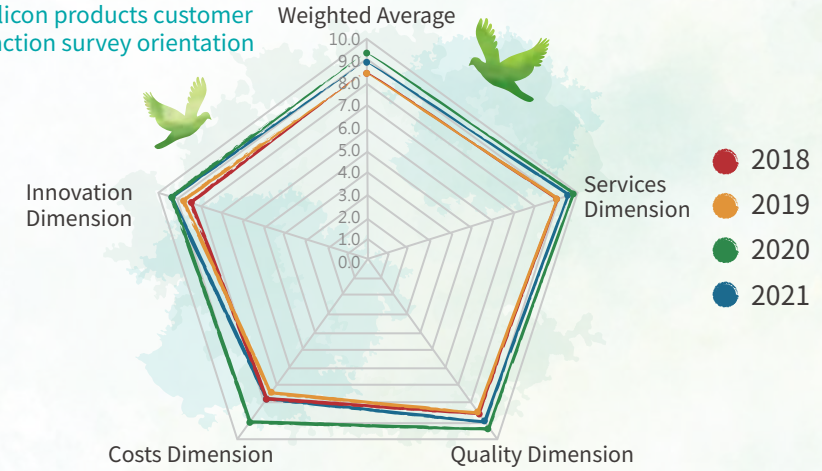
SAS has long been firmly committed to the goals of "customer satisfaction, requirements conformity, total quality control, and continued improvements" to increase customers'confidence in SAS products and services. Providing high-quality services and products to satisfy customers is the company's core mission. Professional teams are set up to take charge of product development, costs, manufacturing, quality, and customer services. Professional services are provided in response to customer problems and feedback in a rapid and active manner to assist customers handling and resolving problems so as to earn their trust and satisfaction.

SAS schedules regular meetings with customers to maintain excellent communications with customers and conduct discussions on production and sales quality and engineering technologies. The company develops new-generation products in cooperation with customers and enhances product power conversion through technical discussions with the supply chain. It further optimizes the usage of social resources to reduce environmental pollution. The ultimate goal is to ensure in-depth cooperative relationships with customers and higher customer satisfaction with our products, technologies, and services.

SAS therefore conducts customer satisfaction surveys on a bi-annual basis. Upon collection and organization of customer opinions, dedicated teams convene exclusive meetings to formulate strategies and directions of improvement with customer opinions as the main indicator. With regard to items with relatively low to zero satisfaction, the company conducts follow-up interviews with customers to clarify issues. Shortcomings will be analyzed and improvement strategies formulated to transform the concept of enhanced customer satisfaction into concrete action, hoping to earn the trust and praise of even more customers. The goal is to become our customers' best collaborative partner and to work with our customers in sustainable operations and development.

In addition to providing services to existing customers, SAS has also actively sought new customers' recognition since 2021. Our teams have endeavored to understand the customers' expectations and needs through their feedback, formulate improvement measures and plans, and provide customers with high-quality products. In 2021, polysilicon products' overall customer satisfaction weighted average score was 9.1 points (highest satisfaction), which decreased by 0.4 points compared to 2020. The biggest loss came from the "cost aspect" performance. This was mainly caused by global raw material price changes, which pushed up customer costs. Customers also made improvement requests for cost control. Since this issue is an unavoidable operation risk for the organization, SAS has made "cost reduction" an important internal objective. Meanwhile, SAS has formulated various cost control strategies such as process improvement, 2nd source verification, and regular review of cost changes to maintain the organization's operating cost competitiveness through multiple methods. The scores for "service," "quality," and "innovation" aspects have remained above 9 points (highest satisfaction), which shows that the customers' evaluations of SAS remain good. But new customers have high expectations for product quality, and SAS will continue to improve the satisfaction of new customers.

Polysilicon products customer satisfaction survey orientation

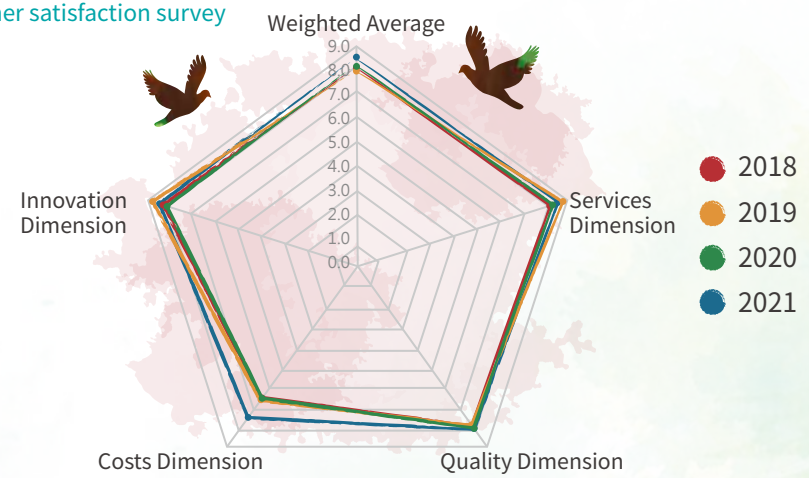


Solar Cells Customer Satisfaction

We divided customer satisfaction into 5 major aspects for evaluation to improve customer satisfaction and product competitiveness by understanding the needs of market customers. These 5 major aspects include Service, Innovation, Quality, Cost, and Weighted Average (total score evaluation). Each aspect has the highest score of 10 points ("highest satisfaction"), 6 points mean "acceptable," and any score lower than that means urgent improvement is required. We then performed a weakness analysis to determine SAS's continual internal improvement directions based on the detailed satisfaction scores from these 5 aspects.

The overall weighted average customer satisfaction score for solar cells in 2021 was 8.5 points, which increased by 0.4 points compared to 2020. Among them, the cost aspect performance has improved compared to previous years. Although the cost of solar cells soared due to increases in the upstream solar wafer raw materials for the first half of 2021, our team has continued to improve cell manufacturing costs. The efforts include improving battery output and yield, importing 2nd source materials, saving water and electricity, and reducing chemical consumption to enhance cost competitiveness. In terms of quality, service, and innovation, we have introduced half-cut mass production technology to downstream module packaging in response to the efficiency required by the mainstream market. In terms of battery assembly, the crack rate has increased because the number of strings doubled, which has reduced the module output yield. The SAS solar cell team strictly adheres to the core concept of customer satisfaction service and excellent battery quality. In many instances, it has cooperated with customers to test and improve battery graphic designs and introduce new conductive paste materials. The efforts have significantly enhanced the half-cut mass production yield for customer modules, increased customer confidence, strengthened the cooperation model between the parties, and enabled SAS' cell products to gain importance and competitiveness in the solar energy market.

Customer satisfaction survey



Despite the current positive feedback from customers, SAS does not rest on its laurels. The company continues to invest in the necessary equipment, upgrade product qualities, and conduct ongoing technology development, striving to break through the challenges from the market and the external economic environments. The company still aims to constantly increase customer satisfaction and provide high-quality products and services in accordance with the quality policy and goals of the company. Improvement measures are proposed and tracking of progress is implemented for unsatisfied goals through quality system management tools to clearly demonstrate the commitment of SAS to constant improvements and thereby achieve continued enhancement in the field of service quality and competitiveness.

Product Services

SAS adheres to the cells production with high-efficiency conversion, as well as constant innovation and development of high-efficiency products. SAS can fast integrate up- and down-stream technology development capacity through supply chain integration and technology interchange. The time required for product launch is shortened; product reliability, enhanced; and quality confidence, increased, in order to more efficiently align products to the demands of end users. In terms of quality, SAS has stringent procedures, processes, and controls in handling customer information collection, product design and development, and manufacturing processes. Outstanding and stable product quality is ensured via systematic management at all phases. SAS also convenes production morning, operation weekly, quality monthly, management review, and annual review meetings to ensure continuous product improvements. PDCA is constantly carried out to enhance products and services, reduce costs and expenditures, and give back to society.

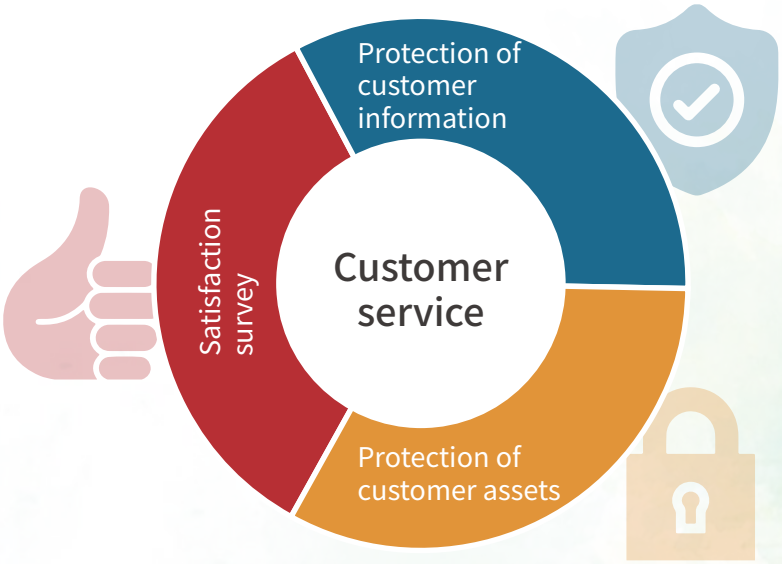
2.3 Customer Confidential Information Protection

Customer privacy

Not only committed to providing excellent customer services, SAS also places great emphasis on protection of customer privacy and confidentiality. Relevant agreements are signed with customers to protect their classified information. Meanwhile, all staff members are required to strictly abide by SAS IPR policies and protect confidential information of customers during business dealings in a rigorous manner.

In recent years, allegations of customer information leakage have emerged. SAS not only formulates confidentiality agreement regulations but also invests resources in the establishment of information security systems to ensure proper protection of customer data. Regular and irregular audits are conducted to ensure the integrity of information security system operations. At the same time, internal personnel are required to strictly abide by SAS IPR policies and rigorously protect confidential information of customers in business dealings. Relevant employee training is administered on an annual basis to emphasize the importance of confidentiality. Promote the concept of information confidentiality to protect the relevant privacy of customers and prevent losses caused by information leakage. In 2021, there have been no related complaints from customers or penalties imposed by the competent authority.

Customer Service Principles



Protection of intellectual property

In 2010, SAS adopted the Taiwan intellectual property management system (TIPS), and has since successively passed the basic certification (2010-2011) and advanced certification (2012-2015), and obtained the AA-level certification in 2016. The company will remain committed to the protection and management of intellectual property. In recent years, we have strengthened confidentiality control and gradually structured a data classification system, defined confidentiality levels for internal and external documents, established different labeling and circulation control methods, and established electronic equipment usage specifications. The Company has introduced Cloud virtual desktop and centralized data backup management, outgoing email inspection system, electronic storage device use restrictions, and the factory video shooting management methods. We also review folder permissions regularly, require important employees to sign NDAs, and strengthen management procedures for departing employees to eliminate information security issues. We have completed the electronic TIPS internal audit form and regularly review stakeholders' expectations and internal and external issues in the TIPS system. In terms of the patent management system, we will continue to optimize the patent proposal system. Even more importantly, SAS organizes regular intellectual property training to reinforce the staff's understanding and awareness of confidentiality management's importance and shape a corporate culture concerned with confidentiality management. The goal is to apply excellent intellectual property management to safeguard the rights and interests of the company and its customers, improve customer trust, and increase product market share.

2.4 Products Liability

Product safety and liability

Due to the wide range of silicon material application products and to ensure the products comply with the EU RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment) international regulations and customer requirements for hazardous substances, SAS requires all of its products to be tested by a certified unbiased third-party laboratory. In addition, raw materials suppliers and packaging materials are also required to provide regular hazardous substance inspection reports issued by a certified third-party impartial unit laboratory in order to meet the product safety and non-toxicity requirements, and strengthen environmental friendliness and protection.

In addition, SAS is fully aware of the risks associated with solar cells and backend modules such as environmental impact of chemical substances used in manufacturing processes, risks of product use in different environments, and risks at different stages after the end of the product life cycle. Despite the fact that there are currently no international laws and regulations for solar cell products labeling, SAS, upon much deliberation, still insists on complete labeling and indication of product ingredients, harmful substances, and usage safety to ensure safe and worry-free use by customers. In terms of marketing, SAS provides a detailed description of potential product risks in the media such as booklets of specifications and ensures conformity to legal, environmental, and customer requirements in all sales areas.

2.5 Upstream and Downstream Supply Chain

In view of increasing requirements for eco-friendliness, the demand for solar energy is growing and the cost for electricity generation is decreasing. Once the cost for solar power generation drops to the same price as market electricity, solar power will become one of the most competitive options available on the energy market. This will allow the market to expand further and thereby maximize eco-friendly effects. To pursue the ultimate objective of price competitiveness, the whole solar industry chain embraces the development goal of high efficiency at minimum costs.

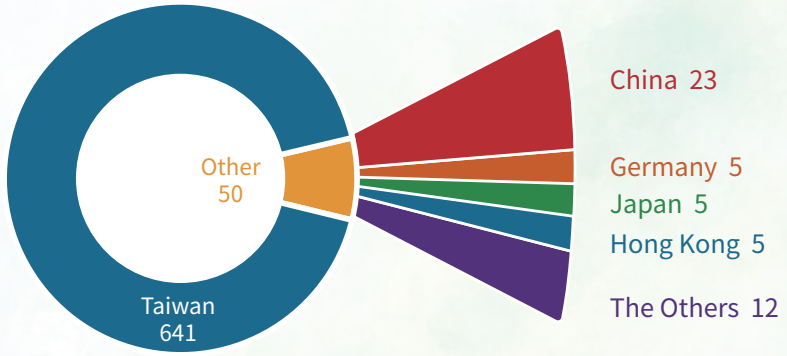
SAS has identified silicon raw material as the key material with potential shortage risks. We have established the supplier management procedures in addition to adopting the supplier diversification risk control strategy, material reserve, and increasing the reuse ratio of silicon raw materials. Qualified suppliers must abide by the Code of Conduct for Responsible Business Alliance (RBA), use conflict-free minerals, ensure compliance with domestic and foreign laws (RoHS, REACH, WEEE), and prioritize purchasing products with environmental protection labels.

Localized supply chain

SAS has its main production base in Taiwan and has therefore been actively cooperating with Taiwanese suppliers to implement the goal of supply chain localization. There were no major supply chain changes in 2021. Chunan Branch, Yilan Branch, and FZtech Branch have 691 suppliers. Among them, 641 suppliers are located in Taiwan and account for 92.7%.

By implementing supply chain localization, we can gradually reduce production costs via lowering the material transportation cost, reducing turnover inventory, unit shipment optimization, and other measures to strengthen industry competitiveness in terms of cost. Localized procurement can enhance national competitiveness, increase local employment, stimulate local economic activities, minimize environmental impact and damage caused by long-distance transportation of raw materials, and thus reduce the importance of timeliness. Moreover, SAS adheres to the green procurement concept and prioritizes buying low energy consumption and EPA certification products to reduce environmental impacts and energy consumption.

Number of Suppliers in 2021




3
Clean Green Energy
Environment

Material Topic Strategy and Performance

Material topics/chapters	Strategies of Sino-American Silicon	2021 Key results	2021 Targets	Targets reached	2022 and future targets
GHG emissions / 3.1Carbon Management 3.2Energy Management and Development	‣ In terms of climate change "mitigation" actions, start from greenhouse gas/carbon footprint inventory to greenhouse gas reduction implementation ‣ Actively achieve the greenhouse gas emission reduction goal through green design, green factory, energy management, efficient energy creation, energy conservation, as well as energy conversion products and solutions ‣ Collaborate with the renewable energy development and obtain international green power certifications as the main development direction to create a clean and green energy environment in response to the climate change related challenges	‣ Established a greenhouse gas inventory system (ISO 14064-1:2018) and obtained the verification statement in April 2022 ‣ The energy-saving measures and management of Chunan and Yilan branches can reduce approximately 412 metric tons of carbon dioxide emissions annually	‣ Introduced the climate change risk and opportunity assessment mechanism ‣ Optimized greenhouse gas inventory and strengthened disclosure of GHG emissions from transportation and products used by the organization ‣ Chunan Branch annual power saving rate > 1% ‣ Yilan branch annual power saving rate ≧ 800,000 kWh	V V V X	‣ Optimized the climate change risk and opportunity assessment mechanism ‣ 100% renewable energy use by 2050: Renewable energy use target achievement phases: 20% by 2030, 35% by 2035, 50% by 2040, 100% by 2050 ‣ Chunan Branch annual power saving rate > 1% ‣ Yilan branch annual power saving rate ≧ 800,000 kWh
Energy resources consumption / 3.2Energy Management and Development 3.3Raw Material and Water Resources Management	‣ Continue to introduce the concepts of product life cycle and circular economy 4R, develop product process design and development from the ecological consideration perspective, implement green design and clean production, improve process designs and technologies, increase unit production capacity, and reduce raw material consumptions ‣ For high-efficiency energy creation operations, continue to adopt high-efficiency solar modules to plan and install solar power generation systems ‣ Adopt a carbon reduction set up method for solar system constructions ‣ Adopt environmentally friendly recyclable materials or recycled environmentally friendly second-use materials (such as environmentally friendly steel, environmentally friendly concrete, etc.) for system equipment or building a system ‣ In terms of solar energy system maintenance operations, use the water, electricity, power generation, average performance ratio, and PR value health check management method to achieve effective system management	‣ The cumulative total grid-connected operation and construction capacity of FZtech Branch reached 138 MW. A total of 154,556,376 kWh of electricity was generated in one year, and the carbon dioxide emission was reduced by approximately 77,587 metric tons	‣ Continued to construct solar energy systems with an annual capacity of ≧ 150,000 kW Note: The actual construction capacity is 144,000 kW ‣ Solar system power generation, unit power generation achievement rate ≧ 100%	X V	‣ Chunan branch introduced factory smart energy management ‣ Yilan branch introduced the ISO 50001 power management system

Material topics/chapters	Strategies of Sino-American Silicon	2021 Key results	2021 Targets	Targets reached	2022 and future targets
Pollution Prevention (air and water) / 3.4Pollution Prevention and Waste Reduction Management	‣ Set improvement goals every year and continue to implement water recycling and waste reduction measures to facilitate environmental management system promotions ‣ Install sufficient pollution prevention equipment with considerable processing capacity to reduce the harmful impacts on the environment ‣ Conduct regular maintenance and inspection for pollution prevention and control equipment to maintain equipment treatment efficiency ‣ Assign professional personnel to operate in accordance with relevant regulations	‣ The air, water, and waste pollution prevention and treatment is in 100% compliance with laws and regulations ‣ Chunan Branch recycled over 70% of the water used during the drilling process	‣ Chunan Branch recycled over 50% of the wastewater from drilling process ‣ Yilan Branch improved the quality of the wastewater discharged - COD <200 mg/L (Standard 480 mg/L) - SS<150 mg/L (Standard 320 mg/L) - Nitrate Nitrogen < 40 mg/L (Standard 50 mg/L)	V V	‣ 100% of the prevention (production) equipment meets the emission standard requirements ‣ Chunan Branch recycled over 50% of the wastewater from drilling process
Waste Management / 3.4Pollution Prevention and Waste Reduction Management	‣ Transfer traditional cleaning and disposal into the concept of effective resource management in order to reduce waste generation ‣ Enhance audit management on waste clearance companies to ensure that waste is disposed in an appropriate manner		‣ The frequency of activated carbon replacement in Yilan Branch's organic air pollution treatment system is reduced by 30% (lower the output of waste activated carbon) Note: The actual carbon replacement frequency is reduced by about 14%	X	‣ Chunan branch's waste recycling rate for the whole plant has reached 85%

3.1 Carbon Management

According to the 2022 Global Risks Report from the World Economic Forum, the perception survey for the world's most serious risks for the 10 years indicated that among the top 10 risks, 5 are considered "environmental" risks, and 4 are catalyzed by the COVID-19 outbreak (social cohesion disruption, livelihood crisis, infectious diseases, debt crisis). Among them, "Climate Action Failure" and "Extreme Weather" occupy the top 2 spots consecutively. The key commitments signed by countries at the 2021 Conference of the Parties (COP26, Glasgow Climate Pact) include:

- The Glasgow Financial Alliance for Net Zero (GFANZ), comprised of 450 financial institutions with US$130 trillion in assets, has signed on to the sustainable finance principles to assist in the development of global net-zero emissions.
- Net-zero carbon emissions by 2050 is a global consensus, and the world is focusing on the medium-term emission reduction target for 2030.

This shows that governments, international enterprises, and investment institutions are more focused on the "zero carbon economy." In light of the clean technology and energy transition trend, SAS hopes to become a full-scale renewable energy supplier, continue to support climate initiatives/carbon neutrality, and plan its own climate roadmap. We have started from greenhouse gas inventory to energy management and clean production in climate action and then expanded to renewable energy development. In 2021, SAS announced its commitment to using 100% renewable energy by 2050 and will achieve this renewable energy goal in phases.

3.1.1 Greenhouse Gas Inventory

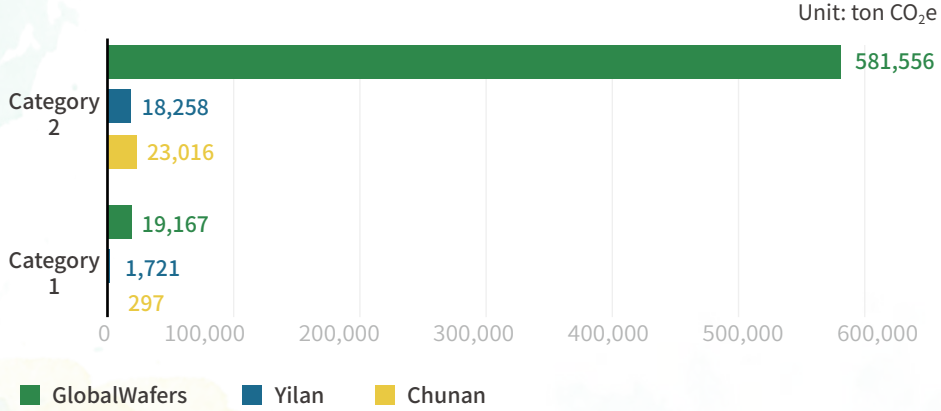
In collaboration with the country's overall greenhouse gas reduction strategy development and response to the global net-zero transition action goal, SAS' Chunan and Yilan branches have independently promoted and completed the systematic greenhouse gas emission inventory (ISO 14064-1:2018) and built a detailed list 2021. The base year was 2020, and a third-party verification statement was obtained. The goal was to effectively manage greenhouse gas emission risks, identify reduction opportunities, and then implement effective voluntary reduction action plans to help slow down global warming and fulfill the responsibility of being a part of the global village.

SAS' Chunan and Yilan branches have adopted the "operational control method" as their organization boundary setting. The greenhouse gas emissions attributed to organizational operations include direct (category 1, direct greenhouse gas emissions), energy indirect (category 2, indirect greenhouse gas emissions from input energy), and other indirect (category 3~category 6) sources of greenhouse gas emissions. Our greenhouse gas emissions calculations were based on the 7 greenhouse gases defined by the ISO 14064-1 standard: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), Perfluorinated compounds (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). We have primarily adopted the "emission coefficient method." The emission coefficients quoted are based on the EPA Greenhouse Gas Emission Coefficient Management Table Version 6.0.4. The global warming potentials (GWPs) quoted in the calculation process are the (IPCC AR5, 2013) warming potentials (GWPs) for the most recent year. The types of greenhouse gases we produce include CO_2, CH_4, and N_2O. We do not produce greenhouse gas emissions from perfluorinated compounds. The following is a description of direct, energy indirect, and other indirect greenhouse gas emissions:

Direct (Category 1) and Energy Indirect (Category 2) Emissions

Emission Category				Emission Source
Category 1	Direct greenhouse gas emission	1.1	Fixed combustion direct emissions	Fuel for generators, boilers, and lawn mowers
		1.2	Mobile combustion direct emissions	Fuel for mobile equipment (office vehicles, stackers)
		1.4	Direct fugitive emissions from greenhouse gas releases by manual systems	Greenhouse gases emitted from septic tanks, stationary pollution source discharge pipes (VOCs), wastewater treated with anaerobic treatment, fire-fighting equipment, refrigerants, etc.
Category 2	Indirect greenhouse gas emissions from the input energy	2.1	Indirect emissions from the input electricity	Externally purchased electricity

2021 Category 1 and Category 2 greenhouse gas emissions



2021 Category 1 and Category 2 greenhouse gas emissions

Unit: ton CO_2e

Item		Category 1	Category 2	Category 1 & 2	GHG emissions intensity
SAS Silicon	Chunan	296.615	23,015.563	23,312.178	0.0094 ton CO_2e/KNTD
	Yilan	1,721.059	18,257.555	19,978.614	
GlobalWafers		19,167.497	581,555.557	600,723.054	
Total		21,185.171	622,828.675	644,013.846	

Note:

1. Scope of statistics: Chunan Branch, Yilan Branch (Factory 1 & 3), GlobalWafers. SAS has complied with the ISO 14064-1:2018 greenhouse gas emission guideline since 2021. Due to the difference from the previous self-examination standards, only the 2021 greenhouse gas emissions verified by a third party are disclosed, and the statistical interval would start from 2021.
2. The electricity emission coefficient is based on the announcement by the Bureau of Energy, MOEA, which is 0.502 (kg CO2 e/kWh) for 2020.
3. GHG emissions intensity: Category 1 & 2 total emissions (ton CO2e) / combined revenue (KNTD).

Other indirect greenhouse gas emissions (Category 3~Category 6)

Indirect emission sources that should be quantified and reported after a major assessment

Unit: ton CO_2e

Emission Category				Emission Source	Chunan Branch	Yilan Branch	Total
Category 3	Indirect greenhouse gas emissions from transport	3.1	Emissions from upstream transport and goods distribution	Raw materials / consumables / tap water	79.300	305.794	385.094
		3.2	Emissions from downstream transport and goods distribution	Distribution and transport of organization's products	270.186	12,119.422	12,389.608
Category 4	Indirect greenhouse gas emissions from products used by the organization	4.1	Emissions from purchased goods	Raw materials, consumables, packaging materials, purchased electricity (including transmission and distribution), and tap water discharged from upstream	49,574.550	297,483.386	347,057.936
		4.3	Emissions from solid and liquid waste handling	Waste incineration, wastewater treatment, waste removal/ recycling shipping	70.659	179.124	249.783
Total					49,994.695	310,087.726	360,082.421

3.2 Energy Management and Development

SAS' energy use includes electricity, natural gas, diesel, and gasoline, and the largest portion is electricity. Therefore, the improvement measures must give priority to energy conservation and the solution must meet the S (Safe), A (Affordable), and S (Sustainable) conditions before it can be regarded as the best energy strategy.

3.2.1 Energy Consumption

The overall energy use by the SAS Chunan and Yilan branches for the past 3 years has not changed much because the demand for production capacity by these two branches have fluctuated with each other. Purchased electricity accounted for 99.9% of total energy use in 2021. In terms of renewable energy use, Chunan has established a 2.2 kW solar power generation system for self-generation and self-use, and the renewable energy utilization efficiency was approximately 0.002%[Note].

Note: Renewable energy use efficiency = renewable energy (MJ)/total energy used (MJ)

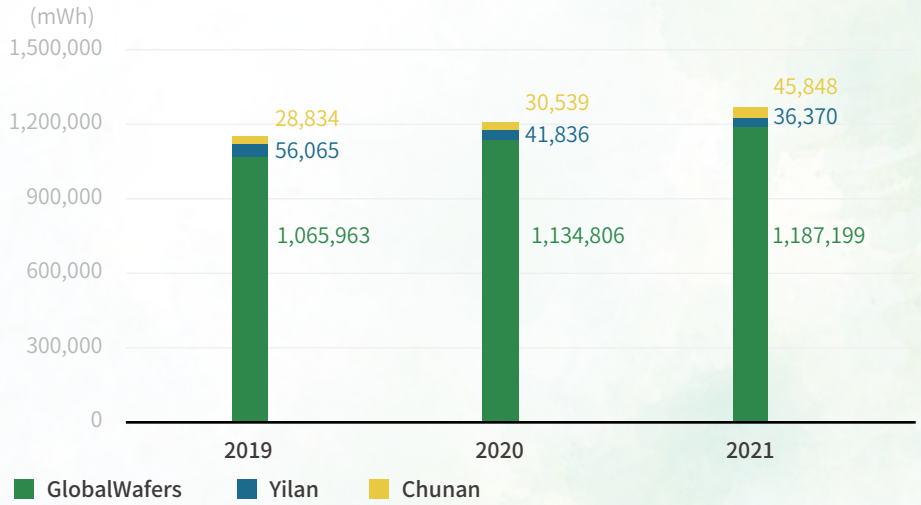
Energy consumption of Chunan and Yilan branches

Unit: MJ

Item		2019	2020	2021
Energy	Externally purchased electricity	305,637,552	260,551,598	295,982,525
	Renewable energy (solar power)	277,186	6,505	6,836
	Natural gas	14,358	17,411	2,528
	Diesel	53,259	65,885	189,081
	Gasoline	0	0	3,266
Total		305,982,354	260,641,399	296,184,236

Note: Conversion unit: 1 degree of electricity = 3.6 MJ; 1 cubic meter of natural gas = 47.7 MJ; 1 liter of diesel = 31.524 MJ; 1 liter of gasoline = 32.657 MJ.

Total electricity consumption



3.2.2 Energy Management and Conservation

Energy Management

In 2021, SAS Chunan Plant applied for the Green Building Label using the "Carbon Reduction Performance Method." SAS has also obtained the Diamond Grade Green Building Label due to 3 recent carbon reduction projects: (1) air conditioning system improvement (added variable frequency control to the ice water pump/cooling water pump, added variable frequency control and wet bulb temperature sensor to the cooling tower fan motor, and adopted control optimization), (2) lighting system improvement (replaced old lamps with high-efficiency lamps), and (3) renewable energy solar power generation equipment system.

Most of the past energy-conservation improvements in the factories were one-time improvement efforts, which may not maximize the energy-saving effect due to the lack of an appropriate management mechanism. The Chunan Plant introduced an energy management system (ISO 50001:2018) in 2021 and established a systematic PDCA management cycle: inventory equipment energy usage in the factory to identify major energy-using equipment, prioritize equipment improvement, monitor the measurements, and adopt appropriate improvement actions. Moreover, set corresponding energy baselines and energy performance indicators according to the factory characteristics and energy use identification results; and continue to update, monitor, and review their reasonableness each month to continuously improve energy efficiency.

The Chunan Plant planned to re-optimize its energy management in 2022 by applying for factory smart energy management demonstration counseling from the Industrial Development Bureau. The goal is to integrate the current independent plant monitoring system and process monitoring system into an energy performance monitoring and analysis system to achieve real-time indicator analysis and equipment energy efficiency data access using the integrated smart management method. The Yilan plant will introduce the energy management system first and then gradually move towards the goal of intelligent energy management for the plants.

▲ SAS Chunan Green Building Label (Diamond Grade) / SAS Chunan ISO 50001:2018 Certificate

Energy Conservation Measures and Achievements

Each SAS plant has established energy-conservation plans every year with a single plant area's annual power conservation rate of >1% as the target. Chunan and Yilan Branches have conserved 821,021 kWh of electricity in 2021, which is equivalent to reducing approximately 412 metric tons of carbon dioxide emissions. If the energy-conservation performances of GlobalWafers - Taiwan (GlobalWafers Headquarters, Chunan Plant, and GlobalWafers Taisil Plant) are included, the total conservation rate is 6,824,731 kWh, which is equivalent to reducing approximately 3,426 metric tons of carbon dioxide emissions. The statistical energy-conservation performance is based on the newly added energy-conservation measures in the current year. Some of the energy-conservation measures extended from the previous year's cross-year performance are described in the table below to supplement the energy-conservation results.

2021 power conservation results for Chunan & Yilan branches

Category	Measures	Total power savings (kWh)	Reduce carbon dioxide emissions ($kgCO_2e$)
Wastewater system	1. Adjust the aeration time of HF mixing tank and biological tank * Power saving estimate: blower motor power consumption × reduced operating time 2. Turn off the circulating water pump of the aerobic tank * Power saving estimate: blower motor power consumption × reduced operating time * Power saving calculation interval: 2021/4~2021/12 (2021/4 project completion)	515,995	259,029
Air compressor system	Add an external air conditioning box to reduce the air compressor room's temperature * Electricity saving estimation: (electricity saving for air-conditioning system - electricity for external air-conditioning box) * 6 months	64,494	32,376
Air conditioning system	1. Process hot water supports air conditioning's hot water pipeline * Power saving estimate: Air conditioner and hot water pump electricity consumption × reduction of operating time 2. Cooling tower energy-saving fans replacement * Power saving estimate: Actual windmill motor power consumption measurement before and after the improvement × operating time 3. Extend the packing station air conditioning ducts to support pickling stations * Power saving estimate: Air-conditioning power consumption × operating time	197,458	99,124
Exhaust system improvement	Connect 2 sets of main air ducts in parallel to shorten the air extraction distance and reduce pressure loss * Power saving estimate: Windmill motor power-saving × operating time * Power saving calculation interval: 2021/4~2021/12 (2021/4 project completion)	41,175	20,670
Renewable energy	Solar module power generation in the factory * Electricity saving calculation: the solar energy kWh as actually measured	1,899	953
Total		821,021	412,152

Note:

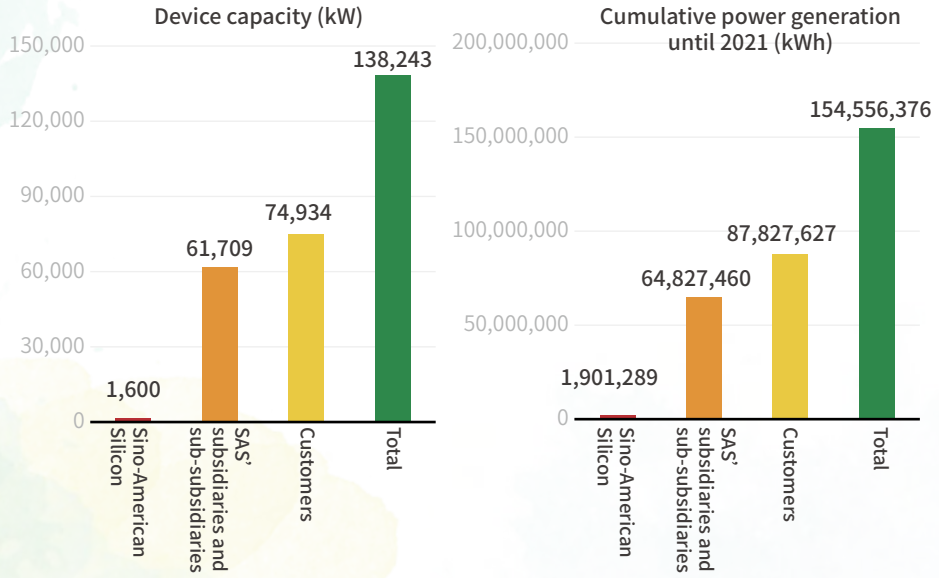
1. The electricity emission coefficient is based on the announcement by the Bureau of Energy, MOEA; which is 0.502 (kg CO_2 e/ kWh) for 2020.
2. Annual electricity savings according to the Bureau of Energy, MOEA, announcement: The annual electricity conservation via power-saving measure implementation shall be calculated from the month following the implementation date, and is limited to 12 months. However, if the calculation period spans across multiple years, the electricity consumption conserved will be calculated on an annual basis.

3.2.3 Renewable Energy Development

Renewable Energy Layout

SAS has continued to pay attention to the various climate action plans after the Paris Agreement. After TSMC joined RE100, we know that building and using renewable energy is a necessary and primary method for companies to achieve SBT reduction goals. In terms of strategic layout, SAS has deployed its FZtech Branch and Yilan Branch (which established the Power Station Development Department in 2020) to fully enter Taiwan's renewable energy market by actively planning and investing in the construction of roof-, ground-, and water-surface-type solar power plants. The Company has also introduced a water surface buoyancy solar power generation system to lower the water surface temperature and significantly increase the solar panel as well as power generation efficiency. From the beginning (2014) to the end of 2021, the total solar power generation system installation capacity at home and abroad for grid-connected operation is approximately 138 MW, with a total annual power generation capacity of 154,556,376 kWh and an estimated carbon dioxide emission reduction of approximately 77,587 metric tons Note. Moreover, in response to the government's active renewable energy promotion to complete the installation of 20 GW of solar energy by 2025, SAS has invested NT$3 billion to build solar power plants starting in 2019 and provide energy management-related services. We have evolved from the energy management service provider role to become a member of the green energy provider.

Solar power generation system construction (including commissions)



Note: Carbon dioxide emissions: Because solar power is used to replace public electricity sales, carbon dioxide emission reduction is estimated based on the Electricity Carbon Emission Coefficient (Electricity Carbon Emission Coefficient for Public Electricity Sales Sector) of 0.502 kgCO_2e/kWh as announced by the Bureau of Energy, MOEA, in 2020.

As the renewable energy installation increases, the energy storage system plays an important role in grid stability and backup capacity enhancement. SAS has invested in the energy storage system for its Yilan plant area in 2021, which is expected to turn into a 1.5 MW energy storage system for the power market in 2022 to provide dispatch services and increase stability for the nation's power grid. SAS will continue to build energy storage systems and improve energy management services in the future.

The future outlook for the SAS Group includes continuing to respond to the global trend of low-carbon green energy, building more high-quality solar system power plants in Taiwan, strengthening energy security, and innovating the green economy.

Renewable Energy Declaration and Commitment

As a comprehensive green energy supplier, SAS has extended its business scope to cover the green power production, energy storage, and green energy resale fields. We have taken practical actions to support and respond to the net-zero transformation objectives worldwide. We are committed to achieving 100% renewable energy utilization by 2050 for the SAS Group and its subsidiaries. The Group will also comprehensively assist its subsidiary GlobalWafers and strategic partners to increase the clean electricity utilization ratio, strive to become a stable cornerstone for green economy development and create a sustainable environment as well as a friendly and zero-carbon living society. According to the climate blueprint, we will grow in phases: 20% by 2030, 35% by 2035, 50% by 2040, and gradually implement 100% use of renewable energy by 2050. We will achieve the long-term renewable energy goal in 4 major areas:

Renewable energy adoption:
Continuing to increase the proportion of renewable energy via self-built solar power generation systems and purchased renewable energy (e.g., PPA, RECs).

Improve energy efficiency:
Reduce equipment energy consumption by improving equipment.

Carbon removal:
Support tree planting programs and participate in other natural solutions and conservation programs.

Purchase carbon offset products:
Offset carbon emissions by purchasing carbon emission trading credits.

3.3 Raw Material and Water Resources Management

3.3.1 Raw Material Management

Clean Production

In 2021, the SAS Chunan plant passed the "Cleaner Production Assessment System of the Green Factory Label" to obtain the green factory label and was invited to share and exchange green factory promotion experiences with the industry. The cleaner production project adopted in 2021 are as follows:

- Optimize certain phases of the ingot processing process, adjust the cutting steps, and reduce processing time and water consumption
  - Reduced 17.9 min (5.4%) of processing time and saved 2.9 kWh of electricity per ingot
  - Reduced 0.18 tons (3.6%) of water consumption per ingot
- Optimized the diamond sawing wire specification at the cutting station to reduce cutting loss and increase production
  - Reduced the saw wire diameter by 10 um
  - The wafer yield for the same ingot length increased by 2.2% when calculated based on a 360 um product
- Introduced a larger size crystal ingot process to improve capacity utilization and reduce energy and resource consumption during the crystal growth phase
  - Reduced electricity consumption by 3,043 kWh (44.9%) during the growing phase of each A-size ingot
- Introduced a new crystal processing process to reduce processing time and water consumption
  - Reduced electricity consumption by 4.42 kWh (16.5%) for each A-size ingot
  - Reduced water consumption by 1,363 L (38.8%) for each A-size ingot

綠色工廠
GREEN FACTORY

▲ SAS Chunan Branch obtained the green factory label

Renewable Raw Materials

■ Solar Cell Products

Due to product characteristics, no renewable materials are used in the solar cell production process. The main raw materials (silicon wafers, screens, and chemicals) used are non-renewable (7,518,743 kg used in 2021).

■ Polycrystalline silicon ingot products

The renewable raw materials used in the polycrystalline silicon ingot

33.3%

Polycrystalline silicon application products are based on product specifications and customer requirements. The silicon materials used in the production of ingots are mainly pure silicon materials, and silicon recycled materials purchased externally cannot be used. Only in-house silicon sapwood (silicon foundry returns) can be recycled and used. However, we have continued to communicate with customers and gradually passed the customers' product verification. The proportion of silicon wafer foundry returns material utilization increased slightly from 31.1% in 2020 to 33.3% in 2021. In addition to increasing the proportion of renewable raw materials and reducing the use of source materials, this effort can also positively impact the carbon emissions of products.

2021 Renewable Raw Materials Utilization Status

Product item	Unrenewable Raw Materials Utilization Status (Silicon Pure Material + Boron)	Renewable Raw Materials (foundry returns)	Recycling rate
Polycrystalline silicon ingot	885,788 kg	442,246 kg	33.3%

Note: Recovery rate = total weight of renewable raw materials / (total weight of non-renewable raw materials + total weight of renewable raw materials)

3.3.2 Water Resources Management

Water Use and Discharge

SAS' water use by its plants in Taiwan comes from tap water supplied by Taiwan Water Corporation and ground surface water. The company does not use underground water. Therefore, there are no problems of underground water over-utilization, land subsidence, or sabotage of the environmental ecology. In terms of water resources, Chunan Branch's water supply comes from Dongsin Water Treatment Plant, and its raw water source is Yongheshan Reservoir. Yilan Branch's water supply comes from Longde Water Treatment Plant, and its raw water source is the Sincheng River. None of the original water sources are classified as national or international nature reserves or from sensitive water origins (considered by experts as relative area, special function, rare, threatened, endangered system, or some endangered species living in the water source).

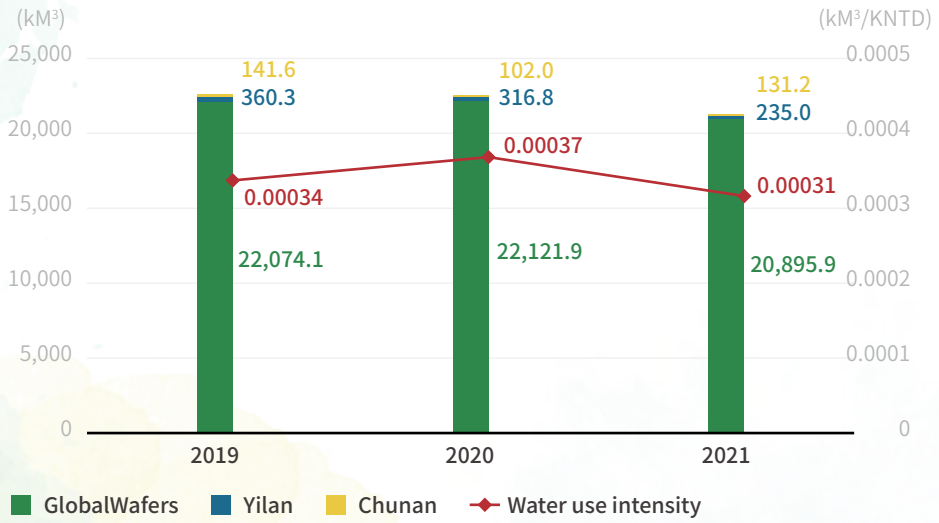
A reference to the Aqueduct water resource risk assessment tool indicated that Taiwan’ s overall water resource risk level is 1~2 (low to medium risk), and Taiwan is not a high water resource stress area. Therefore, SAS has no water intake, drainage, and consumption from high water resource stress areas.

2019~2021 Water intake, discharge, and consumption volume

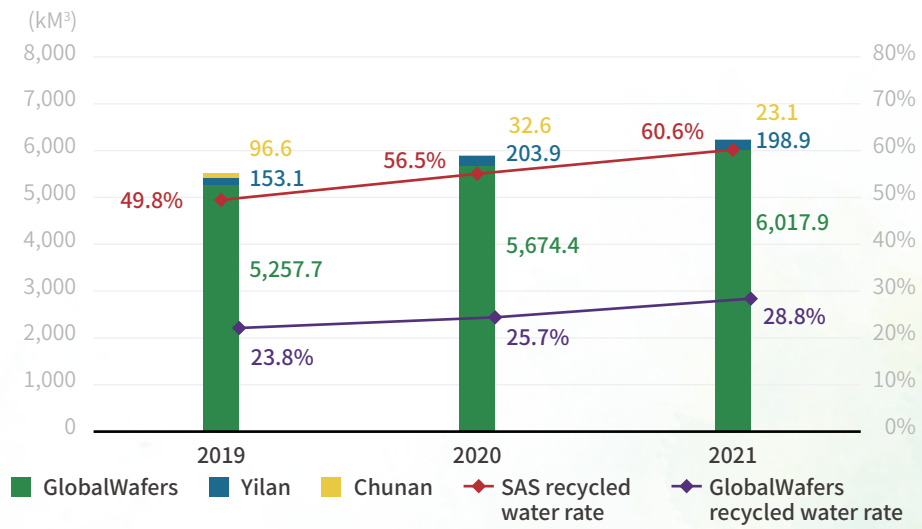
Unit: million liters (kM^3)

Category		2019			2020			2021		
		SAS	GlobalWafers	Total	SAS	GlobalWafers	Total	SAS	GlobalWafers	Total
Water withdrawal quantity	Surface water	0.0	1,240.2	1,240.2	0.0	1,250.3	1,250.3	0.0	1,269.4	1,269.4
	Underground water	0.0	11,287.0	11,287.0	0.0	10,810.2	10,810.2	0.0	9,492.5	9,492.5
	Seawater / produced water	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Water plant - raw water	174.5	0	174.5	293.6	0	293.6	224.1	0	224.1
	Water plant	336.4	9,546.9	9,883.4	125.3	10,061.4	10,186.7	142.2	10,134.0	10,276.1
	Total	510.9	22,074.1	22,585.1	418.8	22,121.9	22,540.7	366.2	20,895.9	21,262.1
Water Discharge Quantity	Surface water	0.0	7,506.7	7,506.7	0.0	6,631.8	6,631.8	0.0	5,656.7	5,656.7
	Underground water	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Seawater	0.0	4,584.7	4,584.7	0.0	4,652.8	4,652.8	0.0	4,738.0	4,738.0
	Wastewater Treatment Facility	386.3	6,099.4	6,485.7	302.1	6,801.4	7,103.5	276.6	6,953.0	7,229.6
	Total	386.3	18,190.8	18,577.1	302.1	18,086.1	18,388.2	276.6	17,347.6	17,624.2
Water Consumption Quantity		124.6	3,883.3	4,008.0	116.8	4,035.8	4,152.6	89.6	3,548.3	3,637.9

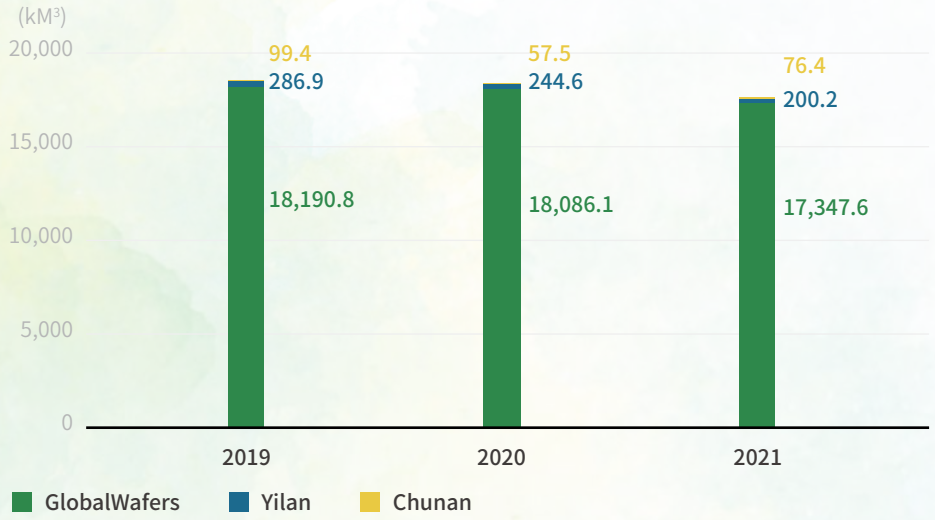
Water withdrawal quantity



Water recycle quantity



Water Discharge Quantity



Note:

1. Scope of statistics: Chunan Branch, Yilan Branch (Plants 1 & 3), and GlobalWafers
2. Water consumption density: water consumption (kM3)/consolidated revenue (KNTD)
3. Water recovery rate: recovered water/total water intake.

Water Resource Management and Conservation

Due to extreme climate problems in recent years, Taiwan has experienced an extreme unstable rainfall phenomenon, and its water supply stability has come into question. Under the impact of the La Niña phenomenon and the abnormally strong Pacific high pressures during the rainy season in 2021, a severe drought occurred in Taiwan's first half of the year because there was no precipitation during the important catchment period. The Hsinchu Science Park Administration required manufacturers in the park to conserve water according to the water conditions. The water conservation rate gradually increased from 7% to 17%, and the water supply was decompressed throughout the day. The Chunan Plant implemented the following measures to achieve the water-conservation effect and meet the water-conservation rate required by the competent authority.

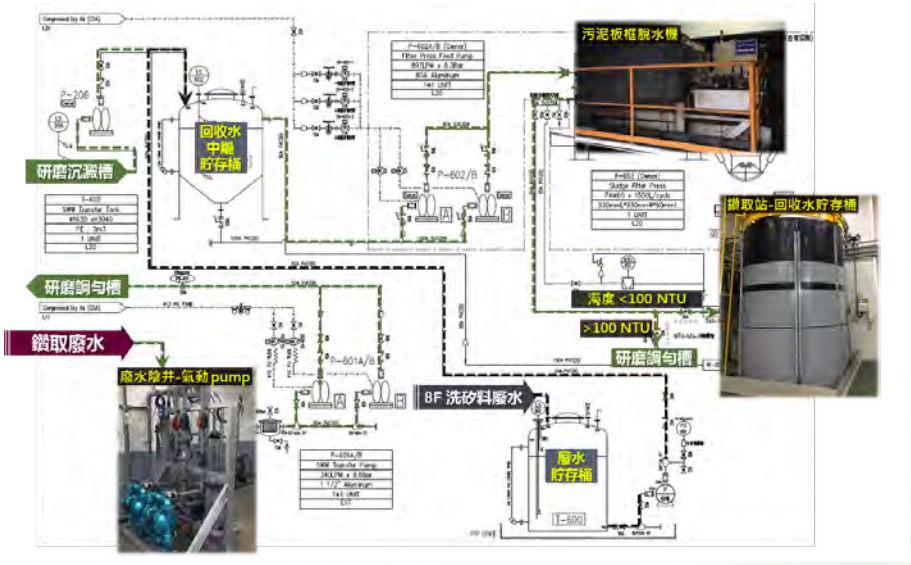
1. Adjusted the cooling water system control parameters (conductivity, ice water temperature), reduced the number of air conditioners turned on, and recycled the drain water from the cooling water system for use by the washing tower of air pollution control equipment in order to reduce the discharge/supplement water volume for the water cooling system and water loss due to evaporation.
2. Reduced the daily water used for gardening from 5 minutes → 2 minutes → 1 minute of daily watering.
3. Introduced a new silicon ingot process to reduce water consumption during ingot processing and gradually expand to various sizes of silicon ingots.

In addition, we have also inspected and reviewed the wastewater processing quality in the factory and its water quality requirements and formulated the following water-conservation plans:

▸ Recycle water from the drilling unit process

In the second half of 2021, the Chunan Plant added a process wastewater recovery system whereby wastewater from the grinding, washing, and other process stations (without added chemicals) were collected for recycling and reuse by the drilling process unit after the chemical coagulation filter press treatment. According to the trial results, the water recycling rate from the drilling unit process can exceed 70%.

Drilling Unit Wastewater Recycling System Diagram



▸ TEX/PSG Water Conservation Project

After switching from the SE process to the LDSE process, the Yilan plant's front-side solar cell process no longer has crystal wax of BDG organic waste liquid discharged. Moreover, the wafer etching cleaning procedure has also been simplified (no residual wax and etching marks). We have also planned a cleaning station (TEX/PSG) water conservation project, which can save on pure water costs and reduce the waste liquid discharge (reduce the processing cost). Improvement methods: (1) Modify the PSG station pipeline to increase the wafer temperature and the etching rate and reduce the amount of chemicals and pure water. (2) Minimize the pure water flow of the TEX and PSG station water tanks. After this project is on line:

PSG station → can reduce water consumption by 17,550 tons/year

TEX station → can reduce water consumption by 21,060 ton/year

3.4 Pollution Prevention and Waste Reduction Management

Regarding pollution and emissions, SAS installs adequate pollution control equipment with corresponding treatment capabilities to maintain the efficiency of treatment operations. Every piece of equipment is regularly maintained and inspected. Dedicated specialist personnel are appointed to conduct relevant operations in accordance with relevant regulations to reduce pollutant emission concentrations, ensure compliance with legal standards, and minimize environmental hazards and impacts with the ultimate goal of realizing the vision of environmental protection and sustainability.

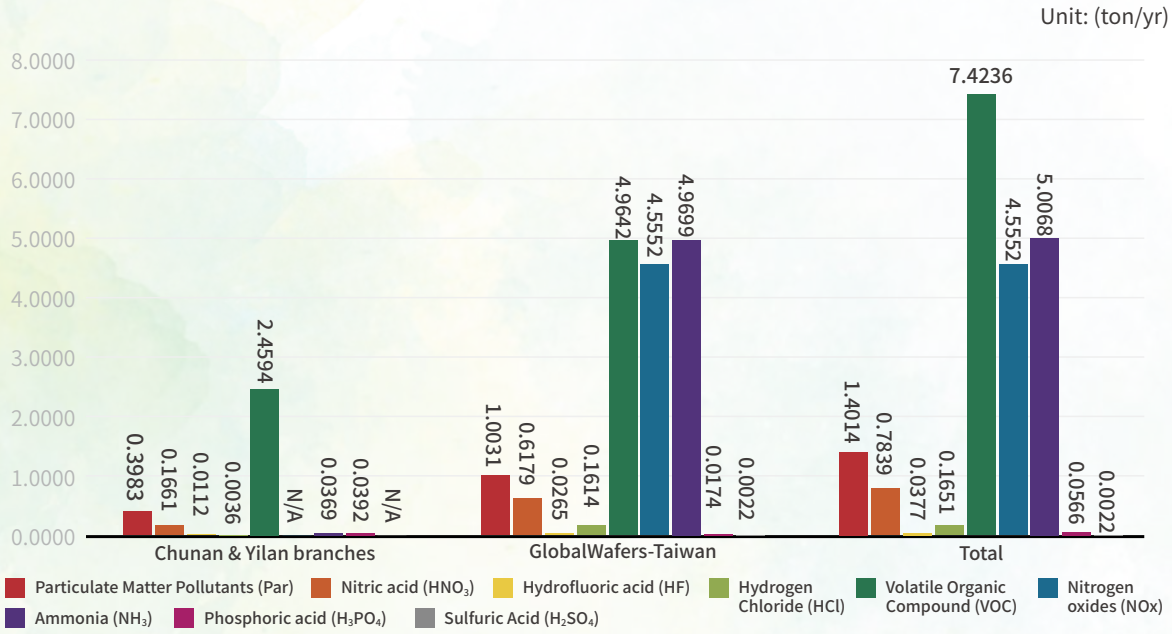
3.4.1 Air Pollution Control

Air Pollution Emission Quantity

The production processes of various SAS plants are different, so the process exhaust gas from each plant area is slightly different. Chunan Branch has 3 major types of waste gas: acidic, volatile organic compounds, and particulate pollutants. Yilan Branch (including Plant 1 and Plant 3) has 3 major types of waste gas: acidic, alkaline, and volatile organic compounds. In terms of waste gas treatment, both acidic waste gas and alkaline waste gas are treated by a central scrubber. Volatile organic compounds waste gas is treated differently due to the different features of each plant. Chunan Branch uses scrubbers for treatment, while Yilan Branch uses activated carbon adsorption towers. Particulate pollutant waste gas is only produced in Chunan Branch and is treated via bag-type dust collectors scrubbing towers.

We have performed fixed pollution source testing according to the testing frequency specified by the fixed pollution source permit specification, tested volatile organic compounds every year, and tested acidic/alkaline pollutants and particulate pollutants every 5 years.

2021 Gaseous Pollutants Discharge Volume



Note:

1. Air pollution emissions estimation is related to the environmental protection regulations of various countries and must consider consistent estimation standards; therefore, GlobalWafers overseas region data is not included within the scope of statistics.
2. Regular pollution source emission matter is disclosed according to the regular pollution source operation permit.
3. GlobalWafers Taiwan: GlobalWafers Headquarters, Chunan Plant, and Taisil Plant.
4. Emission estimation: Based on third-party qualified laboratory testing data calculating the pollution emission intensity*annual output.
5. Test report year: VOC quoted the 2021 test report (according to the regular inspection frequency). For other pollutants, SAS Chunan branch quoted the 2021 test report, and Yilan branch quoted the 2019 test report (according to the test frequency permission specification).

Air Pollution Control Equipment Improvement

Materials containing VOCs are used for the metallization and sintering processes in the Yilan plant. The high-temperature exhaust gas generated by the PRT VOC-burner can easily increase the temperature in the activated carbon tower to 50° C. This causes the risks of activated carbon desorption and emissions exceeding regulatory emission standards. In 2021, a scrubbing tower was built in front of the activated carbon tower to wash the high-concentration and high-temperature VOC waste gas via the scrubbing tower's circulating water. The process can reduce the VOC concentration and temperature of the waste gas, increase activated carbon adsorption efficiency, and reduce the activated carbon replacement frequency.

After adding the scrubbing tower, the average temperature in the activated carbon tower decreased from 49.5° C to 44.8° C, and the activated carbon replacement frequency was reduced by 14% (reduced waste activated carbon output).

Air Pollution Emergency Response Drill

The process exhaust gases from Chunan and Yilan plants contain air pollution emergency controlled substances (hydrofluoric acid, hydrochloric acid). We have conducted at least one air pollution emergency drill every year for units that use controlled substances in the factory and reported the drill results to the competent authority. The goal of the regular drills is to help reduce the environmental impact, personal injury, and loss of equipment and property due to possible accidents; and to prepare staff to take appropriate contingency measures effectively and immediately in case of an accident.

Hydrochloric Acid Storage Tank Leakage Drill in Yilan Plant

▲ Rescue workers wear Class A air-tight chemical protective clothing and self-contained breathing apparatus (SCBA) to the disaster site to close the pump outlet/inlet valve and prevent leakage

▲ Implement access control during the disaster site to prohibit non-disaster relief personnel from entering the spill area

▲ Post-disaster treatment - use a pump to pump the leaked acid into ton-capacity barrels and implement on-site decontamination

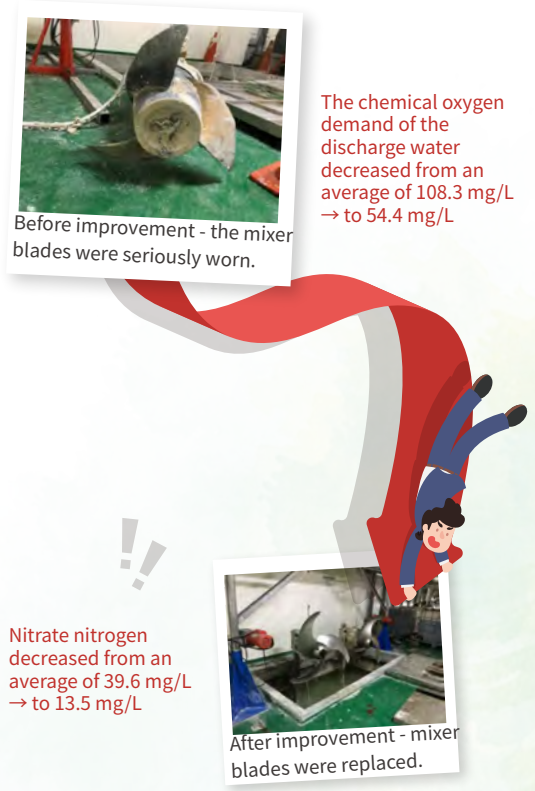
3.4.2 Water Pollution Prevention

The plants of SAS are located in different regions, and their wastewater was discharged to the Chunan Park Sewage Treatment Plant and Letzer Industrial Park Sewage Treatment Plant of the Hsinchu Science Park Bureau, MOST, for management. To be able to monitor and respond immediately, water volume and water quality monitoring facilities (monitoring pH and fluoride ion concentration) are set up before discharge, and regular waste water testing and reporting are performed in accordance with the law. The quality of wastewater discharged must meet or exceed the regulatory requirements. There are also random inspections at the discharge outlets on an irregular basis to double check the quality of the discharged water. In 2021, there were no major leakage or overflow incidents from the SAS plant areas.

SAS has prioritized production source reduction as its water pollution prevention strategy. Under the principle of waste liquid separation and reclassification treatment, wastewater is classified according to its characteristics and then treated by the wastewater treatment facility in the factory. The Chunan Branch and Yilan Branch Plant 3 have established a complete biological treatment system (anaerobic + aerobic biological treatment) system in addition to the chemical treatment system to strengthen the wastewater treatment efficiency. According to the 2021 SAS wastewater discharge water quality analysis results, the pH value of the wastewater discharged from each plant was controlled between 6-9 (the control standards of the two districts are all 5-9), suspended solids were controlled below 250 mg/liter (the control standards of the Science Park Bureau and Letzer Industrial Park Management Center are <300 mg/liter and <320 mg/liter, respectively), the chemical oxygen demand was controlled below 250 mg/liter (the control standards of the Science Park Bureau and Letzer are <500 mg/liter and <480 mg/liter, respectively), and the fluoride ion concentration was controlled at less than 11 mg/liter (the control standards of the two districts are all <15 mg/liter). The results indicated that the stability of the wastewater treatment equipment in SAS plants is quite good.

Wastewater Discharge Quality Control and Improvement

The design of the T-203 anaerobic tank for Yilan Plant's wastewater treatment unit originally used a water mixer to disturb the anaerobic sludge in the carrier tank to promote anaerobic action in the tank to remove nitrate-nitrogen in the wastewater. In 2021, it was discovered that the sludge disturbance in the carrier tank had deteriorated. After inspection and repair, the reason for the abnormality was that the fan blades of the two water mixers were severely worn. The original design mixing capacity could not be reached, resulting in huge wastewater discharge quality changes and making it difficult to control.Correction/improvement measures: Replace the water mixer blades, remove the load in the anaerobic tank, and use the sludge return method for wastewater treatment. The improvement project has significantly improved the quality of wastewater discharged.



3.4.3 Waste Management

The first priority of the waste management strategy by SAS is to focus on reduction at the source by improving process design and reducing the use of raw materials from the source to reduce waste output, followed by the second priority of recycling and reuse in the factory. The effort not only can increase the recycling rate for process materials and reduce waste output, but it can also reduce the use of raw materials, outsourced semi-finished products, and consumables as well as transportation energy consumption. The third priority is recycling and reusing the resources outside of the plant. The last is commissioned treatment (incineration, physical treatment, chemical treatment, burial, etc.).

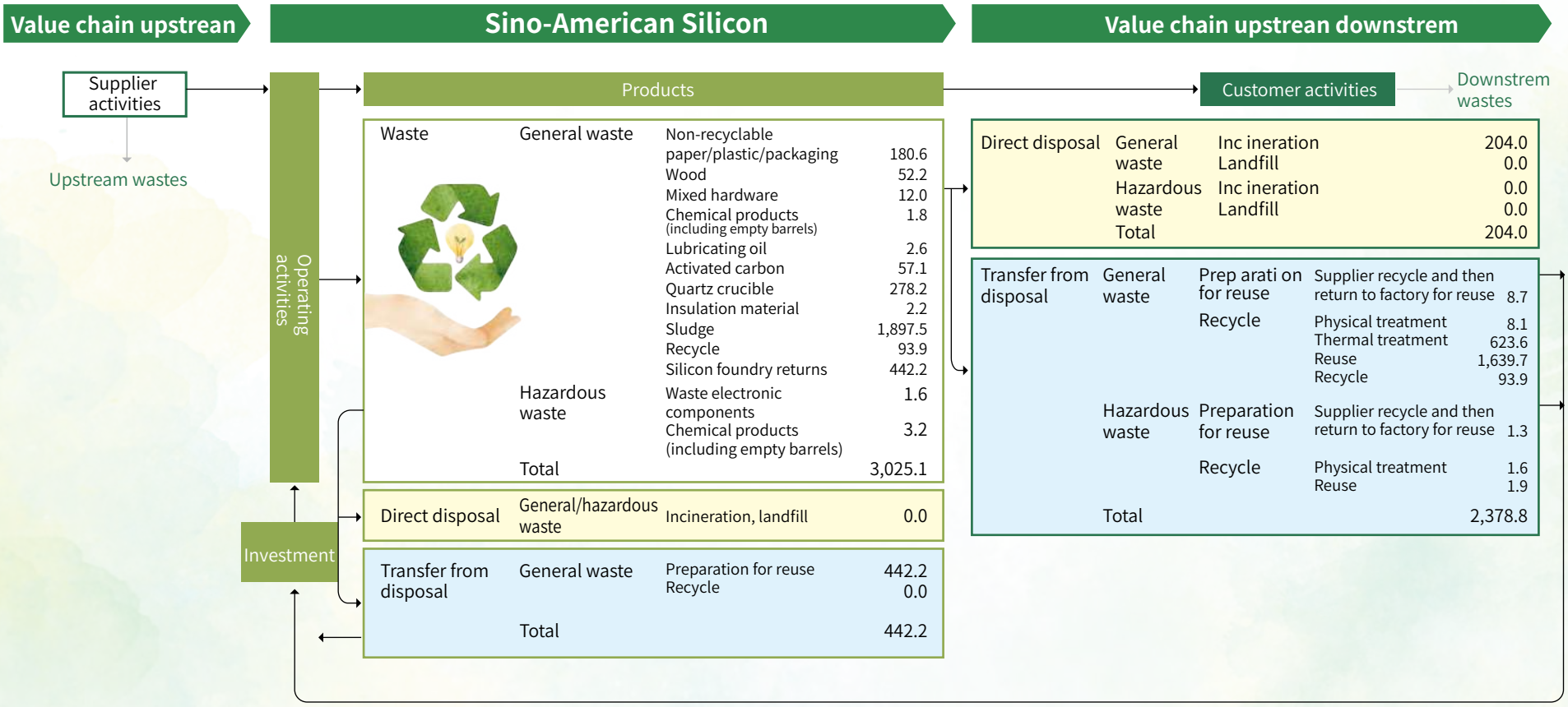
The relevant information on the waste solar panels produced by SAS, such as the quantity of waste photovoltaic panels and their model numbers, must be registered using EPA's "Waste Solar Panel Recycling Service Management Information System" platform. The platform then compares the serial number of the solar photovoltaic panels and the factory information. After confirmation, the EPA then dispatches a legal removal and disposal agency to clean up the waste solar photovoltaic panels. SAS's current waste solar panels are all processed domestically, and there is no cross-border (overseas) processing.

▲ Waste solar photovoltaic panel recycling and removal treatment system

Waste Generation Related Impacts

The total waste outputted in 2021 by the SAS Chunan and Yilan branches (including silicon recycle material, waste recycled by suppliers, and then returned to the factory for use) was 3,025.1 metric tons. General waste accounted for 99.84% (3,020.2 metric tons) of the total waste, and hazardous waste accounted for 0.16% (4.8 metric tons) of the total waste. In terms of waste treatment, we give priority to the waste recycling operations that are implemented during waste disposal (as detailed in the reuse and recycling[Note]), which account for approximately 93.26% of the total waste disposal volume.

Unit：Metric Ton



Note:

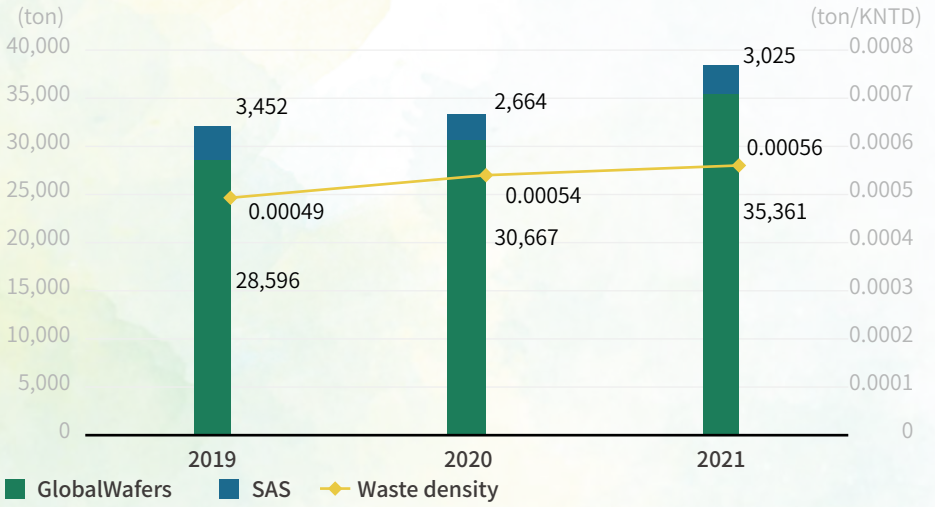
1. Reuse: Take a product or composition intended for waste and adopt the inspection, cleaning, or repair methods to reuse it for its original purpose.
2. Recycle: Reprocess (chemical, physical, heat treatment, etc.) waste products or components to produce new materials.

Unit: metric ton

Type of waste	Total output	Transfer during disposal				Direct disposal			
		Transfer method	On-site	Off-site	Total	Disposal method	On-site	Off-site	Total
General waste	3,020.2	Preparation for reuse	442.2	8.7	450.9	Incineration	0.0	204.0	204.0
		Recycle	0.0	2,365.3	2,365.3	Landfill	0.0	0.0	0.0
		Total	442.2	2,374.0	2,816.2	Total	0.0	204.0	204.0
Hazardous waste	4.8	Preparation for reuse	0.0	1.3	1.3	Incineration	0.0	0.0	0.0
		Recycle	0.0	3.5	3.5	Landfill	0.0	0.0	0.0
		Total	0.0	4.8	4.8	Total	0.0	0.0	0.0
Total	3,025.1	Total	442.2	2,378.8	2,821.0	Total	0.0	204.0	204.0

2019~2021 Total waste output from SAS and GlobalWafers

Unit: metric ton

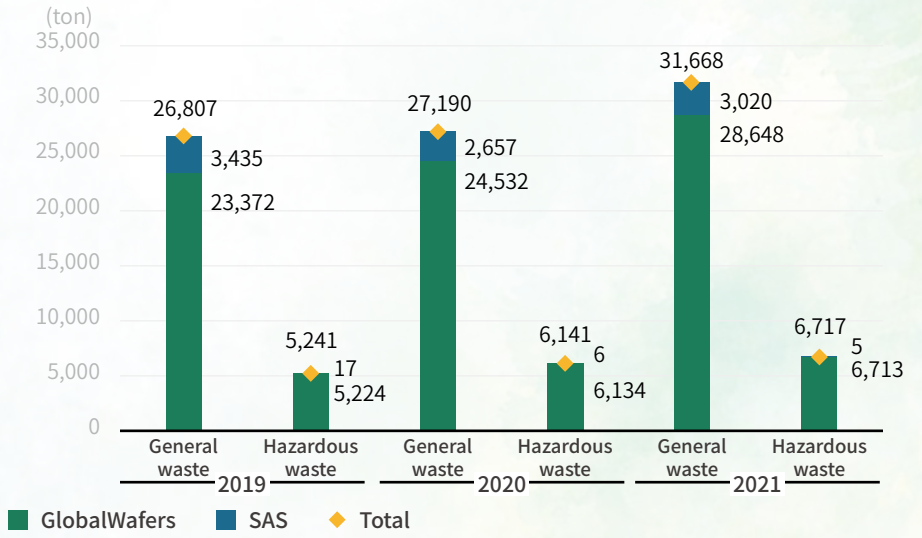


Note:

1. Scope of statistics: Chunan Branch, Yilan Branch (Plants 1 & 3), and GlobalWafers
2. Waste density: Waste volume (ton)/Consolidated revenue (KNTD)

2019~2021 General waste and hazardous waste

Unit: metric ton



Management of Outsourced Waste Removal/Disposal

SAS has established the in-plant waste management and treatment agency procedures according to the "Regulations Governing Determination of Reasonable Due Care Obligations of Enterprises Commissioning Waste Clearance":

- Internal Waste Management

Regularly conduct self-inspection and review waste storage conditions, online declaration records, vendor clearance qualifications, and track and keep records of proper waste disposal.

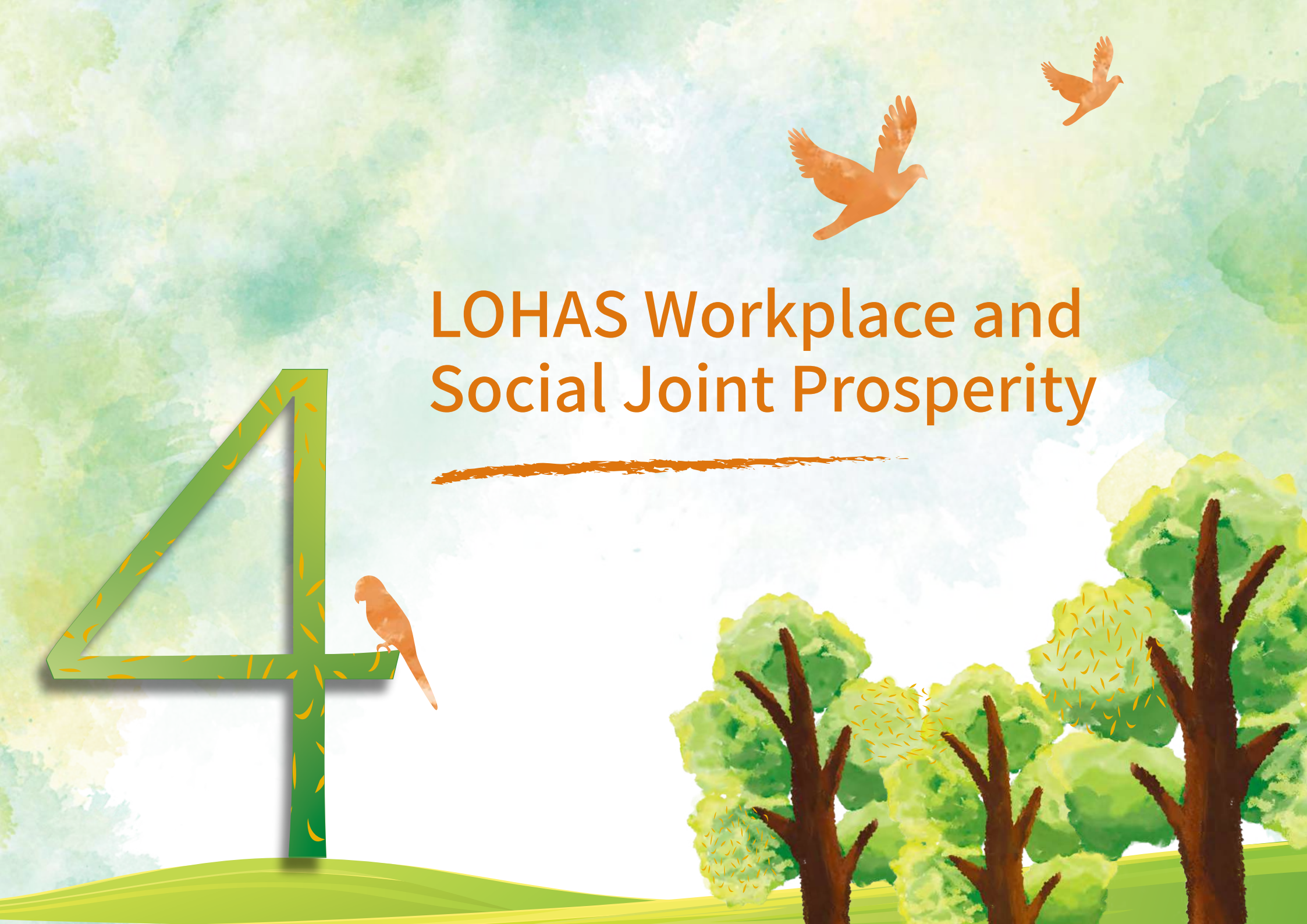
- Management of Waste Management Organization

The waste disposal agencies must be jointly inspected by the relevant units (waste disposal, security, procurement, and legal personnel) to ensure the agencies and their employees have not violated the Waste Disposal Act or received any penalty fines in order to become qualified agencies. For new clean up agencies, a relevant unit in the factory shall be dispatched to conduct an on-site inspection of the waste clean up agencies, to verify whether their treatment/reuse equipment (facility) has sufficient capacity to dispose of the received waste properly. The sales status of re-manufactured products after treatment to reduce the risks of illegal waste dumping or disposal.

For inspections, high-risk waste treatment/reuse agencies shall be visited at least once a year. The inspection contents shall cover the vendor's operation records, whether the processed products meet the saleable standards, as well as their sales/in-plant inventory status, environmental protection licenses, on-site environmental safety regulations compliance, etc. The inspection score results are divided into grades A, B, and C. If the grade is C (with ≧ 3 defects), the vendor will be dismissed. In 2021, the inspected vendors had all received the A grade.

4

LOHAS Workplace and Social Joint Prosperity



Material Topic Strategy and Performance

Material topics/chapters	Strategies of Sino-American Silicon	2021 Key results	2021 Targets	Targets reached	2022 and future targets
Employee education & training / 4.3 Education and Training	* Planning the next year's education and training based on the Company's operating goals, various department KPIs, functional requirements, etc. * Review the class performance and the goal achievement status each quarter as a reference for future improvement	* Yilan Branch general course attendance rate ≧ 85% * Chunan Branch education and training program implementation rate 100%	* Yilan Branch general course attendance rate ≧ 85% * Chunan Branch education and training program implementation rate 100%	V V	* Education and training program implementation rate 100%
Friendly workplace / 4.4 Friendly Workplace	* Create a friendly working environment to ensure the safety of employees in the workplace and pay attention to their physical and mental health as well as work-life balance * Introduce an occupational safety and health management system; focus on social expectations, management level, and employee participation; and look at occupational safety and health under the perspective of sound operation and sustainability	* Special group care and tracking management 100% * Replace manual drill pipe replacement using carrying equipment * Build a charging safety mechanism	* Special group care and tracking management 100% * Chunan Branch health management course ≧ 10 sessions * Chunan Branch added labor-saving devices to the drill station to reduce the risk of musculoskeletal injuries to employees * Establish the charging safety-related mechanism in the plants	V V V V	* Operations for newly listed chemical substance (HF) are 100% compliance * Establish a secure IPA storage environment * Health promotion courses or activities ≧ 10 sessions * Special group care and tracking management 100%

4.1 Talents Recruitment Human Resources

SAS embraces a spirit of respect for the labor rights of its employees and equal employment opportunities. During the recruitment and hiring process, the company does not adopt any discriminatory decisions that have a negative impact on employment, salaries, promotions, and rewards based on ethnicity, skin color, age, gender, sexual orientation, gender identity and expression, race or nationality, disability, pregnancy, religious beliefs, political affiliation, group backgrounds, veteran status, protected gene information, or marital status. The company also provides fair, equal, and safe employment opportunities and environments and widely recruits professional talents of varied gender, age, experience, and expertise with the goal of becoming a further innovative and competitive enterprise.

SAS (headquarters & Chunan, Yilan, FZtech branches) and GlobalWafers had 7,752 employees in 2021. SAS has a total of 657 employees. Based on gender, men accounted for 73.4%, and women accounted for 26.6%. Based on age, 8.1% are under 30 years old, 86.1% are 30-50 years old, and 5.8% are over 50 years old. Based on the work area, Hsinchu accounted for 5.3%, Chunan accounted for 28.3%, and Yilan accounted for 66.4%. Based on job attributes, direct personnel accounts for 59.8%, and indirect personnel accounts for 40.2%. Based on employment type, regular employees account for 98.5%, and informal employees account for 1.5%. Based on employment contracts, fixed contracts accounted for 3.2%, non-fixed contracts accounted for 96.8%, foreign employees accounted for 1.5%, and overseas employees accounted for 0.2%.

2019~2021 Staff Structure Analysis

Staff structure \ Year		2019		2020		2021	
		Sino-American Silicon	Global-Wafers	Sino-American Silicon	Global-Wafers	Sino-American Silicon	Global-Wafers
By gender	Male	638	5,145	475	5,326	482	5,446
	Female	207	1,584	192	1,600	175	1,649
Full-time/ Part-time	Official (General Employees)	845	6,286	667	6,484	647	6,755
	Non-official (Dispatch, part-time)	0	443	0	442	10	340
By employment contract	Unfixed term	706	6,054	642	5,912	636	6,095
	Fixed term (Appointment)	139	675	25	1,014	21	1,000
By nature of work	Direct	582	4,133	407	4,089	393	4,426
	Indirect	263	2,596	260	2,837	264	2,669
By education level	Doctorate degree	5	56	3	57	3	62
	Master degree	89	497	87	499	82	493
	College	541	1,425	411	1,451	401	1,752
	Senior high school and vocational school	186	4,309	146	4,492	151	4,344
	Junior high school and below	24	442	20	427	20	444
By age	< age 30	206	1,240	78	1,312	53	1,381
	age 30-50	610	3,951	558	3,951	566	3,852
	age 30-50	29	1,538	31	1,699	38	1,862
Area	Taiwan	845	1,590	667	1,592	657	1,674
	Offshore	0	5,139	0	5,334	0	5,421
Foreign employees		-	-	-	-	10	234
Overseas staff		-	-	-	-	1	2
Total		7,574		7,593		7,752	

Note:

1. SAS' informal employees in 2021 are dispatched personnel (SAS has no part-time or seasonal employees).
2. This year, foreign and overseas employee statistics are added as compliance indicators, so the relevant data has been disclosed since 2021.

Hiring of local personnel and disabled persons

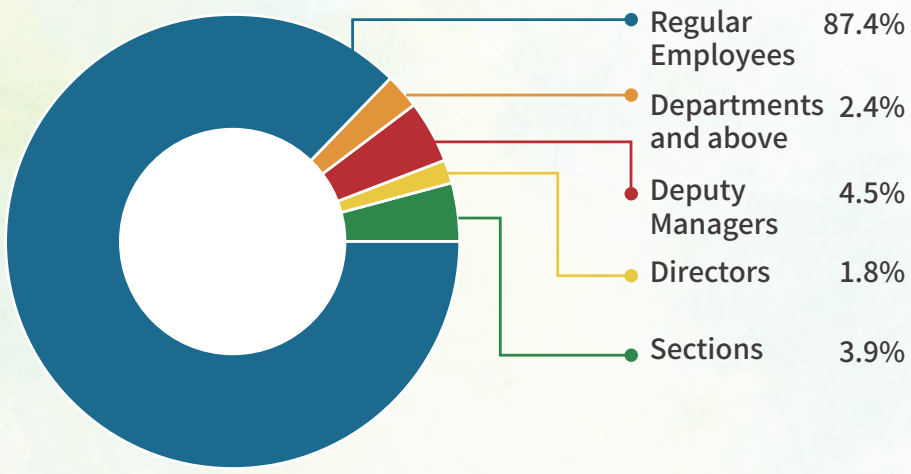
In terms of social care, SAS supports the employment of people with disabilities and has established channels to hire people from this demographic. As of 2021, SAS has employed 7 people with disabilities, which accounted for 1.1% of all employees. SAS complies with the government' s regulations for hiring people with disabilities.

Supervisor

In terms of management level, the total number of SAS supervisors is 73, of which 68.5 % are males, and 31.5% are females. In terms of management ranks, there are 16 high-level supervisors (department level or higher), 27 managers or deputy managers, 8 director-level personnel, and 22 sectional-level personnel.

All Levels	Sino-American Silicon (Headquarters and Chunan, Yilan, FZtech branches)				GlobalWafers Taiwan (GlobalWafers Headquarters, Chunan Plant, Taisil Plant)				Total			
	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage
Departments and above	11	5	16	2.4%	36	4	40	2.4%	47	9	56	2.4%
Deputy Managers	23	4	27	4.1%	58	21	79	4.7%	81	25	106	4.5%
Directors	5	3	8	1.2%	25	8	33	2.0%	30	11	41	1.8%
Sections	11	11	22	3.3%	53	16	69	4.1%	64	27	91	3.9%
Regular Employees	432	152	584	88.9%	1,025	428	1,453	86.8%	1,457	580	2,037	87.4%
Total	482	175	657	100.0%	1,197	477	1,674	100.0%	1,679	652	2,331	100.0%

Employee class distribution for SAS and GlobalWafers (Taiwan)



New Recruits and Leaving Employees Statistics

In 2021, the number of new employees for SAS and GlobalWafers in Taiwan is 933. In terms of gender for the previous year, new male employees account for 8.7% of the total, and women account for 3.6%. In terms of age, new recruits younger than 30 years old accounted for 6.5%, followed by employees between 30 and50 years old at 5.1%. In 2021, the number of resigned employees was 765. In terms of gender for the previous year, resigned male employees accounted for 6.7% of the total, and women accounted for 3.4%. In terms of age, resigned employees between 30 and 50 years old accounted for 4.9%, followed by younger than 30 years old at 3.9%.

When employees submit their resignation letter, the HR department would immediately schedule an exit interview to understand reasons for the resignation. This also enables the HR department to provide active assistance in adjustments and detailed explanations with regard to work contents, personal characteristics, and identified problems to achieve the goal of talent retention. In addition, when the Group (including the solar business group and the semiconductor business group) has a job vacancy, priority will be given to each plant for internal recruitment. After the person who wants to transfer is approved by the unit manager, HR will assist employees with the interviews and subsequent transfer matters.

2019~2021 Statistical Analysis for New Employees

Year		2019												2020												2021											
Area		Yilan		Chunan		Hsinchu		GlobalWafers-Taiwan		GlobalWafers-overseas		Total		Yilan		Chunan		Hsinchu		GlobalWafers-Taiwan		GlobalWafers-overseas		Total		Yilan		Chunan		Hsinchu		GlobalWafers-Taiwan		GlobalWafers-overseas		Total	
Age		No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%
Male	< age 30	57	0.7%	0	0.0%	1	<0.1%	24	0.3%	132	1.6%	214	2.7%	1	<0.1%	2	<0.1%	2	<0.1%	48	0.6%	282	3.7%	335	4.4%	1	<0.1%	30	0.4%	2	<0.1%	113	1.5%	223	2.9%	369	4.9%
	age 30~50	39	0.5%	0	0.0%	1	<0.1%	44	0.5%	57	0.7%	141	1.8%	3	<0.1%	9	0.1%	0	0.0%	68	0.9%	62	0.8%	142	1.9%	8	0.1%	51	0.7%	0	0.0%	104	1.4%	99	1.3%	262	3.5%
	≧ age 50	0	0.0%	0	0.0%	1	<0.1%	1	<0.1%	28	0.3%	30	0.4%	0	0.0%	1	<0.1%	0	0.0%	3	<0.1%	20	0.3%	24	0.3%	0	0.0%	2	<0.1%	1	<0.1%	3	<0.1%	22	0.3%	28	0.4%
Female	< age 30	6	0.1%	0	0.0%	3	<0.1%	28	0.3%	91	1.1%	128	1.6%	0	0.0%	0	0.0%	0	0.0%	20	0.3%	59	0.8%	79	1.0%	1	<0.1%	2	<0.1%	2	<0.1%	51	0.7%	72	0.9%	128	1.7%
	age 30~50	9	0.1%	1	<0.1%	3	<0.1%	17	0.2%	14	0.2%	44	0.5%	1	<0.1%	1	<0.1%	1	<0.1%	33	0.4%	28	0.4%	64	0.8%	2	<0.1%	4	0.1%	8	0.1%	71	0.9%	42	0.6%	127	1.7%
	≧ age 50	0	0.0%	0	0.0%	1	<0.1%	1	<0.1%	20	0.2%	22	0.3%	0	0.0%	0	0.0%	1	<0.1%	2	<0.1%	10	0.1%	13	0.2%	0	0.0%	0	0	2	<0.1%	2	<0.1%	15	0.2%	19	0.3%
Total		111	1.4%	1	<0.1%	10	0.1%	115	1.4%	342	4.3%	579	7.2%	5	0.1%	13	0.2%	4	0.1%	174	2.3%	461	6.1%	657	8.7%	12	0.2%	89	1.2%	15	0.2%	344	4.5%	473	6.2%	333	12.3%

2019~2021 Statistical Analysis for Resigned Employees

Year		2019												2020												2021											
Area		Yilan		Chunan		Hsinchu		GlobalWafers-Taiwan		GlobalWafers-overseas		Total		Yilan		Chunan		Hsinchu		GlobalWafers-Taiwan		GlobalWafers-overseas		Total		Yilan		Chunan		Hsinchu		GlobalWafers-Taiwan		GlobalWafers-overseas		Total	
Age		No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%	No. of people	%
Male	< age 30	57	0.7%	2	<0.1%	1	<0.1%	49	0.6%	159	2.0%	219	2.7%	93	1.2%	3	<0.1%	3	<0.1%	37	0.5%	118	1.6%	254	3.4%	9	0.1%	15	0.2%	1	<0.1%	68	0.9%	106	1.4%	199	2.6%
	age 30~50	64	0.8%	29	0.4%	3	<0.1%	68	0.8%	144	1.8%	240	3.0%	79	1.0%	9	0.1%	1	<0.1%	75	1.0%	54	0.7%	218	2.9%	35	0.5%	23	0.3%	3	<0.1%	105	1.4%	87	1.1%	253	3.3%
	≧ age 50	0	0.0%	3	<0.1%	1	<0.1%	3	<0.1%	61	0.8%	65	0.8%	1	<0.1%	4	0.1%	2	<0.1%	9	0.1%	57	0.8%	73	1.0%	1	<0.1%	0	0.0%	1	<0.1%	7	0.1%	48	0.6%	57	0.8%
Female	< age 30	15	0.2%	2	<0.1%	2	<0.1%	28	0.3%	143	1.8%	165	2.0%	7	0.1%	0	0.0%	0	0.0%	19	0.3%	63	0.8%	89	1.2%	4	0.1%	0	0.0%	0	0.0%	31	0.4%	64	0.8%	99	1.3%
	age 30~50	14	0.2%	11	0.1%	5	0.1%	43	0.5%	73	0.9%	103	1.3%	17	0.2%	1	<0.1%	1	<0.1%	31	0.4%	38	0.5%	88	1.2%	19	0.3%	7	0.1%	7	0.1%	52	0.7%	33	0.4%	118	1.6%
	≧ age 50	0	0.0%	1	0.0%	1	<0.1%	3	<0.1%	41	0.5%	43	0.5%	1	<0.1%	0	0.0%	1	<0.1%	3	<0.1%	17	0.2%	22	0.3%	0	0.0%	0	0.0%	1	<0.1%	7	0.1%	31	0.4%	39	0.5%
Total		150	1.9%	48	0.6%	13	0.2%	194	2.4%	621	7.7%	832	10.4%	198	2.6%	17	0.2%	8	0.1%	174	2.3%	347	4.6%	744	9.8%	68	0.9%	45	0.6%	13	0.2%	270	3.6%	369	4.9%	765	10.1%

Note:

1. The percentage of new and resigned employees is based on the ratio of the total number of employees at the end of the previous year.
2. The statistics are divided by region and age. "Chunan" covers: SAS Chunan Branch in 2019, and SAS Chunan Branch and FZtech Branch in 2020 and 2021. (The operating locations of Chunan and FZtech branches are both located in Chunan)
3. "GlobalWafers-Taiwan": covers GlobalWafers headquarters, Chunan Plant, and Taisil Branch.

4.2 Salaries and Benefits

Remuneration policies

SAS offers competitive salaries (including fixed salaries and holiday bonuses) to attract and retain outstanding talents. Annual salary adjustment standards are formulated based on the company's operational performance, salary adjustment range of the entire industry, consumer price indices, and employee performance. In addition, compensation is provided in accordance with the profitability of the company to increase employee cohesion, motivate employees to exceed annual business goals, create profits, and share joint achievements. Promotion recommendations are submitted on an annual basis based on work performance and contribution appraisals.

Number of full-time employees as well as the average and median salary of non-supervisory positions in 2021

Item		Sino-American Silicon (Headquarters and Chunan, Yilan, and FZtech branches)			GlobalWafers (GlobalWafers Headquarters, Chunan Plant, and Taisil Plant)		
		2020	2021	Difference compared to the previous year	2020	2021	Difference compared to the previous year
Non-supervisory positions	Number of full-time employees (persons)	747	745	-0.3%	1,453	1,563	7.6%
	Average salary (1,000 NTD)	1,128	1,302	15.4%	1,104	1,205	9.1%
	Median salary (1,000 NTD)	1,163	1,243	6.9%	1,068	1,124	5.2%

Note:

1. "Full-time employees" refer to those whose working hours have reached the normal working hours or statutory working hours stipulated by the Company ; or the rough average working hours have exceed 35 hours per week for those whose normal working hours are not set.
2. "Full-time non-supervisory employees" refers to the number of full-time employees after subtracting the supervisor positions, part-time positions, and those eligible for exemption from statistics from all employees. Employees in supervisory positions refer to Company managers or "managers" within the scope as defined by the regulations of the competent authority: General manager and equivalent; deputy general manager and equivalent; associate manager and equivalent; head of the financial department; head of the accounting department; and other persons who have the authority to manage the company's affairs, provide authorization signatures, and consistent within the scope of insiders (managers) and (managers) declared by the annual shareholders meeting report.
3. "Salary" refers to the employee's salary attributable to the current year according to the accrual basis based on the occurrence of powers and responsibilities. It shall include recurring salary (monthly basic salary, fixed allowance, and bonus), overtime pay (regardless of taxable or tax-free), and non-recurring salary (non-monthly allowances, bonuses, employee compensation, etc.).
4. The number of employees listed above is based on the weighted average statistical concept (the average number of employees for each month), which is different from the statistical method for the number of employees (employees still working as of December 31 of the current year) mentioned in Chapter 4.1.

Leave system

SAS provides a leave system and defined work systems and management guidelines in accordance with the Labor Standards Act. Regarding working hour policies, the company strictly abides by the requirement of imposing two rest days within every seven working days. Of which, one is a fixed day off and the other, a flexible rest day. The company also signs contracts with its employees and respects the employee's willingness to provide labor services. Workers will never be threatened or forced to provide labor services through any illegal means. The HR system allows our staff members to check on personal attendance records and remaining leave hours to ensure their rights and interests regarding working hours and leave.

Insurance and pension system

In addition to the health and insurance policies as legally required, SAS also provides group insurance for every employee exceeding the benefits set forth in labor laws. Insurance policies include term life insurance and other accident insurance for accidents, air travel accidents, severe burn injuries, as well as limited medical insurance and hospitalization insurance. The goal is to provide comprehensive protection measures and to minimize personnel losses.

SAS provides a monthly retirement reserve of 2% for employees who meet the old labor pension system, and saves it in the retirement reserve account of the Bank of Taiwan. At the end of the year, SAS allocates a full pension according to the law in order to ensure the rights and interests of employees' retirement pensions. Employees who fall under the new labor pension system shall contribute 6% of their pensions to their labor pension account.

Unpaid child care leaves

SAS provides employees with the right to parental leave. Employees who have worked for 6 months and have a child under the age of 3 may apply for childcare leave without pay from the Company in order to take care of their child. A total of 22 SAS colleagues in Taiwan have applied for parental leave between 2019 and 2021.

Execution results of unpaid child care leave application

Item	Gender	Sino-American Silicon			GlobalWafers - Taiwan		
		2019	2020	2021	2019	2020	2021
Total employee staff number eligible for unpaid child care leave	Male	54	48	40	58	58	60
	Female	11	9	10	13	16	24
Total number of employees who actually took unpaid child care leave	Male	3	2	2	1	4	2
	Female	5	7	3	5	8	11
Total number of reinstated employees upon the expiration of their child care leaves	Male	7	6	2	2	4	2
	Female	15	13	9	11	6	11
Total number of employees who actually resumed their duties upon the expiration of their child care leaves	Male	0	3	2	1	2	2
	Female	6	4	4	9	6	8
Ratio of employees who resumed their duties upon the expiration of their child care leaves (reinstatement rate)	Male	0.0%	50.0%	100.0%	50.0%	50.0%	100.0%
	Female	40.0%	30.8%	44.4%	81.8%	100.0%	72.7%
Total number of employees still in service 12 months after expiration of their unpaid child care leaves	Male	2	0	2	1	0	2
	Female	7	7	2	9	7	5
The ratio of employees still in service 12 months after expiration of their parental leaves (retention rate)	Male	66.7%	0.0%	66.7%	100.0%	0.0%	100.0%
	Female	100.0%	116.7%	50.0%	100.0%	87.5%	83.3%

Employment meals

SAS provides free meals for its employees during working hours in staff restaurants. The goal is to provide a comfortable dining environment and diverse meal choices to cater to staff members' different culinary demands. A restaurant monitoring task force has been established to ensure the meal quality and nutritional value and implement staff health and catering controls.

Welfare committee system

The SAS Employee Benefits Committee was established in 1988 to actively strive for employee benefits and welfare measures, including emergency relief and first-time cancer relief, to help those in the face of drastic changes in life to survive the hardship. Cash compensation is also given to those getting married, giving birth, and processing funerals. Festival and birthday gifts in the form of cash, education scholarships, illness & hospitalization subsidies, concessions in designated shops are also provided, plus regular outings, year-end parties, and sponsorship for social welfare organizations, sporadic family days, to which all staff members and their families are invited in order to build cohesion and identification with the Company. The goal is to inspire colleagues and family members to understand the Company's operations better and promote family harmony. Establish employee associations to improve colleagues' physical and mental health, promote proper entertainment, cultivate teamwork, and inspire the spirit of mutual assistance and sincere exchanges between colleagues. Hold irregular beach cleaning activities to contribute to society and make the natural environment cleaner. Add audio-visual facilities to improve the quality and comfort of employees' dining environment.

During the COVID-19 period, the spring and autumn employee travel was replaced by gift voucher issuance. Each employee can receive a gift voucher worth approximately NT$15,000. This alternative solution can reduce unnecessary personnel movement and gathering while subsidizing the employees' daily necessities. The Company has also established a vaccination reward system to encourage employees to vaccinate against COVID-19.

4.3 Education and Training

All-round learning environments

SAS organizes annual training courses and provides an all-around, diversified learning environment to enhance employee skills and literacy, optimize the use of human resources, and ensure continued personal development. Training plans for the following year are formulated by various departments in line with the company operation goals, department KPI, and competency demands. At the end of each quarter, reviews and assessments of goal achievement status are conducted with regard to courses offered in the said quarter. The results of these reviews and assessments serve as a key reference for improvements for upcoming courses. The SAS training system encompasses the following five categories: competency training for new recruits, professional competency training, general management competency training, intellectual property training, and health and safety management training. This system provides suitable training courses for employees in their different stages of career development.

SAS provides an all-around, diversified learning environment.

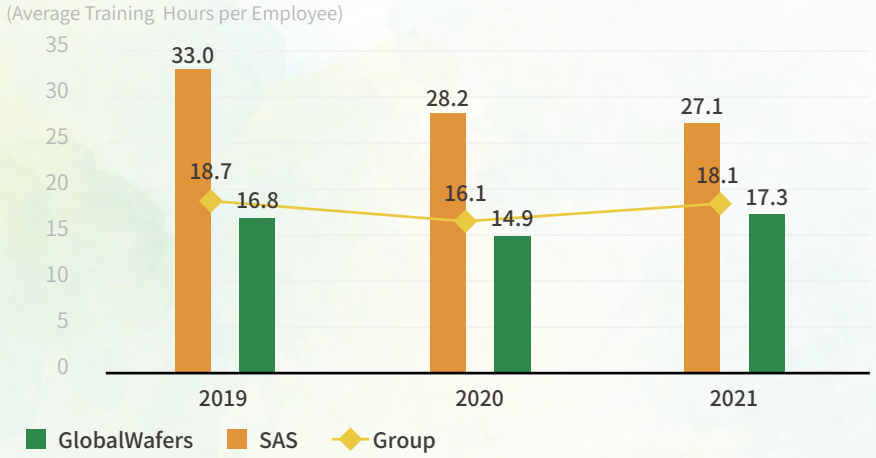
SAS has established an E-Library Academy to allow employees an opportunity to read and review training materials at any time. The stored data covers a wide range of diverse topics, easily accessible to busy staff members, thereby creating a reading culture in the company. The Academy also offers training materials for every professional field, allowing employees interested in cross-disciplinary learning an opportunity for self-study and rapid personal growth. SAS firmly believes that continuous learning leads to continuous improvements in overall company operational performance. The total training development hours for SAS and GlobalWafers in 2021 is 140,410 hours.

For SAS, our plants' average hours of education and training for men and women according to gender are 28.0 hours and 24.7 hours, respectively. Based on employee classification, the average hours of education and training received by direct and indirect personnel are 29.5 hours and 23.6 hours, respectively.

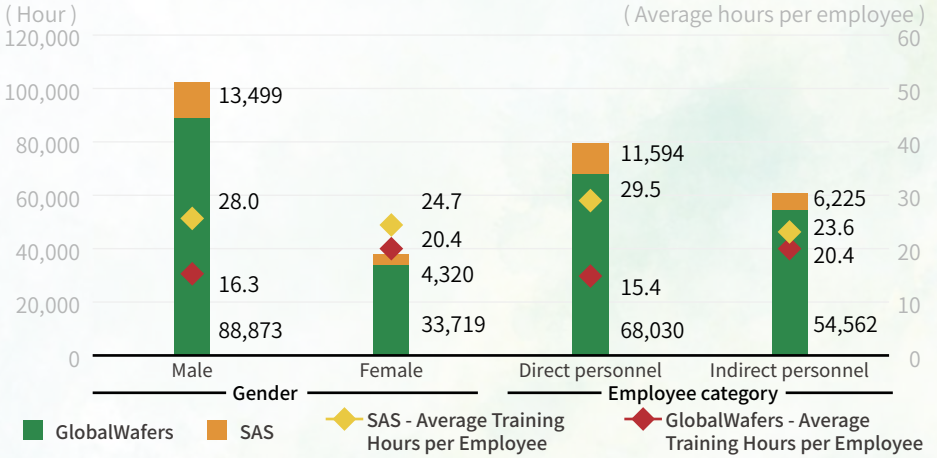
Number of people and hours for education and training from 2019 to 2021

	Training Type	2019				2020				2021			
		Number of sessions	Number of people	In Session Total hours	Total class hours	Number of sessions	Number of people	In Session Total hours	Total class hours	Number of sessions	Number of people	In Session Total hours	Total class hours
SAS	Competency training for new recruits	42	121	270.0	799.0	9	14	70.5	110.5	57	75	476.0	633.0
	Professional competency training	1,495	32,248	2,065.5	23,158.5	1,103	20,941	1,659.0	17,088.0	831	17,589	1,589.0	15,285.5
	General management competency training	210	2,370	387.5	3,890.5	117	1,331	169.6	1,625.7	105	1,251	159.0	1,900.5
	Total	1,747	34,739	2,723.0	27,848.0	1,229	22,286	1,899.1	18,824.2	993	18,915	2,224.0	17,819.0
GlobalWafers	Competency training for new recruits	130	960	727.0	8,227.0	126	921	747.0	7,546.5	295	1,092	1,571.0	9,258.5
	Professional competency training	1,366	14,267	6,038.5	42,030.5	1,670	14,308	5,462.3	47,371.0	1,426	12,513	24,830.0	57,709.0
	General management competency training	635	41,714	1,530.8	60,253.3	425	33,335	780.6	46,480.5	767	39,749	6,481.9	55,624.0
	Total	2,131	56,941	8,296.3	110,510.8	2,221	48,564	6,989.8	101,398.0	2,488	53,354	32,882.9	122,591.5
Total		3,878	91,680	11,019.3	138,358.8	3,450	70,850	8,888.9	120,222.2	3,481	72,269	35,106.9	140,410.5

Average employee education and training hours from 2019 to 2021



Average hours of education and training of employees according to their gender and category in 2021



Note:

1. Direct Personnel: Operation personnel directly engaged in production related operations, including those engaged in technological tasks and team leaders in production sites.
2. Indirect Personnel: Personnel not directly engaged in production related tasks, including management, product design staff, accounting staff, procurement staff, engineers, etc.

4.4 Friendly Workplace

Talent cultivation

SAS highly values research and development and is firmly committed to the cultivation of industry and academic talents. In addition to organizing campus lectures with the goal of introducing current and future trends of the solar energy industry and providing students with assistance in their planning of future careers, the company also offers internship opportunities and plans factory visits for related academic departments and institutes. These activities allow students to gain an early understanding of workplace environments and career planning through shared experiences and exchanges with SAS workers. To deepen the links between the company and university campuses and pave way for long-term cultivation of future talents, SAS sets up an industry-academia collaboration mechanism for students to fuse the theoretical knowledge learned in the classroom with practical work and provide them with internship opportunities prior to officially entering a workplace, thereby increasing their competitiveness in the job market.

4.4.1 Work Environment Safety

Occupational health and safety management system

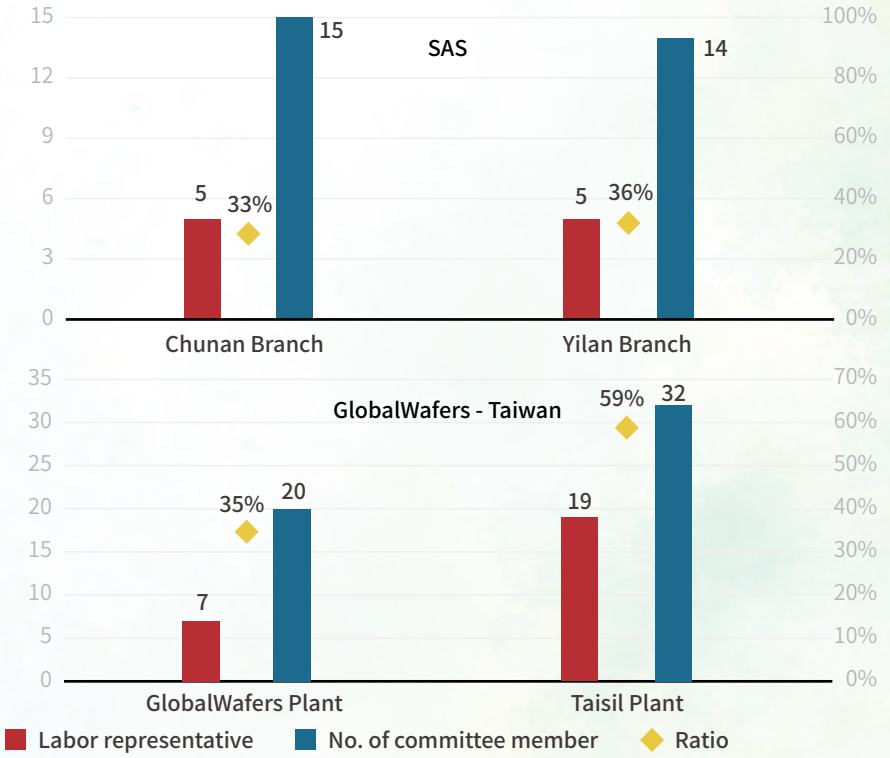
SAS values the expectations of stakeholders as well as the participation of management and employees. We have introduced an occupational safety and health management system (ISO 45001: 2018) so that occupational safety and health are no longer regarded as "independent operations", but must be handled from the operational soundness and sustainability perspective. Meanwhile, SAS has also provided a safe and healthy working environment, strengthened pollution prevention and work hazard elimination, and consulted with workers and their representatives so all employees can participate in environmental safety and health system activities and recognize personal responsibilities.

Note: The scope of occupational safety and health management system covers: the scope of management system verification covers SAS Chunan Branch, Yilan Branch, and GlobalWafers Taiwan. The management system is implemented for the work or workers at the workplace under the control of the preceding scope, including SAS' headquarters and FZtech Branch.

Occupational health and safety organizations

According to law, SAS has established the Occupational Health and Safety Committees in each plant area. Their purpose is to hold regular quarterly meetings, which shall be chaired by the president or presided by the vice presidents of each plant, and all department heads and labor representatives must participate in such meetings. The meetings shall discuss occupation safety and health management plans, work environment measurement improvement and countermeasures, occupation safety and health education and training, occupation safety and health auditing, occupation safety and health management performance, accident awareness and prevention, health management and promotion, etc. The matters discussed in the meetings must be recorded, and the improvement completion must be continuous tracked.

Labor representatives ratio in the occupational safety committee



Note: Ratio = No. of labor representative / Total no. of committee members x 100%

Note: Both SAS Hsinchu Headquarters and FZtech Branch have established occupational safety and health professionals in accordance with regulations. But they have not set up an occupational safety and health committee because they are under the legal threshold.

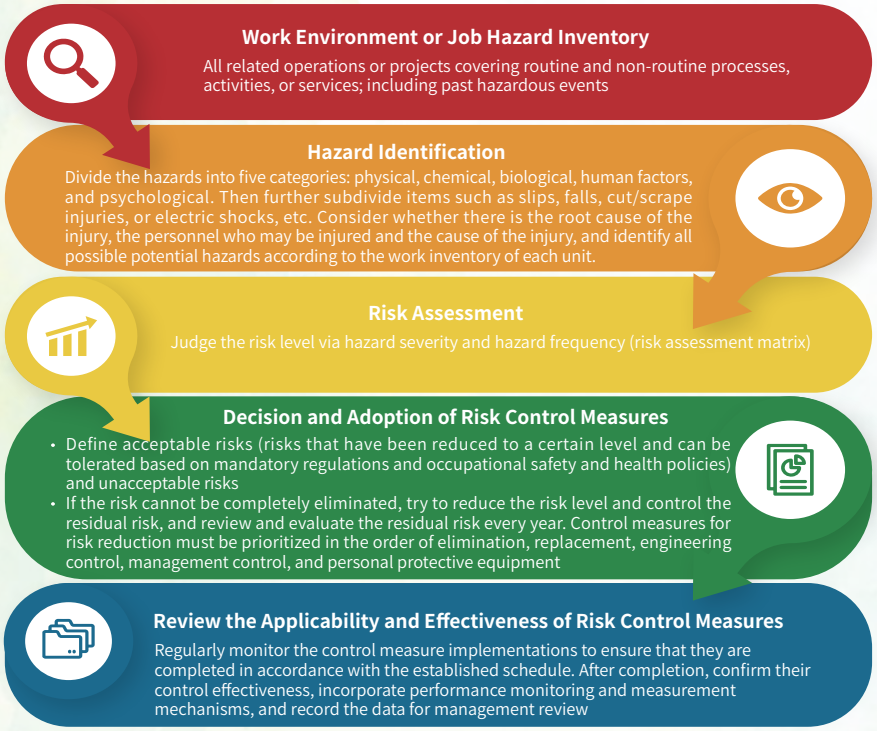
Occupational safety management

SAS is well aware of the importance of operating environment safety. The on-site management by supervisors at all levels are responsible to strengthen discipline and autonomy of the employees, enhance the employees' safety awareness, and establish a corporate safety culture.

Hazard Identification and Risk Assessment

Appropriate hazard identification and risk assessment can effectively control hazards and risks, prevent and reduce disasters, as well as improve occupational safety and health management performance. There are numerous hazard identification and risk assessment methods, and the main risk assessment models for routine and non-routine operations in SAS plants include: Job Safety Analysis (JSA), Failure Modes and Effects Analysis (FMEA), and what-if analysis. Qualified personnel are trained by each unit to perform hazard identification and risk assessment for their operations and activities, and the identification results are regularly reviewed annually.

Risk assessment process



Health Hazard Risk Management

In addition to the preceding risk assessment and control measures, we also perform regular operational environmental monitoring or quantitative exposure assessments for CNS15030 chemicals classified as hazardous to health, such as strong acids/bases, oxidizing substances, or volatile organic compounds. The goal is to implement different levels of management according to the exposure assessment results as follows:

- Level 1 management (exposure concentration <1/2 allowable exposure standard): Maintain current control or management measures and reevaluate exposure levels every 3 years.
- Level 2 management (allowable exposure standard < exposure concentration < 1/2 acceptable exposure standard): perform inspections on equipment, operating procedures, or operating methods (such as local exhaust facilities, respiratory protective equipment, or operating environment), encourage personnel to make suggestions for improving the operating environment, and reevaluate the exposure concentration every year.
- Level 3 management (exposure concentration > allowable exposure standard): take immediate improvement control measures and reevaluate the exposure concentration after the improvement is completed to ensure that the exposure concentration to personnel is lower than the allowable exposure standard.

SAS does not use chemicals known as potential carcinogens, teratogens, and mutagens. Our health hazards chemical exposure assessment results indicated that all chemicals used are classified as level 1 management (maintain current control or management measures).

Moreover, we held relevant activities to encourage/reward employees to make proposals on work environment improvement when we first introduced the occupational safety and health management system to enhance employee safety awareness and build a company safety culture. Take the Chunan Factory as an example. Its annual public injury incidents have dropped from 24 in 2015 to ≦ 2 in recent years (excluding traffic accidents, including minor injuries). The result showcases the effectiveness of our safety culture activities.

We currently have an employee improvement proposals reward system. In recent years, the health hazards improvement-related proposals include: Replacing the cutting agent (volatile organic compounds + silicon carbide) with water-soluble cutting fluid. This change can reduce the environmental impact and enable employees to eliminate the risk of exposure to volatile organic compounds and dust in the working environment. Replacing manual tool repairing with machine automatic tool repairing reduces personnel operation risks and eliminates the dusty working environment.

Emergency & Contingency

There is usually not enough time to decide who should be responsible for what, how to do it, and how to obtain outside support when an emergency occurs. But failure to take effective control measures within a short period of time may lead to serious consequences. Each year, we have conducted contingency drills for possible emergencies based on the plants' hazard identification and risk assessment results.

Past false alarms are included in the emergency response drill plan to conduct drills on an irregular basis

▲ Fire Drill

▲ Chemical Disaster Drill

▲ Plant Evacuation Drill

Change Management

To prevent disaster accidents due to its operating conditions or environment deviating from the original safety range and control measures when there are changes or modifications to various operations such as manufacturing processes, activities, or services; SAS has established a change management mechanism whereby an application must be submitted prior to any operation changes in the manufacturing process, activities, or services (including operating conditions, methods, raw materials, machinery, equipment, or personnel job changes). The goal is to provide initial hazard identification and risk assessment, review and update the relevant procedure documents, personnel notification and training, and safety inspections before execution in order to reduce disaster risks and ensure personnel safety and health.

Procurement Management

SAS has integrated the engineering, property, or labor service safety and health requirements into the procurement management operating procedures. During procurement proposals, the safety and health specification requirements, safety inspections, and related record documents required for the case, such as industrial safety facilities, protective gear, qualifications/operator techniques, safety protection that should be installed or used with mechanical equipment, equipment safety performance verification documents or test reports, and other items required according to laws, regulations, or international standards, etc., must be submitted in order to prevent safety and health hazards or risks that may occur during purchases and ensure they meet the requirements before acceptance.

Workers' Consultation and Communication

Employee Communication

SAS has formulated consultation and communication management procedures in order to effectively deal with complaints inside and outside the Company and suggestions from all levels. The goal is to strengthen consultation and communication with employees before executing any job security system plans. The content of consultation includes occupational safety and health policies, how to fulfill legal and other requirements, occupational safety and health goals, supervision and measurement matters, and other relevant control measures. In addition, we have established a communication platform - "Environmental Safety Area" at the Company's internal information service station. Its purpose is to publish the fire-fighting facilities configurations in the plant, emergency response organization and information, accident investigation and analysis, operating environment monitoring, regulatory changes, industrial safety and environmental protection publicity (including social and industry accidents), etc.; and set up complaint mailboxes to strengthen employee awareness and communication.

Non-employee worker communication

SAS has also actively communicated with other workers who are not employees to establish contractor partnerships as well as operation management methods and implement our commitment to health and safety. In addition to requiring the contractor to comply with the safety and health management laws and regulations, the contractor must also meet the Company's qualifications for construction personnel, equipment and materials, and safety protection before signing a contract with the Company. The Company shall inform the contractors of any working environment, project hazard risks, or relevant safety and health regulations before they enter the Company; and require them to participate in safety meetings convened by the safety and health management personnel. In addition, we have also established a comprehensive electronic construction application system to control the construction application and the management prior to, during, and after each project. In addition to requiring the contractor to assign on-site supervisors and hold daily pre-construction toolbox meetings, the on-site supervisors of the responsible departments and the security personnel also conduct audits on an irregular basis during the construction period to ensure that all operations are in compliance with safety regulations.

▲ Toolbox meeting

Occupational safety and health education and training

To strengthen workers' occupational safety and health awareness and adaptability; SAS colleagues must participate in the environmental, safety, and health education plans and training programs in order to comply with the management system requirements and external topics every year. The training subjects include new and in-service employees, supervisors at all levels, and contractors in order to develop their occupational safety and health awareness, regulatory awareness, and adaptability. Moreover, dispatched and trained machinery and equipment operators, operation supervisors, occupational safety personnel, and first-aid personnel, etc., are trained to help them obtain the necessary licenses according to law.

▲ Breathing Protection Gears Snugness Tests and Education Training

Incident Investigation and Correction

According to the iceberg effect based on Frank E. Bird' s accident frequency, among the 1.75 million industrial disaster accident cases, every 641 incidents include 1 disabling injury accident, 10 minor injury accidents, 30 financial loss accidents, and 600 false alarm accidents. Accordingly, the occurrence of occupational disasters is only the tip of the iceberg. American scholar Heinrich studied the direct causes of occupational safety and health accidents from insurance industry' s occupational accident claims database, and found that 88% of accidents are caused by unsafe behavior, 10% are caused by unsafe environments, and 2% are caused by unpreventable factors. Therefore, 98% of accidents can be prevented via management measures.

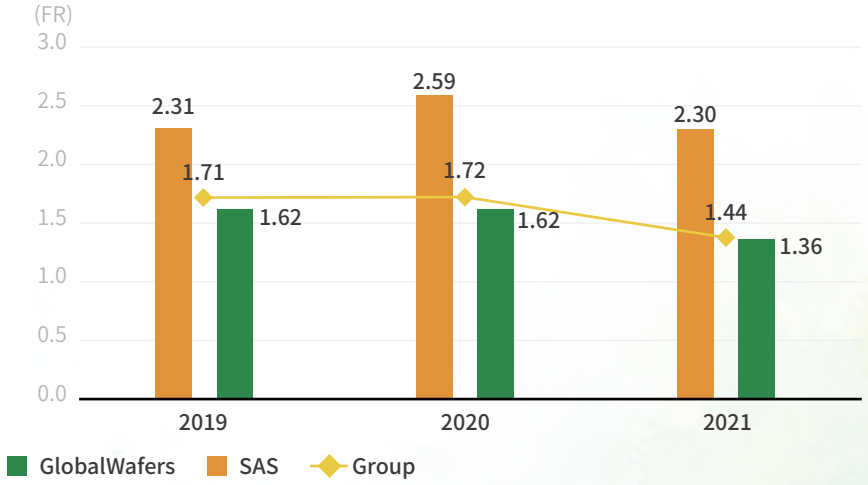
SAS has established incident notification, handling, and investigation procedures as well as non-conformity correction measure management procedures, and promoted incident notification procedures and emergency rescue procedures (including government / medical institution instant messages, emergency chemical spill handling) on its intranet platforms - "Environmental Safety Area" and "Health Area." All incidents must be investigated regardless of severity. Investigators include incident-related management, supervisory, operating personnel, and labor representatives who are qualified via incident investigation education and training. Tools such as the 5-WHY and the 8D report are used during incident investigations to find the root causes. The hazard risk assessment as well as the remedial and improvement measures must be reexamined and adjusted to ensure the improvement measures are able to eliminate the cause of the accident and prevent its recurrence. The safety and health personnel must track and review all such cases.

If any immediate danger at workplace is discovered, the worker can stop the operation and retreat to a safe location on his/her own without endangering the safety of other workers, and immediately notify the on-site supervisor without receiving any unfavorable punishment from the Company.

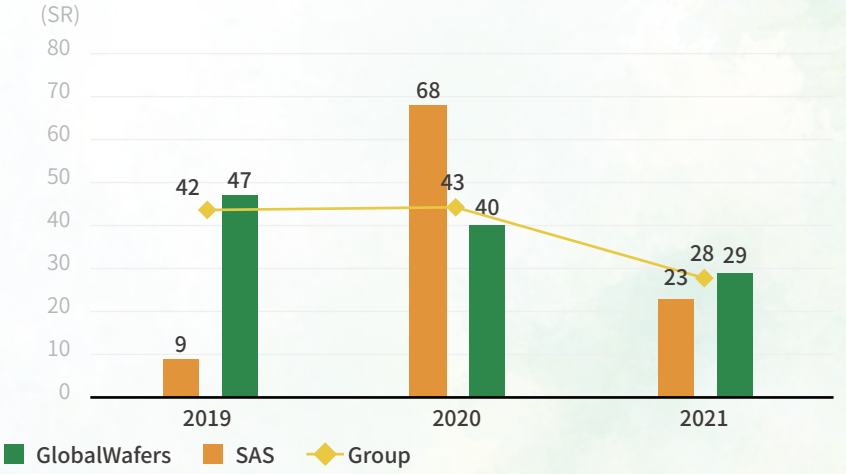
Occupational hazards management

In 2021, SAS had no incidents of death, occupational disease, or major occupational disasters caused by work. There were 5 recordable occupational injuries (excluding employee commuting accidents): 2 pinching, 1 trampling, 1 falling, and 1 cutting injury. According to the definition by the Ministry of Labor, the disability injury frequency rate (FR) is 2.30, and the disability injury severity rate (SR) is 23. We have conduct special investigations for each occupational disaster incident, and taken improvement measures (such as improving facilities/equipment, establishing systematic document specifications, or strengthening personnel education and training) based on the root cause of the incident, and provided training to other departments to prevent similar incidents from occurring again. In 2021, non-employee workers operating in the SAS plants had no work-related injury incidents (accidents).

Disabling Frequency Rate (FR)



Disabling Severity Rate (SR)



Note:

1. Disabling Frequency Rate (FR) = total number of disabled employees $\times 10^6$ / Total work hours
2. Disabling Severity Rae (SR) = Total number of work days lost to injuries $\times 10^6$ / Total work hours

2021 Major Occupational Disaster Statistics

	Sino-American Silicon		GlobalWafers (Taiwan)	
	Employees	Other non-employee workers	Employees	Other non-employee workers
No. of people	657	195	1,674	88
Work hours	1,303,846	573,932	3,321,216	265,810
No. of disability injuries	3	0	3	0
Days of disabling injuries	30	0	14	0
Death toll due to work	0	0	0	0
No. of severe occupational accidents	0	0	0	0
No. of recordable occupational injuries	5	0	10	0
Recordable occupational injury rate (IR)	0.77	0	0.60	0
Occupational disease rate (ODR)	0	0	0	0

Note:

1. Other non-employee workers: Refer to workers who are not employees but whose work and/or workplace are controlled by the organization. Divide the total number of workers for the year by 365 to calculate the average number of people entering the plants every day.
2. Work hours: Employees - calculated based on the actual work hours of the year. Other non-employee workers - calculated based on the total number of workers for the whole year, followed by 8 hours per day.
3. Severe occupational disasters: Injuries in which workers are unable or cannot recover to their pre-injury health status within 6 months after the occupational injuries.
4. Recordable occupational injuries: Refer to occupational injuries that caused death, loss of work, restricted work, or work transfer; emergency care or higher level medical treatment; loss of consciousness; and serious injury or illness diagnosed by a doctor.
5. Recordable occupational injury rate (IR): (recordable occupational injury number / total working hours) * 200,000
6. Occupational disease rate (ODR): (total number of occupational diseases / total working hours) * 200,000
7. SAS headquarters is located within the scope of the occupational safety and health management system of GlobalWafers headquarters. The relevant information of other workers who are not employees is included in GlobalWafers headquarters' statistics.

4.4.2 Healthy workplace

Colleagues' health is critical for an enterprise to build and strengthen its competitiveness. SAS has established health centers in all of its plants equipped with full-time nurses and specially appointed physicians to provide multiple health care services for colleagues, track and manage employees' health problems, and provide referral or medical services.

In addition, SAS is firmly committed to the 4 pillars of maternity care, human injury prevention, overwork prevention, and unlawful infringement prevention. The Company safeguards our staff members' physical and mental health through a wide range of health care initiatives, sporadic health lectures, and health promotion activities to create a blissful and healthy work environment. In 2021, SAS was awarded the CHR Health Enterprise Citizenship Promise Enterprise certification label from the "Common Health Magazine" for its commitment to creating a benchmark for a healthy and happy workplace.

The four pillars of health protection

Maternity care

Execution direction

Conduct health risk assessments for pregnant employees who want to return to the workplace after childbirth, offer physician consultation and care services, and provide expecting mothers with a good maternity pack to protect the physical and mental health of pregnant, postpartum, and breastfeeding colleagues.

2021 results

Level I ~ III management: 33 people (SAS 7 people; GlobalWafers-Taiwan 26 people)
Health risk assessment completion rate: 100%

Overwork prevention

Execution direction

Based on employee health examination data, Flemingham Risk Assessment Scale, overwork scale, and other data to analyze the high-risk overload groups and provide factory medical consultation and protection guidance measures for such groups. The nursing staff regularly distribute health messages to strengthen the physical and emotional heart, prevent overwork, and continue to implement employee tracking and care.

2021 results

Tracking management: 334 people (SAS 91 people; GlobalWafers-Taiwan 243 people)

Unlawful infringement prevention

Execution direction

To provide a healthy and positive workplace, we conduct a risks assessment for the entire factory once every two years. Positivity courses like unlawful infringement and spiritual growth are arranged to construct an excellent work environment.

2021 results

Lectures on prevention of workplace violence, sexual harassment, and interpersonal relations.

Human injury prevention

Execution direction

We conduct human hazard risks surveys on all departments based on their work content/operation. Operation observation, personnel interviews and medical treatment record investigation are conducted to screen and identify priority improvement targets (operation). Next, based on their operation hours, loading of weight, postures and work conditions, a quantitative risk assessment is in place for the risk grade calculation (KIM) to gradually improve the operation/construction by the year and to prevent the human hazards.

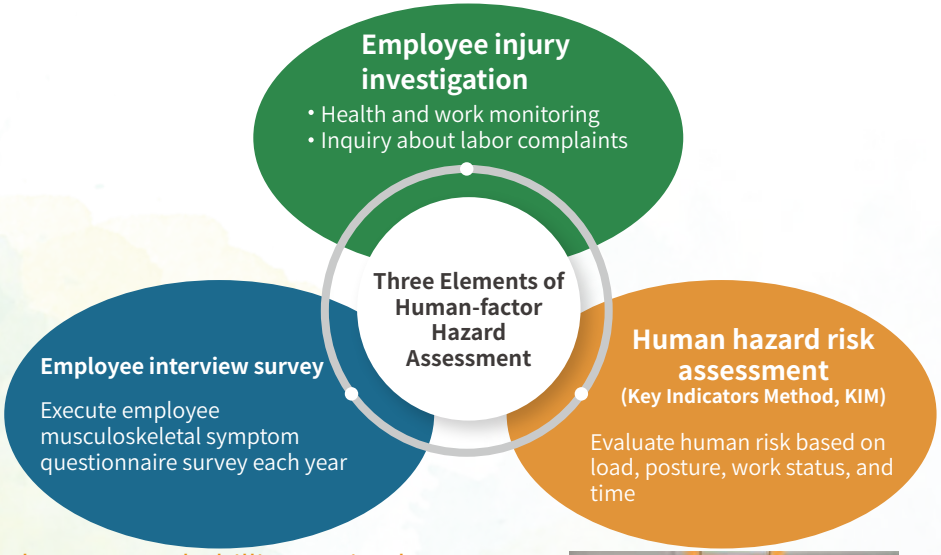
2021 results

Human-factor hazard risk assessment: 2 cases (SAS 2 cases, GlobalWafers-Taiwan 0 case, see description below for details)

Note: The statistical scope covers SAS and GlobalWafers Taiwan

Human-factor injury prevention

SAS plants have established human-factor hazard prevention procedures. Adopt employee injury surveys, questionnaires, and human hazard risk assessment survey results to provide ranking matrix. When the risk ranking level is ≧4, a target improvement plan must be established. In 2021, the Chunan and Yilan factories each had 1 risk-related improvement.



Chunan Branch drilling station human factor improvement

Before improvement:

It was necessary to use manpower to transport the processing jig. The KIM rating of the upper and lower machines of the processing jig is medium-high load (risk level 3), which is a human injury risk factor.

After improvement:

The idle machinery and tools in the factory were modified to work as process jigs, which can be used to carry the jigs on and off the machine instead of using manual handling. After the improvement, the KIM rating is low load (risk level 1).

▲Modify idle equipment in the factory into equipment that can handle and process the jig

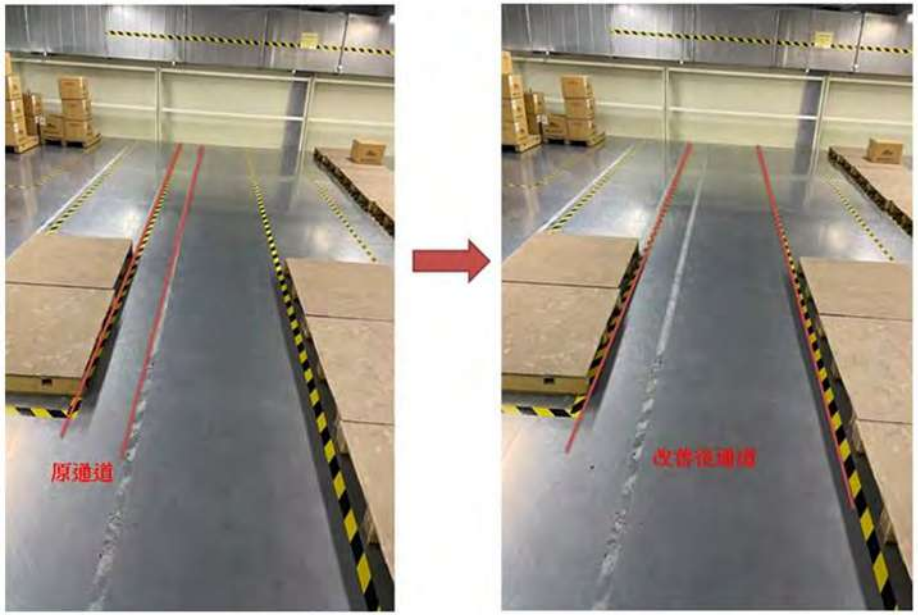
Yilan warehousing human factor improvement

Before improvement:

Warehousing staff must put the items in the designated stacking place according to the category. A trolley cannot be used because the aisles are too narrow. The operator must lift the entire boxes of items through the aisle to the designated place for stacking. The KIM rating is medium-high load (risk level 3), representing a human injury risk factor.

After improvement:

The aisles are reorganized so that trolleys can enter and stack items at a fixed point. The KIM rating after improvement is low load (risk level 1).



Health promotion and reinforcement of health concepts

SAS embraces the concept of diversified employee health care. Analysis of health data is carried out annually based on employee health check reports. Annual health management plans that meet relevant needs and cover planning of improvements are formulated to maintain employees' physical health. In addition, SAS carries out customized health checks taking in consideration of various physique of different operating personnel. Health check items and frequency exceed legal requirements and are combined with free cancer screening (colon cancer, cervical cancer, mammography and oral cancer) in conjunction with hospital services to maintain a firm grasp of employee health conditions without any oversights. Upon completion of health check operations, professional on-site medical personnel will conduct follow-up tracking regarding abnormal results. This data serves as a key reference for health improvement activities and health promotion initiatives.

New recruits

General physical examination	Completed in designated hospitals before arriving for work	Assessment record archive for work selection operation

Existing employees

General health check-up	Implemented in line with regulations regarding labor health protection	Assessment record archive for work distribution operation

High-ranking executives

Exquisite health examinations	Implementation exceeding standards as required by regulations regarding labor health protection	Assessment record archive for health risk

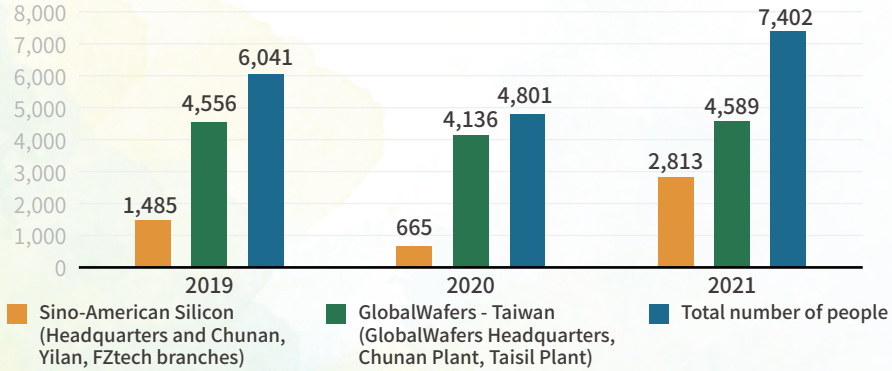
Catering personnel

Health examination for food catering personnel	In line with Clause 322 in the occupational safety and hygiene facilities regulations	Catering contractors conduct self-assessment and submit the record/report to the company.

The health promotion activities promoted by SAS include cancer screening, health lectures (high blood pressure, healthy diet with high blood lipids, and liver health care topics), and emergency rescue courses so that employees can establish correct health care knowledge and improve health care awareness. In 2021, 2,813 participants participated in the events. To strengthen the health awareness of employees, the Company will announce and share critical illness or health information on an irregular basis, so colleagues can gain a comprehensive understanding of the health information, and thereby enhance their health awareness and self-weight management knowledge. Free flu vaccine benefits are provided to employees to help them prevent infectious diseases (influenza, etc.) and other diseases. The Company also offers comprehensive vaccine consultation services, and provides convenient in-plant vaccination shots to ensure the health of the staff and create a safety net.

2019~2021 Health Promotion Activities

Unit: No. of people



The health center utilizes annual health check and incoming employee data in conjunction with work burnout questionnaire and working time analysis results to identify medium- and high-risk groups. Health management measures such as one-on-one counseling with physicians, individual health education guidance, and work pattern adjustments are adopted to minimize risks for identified groups. Furthermore, convenient blood pressure self-check stations have been established in the company to allow employees to measure their blood pressure in a convenient manner. Health education related information is posted in offices to reinforce self-health care awareness among employees.

To improve the safety of the workplace environment, the Company has established a 24-hour automatic external defibrillator (AED) in the plant, and arranged for the employees to participate in the CPR+AED education and training, so the colleagues can gain the basic rescue ability, and extend the emergency rescue forward to the scene of the incident. The goal is to create a healthy and safe working environment for employees, and receive the Safe Place Certification by the Ministry of Health and Welfare.

Tracking and concern for special groups

The SAS health center aims to gain a better understanding of groups with abnormal results in physical exams, e.g., new recruits, high-risk groups, and maternity health protection groups. In addition, the company would arrange for consultations with physicians, depending on individual needs, as well as expressing concern and psychological support.

In addition, the Company will also provide care to colleagues who have suffered a public injury or traffic accident by offering psychological support, insurance claims service instructions, and on-site physician consultation accordingly to help colleagues return to work as soon as possible.

Number of services for special groups and number of people tracked from 2019 to 2021

Number of service sessions		2019	2020	2021
Sino-American Silicon	Yilan Branch	322	269	539
	Chunan Branch	269	236	377
	FZtech Branch	-	27	19
	Hsinchu Headquarters	43	47	23
	Total	634	579	957
GlobalWafers - Taiwan		1,346	1,298	1,247
Total		1,980	1,877	2,205

Number of people in special groups being tracked		2019	2020	2021
Sino-American Silicon	Yilan Branch	58	39	138
	Chunan Branch	61	59	90
	FZtech Branch	-	7	2
	Hsinchu Headquarters	17	11	13
	Total	136	116	243
GlobalWafers - Taiwan		1,051	1,113	915
Total		1,187	1,229	1,158

Note:

1. Special group definition: (1) Overload (tracking B2 or higher in the current year), (2) Maternity (tracking the case received in the current year), (3) Disability (tracking the current year, once every 2 years), (4) Newcomers (abnormalities), (5) Special class-2, (6) Annual health checkup (class -C or higher), (7) Work-related injuries (from the day of occurrence), (8) Psychology (above 19 points / suicidal intent).
2. FZtech Branch was included in the statistics in 2020, so information from 2019 has not been disclosed.

Safe and healthy workplace

SAS aims to create a healthy workplace that allows colleagues to work with peace of mind. The company is committed to implementing a maternity protection plan and actively improving workplace-friendly measures superior to legal requirements. In addition to the comfortable milk collection room, maternity subsidies, and exclusive discounts for contracted corporate nurseries and kindergartens, the Company also started to offer the "Good Pregnancy Pack" in 2021, whereby pregnant mothers are presented with a good maternity pack - a breastfeeding pillow (moon pillow). Pregnant colleagues are encouraged to report as soon as possible so that they can receive immediate maternal workplace health assessment and initiate protective measures. The goal is to create a mother-friendly workplace environment so that colleagues can feel at ease at work while nurturing a new life.

Moreover, based on the annual health exam results, we have planned the health promotion activity and lecture topics for the year, arranged consultations with the clinic service physicians, and collaborated with the medical and healthcare services provided by the Hsinchu Science Park employee clinic to promote preventive medicine and disease prevention while strengthening health awareness for colleagues. Our 2021 health promotion content includes various lectures and activities such as four-cancer screening and lung cancer screening, and influenza vaccination to provide colleagues with correct health knowledge and concepts.

We attach great importance to the prevention and management of epidemic infectious diseases, and have established an active infectious disease notification system in order to prevent the threat of infectious diseases in the workplace and ensure continuous and normal company operations. The Company also posts the latest domestic and foreign epidemic information on the internal website in an irregular basis to remind colleagues to strengthen personal hygiene and strengthen their epidemic prevention knowledge. We have organized free influenza vaccination activities in the plants each year to strengthen employees' flu resistance, and provided "epidemic prevention kits" for colleagues to carry along during business trips to provide epidemic and disease prevention related information as well as health promotion, and help to protect colleagues from the threat of disease during business trips.

Physical and mental balance and a blissful workplace

SAS views its employees as its key assets. Only with healthy employees can we raise corporate productivity. Therefore, we are committed to creating a safe, healthy, and friendly workplace.

SAS introduced the Employee Assistance Service (EAPC) to provide comprehensive care for employees. The service items include emotional management, interpersonal relationship, legal, work career, family parent-child, financial, and other diversified consultation services. Each employee can receive 2 free one-to-one consultation services every year. Nurses will actively refer those with high scores on the mood thermometer questionnaire to EAPC and regularly track and care for the colleagues' status. We also provide recruit training programs, contact description cards, and deliver psychological activity articles regularly. The goal is to help employees resolve and eliminate problems via professional counseling services and help them feel at ease and work with confidence.

Employee Assistance Service (EAPC)

Live chat, E-mail consultation service	Sino-American Silicon + GlobalWafers - Taiwan		23 people
One on one Expert advisor consultation	Sino-American Silicon	Yilan Branch	0
		Chunan Branch	0
		FZtech Branch	0
		Hsinchu Headquarters	0
	GlobalWafers - Taiwan		8 people
Total number of consultation			31 people
Overall satisfaction with on-site psychological counseling from colleagues			100 points

Statistics interval: 2021/8~2021/12 (from 2021/8)

The Company has organized several staff outings through its Welfare Committee on an annual basis. These outings will hopefully replenish employees' energy and build team cohesion. Family members are encouraged to participate in these outings for employees to bond and build a strong rapport amongst themselves, to show concern for family members after work hours, and to enhance work-life balance.

SAS listens to the voice of its employees. Various channels such as labor-management consultation meetings, employee suggestion boxes, OSH committees, meetings on the old pension system, and a staff benefits committee allow employees to freely express their views and opinions. Employees are able to fully express their opinions via meeting exchanges and discussions. This enables an effective bidirectional communication channel between the labor and the management, rendering win-win results for both parties. In addition, the HR Department sends out electronic weekly newsletters containing articles, columns, English learning sections, and events and health information. These newsletters provide employees with new knowledge and an opportunity to participate in internal and external events. This also enables employees to achieve a work-life balance and maintain their physical and spiritual health while performing their work duties.

SAS also appoints dedicated management personnel who provide assistance to facilitate the work and daily lives of foreign blue-collar migrant workers. Annual activities are organized to show constant concern for the foreign staff members and to understand their needs and problems so as to conduct timely communication and assistance for them to enjoy work and lead a happy life in Taiwan.

4.5 Social Care

By practicing the spirit of altruism and social care, SAS and its subsidiaries in Taiwan can strengthen the core literacy values of "respect for human dignity, social justice, responsibility, privacy, and authority" and continue to internalize social care activities. Since 2003, compassionate manufacturers in the Hsinchu Science-Based Industrial Park have been organizing Christmas gift collection activities on Christmas Eve to fulfill the dreams of underprivileged children. SAS and its subsidiaries in Taiwan continue to cooperate with www.17885.com.tw to promote the "Dream Realization Action" to realize the children's eager expectations for one year through small gifts. We can all be Santa Claus to send hope and love to children. Each year, the colleagues have participated in sponsorship activities to provide many gifts to children through their hometowns and social welfare organizations. In addition, we have also magnified the benevolence of colleagues to match the mooncakes donated by our colleagues in cash, and then double this amount in donations to convey our care and love to the disadvantaged groups. Since 2019, we have contacted rural schools, Huashan Social Welfare Foundation, and World Vision Taiwan proactively to learn about the resources they might need help with, provide appropriate assistance, improve the inconvenience of life for certain elementary schools, and raise funds for the elderly living alone. To connect employee ideas with Company professional resources to achieve social reciprocity and expand social influence, the 2021 social care activity project covered two aspects: charity public welfare and education promotion in remote villages.

Charity and Public Welfare

Since 2020, SAS Group has actively participated in public welfare fundraising activities such as "Caring for Remote Homes and the Vulnerable" to support and engage in public welfare. The fundraising proceeds were matched 1:1 by the SAS (the Company donated the same amount as the staff did). The goal was to combine the small-amount donations into a tower of power and donate this gesture of care and warmth to more places in need. Many people's livelihoods have been impacted by the devastating effects of COVID-19 in 2021. Therefore, we have proposed public welfare activities every 6 months to do our best to help the society.

Events Participated in 2021

Event Name	Organizing Unit
Happy Shop - Skill Cultivation and Presentation Stage Picking Up Coffee - Build Soft Power in Workplaces for Teenagers to Pick Up their Dreams	Yilan Center of Taiwan Fund for Children and Families
Children's Meal Fundraising for Jushing and Chunan Elementary Schools in Miaoli County	-
Fundraising to Maintain Shilei Elementary School Building	-
2021 Assist with Taking a bath at Home Fundraising	The Red Cross Society of Hsinchu County
Food Boxes for Vulnerable Children Studying at Home + College Student Assistance Program	Hsinchu Family Support Center
Epidemic Peace of Mind Consultation and Care Fundraising Program	Hsinchu City Life Line
Vulnerable Family Special Life Circumstance Assistance + Emergency Medical Aid Fundraising Program	Yilan World Vision
Garden Party Gifts	Miaoli Family Support Center

Event Report

▲ Shilei Elementary School - Building Maintenance Fundraising

▲ Red Cross - Taking Bath at Home Fundraising

▲ Children's Meal Fundraising for Jushing and Zhunan Elementary School

▲ Yilan Family Support Center Fundraising Event

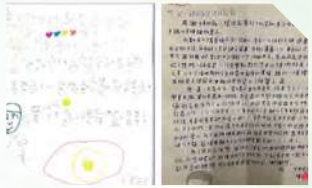
▲Hsinchu Family Support Center- Food Boxes for Vulnerable Children Studying at Home + College Student Assistance Program

當天由張祖琰理事長代表歡迎我們，向我們說明新竹市生命線的發展歷史，與一直以來新竹市生命線在新竹地區所做的努力。

On that day, Chairman 張祖琰 represented Taiwan Lifeline International of Hsinchu to welcome us to participate in the event, she also explained to us the history of Taiwan Lifeline International of Hsinchu and the efforts that they have made in the Hsinchu area.

▲Hsinchu City Life Line- Epidemic Peace of Mind Consultation and Care Fundraising Program

▲Yilan World Vision - Vulnerable Family Special Life Circumstance Assistance + Emergency Medical Aid Fundraising Program



▲ Miaoli Family Support Center - Garden Party Gifts

Regeneration Education Promotion

SAS launched the Photovoltaic Seed Project in 2021, hoping that photoelectric education can take root from an early age. The goal is to give children a correct understanding of solar photovoltaics as a safe, affordable, and sustainable clean energy via story discussions, life topics, and solar energy application implementations and practice what they have learned.

During the first event, we held the optoelectronics workshop activity for the employees' children and provided an on-site visit to the solar photovoltaic system in the factory. We held the second event of this project in Shilei Elementary School at Jianshi Township of Hsinchu County on Christmas Eve to convey the photovoltaic application principles that can be seen locally or on campus to children, such as stop signs and solar water heaters.

Renewable energy development has become one of the most critical policies of various nations. The teaching content of this project also included the "Grandpa's Roof can Generate Electricity"picture book published by the Bureau of Energy. Colleagues recorded the story dialogues with human voices to make the book's content more realistic. The goal is to lead children to quickly enter the solar energy field in the classroom and use the solar windmill DIY experience to leave a deep solar energy application impression on children.

Although we are not education experts, we have completed this photovoltaic seed project via our lesson plans, material collection, hands-on tests, teaching drills, and the enthusiasm to promote solar photovoltaics knowledge. We will continue this enthusiasm and mission to convey optoelectronics' concept and application to rural elementary school students throughout Taiwan. The goal is to help children establish a correct understanding of solar photovoltaics as a Safe, Affordable, and Sustainable source of power through stories and hands-on exercises and inspire them to practice green energy and carbon reduction actions.

▲ Photovoltaic Seed Program Activity Highlights - Employee Children Event

▲ Photovoltaic Seed Program Activity Highlights - Shilei Elementary School Event

GRI Guideline Index

Index No.	Description	Corresponding chapters	Page No.	Note / Reasons for non-disclosure	External assurance
Organizational Profile (Core Option)					
102-1	Name of the organization	Sino-American Silicon -Company Profile	07		◎
102-2	Activities, brands, products, and services	Sino-American Silicon -Company Profile - Market and Services	07 08		◎
102-3	Location of headquarters	Sino-American Silicon -Company Profile	07		◎
102-4	Operation Site	Sino-American Silicon -Company Profile	07		◎
102-5	Nature of ownership and legal form	Sino-American Silicon -Company Profile	07		◎
102-6	Markets Served	Sino-American Silicon -Company Profile - Market and Services	07 08		◎
102-7	Scale of the organization	Sino-American Silicon -Company Profile	07		◎
102-8	Information on employees and other workers	4.1 Talents Recruitment Human Resources	71		◎
102-9	Supply Chain	2.5 Upstream and Downstream Supply Chain	49		◎
102-10	Significant changes to the organization and its supply chain	Sino-American Silicon -Company Profile 2.5 Upstream and Downstream Supply Chain	07 49	The organization and its supply chain had no major change in 2021	◎
102-11	Precautionary Principle or approach	1.3 Risk Management	34		◎
102-12	External initiatives	-		Not attending relevant advocacy	◎
102-13	Membership of associations	Sino-American Silicon - Participation in External Associations	10		◎
Strategy (Core Option)					
102-14	Statement from senior decision-maker	Message from the Chairperson	04		◎
Ethics and Integrity (Core Option)					
102-16	Values, principles, standards, and norms of behavior	1.1.2 Integrity & Ethics	27		◎
Governance (Core Option)					
102-18	Governance Structure	Sustainable Management - Sustainable Organization 1.1.1 Corporate Governance Structure	12 23		◎

Index No.	Description	Corresponding chapters	Page No.	Note / Reasons for non-disclosure	External assurance
Stakeholder engagement (core option)					
102-40	List of stakeholder groups	Sustainable Management - Major Sustainability Issue Identification Process	13		◎
102-41	Collective bargaining agreements	-	-	There are currently no trade unions and no employees have signed a group agreement	◎
102-42	Identifying and selecting stakeholders	Sustainable Management - Major Sustainability Issue Identification Process	13		◎
102-43	Approach to stakeholder engagement	Sustainable Management - Stakeholders Engagement	15		◎
102-44	Key topics and concerns raised	Sustainable Management - Stakeholders Engagement	15		◎
Reporting practice (Core Option)					
102-45	Entities included in the consolidated financial statements	About This Report	02		◎
102-46	Defining Report Content and Topic Boundaries	Sustainable Management - Boundary and Scope of Material Issues	14		◎
102-47	List of material topics	Sustainable Management - Material Issue Analysis - Material Issues and Sustainability Goals	13 17		◎
102-48	Restatements of information	-		No information restatement this year	◎
102-49	Changes in reporting	-		This year's major themes and boundaries remain unchanged	◎
102-50	Reporting Period	About This Report	02		◎
102-51	Date of most recent report	About This Report	02		◎
102-52	Reporting Cycle	About This Report	02		◎
102-53	Contact point for questions regarding the report	About This Report	02		◎
102-54	Claims of reporting in accordance with the GRI Standards	About This Report	02		◎
102-55	GRI Content Index	GRI Guideline Index	93		◎
102-56	External assurance	Verification Disclaimer	100		◎
Category: Economy					
Economic Performance (Major Topic - Business Performance)					
103	Management Approach	1. Governance and Operation - Material Topic Strategy and Performance	22		◎
201-1	Direct Economic Value Generated and Distributed by the Organization	1.2 Operation performance	32		◎
201-2	The financial impact, other risks and opportunities that climate change caused on organizational activities.	1.3 Risk Management	34		◎

Index No.	Description	Corresponding chapters	Page No.	Note / Reasons for non-disclosure	External assurance
Anti-Corruption (Major Topics - Integrity and Ethics / Anti-corruption)					
103	Management Approach	1. Governance and Operation - Material Topic Strategy and Performance	22		◎
205-1	Operations assessed for risks related to corruption	1.1.2 Integrity & Ethics	27		◎
205-2	Communication and training about anti-corruption policies and procedures	1.1.2 Integrity & Ethics	27		◎
205-3	Confirmed incidents of corruption and actions taken	1.1.2 Integrity & Ethics	27		◎
Category: Environment					
Materials (Major Topic - Energy Resources Consumption and Reduction)					
103	Management Approach	3. Clean Green Energy Environment - Material Topic Strategy and Performance	51		◎
301-1	The weight and volume of all raw materials	3.3 Raw Material and Water Resources Management	59		◎
301-2	Recycled input materials used	3.3 Raw Material and Water Resources Management	59		◎
Energy (Major Topic - Energy Resources Consumption and Reduction)					
103	Management Approach	3. Clean Green Energy Environment - Material Topic Strategy and Performance	51		◎
302-1	Energy consumption within the organization	3.2 Energy Management and Development	55		◎
302-4	Reduce Energy Consumption	3.2 Energy Management and Development	55		◎
Water and Effluents (Major Topics - Energy Resources Consumption and Reduction, Pollution Prevention)					
103	Management Approach	3. Clean Green Energy Environment - Material Topic Strategy and Performance	51		◎
303-1	Interactions with water as a shared resource	3.3.2 Water Resources Management 3.4.2 Water Pollution Prevention	60 65		◎
303-2	Management of water discharge-related impacts	3.4.2 Water Pollution Prevention	65		◎
303-3	Water Withdrawal Quantity	3.3.2 Water Resources Management	60		◎
303-4	Water Discharge Quantity	3.3.2 Water Resources Management	60		◎
303-5	Water Consumption Quantity	3.3.2 Water Resources Management	60		◎
Emissions (Major Topics- Energy Resources Consumption and Reduction, GHG emissions, Pollution Prevention)					
103	Management Approach	3. Clean Green Energy Environment - Material Topic Strategy and Performance	51		◎
305-1	Direct (Scope 1) GHG emissions	3.1 Carbon Management	53		◎
305-2	Energy indirect (Scope 2) GHG emissions	3.1 Carbon Management	53		◎
305-5	Reduction of GHG emissions	3.2 Energy Management and Development	55		◎

Index No.	Description	Corresponding chapters	Page No.	Note / Reasons for non-disclosure	External assurance
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	3.4.1 Air Pollution Control	63		◎
Waste (Major Topic - Waste Management)					
103	Management Approach	3. Clean Green Energy Environment - Material Topic Strategy and Performance	51		◎
306-1	Waste Generation and Significant Waste Related Impacts	3.4.3 Waste Management	65		◎
306-2	Management of significant waste-related impacts	3.4.3 Waste Management	65		◎
306-3	Waste generated	3.4.3 Waste Management	65		◎
306-4	Waste diverted from disposal	3.4.3 Waste Management	65		◎
306-5	Waste directed to disposal	3.4.3 Waste Management	65		◎
Environmental Compliance (Major Topic - Legal Compliance)					
103	Management Approach	1. Governance and Operation - Material Topic Strategy and Performance	22		◎
307-1	Non-compliance with environmental laws and regulations	1.1.4 Legal Compliance	30		◎
Category: Society					
Labor-Management Relationship					
401-1	New employee hires and employee turnover	4.1 Talents Recruitment Human Resources	71		◎
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	4.2 Salaries and Benefits	74		◎
401-3	Parental leave	4.2 Salaries and Benefits	74		◎
402-1	Minimum notice periods regarding operational changes			Such cases shall be announced in advance according to law	◎
Occupational Health and Safety (Major Topic - Friendly Workplace)					
103	Management Approach	4. LOHAS Workplace and Social Joint Prosperity - Material Topic Strategy and Performance	70		◎
403-1	Occupational health and safety management system	4.4.1 Work Environment Safety	78		◎
403-2	Hazard Identification, Risk Assessment, and Accident Investigation	4.4.1 Work Environment Safety	78		◎
403-3	Occupational health services (Maintenance of Information Related to Worker Health)	4.4.2 Healthy workplace	84		◎
403-4	Worker participation, consultation, and communication on occupational health and safety	4.4.1 Work Environment Safety	78		◎
403-5	Worker training on occupational health and safety	4.4.1 Work Environment Safety	78		◎
403-6	Promotion of worker health	4.4.2 Healthy workplace	84		◎
403-7	Prevent and mitigate occupational safety and health impacts directly related to business relationships	4.4.1 Work Environment Safety	78		◎

Index No.	Description	Corresponding chapters	Page No.	Note / Reasons for non-disclosure	External assurance
403-8	Workers covered by an occupational health and safety management system	4.4.1 Work Environment Safety	78		◎
403-9	Work-related injuries	4.4.1 Work Environment Safety	78		◎
403-10	Work-related ill health	4.4.1 Work Environment Safety	78		◎
Training and Education (Major Topic - Employee Education & Training)					
103	Management Approach	4. LOHAS Workplace and Social Joint Prosperity - Material Topic Strategy and Performance	70		◎
404-1	Average hours of training per year per employee	4.3 Education and Training	76		◎
404-2	Programs for upgrading employee skills and transition assistance programs	4.1 Talents Recruitment Human Resources 4.3 Education and Training	71 76		◎
Diversity and Equal Opportunity					
405-1	Diversity of governance bodies and employees	4.1 Talents Recruitment Human Resources	71		◎
Customer Privacy					
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	2.3 Customer Confidential Information Protection	48		◎
419-1	Non-compliance with laws and regulations in the social and economic area	1.1.4 Legal Compliance	30		◎

Sustainable Accounting Standards Board Establishment Standards Index

Disclosure Topics	Index No.	Disclosure Indicators	Nature	Corresponding chapters/description	Page No.
GHG emissions	TC-SC-110a.1	Total global emissions (Scope 1) Total emissions from perfluorinate compounds	Quantitative	3.1 Carbon Management	53
	TC-SC-110a.2	Discuss long- and short-term strategies or plans for managing Scope 1 emissions, emission reduction targets, and performance analysis	Qualitative	3.1 Carbon Management	53
Energy Management in Manufacturing	TC-SC-130a.1	Total Energy Consumption Ratio accounted for by electricity grid compared to the total energy consumed The ratio accounted for by renewable energy compared to the total energy consumed	Quantitative	3.2 Energy Management and Development	55
Water resource management	TC-SC-140a.1	Total water withdrawal and the ratio of areas with high water stress Total water consumption and the ratio of areas with high water stress	Quantitative	3.3.2 Water Resources Management	60
Waste Management	TC-SC-150a.1	Hazardous waste generated in the manufacturing process and the ratio recycled	Quantitative	3.4.3 Waste Management	65
Employee Health and Safety	TC-SC-320a.1	Describe how to assess, monitor, and reduce employee exposure to hazardous environments	Qualitative	4.4.1 Work environment safety	78
	TC-SC-320a.2	Total monetary damages due to legal incidents related to employee health and safety	Quantitative	1.1.4 Legal Compliance 4.4.1 Work environment safety	30 78
Recruit and manage global professional talents	TC-SC-330a.1	Explain the ratio of (1) foreign employees and (2) overseas employees	Quantitative	4.1 Talents Recruitment Human Resources	71

Disclosure Topics	Index No.	Disclosure Indicators	Nature	Corresponding chapters/description	Page No.
Product Lifecycle Management	TC-SC-410a.1	The ratio of product revenue, including IEC62474 substances	Quantitative	1. Our stakeholders are mainly concerned about the RoHS directive and REACH Substances of Very High Concern (SVHC) from the Company's products, and the test results of the products meet the standards. 2. We test products according to the stakeholders' expectations and requirements, so we do not test IEC 62474 substances for products. But most declared substances are the same as the RoHS directive and REACH SVHC substances.	
	TC-SC-410a.2	The processor’ s overall system-level energy efficiency: (1) Server (2) Desktop (3) Notebook	Quantitative	Not a terminal product manufacturer, no corresponding content	
Raw material procurement	TC-SC-440a.1	Describe the risk management method for critical materials used	Qualitative	2.5 Upstream and Downstream Supply Chain	49
Intellectual property protection and competitive behavior	TC-SC-520a.1	Total monetary damages attributed to legal events related to anti-competitive conducts	Quantitative	1.1.2 Integrity & ethics	27
Activity Indicators	TC-SC-000.A	Total output	Quantitative	1.2 Operation performance	32
Activity Indicators	TC-SC-000.B	Percentage of output from self-owned factories	Quantitative	1.2 Operation performance	32

External Verification Disclaimer

DNV

Independent assurance statement

Scope and approach

Sino-American Silicon Products Inc. ("SAS" or the "Company") commissioned **DNV Business Assurance Taiwan** ("DNV") to undertake independent assurance of the 2021 Sustainability Report (the "Report") for the year ended 31 December 2021

We performed our work using DNV's assurance methodology VeriSustain™[1], which is based on our professional experience, international assurance best practice including International Standard on Assurance Engagements 3000 (ISAE 3000) and the Global Reporting Initiative (GRI) Sustainability Reporting Standards.

The Report also incorporated the relevant sustainability reporting guidelines, such as SEMICONDUCTORS SASB Standards and TCFD.

We understand that the reported financial data and information are based on data from the company's Annual Report and Accounts, which are subject to a separate independent audit process. The review of financial data taken from the Annual Report and Accounts is not within the scope of our work.

The Report has been prepared in accordance with the GRI Standards 'Core' option. We planned and performed our work to obtain the evidence we considered necessary to provide a basis for our assurance opinion. We are providing a 'moderate level' of assurance of the reporting principles for defining the sustainability report content and the quality as expressed in the GRI Standards.

Responsibilities of the Directors of Sino-American Silicon Products Inc. and of the assurance providers

The Directors of SAS have sole responsibility for the preparation of the Report. In performing our assurance work, our responsibility is to the management of SAS; however, our statement represents our independent opinion and is intended to inform all of SAS stakeholders. DNV was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement.

We have no other contract with SAS and this is the 6th year that we have provided assurance. DNV's assurance engagements are based on the assumption that the data and information provided by the client to us as part of our review have been provided in good faith. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement.

Basis of our opinion

A multi-disciplinary team of sustainability and assurance specialists performed work at headquarters and site level. We undertook the following activities:

- Review of the current ESG issues that could affect SAS and are of interest to stakeholders;
- Review of SAS approach to stakeholder engagement and recent outputs;
- Review of information provided to us by SAS on its reporting and management processes relating to the Principles;
- Interviews with selected Directors and senior managers responsible for management of corporate responsibility issues and review of selected evidence to support issues discussed;
- Site visited to the major production site at Chunan, and data checked from Ilan and include HQ to review process and systems for preparing site level corporate responsibility data and implementation of corporate responsibility strategy;
- Review of supporting evidence for key claims and 2021 data in the report. Past two years' data reported in the report are not within the scope of our work. Our checking processes were prioritised according to materiality and we based our prioritisation on the materiality of issues at a consolidated corporate level;
- Review of the processes for gathering and consolidating the specified performance data and, for a sample, checking the data consolidation.
- An independent assessment of SAS's reporting against the Global Reporting Initiative (GRI) Sustainability Reporting Standards (Core Option).

[1] The VeriSustain protocol is available on dnv.com

DNV

- The verification was conducted based only on the Chinese version Report.

Opinion

On the basis of the work undertaken, nothing came to our attention to suggest that the Report does not properly describe SAS's adherence to the Principles. In terms of reliability of the performance data, in accordance with Moderate level assurance requirements, nothing came to our attention to suggest that these data have not been properly collated from information reported at operational level, nor that the assumptions used were inappropriate.

Observations

Without affecting our assurance opinion we also provide the following observations.

- Besides questionnaire surveys, analysing the data/information from stakeholder communication to understand the needs and expectations of stakeholders is encouraged.
- Strengthening the materiality assessment process by integrating the key issues raised from relevant management system, i.e., QMS, EMS and TIPS management system, etc.
- Standard process for collecting data/information from operation and conducting audit to verify the accuracy of the data/information to improve the data reliability and accuracy is suggested.

Stakeholder Inclusiveness
The Company has identified the expectations of stakeholders through internal mechanisms in dialogue with different groups of stakeholders. The stakeholder concerns are well identified and documented. The significant ESG issues identified through this process are reflected in the Report.

Sustainability Context
Sustainability Report provides an accurate and fair representation of the level of implementation of related ESG policies, and meets the content requirements of the GRI Standards.

Materiality
The process developed internally has not missed out any significant, known material issues, and these issues are fairly covered in the Report. A methodology has been developed to evaluate the priority of these issues.

Completeness

The Report covers performance data against the GRI Standards core indicators that are material within the Company's reporting boundary. The information in the Report includes the company's most significant initiatives or events that occurred in the reporting period.

Accuracy and Reliability

The Company has developed the data flow for capturing and reporting its ESG performance. In accordance with Moderate level assurance requirements, we conclude that no systematic errors were detected which causes us to believe that the specified ESG data and information presented in the Report is not reliable.

For and on behalf of DNV Taiwan
Date: 23 May, 2022

Nasa Chen
Lead Verifier
DNV – Business Assurance Taiwan

David Hsieh
Sustainability Service Manager,
Greater China

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