Sino-American Silicon Products Inc.

2018

Corporate Social Responsibility Report

Contents

CSR

About this Report

Report Pillar

Sino-American Silicon Products Inc. (hereinafter referred to as “SAS”) manufactures high-quality solar wafers, cells and modules as one of the main professional green energy suppliers in Taiwan. In response to global climate change and the latest developments in the field of corporate social responsibility, SAS started compiling CSR reports in 2017. In these reports, SAS discloses information on material issues in the four aspects of corporate governance, economy, environment, and society and the results of implemented improvements as well as the future vision and goals in the field of sustainable development based on long-term in-depth interactions with local communities and engagement with stakeholders.

Report Editing and Final Draft

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

- CSR Task Force

  The main members include the President's Office and the Health and Safety 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 preliminary draft completed by the President's Office and the Health and Safety Management Department is submitted to the Audit Office and members of the Sustainable Development Committee in each department for review. It is then forwarded to the President (Chairman of the Sustainable Development Committee) for final approval prior to publication.

Reporting Standards

The contents and structure of this report are based on the core indicators in the Sustainability Reporting Guidelines released by the Global Reporting Initiative (GRI). This report also conforms to the Rules Governing the Preparation and Filing of Corporate Social Responsibility 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 CSR report released by Sino-American Silicon (SAS) is defined as follows:

Publication Date: June 2019

Reporting Period: January 1, 2018 – December 31, 2018

Reporting Scope: SAS’ solar energy business activities in Taiwan (including SAS Hsinchu headquarters and branch companies in Chunan and Yilan; subsidiary company, FZtech Inc.), along with SAS’ financial data, are verified and certified by KPMG in accordance with the International Financial Reporting Standards (IFRS) in order to maintain consistency with the consolidated financial data in the company’s annual report. The performance data for the subsidiary Aleo Solar (hereinafter referred to as “Aleo”) and the semiconductor business group GlobalWafers Co., Ltd.(hereinafter referred to as “GlobalWafers”) was also included and amounts are given in NT dollars. Provided environmental performance data is compiled and organized by SAS, while social performance data is provided by SAS internal units. The data is presented through internationally accepted indicators and calculation methods.

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

Previously published in June 2018

Report Assurance

The SAS Sustainable Development Committee passed a resolution to commission an independent third-party certification body to verify the report in order to ensure conformity to the GRI G4 assurance standards and enhance the transparency and credibility of sustainability related information provided by SAS. The report was verified by DNV GL and met the requirements of GRI Core Option and moderate level assurance requirements of DNV GL VeriSustain Protocol. For more details on the verification statement, please refer to the Appendix. Financial performance data was made public upon attestation by a CPA and is presented in a manner consistent with the Annual Report. GHG data is based on independent inventory results.

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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Telephone: 03-5772233 #2291
Acting Spokesperson: Pei-Yi Chen, Sales Assistant VP
Telephone: 03-5772233 #3862
Address: 4F, No. 8, Industrial East Road 2, Hsinchu Science Park, Hsinchu
E-mail: CSR@saswafer.com
Corporate Website: http://www.saswafer.com/pages/sas/en/

About this Report

Sustainability Performance Overview

Aspects	Material Topics	2019 Goals	2018 Goals	2018 of Goal Achievements
Economic Aspect	Corporate governance	• Maintain the top 5% ranking of all listed OTC companies in the corporate governance appraisal	• Implement corporate governance transparency. • The board of directors' performance assessment results are disclosed on the corporate website. • The remuneration committee' performance assessment results are disclosed on the corporate website. • The audit committee's performance assessment results are disclosed on the corporate website. • The board of directors' resolutions are disclosed on the corporate website. • Maintain the top 5% ranking of all listed OTC companies in the corporate governance appraisal • The board of directors adopts an electronic voting system.	V Goal achieved V Goal achieved V Goal achieved V Goal achieved V Goal achieved V Goal achieved V Goal achieved
	Ethics & integrity / Anti-corruption	• Maintain zero occurrence of corruption.	• Maintain zero occurrence of corruption.	V Goal achieved
	Operational performance	• Revenue growth • Profit growth	• Revenue growth • Profit growth • Lowering of debt ratio	V Goal achieved V Goal achieved V Goal achieved
	Legal compliance	• Zero occurrence of fines for violating regulations	• Zero occurrence of fines for violating regulations	X Goals not fulfilled
Environmental Aspect	Energy resources consumption and reduction Greenhouse gas (GHG) emission	• Plant power conservation rate >1%	• Plant power conservation rate >1%	V Goal achieved
	Pollution prevention	• All operating parameters for preventative equipment are compliant with environmental protection permits.	• Add burners at the screen printing output to reduce VOC emissions.	V Goal achieved
	Waste control	• In line with the "regulations governing determination of reasonable due care obligations of enterprises commissioning waste clearance", plant waste management procedures are stipulated with checks on high-risks waste clearance companies at least once a year.	• Reduced commissioned quantity of BDG waste liquid clearance (monthly reduced quantity >40%)	V Goal achieved
Social Aspect	Salaries and benefits	• Employee spring outings • Employee autumn outings • Birthday cash presents and cakes for employees	--	--
	Friendly workplace (including issues like occupational safety and hygiene, occupational health) Employee education & training	• Occurrence of occupational injuries ≦ 0 (excluding traffic accidents) • Concern and follow-up monitoring of special groups 100% • Walking stairs are added for the condensation water towers to enhance patrol safety.	• Occurrence of occupational injuries ≦ 0 (excluding traffic accidents) • Conduct internal safety and hygiene education and training ≧ 6 sessions • Concern and follow-up monitoring of special groups 100% • Conduct health promotion courses > 10 sessions	V Goal achieved V Goal achieved V Goal achieved V Goal achieved
	Product quality and customer satisfaction	• Score for "quality aspect" on the customer satisfaction survey>8.0 • Score for "service aspect" on the customer satisfaction survey>8.0	• Score for "quality aspect" on the customer satisfaction survey >8.5 • Score for "service aspect" on the customer satisfaction survey >8.5 • Continue to improve the customer satisfaction and obtain more customers' trust and recognition	X Goals not fulfilled V Goal achieved V Goal achieved

About this Report

Economic KPI

Information Disclosure and Corporate Governance Appraisal and Rating of TWSE Listed Companies.

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

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

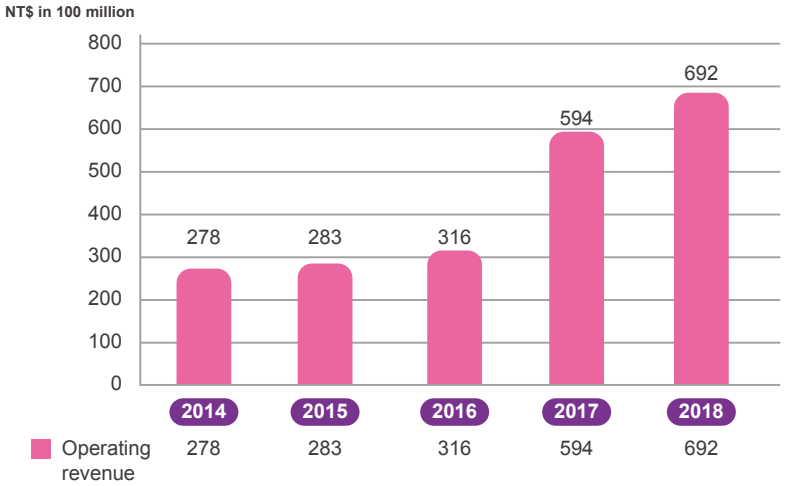
2016
- Ranking in the top 5% of all listed OTC companies in the 3rd corporate governance appraisal

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

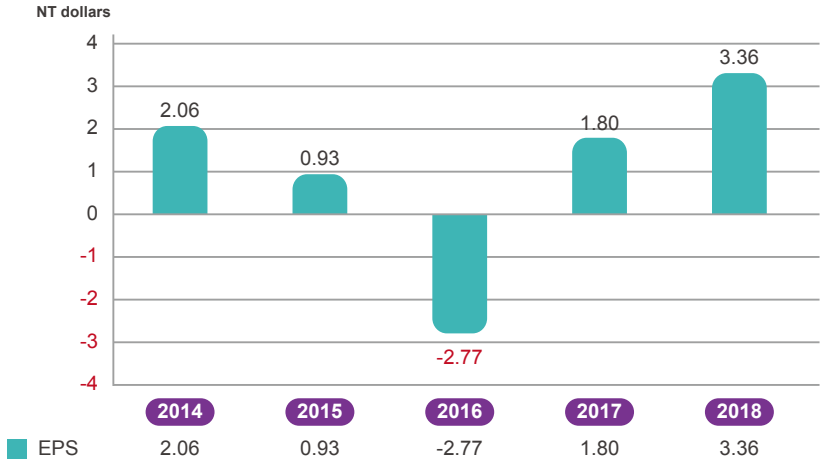
2014
- Information disclosure appraisal A+
  Ranking in the top 5% of all listed OTC companies in the 1st corporate governance appraisal

2013
- Information disclosure appraisal A+

Operating Revenue (Consolidated Revenue)

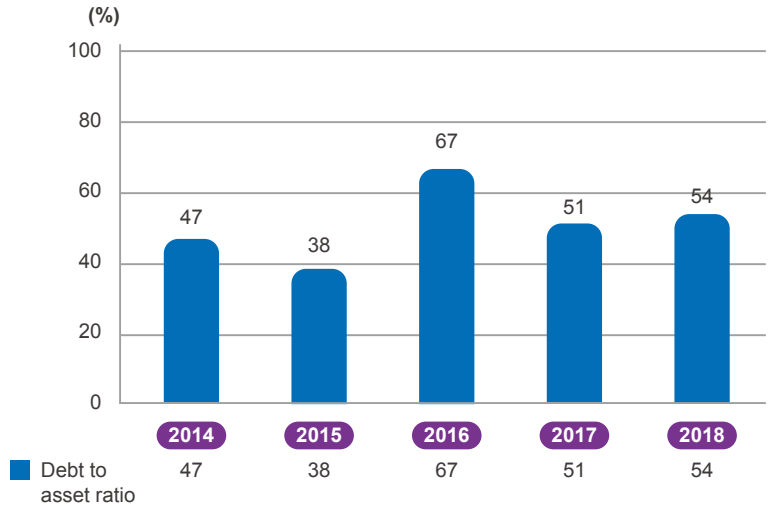


Earnings Per Share (EPS)



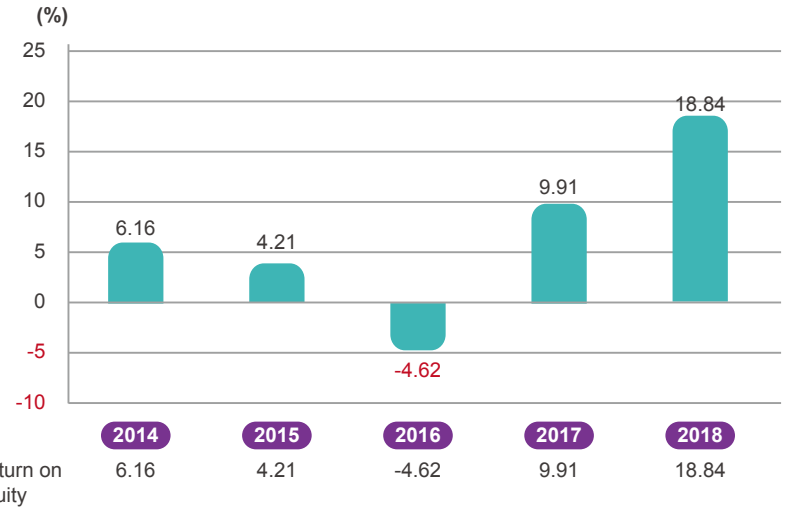
About this Report

Debt to Asset Ratio



	2014	2015	2016	2017	2018
Debt to asset ratio	47	38	67	51	54

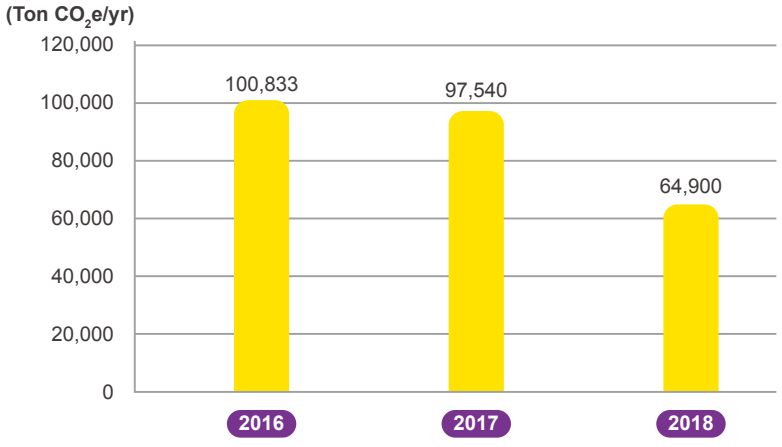
Return on Equity



	2014	2015	2016	2017	2018
Return on equity	6.16	4.21	-4.62	9.91	18.84

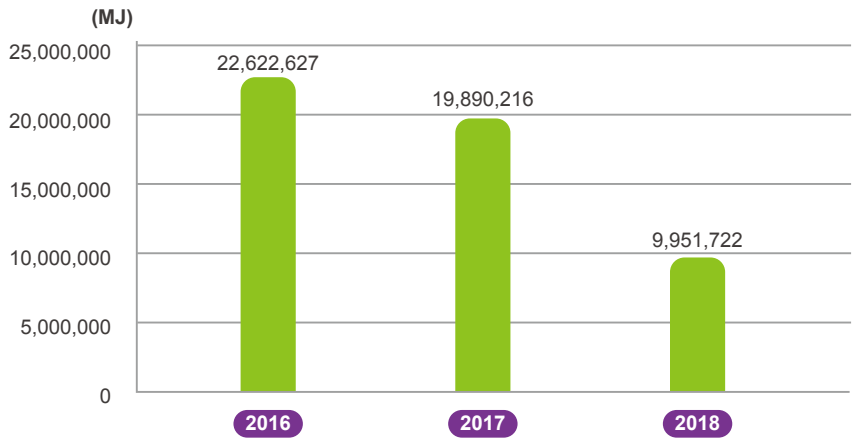
Environmental KPI

Carbon Dioxide Equivalent



	2016	2017	2018
Carbon dioxide equivalent	100,833	97,540	64,900

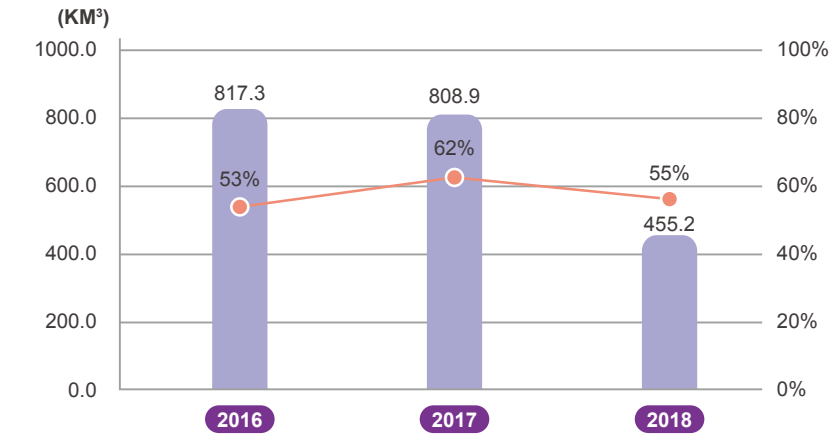
Power Conservation Effects



	2016	2017	2018
Power conservation quantity	22,622,627	19,890,216	9,951,722

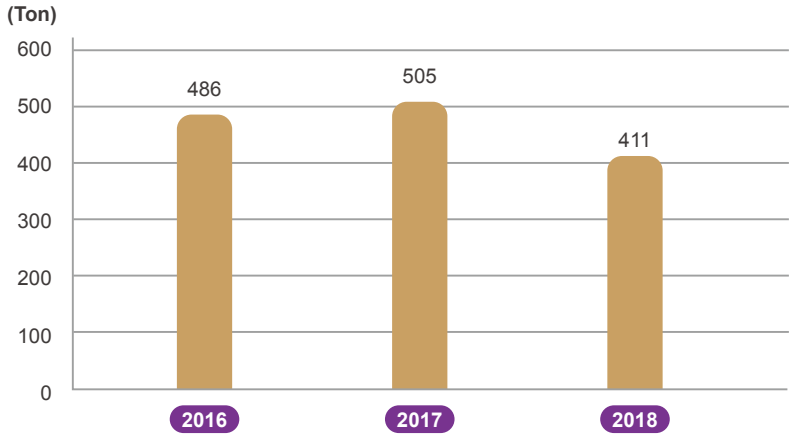
About this Report

Recycled Water



	2016	2017	2018
Recycled water quantity	817.3	808.9	455.2
Water recycling rate	53%	62%	55%

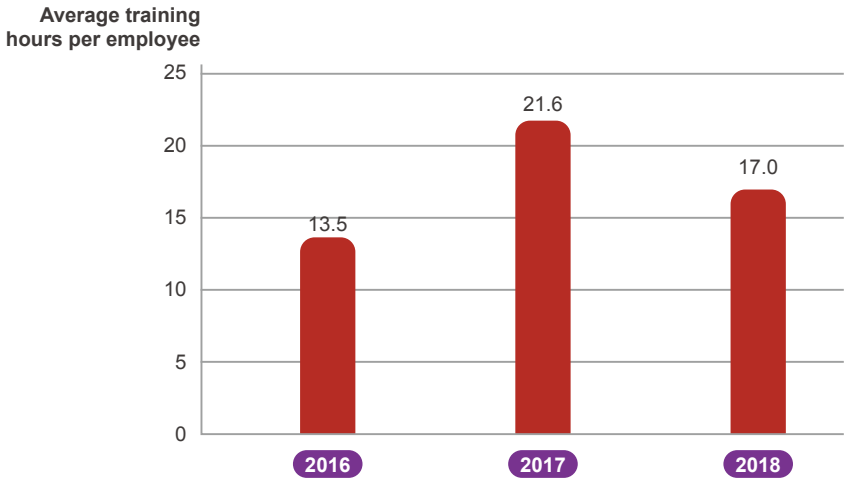
Recycle Waste



	2016	2017	2018
Waste for resources recycling	486	505	411

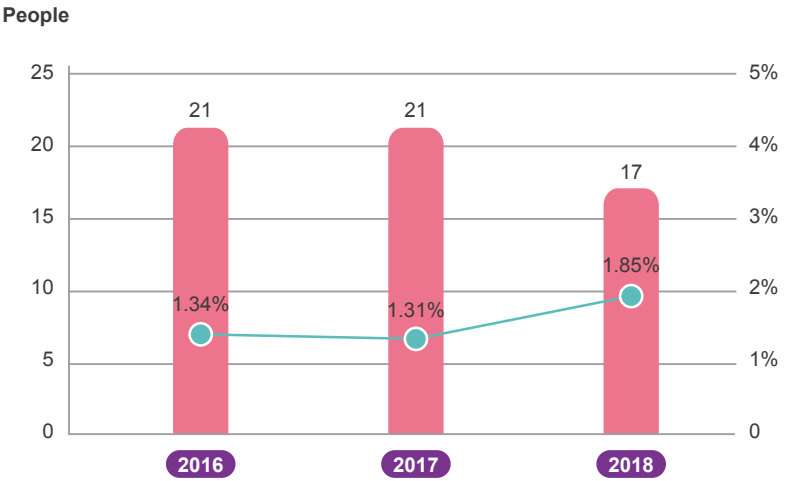
Social KPI

Average Training Hours per Employee



	2016	2017	2018
Average training hours per employee	13.5	21.6	17.0

Female Executives Ratio



	2016	2017	2018
Number of female executives	21	21	17
Female executives ratio	1.34%	1.31%	1.85%

Message from the Chairman

Since its inception, SAS has adhered to a business philosophy of “Integrity, Professionalism, Innovation, and Service”. The company is fully committed towards a win-win-win vision, i.e. growing together with customers, pursuing excelsior with and creating value for shareholders. Amid dedication for sustainable corporate management, SAS is also expecting to create sustainable values for economic growth, environmental protection and social progress. SAS has been releasing CSR reports since 2017 to fully disclose its achievements in terms of its CSR performance and present the state of communications and interactions with its stakeholders so as to facilitate sustainable development goals.

Rising Revenues and Sustainable Governance

Year 2018 saw a slump in the solar energy industry affected by China-US trade wars, solar energy policy changes in various countries, declining market demands and reduced prices and production outputs. All solar energy companies were faced with severe operation challenges. Yet, with concerted efforts form all staff members, SAS was able to hit another record high in terms of revenue and turn losses into profits and regain its profitability that has exceeded its competitors, as a result of production capacity adjustment, resources integration, product differentiation, continuous strategy adjustments in response to the market, plus outstanding business performance of its subsidiary, GlobalWafers.

1. Consolidated revenue of NT$ 69.239 billion and annual growth rate of 17%, another record high
2. Consolidated operating income of NT$ 13.178 billion and annual growth rate of 108%
3. EPS of NT$3.36, an increase of NT$1.56 from the previous year of NT$1.8
4. Shareholders’ equity of NT$ 47.914 billion, a 9% increase from the previous year.
5. Ranking in the top 5% of all TPEx-listed companies in five consecutive corporate governance appraisals

SAS Chairman

SAS has a leading competitive edge in the field of PERC mono-crystal cell efficiency and will continue to develop advanced technologies and accelerate research and development of new-generation products with ultra-high efficiency. We aim to establish mutually beneficial cooperative relationships with our customers to build a win-win environment conducive to joint growth. Regarding corporate governance, we constantly refine our performance to strengthen our commitment to the pursuit of sustainable operations.

Forward-looking and Industry-leading Technologies

The SAS R&D team is fully committed to the development of high-efficiency products with high added value. In 2018, the multi crystalline silicon wafer process was converted from Slurry to DW to enhance productivity and minimize environmental pollution. N-type mono crystalline cells are expected to reach 23% in efficiency by mid-2019. The P-type mono crystalline cells have reached 21.9% in average efficiency. As for the development of new products, Multi Crystalline Black Wafers, New-generation Mono Crystalline Busbar-less and Metal-Wrap-Through PERC have successfully entered mass production. In addition, SAS has also been active in promoting deployment of patents for key technologies and accelerated development of the company’s core technologies. A total of 267 patent certifications have been obtained worldwide. SAS will continue to accumulate R&D capabilities with a focus on development of advanced technologies and high-performance diversified products. The company’s overall competitiveness is enhanced through value-added innovation and optimized product combinations.

Circular Economy & Facilitating Green Energy and Low Carbon

The Global Risks Report 2019 released at the World Economic Forum in Davos pointed out that future extreme weather incidents, failed partnerships responding to climate change and natural disasters will be of high risks and high occurrence probabilities with major impact. In the face of rising risks of global climate problems occurrence, SAS as a global citizen and a member of the green industry will spare no efforts in continuously promulgating greenhouse gas mitigation and adaptation actions.

Excellent results have been achieved through recent participation in the Energy Conservation Improvement Project sponsored by the Industrial Development Bureau. Results include the improvements of air compressors and air conditioning systems. In 2018, power savings amounted to 2,764,000 kWh. Further still, with regards to solar energy plant deployment, SAS' subsidiary, FZtech Inc., is fully committed to the Taiwan market and actively conducting solar energy plants investments and construction projects for the rooftop, ground-mounted and floating solar power plants, while introducing the gravitation water vortex solar power generation system to lower the water surface temperature and drastically enhance the power generation efficiency of the solar energy panel. In 2018, in our solar energy generation system, the total installation for grid-tie operation reached approx. 26MW, expected to reduce the CO2 emission by 9,890 metric tons per year. Up to end of 2018, the offshore and domestic installation for grid-tie operation reached approx. 97MW, expected to cut the CO2 emission by 66,685 metric tons per year. In 2019, SAS teams up with its subsidiary, FZtech Inc., in the construction of compound energy system on the rooftops of the Chunan Plant that integrates the 99kW self-weight photovoltaic solar system, 100 kW/350 kWh power storage system, 600 kW adjustable grid-tie power generators. SAS has also switched to micro-grid systems inside the plant. The subsystem installations are expected to be completed by Q2 this year, while simultaneously blending the energy storage device development and integrating it to the energy management system platform in response to the future market demand for power storage management. Our subsidiary semiconductor company, GlobalWafers, passed the gold-level green building certification in January 2019 issued by the Ministry of the Interior, MOEA. Looking to the future, SAS will continue to participate proactively in the green energy promotion hoping to contribute to a clean environment that our future generations can rely on for sustainable survival.

Employee Care and Public Cause

SAS views its employees as its critical driving force for growth and sustainable operation. To fulfil our human-centered commitment for employee care, we are devoted to a sound remuneration system, comprehensive benefits system and relevant care schemes. We construct a friendly workplace, guarantee employees' work safety, plan diverse training courses, upgrade employees' skills and know-how, value employees' professional development and care about employees' work-life balance. 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.

In terms of social welfare, SAS has been proactive in participating in all kind of philanthropic activities. We lead and encourage employees to care about disadvantaged groups hoping that we can lead by example and spread love in a bid to fulfill our social responsibility as a corporate citizen.

SAS has been consistently focusing and cultivating in line with our management philosophy, while 2019 has been a year full of uncertainties and challenges. Nonetheless SAS forges ahead towards innovative R&D, costs reduction and building momentum and competence, focus on our niche sector and deliver strategic deployment for solar energy power plants in order to strengthen overall operation performance. We exist for sustainable operation, excellent corporate governance and focus on social responsibility. SAS will adhere to our vision, exert all efforts and fulfill our commitment in friendly workplaces, environmental protection and social concern. Our goal is to become a green enterprise with sustainable development and stable increases in revenues and profits.

SAS President

徐秀蘭

About the Company

Company Profile

Sino-American Silicon Products Inc.(hereinafter referred to as “SAS”), a professional wafer manufacturer, was established on January 21, 1981. The company features two main business groups – semiconductor and solar energy. The semiconductor and silicon wafer business units were spun off and transferred to GlobalWafers Co., Ltd. (hereinafter referred to as “GlobalWafers”) on October 1, 2011. After that, the parent company has been focusing on the solar energy sector with production lines for solar ingots, solar wafers, solar cells and modules. Company operations have also spanned downstream solar power generation system business, turning SAS into one of the most vertically integrated companies in Taiwan.

SAS is committed to developing advanced technologies and constantly releases new-generation solar energy products with high conversion efficiency. This is what makes SAS stand out and the primary factor that SAS can keep on attracting niche customers. Through vertical integration strategies, SAS has achieved synergistic effect of overall upstream, midstream and downstream industry integration and expanded its global market deployment in terminal solar power systems. The goal is to play an important role in the green solar power sector and create greater benefits for 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 were acquired by Sunrise Global 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.

In 2016 SAS’s important subsidiary company, GlobalWafers, successfully acquired Topsil Semiconductor Materials A/S(hereinafter abbreviated as Topsil) and SunEdison Semiconductor Limited (hereinafter abbreviated as SEMI) in Denmark. GlobalWafers’ product range has thus crossed from CZ into large-sized epitaxial wafers, polished wafers, silicon on insulator wafer and float zone (FZ) semiconductor wafers. Combined with GlobalWafer’s top-notch operation model and market niche and SunEdison’s global bases and R&D capabilities, GlobalWafers has thus built a further integrated product line with a total of 16 operation & manufacturing bases that are strategically dispersed across 10 countries in Asia, Europe, the Americas. It has since become the world’s third largest silicon wafer supplier.

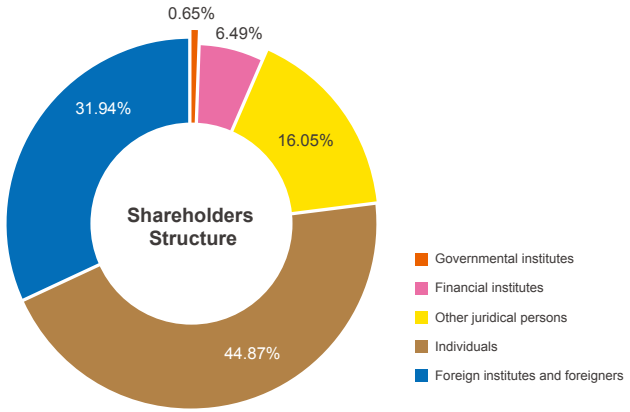
SAS Basic Information

Date of Establishment	January 21, 1981
Capital	NTD 5.86 billion
Main Product and Technology	Solar ingots, solar wafers, solar cells and modules, solar power generation system services
Employee No.	Taiwan: 919 people; Offshore: 176 people
Chairman & CEO	Ming-kuang Lu
Vice Chairman / Deputy CEO	Tang-liang Yao
President	Hsiu-lan Hsu
Headquarters	4F, No. 8, Industrial East Road 2, Hsinchu Science park, Hsinchu, Taiwan, R.O.C.
Operating Bases	Headquarters: 4F, No. 8, Industrial East Road 2, Hsinchu Science park, Hsinchu, Taiwan, R.O.C. Chunan Branch: No. 6, Kejung Rd., Chunan Science Park, Chunan Township, Miaoli County, Hsinchu Science-Based Industrial Park, Taiwan, R.O.C Yilan Branch: No.1, Sec. 2, Ligong 1st Rd., Wujie Township, Yilan County, Taiwan, R.O.C
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

Shareholders Structure

Shareholders / Structure	Governmental Institutes	Financial Institutes	Other Juridical Persons	Individuals	Foreign Institutes and Foreigners	Total
Shareholding percentage	0.65%	6.49%	16.05%	44.87%	31.94%	100.00%

Latest updated: 04.28.2019



About the Company

Operation Site

SAS adheres to its vision of integrity, grows robustly by overcoming challenges and produces high-performance solar wafers, cells, and modules. Through vertical integration, the company's operations span downstream systems which generate relevant benefits and expands the layout of the solar energy business unit, turning SAS into one of the domestic providers of professional green energy solutions

SAS is headquartered in Taiwan's Hsinchu City, with bases in Taiwan, Germany, Italy, and the Philippines. The main markets for the company's products are Asia, Europe, and the Americas. SAS is firmly committed to making contributions to environmental protection and strives to turn into a cutting-edge global provider of green energy solutions.

Market and Product Services

Solar Energy Industry

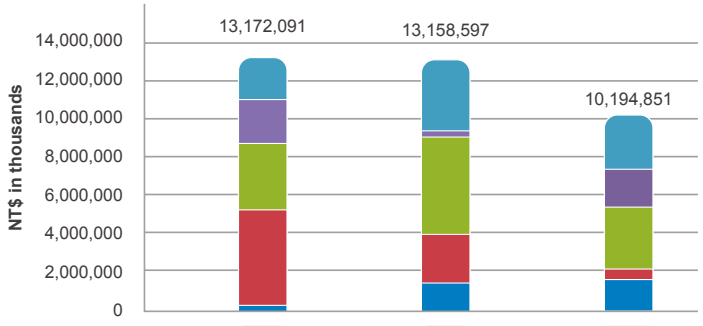
- Product Sales

  Year 2018 saw a slump in the solar energy industry affected by China-US trade wars, solar energy policy changes in various countries, declining market demands and reduced prices and production outputs. In response to market changes, we adjust our product sales strategies, increase the sales ratio of solar modules and ingots.

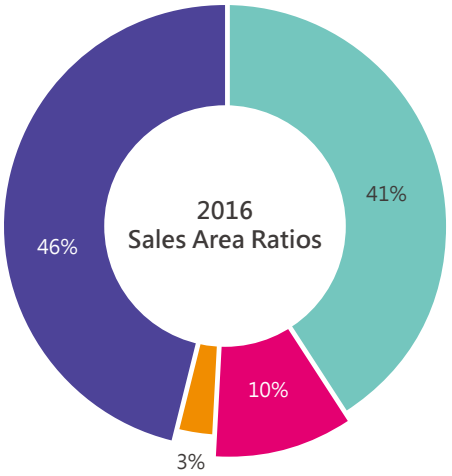
- Sales Area Ratios

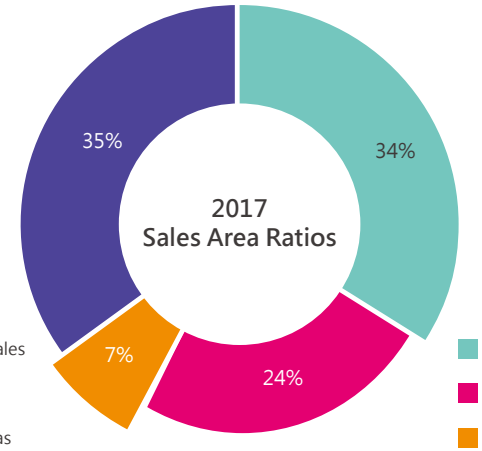
  During 2016 and 2018, sales area ratios changed in line with expansion or contraction of individual markets. As manufacturing locations shifted following module plant changes, domestic sales accounted for 30-40%. SAS sells high-performance diversified products with corresponding adjustments in sales areas.

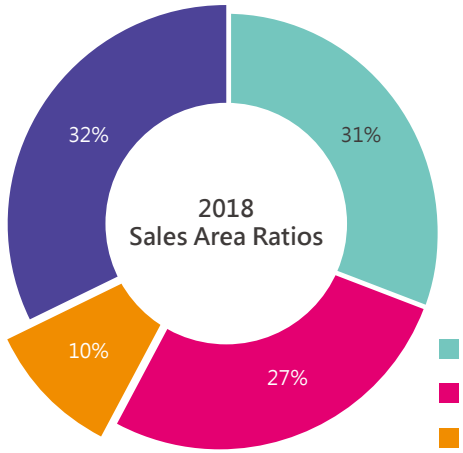
Revenue



	2016	2017	2018
Other	2,104,081	3,842,447	2,796,322
Solar module products	2,437,016	327,950	2,066,427
Solar cell products	3,390,511	5,054,173	3,141,457
Solar wafer products	4,982,969	2,524,614	581,924
Solar ingot products	257,514	1,409,413	1,608,721

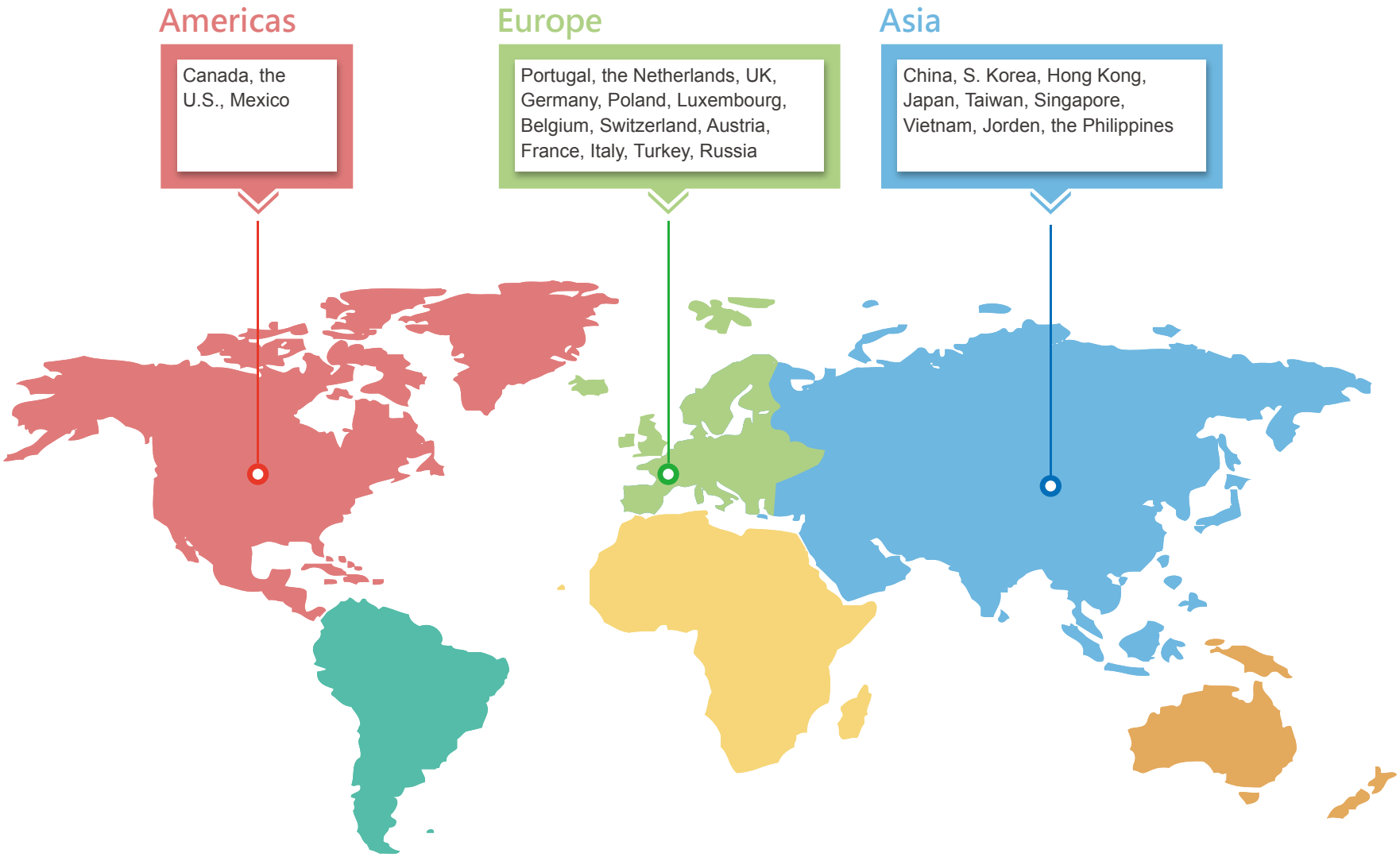






Domestic sales
Asia
The americas
Other

Sales Areas


Americas
Canada, the U.S., Mexico
Europe
Portugal, the Netherlands, UK, Germany, Poland, Luxembourg, Belgium, Switzerland, Austria, France, Italy, Turkey, Russia
Asia
China, S. Korea, Hong Kong, Japan, Taiwan, Singapore, Vietnam, Jorden, the Philippines

About the Company

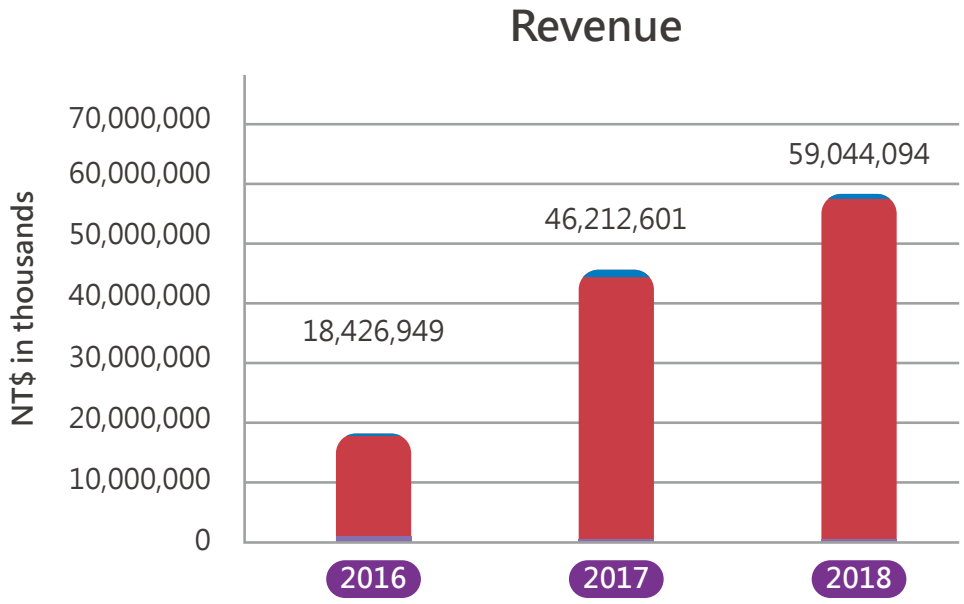
Semiconductor Industry

Product Sales

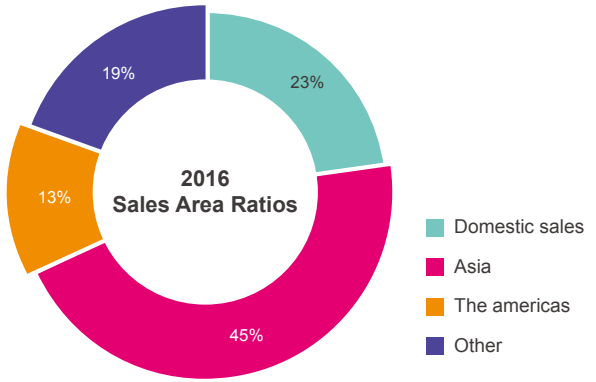
The rapid growth in the semiconductor market in 2018 means the development of new production capacity and new technologies has stimulated the demand for quality silicon wafers. Given such a thriving prospect for the industry, our subsidiary, GlobalWafers, has maximized the post-acquisition production capacity & performance. With flexible adjustments and strengthened operation as a response to the vibrant sales, our home and offshore subsidiary companies have all reached their production capacity in terms of output and reached a new record height in annual profits.

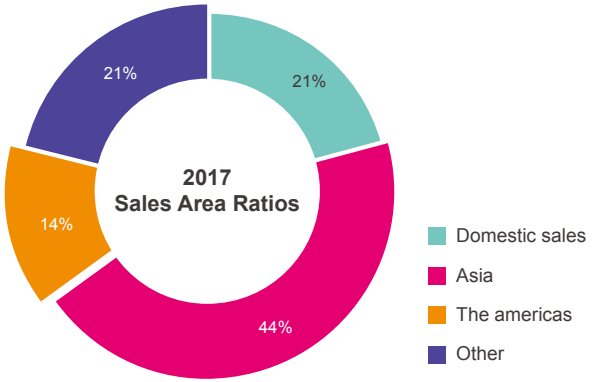
- Sales Area Ratios

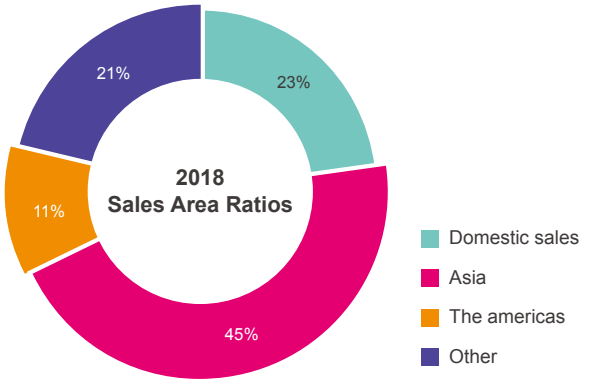
  After the Topsil and SEMI acquisition in 2016, GlobalWafers has successfully obtained their existing customer orders and worldwide sales networks, thereby reaching a stable and balanced rise in sales area and revenue ratio, with the Asia region being the majority including a domestic sales ratio of over 60%, followed by the Americas.



	2016	2017	2018
Semiconductor ingots products	167,912	496,690	492,114
Semiconductor chips products	17,850,125	45,540,327	58,447,151
Other	408,912	175,584	104,829







Business 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 thereby fulfill its corporate social responsibility.

01 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.

02 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.

03 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.

04 Give Back to 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	Member	Role
Taiwan photovoltaic industry association		•	Director
SEMI taiwan	•	•	Board member
Chinese professional management association	•	•	Supervisor
Taiwan mergers & acquisitions and private equity council	•	•	Chairman
International technology roadmap for photovoltaic (ITRPV)	•	•	Co-Chairman
Chinese professional management association of hsinchu		•	
The allied association for science park industries		•	
The institute of internal auditors—chinese taiwan		•	
Computer audit association		•	

About the Company

Company Chronology

Development History Please refer to "About SAS" on SAS website.

Awards & Recognitions

2016

- **April** — Ranked in the top 5% of all TPEx-listed companies in the 2nd Corporate Governance Appraisal
- **December** — Honored with the "Golden Energy Award" for outstanding photovoltaic products presented by the Bureau of Energy, MOEA
- **August** — Dr. Chun-wen Lan, chief high-tech consultant of SAS, was recognized with the prestigious Laudise Prize by the International Organization of Crystal Growth (IOCG) in 2016: the award-winning high-performance polycrystalline crystal growth technology was jointly developed by Dr. Lan and the SAS R&D team

2017

- **April**
  - Ranked in the top 5% of all TPEx-listed companies in the 3rd Corporate Governance Appraisal
  - Honored with the 2016 National Invention & Creation Award
- **February** — SAS Sunrise Energy, an SAS subsidiary, is honored with the System Integration Output Award at the 2017 Smart City Summit & Expo
- **December** — Listed as a benchmark enterprise in Economic Daily News (2017 CSR Yearbook)
- **November**
  - Honored with the Green Procurement, Green Services and Production of Low Carbon Products Performance Unit
  - Honored with a Gold Award in the Electronic Information Manufacturing Industry category of the "2017 Taiwan Corporate Sustainability Awards (TCSA)" – released for the first time

2018

- **April** — Ranked in the top 5% of all TPEx-listed companies in the 4th Corporate Governance Appraisal

2019

- **April** — Ranked in the top 5% of all TPEx-listed companies in the 5th Corporate Governance Appraisal

1

Stakeholder Engagement & Analysis

1.1 Stakeholder Identification

1.2 Stakeholder Communication and Response

1.3 Identification and Analysis of Material Aspects

1 Stakeholder Engagement & Analysis

1.1 Stakeholder Identification

Identifying and communicating stakeholder is at the core of corporate social responsibility. Based on operational characteristics and cross-departmental discussion, SAS has identified its shareholders that include staff members, customers, shareholders (investors) and suppliers (contractors), governmental departments (Science Park Bureau, Environmental Protection Bureau, Environmental Protection Administration, Energy Conversation Bureau, Ministry of Labor and so on) and the media.

1.2 Stakeholder Communication and Response

SAS has established all kinds of communication channels in its daily operations to maintain inter-communication with stakeholders. A mailbox and a customer service hotline for external communication have also been set up on the company website to collect opinions of our primary stakeholders related to our management & activities, i.e. investors, customers, media and so on.

Primary Stakeholders	Significance to SAS	Communication Channel	Communication Frequency	Issues of Concern
Customers	Company's main source of revenue.	Operation meetings	Non-scheduled	1. Prices 2. Quality 3. Due date 4. Environmental responsibility 5. Carbon Inventory / carbon footprint (greenhouse gas emission)
		Customer satisfaction survey	Once every six months	
		Customer audit	Non-scheduled	
		Customer questionnaire	Non-scheduled	
		Appeal / complaints telephone or email	Non-scheduled	
Employees	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.	Internal website and emails	Non-scheduled	1. Salaries 2. Benefits 3. Work environment (including occupational safety and hygiene, and healthy workplace) 4. Equal rights
		Company notice board	Non-scheduled	
		Labor-management meetings	Four meetings per year	
		Complaint boxes or hotlines	Non-scheduled	
		Performance appraisal interviews	Once a year	
		All organizational meetings	Non-scheduled	
Shareholders / investors	All shareholders are the company's investors. The company will handle all disclosed information with fairness as the principle.	Shareholders meeting, institutional investors conference, domestic investment institute seminars and face-to-face communication meetings.	A total of 2 institutional investors conferences in 2018.	1. Operating performance 2. Corporate governance 3. Integrity and ethics / Anti-corruption
		Company annual report	Once a year	
		News announcement on company websites and the Market observation post system	Non-scheduled	
		Collecting and replying to messages via telephone or emails	Non-scheduled	
Suppliers / contractors	Are the company's partners and need to maintain the same ideals as ours in order to provide services in line with our needs.	Operation meetings	Non-scheduled	1. Prices 2. Management guidelines for suppliers / Contractors
		On-site audit	Irregularly on an annual basis	
		Collecting and replying to messages via telephone or emails	Non-scheduled	
Governmental institutes (Mainly the science park bureau, environmental protection bureau, environmental protection administration, energy conversation bureau, ministry of labor and so on)	We need to main an open and pleasant communication relationship to express our determination of complying with regulations.	Correspondence of official documents, meetings (public hearings or conferences)	Non-scheduled	1. Maintain legal compliance (the energy act: our energy management saves electricity by 1% annually. wastewater treatment standards: wastewater management for new manufacturing processes labor standards act / occupational safety and health act: labor conditions / overwork issues) 2. Announcements of newly added / amended laws and regulations; permits review / approval for reference (waste disposal act: waste clearance contractors supervision and management; waste classification 3. Communication regarding regulations (and drafts); communication regarding regulation explanation (air pollution reporting procedures)
		Communicating by meeting with associations or unions	Non-scheduled	
		In-Factory Audits	Non-scheduled	
The media	We establish a contact channel with the media and provide non-scheduled, correct, fair and objective industry and corporate news.	Releasing news We sporadically receive interviews by the media and provide industry news.	An average of 2-3 pressure releases every quarter	1. Company development direction 2. Operating performance

1 Stakeholder Engagement & Analysis

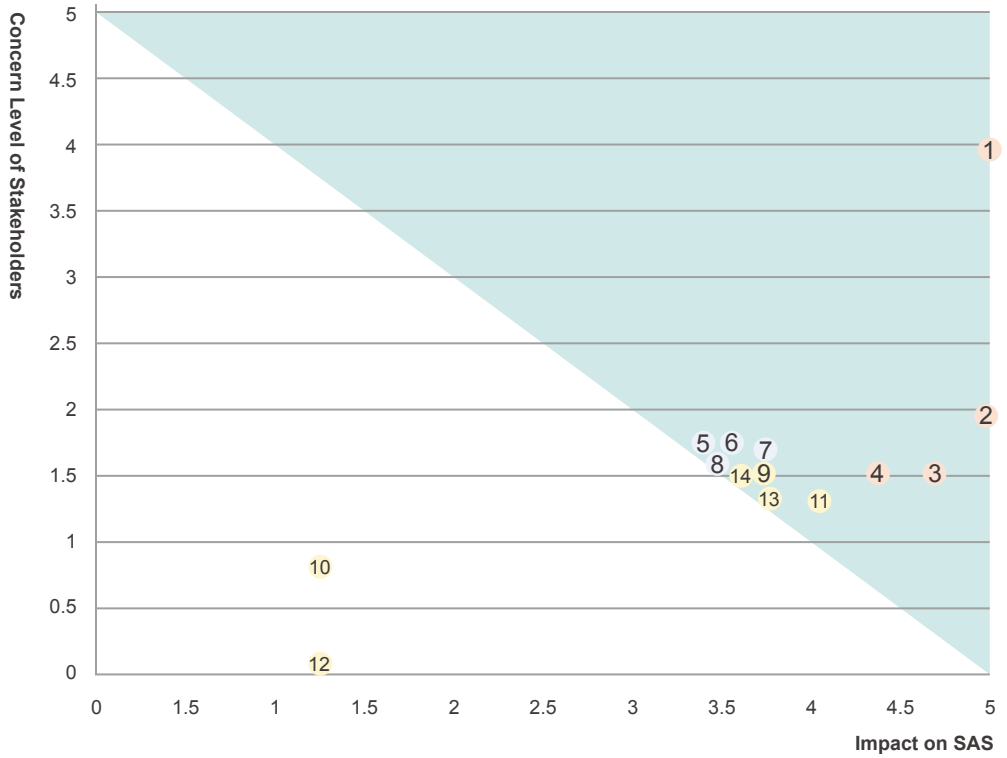
1.3 Identification and Analysis of Material Aspects

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.

The identification of material issues is based on the online questionnaire survey conducted on the company website and the interaction experience and communication records between the stakeholders and the president office, marketing division, procurement division, administrative division and relevant divisions for external affairs of all branch companies, besides collecting issues of concern to the employees, customers, shareholders (investors), suppliers (contractors), governmental institutes (Science Park Bureau, Environmental Protection Bureau, Environmental Protection Administration, Energy Conversation Bureau, Ministry of Labor and so on) and the media. Based on stakeholders' concern level regarding topics on the online questionnaire, "Concern Level of Stakeholders" is assessed. With consideration of the issue's impact on the company and on the external social, environmental and economic impact, "Impact on SAS" is thus assessed by division representatives in the Corporate Social Responsibility Committee. A materiality matrix is thereby drawn, based on its "Concern Level of Stakeholders" and "Impact on SAS". Issues with high concern and high impact are thus listed as material issues. We will disclose in this report its management guidelines and other issues not yet reaching major impact will be disclosed as a summery or not disclosed in this report.

1 Stakeholder Engagement & Analysis

Aspects	Serial No.	Issues	Material
Economic Aspect	1	Legal compliance (including economic, environmental and social aspects)	V
	2	Corporate governance	V
	3	Operating performance	V
	4	Ethics & integrity / Anti-corruption	V
Environmental Aspect	5	Energy resources consumption (including measures like energy conservation & carbon reduction)	V
	6	Greenhouse gas (GHG) emission	V
	7	Waste management (including reuse)	V
	8	Pollution prevention (air and water)	V
Social Aspect	9	Benefitspolicy	V
	10	Local job opportunities	
	11	Work environments (including occupational safety and hygiene, workplace health)	V
	12	Labor's human rights	
	13	Product quality and customer satisfaction	V
	14	Employee education & training	V



Boundary and Scope of Material Aspects

Material Topics		Boundary: Within the Organization						Boundary: Outside the Organization	Corresponding GRI Standards	Corresponding Chapters
		SAS			Subsidiary					
		Headquarters	Chunan Branch Company	Yilan Branch Company	Aleo	Globalwafers	FZtech Inc.			
Economic Aspect	Legal compliance (including economic, environmental and social aspects)	•	•	•					GRI 419 GRI 307	2.2.4 Legal compliance
	Corporate governance	•	•	•					GRI 102- Goverance	2.2 Corporate governance
	Operating performance	•	•	•	•	•	•		GRI 201	2.3 Operation performance
	Ethics & integrity / anti-corruption	•	•	•					GRI 102- Ethics and integrity GRI 205	2.2.2 Ethics & integrity
Environmental Aspect	Energy resources consumption (including energy conservation & carbon reduction)		•	•			•		GRI 301 GRI 302 GRI 303 GRI 305	4.1 Energy resources consumption and reduction
	Greenhouse gas (GHG) emission		•	•					GRI 305	4.1 Energy resources consumption and reduction
	Waste control (including reuse)		•	•					GRI 306	4.3 Waste management
	Pollution prevention (air and water)		•	•					GRI 306	4.2 Pollution prevention
Social Aspect	Benefits policy	•	•	•					GRI 401	5.1 Talent recruitment and human resources 5.2 Remuneration and benefits
	Work environment (including occupational safety and hygiene; workplace health)	•	•	•					GRI 403	5.4 Friendly workplace
	Product quality and customer satisfaction		•	•					GRI 102-43	3.2 Customer and product service
	Employee education & training	•	•	•					GRI 404	5.3 Education training

2

Governance & Operation

2 Governance & Operation

Material Topics

Corporate Governance, Ethics & Integrity (Anti-Corruption), Operating Performance, Legal Compliance

Significance to SAS

SAS complies with the principles of ethics, integrity, and transparency in all its corporate governance practices. The company strives to establish an effective corporate governance framework and strengthens board functions, internal management, risk control, and high-performance products and product differentiation strategies to actively fulfill its corporate social responsibility and generate long-term benefits for all shareholders and stakeholders.

Management Mechanism

Policies

- To serve customers with vertical integration
- To establish and secure our competitiveness through resources integration, cost reduction, and high-performance products and product differentiation strategies
- To actively expand power plant deployment so as to strengthen downstream products export and thereby achieve increased sales volume

Commitment

- Maximization of shareholders' equity and corporate sustainable development

Goals

Short-term Goals

- To strengthen cooperation with non-Chinese markets and regions and to enhance capacity in responding to market changes
- To actively deploy our solar power plant business with a focus on Taiwan and Southeast Asia and to accelerate planning, investment, development and construction of ground-mounted and floating power plants

Mid-term Goals

- To expand cooperation with strategic customers and to extend product services with the goal of becoming a cutting-edge green energy solutions provider
- To strengthen and expand market development and accelerate development of next-generation highly-efficient and competitively-priced new products
- To conduct in-depth downstream system business development, to strengthen vertical integration and global deployment, and to increase operating profit ratios

Long-term Goals

- To have a firm grasp of market trends and industry pulse and timely adjustment on management strategies and to continue with R&D of new-generation ultra-efficient products so as to strengthen the company's overall maneuvering competitiveness
- To develop new partners for solar power system investment and collaboration and to create terminal export opportunities for long-term stable returns
- To establish a corporate culture ingrained in business integrity and to implement a sound corporate governance system to achieve the goal of sustainable growth

System

External System

- Compliance with such regulations as the Company Act, Securities and Exchange Act, Business Mergers And Acquisitions Act, Guidelines for Online Filing of Public Information by Public Companies, Fair Trade Act, and Labor Standards Act.

Internal System

- Establishment of an internal control system, Articles of Incorporation, Procedures Governing the Acquisition and Disposal of Assets, Endorsement / Guarantee Management Guidelines, Operating Procedures Governing Loaning of Funds, Procedures Governing Derivative Transactions, Corporate Governance Best Practice Principles, Corporate Social Responsibility Best Practice Principles, Ethical Corporate Management Best Practice Principles, Risk Management Guidelines, Code of Ethical Conduct, Guidelines for the Handling of Reported Cases of Illegal and Unethical Conduct, Rules Governing the Exercise of Rights and Participation in Resolutions by Juristic Person Shareholders With Controlling Power, Operating Procedures for the Handling of Material Internal Information, Management Procedures for the Prevention of Insider Trading, Guidelines for the Reporting of Public Information, Management Guidelines for Liability Commitments and Contingencies, Operating Procedures for Transactions between Conglomerates, Specific Companies, and Related Parties, Rules Governing Supervision and Management of Financial and Business Matters Between Affiliated Enterprises, and Management Guidelines for Long- and Short-Term Investments.

2
Governance & Operation

Resources

- The R&D investment in 2018 came to NT$1,849,867,000 which accounted for ***3%*** of total revenue and expenses.

Concrete Action

- Initiating Annual Operation Plans and formulation of KPIs for each department to strengthen internal operational management and control.
- Regular convening of business and production & marketing meetings to review goal achievement status and propose improvement & response strategies
- Establishing an incentive system for improvement proposals to boost process research and product quality betterment
- Formulating appropriate measuring methods upon identifying potential risk factors by each department (risk measurement including risk analysis and assessment)
- Strengthening compliance with laws and regulations and relevant industry laws, along with regular internal reviews of the status of compliance with laws and regulations governing the industry to which the company belongs
- Implementing a legal affairs mechanism and internal audits to facilitate our determination for sustainable development

2018 Achievements & Performance

- Consolidated revenue of NT$ 69.239 billion and annual growth rate of ***17%***, another record high.
- Consolidated operating income of NT$ 13.178 billion and annual growth rate of ***108%***.
- EPS of NT$3.36, an increase of NT$1.56 from the previous year of NT$1.8.
- Shareholders' equity of NT$ 47.914 billion, a ***9%*** increase from the previous year.
- ROE has increased from 9.91% to ***18.84%***.
- In 2018, the contracted solar energy installations reached a total capacity of 26 MW in Taiwan alone. By the yearend of 2018, the domestic and offshore contracted solar energy installations reached approx. 97 MW.
- By the end of 2018, SAS achieved worldwide acquisition of ***267*** patents in total.
- Ranking in the top 5% of all TPEx-listed companies in five consecutive corporate governance appraisals.

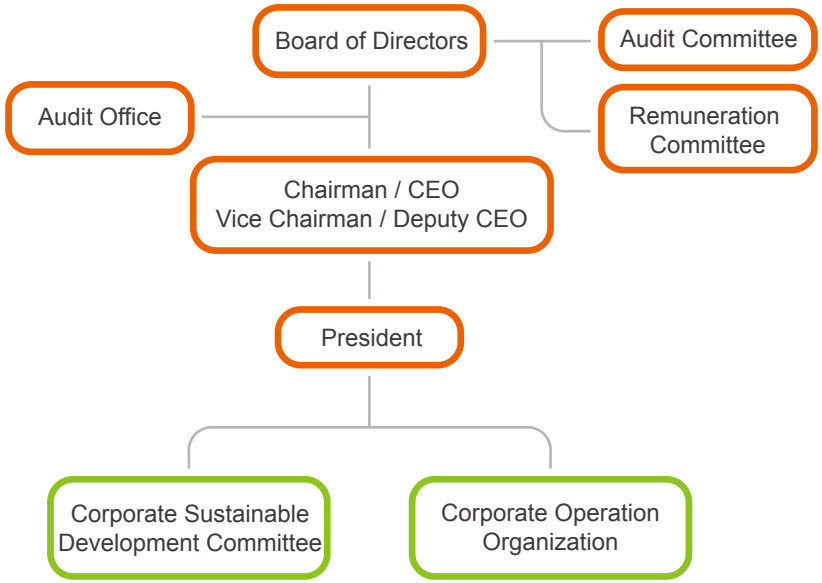
2
Governance & Operation

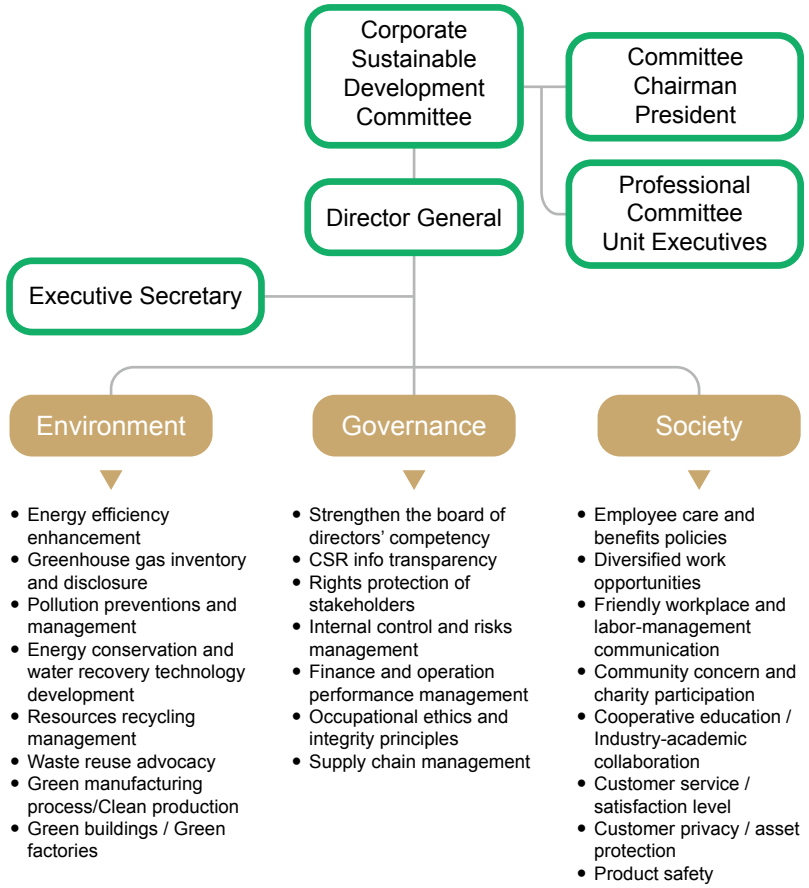
2.1 Sustainable Organization

SAS established a Sustainable Development Committee in April 2016 to realize its sustainable operation goals and fulfill its corporate social responsibility. The committee is the company's highest body in charge of CSR implementation. The organizational structure of the committee is illustrated as below. The President serves as the Chairman and department executives as members of this committee which plans and coordinates CSR and sustainable development directions and goals.

The committee is further divided into three task forces, (namely, the environmental, governance, and social sections) to ensure implementation of activities in the aspects of environment, society, and governance. Specific members are designated to take charge of cross-department integration and check on the progress and execute CRS implementations. Tracking, inspection and reviews are carried out on a regular basis. The task performance and goal achievement is reviewed by the chairman on an annual basis. In addition, the committee reported key implementation points of the year to the board of directors on December 13, 2018.

Sino-American Silicon Products Inc.





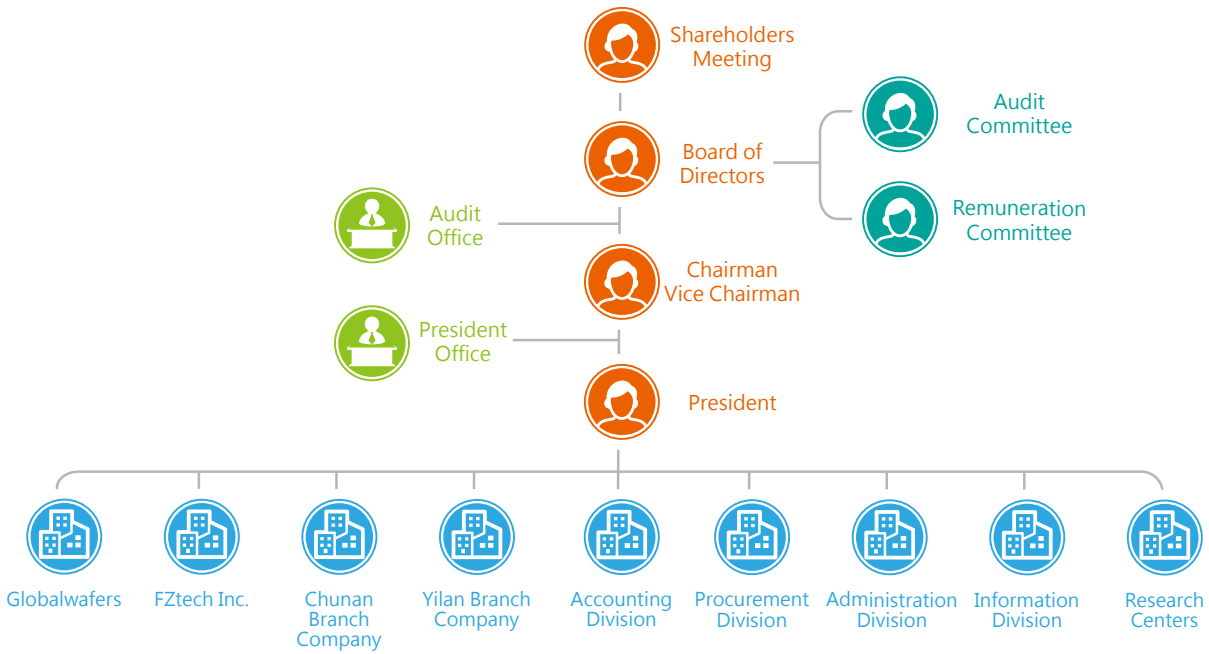
2 Governance & Operation

2.2 Corporate Governance

SAS has made a long-term commitment to promote business integrity policies to form a corporate culture characterized by ethical corporate management. The company has also strengthened information disclosure transparency and has been ranked in the top 5% of all TPEx-listed companies in corporate governance appraisals for the past 5 consecutive years. This achievement highlights the company's determination to pursue sustainable corporate management.

2.2.1 Corporate Governance Framework

SAS Organizational Chart



Summary of Key Points for the Corporate Governance Organization

* The SAS board of directors comprise 12 directors of whom 3 are independent directors. (Originally there were 13 directors. CDIB Venture Capital stepped down from the corporate director position in December 2018.)
* Two of the 12 directors are female.
* The Audit Committee and Remuneration Committee both consist of independent directors.
* The organizational charter of all committees is publicly disclosed in the corporate website.
* Results of annual self-performance appraisals conducted by the board of directors are publicly disclosed on the corporate website.
* Results of annual self-performance appraisals conducted by the audit and remuneration committees are publicly disclosed on the corporate website.

Board Operations

The SAS board of directors comprises 12 directors, elected for a term of three years and each armed with profound knowledge and expertise, namely, in professional technologies, business management, legal and financial affairs, strategy management. Board directors receive 6 hours of advanced training per year to enhance their professional competence and legal literacy. Important motions are submitted to the Audit Committee for preliminary review and discussion prior to resolution by the board. Board resolutions are made public on company website for enhanced information transparency and for protection of shareholders' rights and interests.

Recusal for the 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.

Pursuant to the regulations set forth in Article 192-1 of the Company Act, a candidate nomination system has been adopted for SAS board (including independent directors) elections. Shareholders elect the directors from the nominees listed in the roster of director candidates. A total of 6 SAS board meetings were held in 2018 with an average attendance rate of 88%. Board composition, professional and educational background and attendance record of board members are shown in the chart below:

Board Members' Professional and Educational Background and Attendance Record in 2018

Title	Name	Gender	Primary Professional (Educational) Background	Actual Attendance	Presence by Proxy	Actual Attendance Rate	Notes
Chairman	M.K. Lu / Ming-kuang Lu	Male	Honorary doctorship in engineering from national chiao tung university / successful completion of the advanced mba training program for entrepreneurs offered by national chengchi university President of lite-on semiconductor corp. And lite-on power semi and vice president of silitek corp.	6	0	100%	
Vice Chairman	Tang-liang Yao	Male	Ma degree from the graduate institute of management at tamkang university Assistant vice president of the manufacturing division of lite-on power semi and president of sino-american silicon products inc.	6	0	100%	
Director	Hsiu-lan Hsu	Female	Ma in computer science from university of illinois Executive vice president of sino-american silicon products inc.	6	0	100%	
Director	United Renewable Energy Co., Ltd. Representative: Kang-hsin Liu	Male	Department of shipping & transportation management, national taiwan college of marine science and technology Assistant vice president of the general administration division of formosa plastics, director of formosa chemicals & fibre corporation	3	2	60%	United Renewable Energy Co., Ltd. appointed Chuan-hsien Hong as the director representative on November 30, 2018.
Director	United Renewable Energy Co., Ltd. Representative: Chuan-hsien Hong	Male	Phd in electrical engineering from national tsing hua university Research division director of the photovoltaic solar energy division at the industry technology research institute and vice president of sinonar amorphous silicon solar cell co.	1	0	100%	
Director	Wen-huei Tsai	Male	Accounting department, national chengchi university Director of actherm inc. And ene technology inc.	5	1	83%	
Director	Mao Yang Co., Ltd. Representative: Rong-kang Sun	Male	Department of law, chinese culture university / chairman of yuanjie investment	6	0	100%	
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.	6	0	100%	
Director	Kun Chang Investment Co., Ltd Representative: Yu-da Chang	Male	Ma from the ntu graduate institute of finance Vice president of weilian technology co., Ltd.	6	0	100%	

Title	Name	Gender	Primary Professional (Educational) Background	Actual Attendance	Presence by Proxy	Actual Attendance Rate	Notes
Director	Hung Mao Investment Representative: Hsueh-chung Lu	Male	Msc in electrical and computer engineering from uc santa barbara, california, usa / vice president of the r&d division of via technologies, inc.	4	0	100%	Hung Mao Investment appointed Chu-wang Chen as the director representative on November 1 2018.
Director	Hung Mao Investment Representative: Chu-wang Chen	Male	Bachelor's degree in engineering from the university of california berkeley / greater china chief executive officer of via technologies inc / special assistant to via president	0	2	0%	
Director	CDIB Venture Capital Representative: Chun-huei Ho	Male	Phd in economics from university of pittsburgh, pennsylvania, usa / msc from the institute of transportation engineering, national chiao tung university Deputy executive secretary, national development fund, executive yuan, roc; supervisor for taiwan semiconductor manufacturing co., Ltd.; Chairman of pharmaengine, inc.; President of cdib capital group	4	2	67%	CDIB Venture Capital stepped down on December 28 2018.
Independent Director	Ting-ko Chen	Male	Phd in business administration from university of michigan Ruentex group consultant, president of charoen pokphand new york, vice president of formosa plastics jm eagle usa, chairman of sinofac securities co., Ltd., Professor/director/ dean of the ntu college of management, dean/ professor and dean of the college of management, tamkang university, chair professor and dean of the college of management, asia university	6	0	100%	
Independent Director	Shing-hsien Lin	Male	Master of commerce, tulane university, usa Ba from the department of electrophysics, national chiao tung university, president and ceo of lite-on technology corporation, vice chairman of lite-on group, president of silitek corp., President of texas instruments taiwan	5	1	83%	
Independent Director	Mong-hua Huang	Female	Master of commerce, tulane university, usa President of leotek electronics corporation, manager and senior accounting officer of texas instruments taiwan, president office director (vice president) of silitek corp., Chief auditor (vice president) of lite-on group, senior vice president of lite-on technology corporation	5	1	83%	

For concurrent positions of SAS directors in SAS and other companies, as well as director remuneration and resolutions by the board of directors, please refer to the 2018 SAS Annual Report.

Remuneration Committee

SAS established a Remuneration Committee on December 20, 2011 to implement a systematic compensation scheme. The Remuneration Committee is in charge of formulating and reviewing performance assessment and remuneration policies, systems, standards, and structures for directors and managers.

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

The average attendance rate for the three Remuneration Committee meetings in 2018 reached 89%. Attendance record of independent directors is as indicated in the table below:

Attendance Record of the 2018 Remuneration Committee's Independent Directors

Title	Name	Actual Attendance	Presence by Proxy	Actual Attendance Rate	Notes
Convener	Ting-ko Chen	3	0	100%	
Board member	Shing-hsien Lin	2	1	67%	
Board member	Mong-hua Huang	3	0	100%	

Audit Committee

SAS established an Audit Committee on June 26, 2014 to strengthen the internal monitoring mechanism in corporate governance. The committee consists entirely of independent directors, mainly responsible for appointing/dismissing CPAs, determining CPA remuneration, auditing and discussing quarterly/semiannual/annual financial statements, auditing internal control system, and revising and auditing internal control statements.

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

For major resolutions of the Audit Committee, please refer to the SAS 2018 Annual Report.

The average attendance rate for the six Audit Committee meetings in 2018 reached 89%. Attendance record of independent directors is as indicated in the table below:

Attendance Record of the 2018 Audit Committee's Independent Directors

Title	Name	Actual Attendance	Presence by Proxy	Actual Attendance Rate	Notes
Independent director	Ting-ko Chen	6	0	100%	
Independent director	Shing-hsien Lin	5	1	83%	
Independent director	Mong-hua Huang	5	1	83%	

Performance Assessment

Over 97% completion rate of overall assessment indicators. Performance assessment results exceed the standards.

2 Governance & Operation

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
- Auditing the company's accounting system, financial status and financial statements, auditing reports, along with tracking conditions.
- 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 shareholders' meetings are attended by board directors
- 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.

2.2.2 Ethics and Integrity

To implement ethical corporate management, SAS has formulated integrity-based internal regulations to be observed by all staff members.

Integrity and Ethical Norms

Integrity and Virtuousness is one of the company's core values. To create an environment conducive to ethical corporate management, SAS has formulated relevant guidelines and a communication mechanism to be observed by all directors, managers and staff members. Integrity risks are minimized through a rigorous management mechanism and effective controls in order to fulfill the vision of generating value and benefits for customers, shareholders, and stakeholders.

To ensure that all our employees can conduct operational activities by following the highest ethical standards, SAS has stipulated important internal regulations such as "Best Practice Principles", "Code of Ethical Conduct", and "Risks Management Guidelines", which have been publicly announced on the corporate website and internal website for referencing by employees at any time. These regulations concretely outline what SAS board directors, managers and employees need to take into notice when executing their businesses. Employees are given training & education on ethical management policies to ensure full understanding of and compliance with these regulations, as well as effective implementation in their daily operations. The goal is to enhance the quality of conduct and occupational ethics of all staff members.

Anti-Corruption

SAS is firmly committed to anti-corruption and active prevention of unethical conduct. In addition to the signing of "IPR and Confidentiality Agreements" with all employees to ensure that they refrain from sacrificing the company's rights and interests for the sake of their personal benefits. The "Ethical Corporate Management Best Practice Principles" clearly stipulate that staff members, during the process of engaging in commercial activities, shall not directly or indirectly offer, promise, request or accept any improper benefits or commit unethical acts including breach of ethics, illegal acts, or breach of fiduciary duty for purposes of acquiring or maintaining benefits.

For Ethical Corporate Management Best Practice Principles and other internal regulations, please refer to the SAS website.

Reporting Channel and Informant Protection

To ensure implementation of ethical management, "SAS has formulated Guidelines for the Handling of Reported Cases of Illegal and Immoral or Unethical Conduct" and established a well-defined disciplinary and appeal system for violations of the ethical corporate management rules. An employee suggestion box, email box, and grievance hotline are set up and announced on the internal website to encourage internal and external personnel to report unethical or improper behaviors. The identity of the informant and the reported content will remain strictly confidential. The HR departments are in charge of verification and follow-up handling. Disciplinary measures will be

imposed based on the severity of the offense if infractions of ethical management regulations are verified. The President Office is responsible for the implementation of ethical corporate management policies and the formulation, monitoring and execution of prevention plans. The implementation status is reported to the board of directors on an annual basis. No instances of corruption were reported in 2018.

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Intellectual Property Management Guidelines

In 2010, SAS adopted the Taiwan Intellectual Property Right Management System (TIPS). The company passed the basic and advanced certifications in 2010-2011 and 2012-2015, respectively. In 2016, SAS became the first company in the solar energy industry to pass the AA-level certification. Since the TIPS adoption, we have gradually established patent management guidelines and systematic e-management. We have also purchased a patent retrieval system for former case searches and organized proposal review meetings. The goal is to enhance patent quality and strengthen patent deployment for different technologies and products. In addition, SAS has gradually enhanced confidentiality control, as seen in the control and audit over the use of electronic storage devices (USB) and emails sent externally sent e-mails to ensure effective protection of business secrets and prevent leakage of critical R&D results. To this date, SAS has obtained 267 patent certifications. In future, the company will continue to expand globally in its patent deployment for accumulated competitiveness.

Recusal for Conflicts of Interest

SAS places much emphasis on integrity and ethical principles and has stipulated in its "Procedures for Ethical Management and Guidelines for Conduct" that when a director, manager, or other stakeholder who attends board meetings or a juristic person that he/she represents is an interested party in relation to an agenda item, the director/manager/stakeholder 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 company, the said director/manager/stakeholder 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/manager/stakeholder will not exercise voting rights as proxy for another director.

2.2.3 Internal Audit System

The Auditing Office, which is subordinate to the board, assists directors and managers in the design of an adequate internal control mechanism to ensure sound company management and reasonable achievement of operating objectives.

The company upholds a spirit of absolute independence, objectivity and impartiality in the implementation of its internal audit system which has been approved by the board. The Office assists the board directors and managers in the inspection and assessment of shortcomings and deficiencies of the internal control system and tracking of improvements with regard to shortcomings and irregularities. The Office regularly reports its audit operations to independent directors and the board of directors.

The goal is to implement the company's self-monitoring mechanism and respond to environmental changes in a timely manner, as well as assisting all departments conducting regular internal control system and self-assessment, reviewing inspection records of all departments, and providing timely suggestions for improvement. This data serves as a key reference for review, revision, and adjustment of the design and execution of the internal control system to guarantee effective and continuous implementation of the system.

2.2.4 Legal Compliance

SAS formulates relevant policies and norms and the board leads by example through supervision of the management team to ensure effective and continued implementation of ethical norms and compliance with relevant laws and regulations. Continued training and education ensures compliance by all staff members.

In 2018, there were 8 cases of penalty with a total fine of NT$ 502,000. Most of the violation was against the occupational safety and environmental protection. As such, we have strengthened our internal management and requested all factories within the group to conduct cross auditing hoping to uncover potential risks as seen from different perspectives and as a result, to enhance internal management.

Penalty for Violation in 2018

Item	Penalty of Fines (NTD)	Matter of Violation	Correction Measures
1	20,000	Night time work vouchers not included in the basic wages as overtime payment. (Violating labor standards act)	Adjust and include night time work vouchers into basic wages.
2	60,000	The central control panel in the organic solvent storage room was not explosion-proof. (Violation of occupational safety and hygiene facilities regulations)	Remove the central control panel and place it outside the storage room for organic solvents.
3	60,000	1. Contains for high-pressure gases are not stored in a separate place from empty containers. (Violation of the labor inspection law) 2. Usage overdose of hazardous chemical substances. (Violation of occupational safety and hygiene facilities regulations)	Remove the overdosed hazardous chemical substances and apply to the governing authorities for increased operation quantity.
4	100,000	Air pollution equipment flow meter was not annually measured and tested in line with the standard methods. (Violation of the air pollution control act)	Execute the air volume measuring and testing of the air pollution prevention flow meter.
5	100,000	In-factory conditions were inconsistent with the operating permit for stationary pollution sources. (Violation of the air pollution control act)	Change the permit for the stationary air pollution source operation.
6	66,000	1. Excess waste declaration 2. Waste exceeded the storage expiry date. (Violation of the waste disposal act)	1. Change the waste disposal proposal. 2. Clear overdue storage of waste.
7	30,000	The prevention facilities were inconsistent with the water pollution prevention measures scheme. (Violation of the water pollution control act)	Change water pollution prevention measures scheme.
8	66,000	1. The waste on-site storage quantity was inconsistent with the declared quantity. 2. Waste exceeded the storage expiry date. (Violation of the waste disposal act)	1. Submit the correct declaration data. 2. Clear overdue storage of waste.

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

Securities Regulations	Strict Management Mechanism SAS shares are listed on taipei exchange (tpex) and must abide by securities and exchange act of r.O.C. And relevant laws and policies. • The president office has established excellent communication channels with relevant supervising authorities and constantly monitors the latest legal developments. The office is also responsible for searches of the latest legal announcements and changes. Upon identifying the latest developments, the office will notify relevant business units to take responsive measures as required. • With regard to questions submitted by relevant business units, the legal affairs department will further analyze relevant regulations and propose accurate responsive strategies upon communicating and confirming with supervising authorities.
Labor Laws and Regulations	Strict Compliance with Relevant Labor Laws • Formulating work systems and management guidelines that meet or exceed the requirements set forth in labor laws and regulations; developing excellent working conditions and communication mechanisms; building positive labor-management relations characterized by pleasant interactions amongst staff members. • Valuing employee salaries and benefits; proactively cultivate talents; implement labor laws; ensure employees' rights prior to the implementation of major policies and changes in the fields of remuneration and holiday systems, employees are notified of through labor-management meetings, electronic newsletters, and hr announcements to safeguard employee rights and interests.
Data Management	• Major policies and documents: employment contracts and business confidentialities and ipr agreements, code of ethical conduct, handling procedures for intellectual property disputes, and confidentiality agreements. • 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.
Corporate Governance / Supervision Over Subsidiaries	• Major policies and documents: code of ethical conduct; guidelines for the handling of reported cases of illegal, unethical and dishonest conduct • Management mechanism: relevant contents are incorporated into education for current employees and orientation training for newly inducted employees to ensure compliance by all employees with said code of conduct in the performance of duties.
Environmental / OSH Laws and Regulations	• Major policies and documents: identification and management of environmental, energy management, and osh related laws and other relevant requirements. • Management mechanism: monthly review of conformity to the latest amendments of relevant environmental, energy management, and osh related laws and other relevant requirements; regular assessment of conformity to applicable legal requirements.

2 Governance & Operation

Each year, we publicize relevant laws and regulations to our employees to promote their awareness regarding legal compliance. In 2018, we conducted the following courses:

Legal Compliance

- Operation of confidentiality seminars
- Patent index, application practice
- Lectures on labor standard laws
- International trade regulations
- Intellectual property concept and company confidentiality management
- Be acquainted with contracts and clauses

Health Care

- CPR + AED first aid training
- Emotion management and stress release
- Seminars on workplace violence and handling
- Seminars on sexual harassment prevention
- Seminars on smoking cessation
- High blood pressure prevention
- Health seminars on cardiovascular diseases
- On healthy cancer-free diets
- Themed seminars on workplace breastfeeding
- Themed seminars on metabolic syndrome
- Prevention of common occupational diseases in the office
- Health seminars on toxin-free bodies
- Seminars on osteoporosis prevention

Environmental Protection, Safety and Hygiene

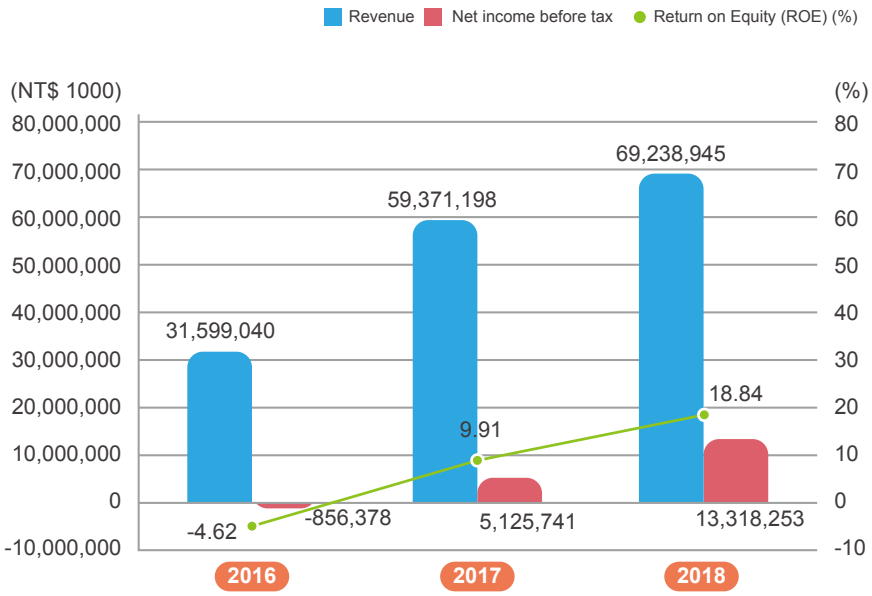
- Safety instruction for freight elevators and machineries usage
- Hydraulic aerial cage education training
- Occupational education training on safety and hygiene
- Education training for chemical splashes first aid station
- Usage instruction for in-factory detergents and emergency shower facilities
- Fire-fighting safety advocacy and fire-fighting equipment usage drills
- Emergency response courses and drills
- Safety management of contractors' in-factory construction
- Education training on operation safety in restricted space
- Environmental protection regulation practice

2.3 Operation Performance

SAS has long adhered to corporate ethical management principles and is firmly committed to the primary goal of creating value for shareholders, customers, and employees. In 2018, the already weak solar energy industry was further devastated by the impact of solar power subsidy schemes in China and the restrictions of US-China trade wars. In face of shrinking market demand and dual decline of prices and output, domestic solar power companies were all having to grapple with stringent sink-or-float challenges. They mostly resort to decreasing output and employee layoff to strengthen and improve their operational performance. In response to market conditions, the Company, in addition to adjusting production capacity, reducing inventory and adjusting product mix, has carried out appropriate human resources allocation policies to reduce operating risks. With concerted efforts from all staff members, plus outstanding performance of its subsidiary, GlobalWafers, SAS was able to outperform other companies in the industry with its revenues and profits reaching another record high in 2018. The consolidated revenue of the group reached NT$69,238,950,000 in 2018, representing a 16.6% increase from the previous year: NT$59,371,200,000. Net income after tax of the parent company amounted to NT$1,950,500,000. After-tax EPS equaled NT$3.36.

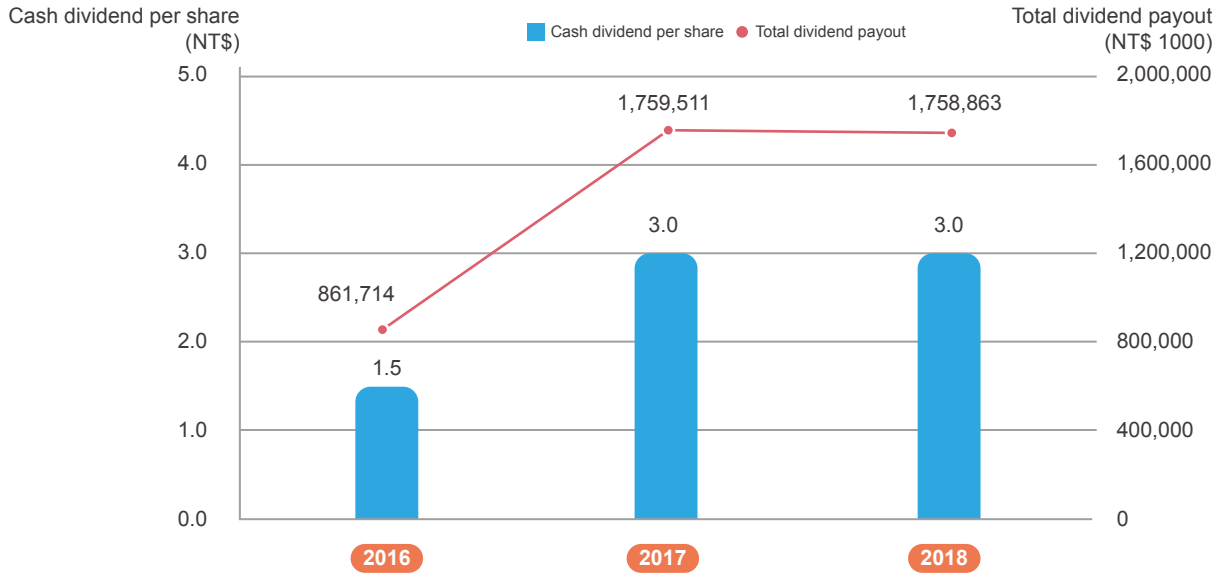
For more details on operational performance and financial data, please refer to the SAS 2018 Consolidated Financial Statement.

Financial Performance (Consolidated)



2 Governance & Operation

Cash Dividend



2018 Annual Economic Value Analysis

NT$ in thousands

Generated Direct Economic Value	Annual report: income	69,238,945
Distributed Economic Value	Operational costs	50,597,092
	Employee salaries & benefits	12,846,019
	Payment to investors	1,759,511
	Payment to the government	11,728
	Community resources	63

Overall Economic Environment and Industry Trends

Year 2018 saw a volatile and integrated performance for the overall solar energy industry, due to the June 1 new policy in China and the September MIP cancellation in Europe. The application trend leaned towards faster and cheaper Internet connection. With decreasing subsidies and the overall product demand switching towards mono crystalline, the production output by polycrystalline plants was reduced with small- and medium-sized non-competitive manufacturers leaving the market. The global installation volume has declined to 98 GW, a 4% decrease compared with the 102 GW in 2017. In 2018, SAS continued to focus its solar power business on high-performance solar products with enhanced high-conversion efficiency, while improving cost control, discontinuing non-competitive products, strengthening financial performance and proactively and carefully selective in choosing customers and strategic alliances so as to boost operational efficiency and company competitiveness.

The prospect of the solar energy industry in 2019 is still characterized by uncertainty and unpredictability. Even though the market survey agency, PV-info Link predicts the total installation volume in 2019 will reach 114 GW, the market still remains subject to extensive changes. In 2018, the solar energy industry remained in recession. As the industry entered its next phase of integration, the industry development is expected to become more stable and prosperous. SAS will continue to develop in the direction of innovative R&D, cost reduction and capacity building. It will continue to adapt to the market strategy and vertically integrate through the layout of solar power plants to strengthen the overall operational efficiency and expand the scale of operations. It is going to be a sustainable green enterprise with stable growth of revenue and profits, continues to create more value for shareholders.

2
Governance & Operation

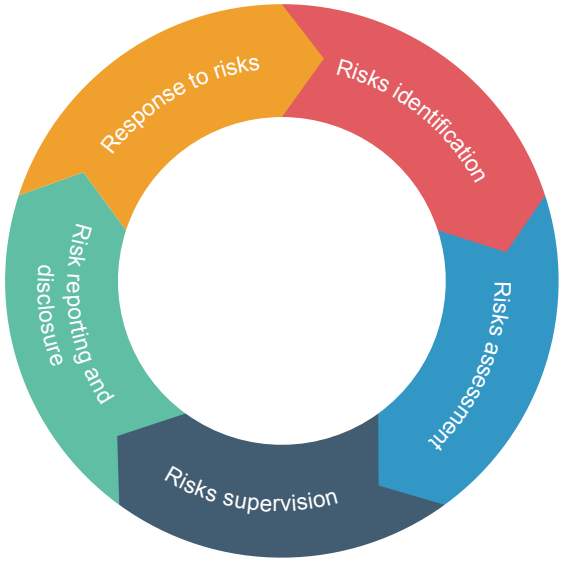
2.4 Risk Management

In response to the rapidly changing management environments and to ensure the company's stable management and sustainable development, SAS has stipulated in 2014 risks management policies and risks management guidelines. The three major objectives of the risks management system stimulation:

- Proactively engage in all businesses to enhance the quality and quantity of income, within the limits of acceptable risks standards
- Strengthen the width and depth of risks control and management and respond, when necessary, with negative listings regarding standardized and key principles
- Thoroughly facilitate systems, computer operation and disciplines to ensure the compliance with risks control and management

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

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. With risks that cannot be easily quantified, we assess them with a qualitative method, i.e. with linguistic description to express the possibility and impact of a risk occurrence. Relevant operation and risks management information is also disclosed in the company annual report and company website.



SAS' Execution of Risks Management Follows the Three-tier Risks Management System for Division of Labor and Operation.

SAS has established an effective risks management mechanism to assess and supervise its ability of withstanding risks and status of risks sustained, and to determine risks-responsive strategies and the compliance status of risks management procedures. Identified ESG risks and opportunities are as illustrated below.

Tier-1 Liability

The person in charge of each department or business operation is the risk liability holder for the said operation and should comply with internal guidelines in business operation as the preliminary unit for risks discovery, assessment and control.

Tier-2 Liability

The chief of each department is responsible for the risks management of their relevant business, as well as tracking, reviewing whether all operation details are compliant with laws and regulations.

Tier-3 Liability

The President Office shall examine the completeness of the risks management mechanism for the company hazards, operation, finance, strategies, legal compliance and contract compliance, while supervising relevant risks for each department.

2 Governance & Operation

Economic Aspect

Identified Risks	Strategies of Turning Risks into Opportunities
All risks involving management and investment	• Proactively establish a comprehensive up-, middle- and down-stream integrated supply chain to expand the operation scale and to disperse operation risks via multi-angled management strategies. • Continue to cultivate in the advanced technology R&D, commit to enhancing product performance so as to widen the gap from the competitors.
Risks of corporate governance	• Implement corporate governance policies, stipulate relevant governance guidelines, punishment and appeal systems, facilitate corporate social responsibility to demonstrate SAS' promise and determination in pursuing sustainable operation.

Environmental Aspect

Identified Risks	Strategies of Turning Risks into Opportunities
Climate change risks	The management is conducted in two major aspects: mitigation and regulation. Mitigation • Promote green products and green production to reduce energy consumption. • Promulgate water conservation measures. Regulation • Strengthen the company's withholding capacity for extreme climate conditions (drought, floods, snow storms). • Conduct energy management and enhance energy consumption efficiency as a response to increased energy costs (e.g. rising electricity bills, carbon tax, energy tax).
Risks for environmental protection	• Install the pollutant emission supervision system; devote to pollutant reduction. • Strength the risk control for turning waste into resources and reuse; use regenerated raw materials as much as possible.

Social Aspect

Identified Risks	Strategies of Turning Risks into Opportunities
Challenges for relationship maintenance and communication with internal & external stakeholders	• Strengthen the stakeholders' section on the company website; build a communication channel with our stakeholders so as to understand and respond to issues of concern to all stakeholders.
Risks for occupational safety and hygiene	• Conduct hazard identification and risks assessment, plus risk reduction measures; stipulate relevant management procedures and handling guidelines; implement emergency response drills on a regular basis. • The company conducts regular safety & hygiene education and training to prevent occupational hazards and protect labor safety and hygiene.
Risks for labor health	• Regarding particularly operation prone to health hazards, special physical check-ups are offered to employees that are newly recruited or undergo job changes. Annual special health check-ups are conducted, as well as the execution of labor operation environment supervision. • To strengthen employees' health awareness, we promulgate sporadic employee health management and health promotional events in which to share info on major illnesses or health allowing our employees access to all-round health info.
Risks for labor-management relationships	• Labor-management communication: Our company values the rights and interests of our employees. Prior to major changes in policies, notification is given to impacted employees via labor-management meetings, electronic newsletters or HR announcement, so as to ensure the employees' rights and interests. • Interviews with new recruits: With interviews, we can more directly understand how the employees are getting on in the company, shorten the time it takes for new recruits to get used to the work, and reduce labor-related risks. • Employee complaints channel: Install designated personnel for handling employee opinions, handle problems raised by employees in a timely manner, reduce labor-management conflicts.

Operation Continuation Management

To speedily resume customer product services caused by operation disruption in events of emergencies and to reduce impact on the product supply and customer service, we thus stipulated the "Emergency Response Handling Procedures for SAS Operation Crises" in 2018. Emergencies are defined as the following: disrupted supply of public facilities, labor shortage/strike, key and primary equipment breakdown, material/equipment components shortage, earthquake, fires, typhoons/hurricanes/floods, information technology dysfunction/ Internet attacks, infrastructure damage, contagious diseases and major environmental protection/occupational safety incidents. In events of the above emergencies, all authorized departments (contingency team) will take action based on the emergency response handling procedures so as to mitigate as much impact as possible. Once the state of emergency is lifted, the contingency team will review the disaster response procedures and mitigation measures in hopes of finding opportunities for continued improvements and avoiding repeated occurrence of the emergency.

3

Innovation and Service

3
Innovation and Service

Material Topics

Product quality and customer satisfaction

Significance to SAS

SAS is engaged in solar energy products manufacturing. The company's green product range includes ingots, wafers, cells, modules, and power plants. RoHS testing is carried out for products at the source (wafers, cells) and laboratory testing results of hazardous substance contents must be certified by third-party impartial units to ensure conformity to international laws and regulations and customer requirements in the field of hazardous substances.

SAS also requires its raw material and packing material suppliers to submit reports on laboratory testing of hazardous substance contents certified by third-party impartial units to ensure conformity of the upstream supply chain to product safety and toxicity requirements. The goal is to realize eco-friendliness and environmental protection at the source.

The core mission for SAS is to provide customers with satisfying services and high-quality products. The company is deeply aware that superior product quality is a key prerequisite to corporate competitiveness. As such, task-specific specialist teams are set up to take charge of product development, costs, manufacturing, quality, and customer services. Product quality is constantly improved to achieve the goals of customer satisfaction and sustainable operations.

SAS is firmly committed to providing its customers with the best services possible and is deeply convinced that an excellent service quality is the key to improved customer satisfaction and consolidated customer loyalty. Professional customer service teams are set up internally to maintain excellent open communications with customers and strive to receive customer opinions and satisfy customer needs through different channels to earn their long-term support.

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 its 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 goal is to ensure in-depth cooperative relationships with customers and higher customer satisfaction with products, technologies, and services.

Management Mechanism

- SAS requires suppliers of raw materials and packing materials to provide RoHS reports during the product certification stage. Hazardous substance contents must meet customer requirements.
- RoHS testing must be carried out for solar wafers and cells on an annual basis to ensure that hazardous substance contents meet customer requirements.
- SAS is firmly committed to satisfying customer requirements. In 2018, customers requested modification of wafer dimensions mainly due to the fact that enlarged dimensions have a positive effect on wafer conversion efficiency. The new dimensions have since been adopted for mass-produced products in accordance with customer requirements after careful assessments and meticulous planning, testing and monitoring by R&D, production, manufacturing and quality assurance units.
- In the field of marketing and promotion (including advertising, sales promotion, and sponsorship), SAS strictly abides by relevant laws and regulations to prevent violations of voluntary guidelines governing marketing and promotion and avoid false or misleading advertisements.
- SAS conducts customer satisfaction surveys on a regular basis and collects customer opinions regarding services, quality, costs, and innovation. The goal is to gain a better understanding of customers as a reference for constant improvements to ensure sustainable operations and development in cooperation with customers.
- Average weighted customer satisfaction scores must exceed 8 points (maximum satisfaction) to indicate that customers have a high level of confidence in SAS products and service quality.

Short-, Mid-, and Long-term Development Goals

I.Short-term Goals (1 year)

- Continued satisfaction of customer requirements in terms of environmental laws and regulations (RoHS, REACH).
- Improvement proposal achievement rate of 100%: In order to provide customers with better product quality and services. SAS strongly encourages its employees to submit new improvement proposals regarding quality, R&D, information, production, safety, and energy conservation through organization of improvement proposal activities. All proposals are implemented upon careful assessment by professional teams to maximize benefits and achieve the goal of "continued quality improvement".

II.Mid-term Goals (2-3 years)

- No severe/major deficiencies detected in customer audits: SAS places great emphasis on customer audit processes and results since such audits provide a clear understanding of areas requiring improvement. The management sees audit results as a driving force for organizational progress. The management sets the goal of "zero severe/major deficiencies" to increase customers' confidence in SAS product quality and services.

III.Long-term Goals (over 3 years)

- Customer satisfaction scores of over 8 points (maximum satisfaction) in all aspects: The organization will continue with improvements to meet or exceed customer expectations. SAS will therefore continue to rely on various communication platforms to receive and understand customer demands. It thus stipulates the highest standards in its on-going pursuit of product quality and services to ensure sustainable corporate management.

2018 Key Achievements

- RoHS tests for raw materials, packing materials, solar chips and solar cells were compliant with customers' requirements with no feed backs of defects.
- . Following customer demand, ingot sizes were altered and mass-produced with positive response from the customers.
- Further from the 2017 commitment, the solar energy cell conversion efficiency continued to be improved:
  a. Mono-Si conversion efficiency was effectively enhanced by ***0.28%*** in 2018 (from 21.57% to 21.85%).
  b. Multi-Si conversion efficiency was effectively enhanced by ***1.33%*** in 2018 (from 19.74% to 21.07%).
  c. Bifacial conversion efficiency in 2018:
  Effective front enhancement ***0.5%*** (From 21.15% to 21.65%)
  Effective back enhancement ***0.6%*** (From 14.40% to 15.00%)
- ***0*** marketing dispute.
- The average weighted score for customer satisfaction in 2018 exceeded ***8.2*** points (maximum satisfaction).

3 Innovation and Service

3.1 Innovation Management

Current State and Development Trends of the Solar Energy Industry

The solar power industry is the industry with the largest growth potential in the 21st century. Following the gradual depletion of non-renewable resources such as coal, petroleum, and natural gas reserves, traditional energy sources will face irreversible changes. Renewable energy, solar energy in particular, will become the key element in the energy structure. Regarding renewable energy, the Bureau of Energy, Ministry of Economic Affairs, has executed measures centered on photovoltaic and wind power generation. The goal is to reach a 20% renewable energy ratio by 2025. The "2-Year Photovoltaic Promotion Program" approved by the Executive Yuan in October 2016 is expected to generate an installed solar power capacity of 1.52GW (1,520MW) by June 2018. This program aims to build on the fundamentals via its short-term goal and carry out root-tackling measures and optimize the environment via mid- and long-term goals. Installation goals for the roof-top and ground-mounted types. The roof-top type is aimed to include rooftops on central government-owned lands, in private factories, agricultural facilities and others. The ground-mounted type is aimed to include salt industry land, severe land subsidence areas, water bodies and landfills.

To this end, high-quality wafers are required to support the development of Taiwan's solar energy industry, and continuous enhancement of solar cell conversion efficiency has to be in place so as to reduce costs per watt and increase Taiwan's international competitiveness.

Continued Innovation and Development of Cutting-edge Products and Technologies

SAS has many years' expensive experience in solar crystal growth and its high-efficiency multi-crystalline products are leading the industry and unrivaled worldwide. The company also possesses powerful R&D capabilities in thermal field simulation and design. The A3+ wafer launched in 2011 has since leaped onto the world stage. In September 2012, its Aegis wafer was honored with the Silicon Innovation Award, the most prestigious international award in the solar energy industry. The company earned the world's first patent for high-efficiency wafer technology (patent number: I452185) in September 2014. The A5+ wafer with its world-leading conversion efficiency went into mass production in late 2014. 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 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.

3 Innovation and Service

The SAS R&D investment are reflected in the number of patent applications. In an 2013 analysis and survey conducted by the Science & Technology Law Institute, alongside Ocean Tomo, an authority in intellectual property, on IPR management and achievements of TWSE/ TPEx-listed companies in Taiwan, SAS was ranked among the “top 50 Taiwanese listed enterprises regarding its US patent value”. This achievement indicates that SAS has become a benchmark enterprise with high-value patents. The company earned a total of 267 patents in 2018.

Past R&D Awards

2008

Technology Award, MOE
Outstanding Innovation Award

2010

MOE Industry Program
Excellent Industry Contribution Award

2011

Industrial Development Bureau
TIPS Industry Demonstration

Science park
R&D Award

2012

Solar Industrial
Silicon Innovation Award

2013

PVSEC
Outstanding Technology Development & Research Contribution Award

2016

IOCG
Laudise Prize Award

2017

Intellectual Property Office, Ministry of Economic Affairs.
2016 National Innovation Award Silver Award

Continued Product Innovation

R&D Achievements in 2018

- DW solar multi crystalline wafers
- Ultra-high efficiency mono crystalline silicon solar cells

Future R&D Development Program

- Ultra-high efficiency P-type mono crystalline silicon solar cells
- Development and mass production of high-efficiency N-type mono crystalline silicon solar cell technology

3
Innovation and Service

3.2 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 manufacturer of solar wafers and cells and provides cutting-edge process technologies and product services to satisfy customer demands. It is customer satisfaction orientated, with emphasis on customer needs and professionalism. It adopts a customer perspective with customer demands as the main reference. It also aims to provide customers with comprehensive services to achieve the goals of 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.

Solar Wafer Customer Satisfaction

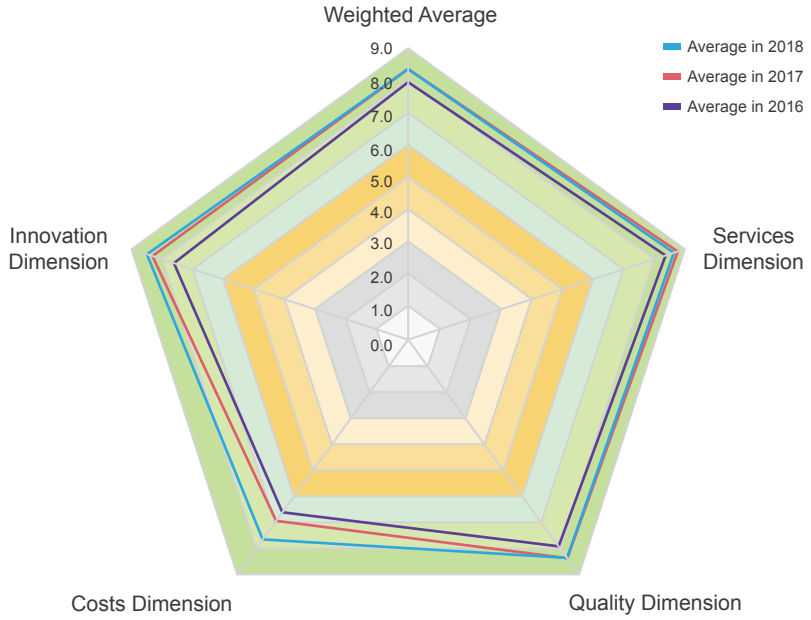
The scope of satisfaction surveys for consists of five major dimensions hoping to understand the needs of all customers from each different dimension: services, innovation, quality, costs and weighted average (general evaluation.) The maximum score for each dimension is 10 points (10 indicates maximum satisfaction, 6 indicates somewhat satisfied). If scores fall below 6 points, internal improvements are required. Customers assess each dimension and give their score accordingly. They also identify shortcomings or directions for necessary improvements as a strategic reference for follow-up internal improvements.

In the second half of 2018, the solar energy market in recession caused a huge impact on the solar multi-crystalline wafer sales which led to a proactive change in SAS silicon wafers marketing strategies. As the overall sales model differs, the previous customer satisfaction survey model no longer applies. So customer satisfaction survey for the second half of 2018 was not carried out as was done previously. For 2019, there will be adjustments on the customer satisfaction survey method.

In the first half of 2018, solar wafers' weighted average satisfaction score reached 8.2 points (highly satisfied) with a full score of 10 for the overall customer satisfaction, 10 for maximum satisfaction. This indicates customers' positive recognition regarding quality and services provided by SAS. As for individual dimensions, satisfaction level in weighted average, services, quality, and innovation all exceeded 8 points (highly satisfied). Although for the costs dimension, we scored only 7.5 points (somewhat satisfied, no improvements required), we still conducted interviews on all of our customers regarding this dimension. This measure was to listen to the customer and seek solutions via bilateral collaboration. Besides meetings and technology seminars, SAS visited customers in person, called them on the phone, emailed them and listened to their opinions trying to understand customer needs from their perspectives so as to continuously enhance customer relations.

3
Innovation and Service

Dimensions for Solar Wafers Customer Satisfaction Survey

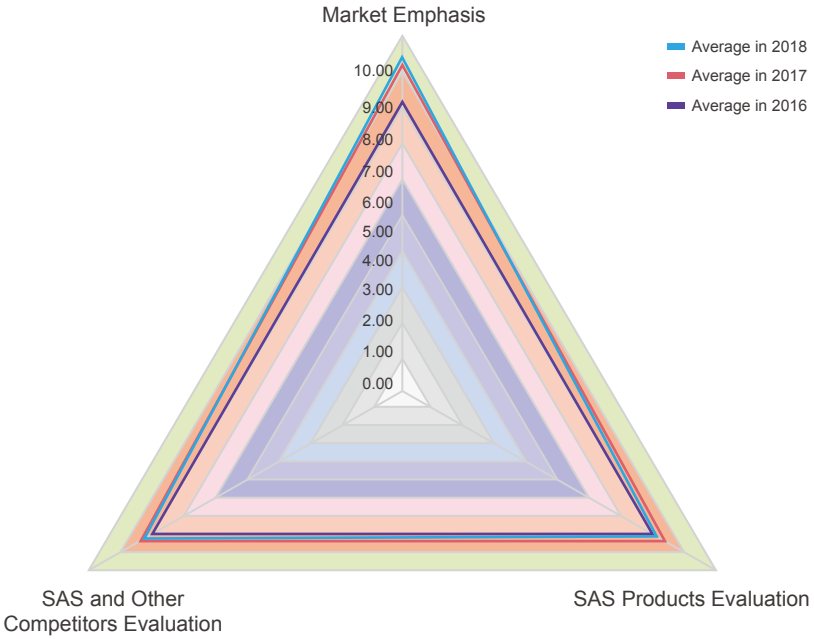


Solar Cells Customer Satisfaction

Since 2016, the existing 21 items of customer satisfaction assessment has been converted into 3 major dimensions for evaluation i.e. market emphasis, SAS products review, and review of SAS and other competitors, with a full score of 10 points for each dimension.

In 2018, the overall customer satisfaction for polar cells was investigated on a full score of 10 points (maximum satisfaction), and we reached the weighted average satisfaction score of 8.53 points for the 3 major dimensions. As for individual dimensions, the weighted average for satisfaction regarding delivery, quality, overall services and product innovation all exceeded 8 points. Compared with previous years, the above satisfaction scores were towards positive stability. This indicates that we have maintained certain customer satisfaction.

Dimensions for Solar Cells Customer Satisfaction Survey



In 2018, the weighted average for customer satisfaction exceeded 8.2 points (high satisfaction). This indicates that we have remained diligent despite the market recession and have maintained certain customer satisfaction. Despite the positive feedback from customers, SAS does not rest on its laurels. The company continues to invest in necessary equipment, upgrade product qualities, and conduct on-going 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 with 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 daily, weekly, and monthly for management review meetings, plus annual review meetings to ensure continuous product improvements. PDCA is constantly carried out to enhance products and services, reduce costs and expenditures, and in turn, give back to society.

3.3 Protection of Confidential Customer Information

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. Advocacy of confidentiality concepts is in place to guarantee customer privacy and prevent losses caused by information leakage. In 2018, no relevant customer complaints were raised and no penalties imposed by governing authorities.

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 been solidifying our confidentiality controls and have step by step established an information classification system to define confidentiality levels for internal and external documents and create corresponding labels and circulation control methods. At the same time, the company has formulated usage regulations for electric equipment and adopted virtual desktop cloud services, centralized management of backup information, an external e-mail inspection system and restricted the use of electronic storage devices. An in-plant filming management system has also been established to prevent information security issues. property management. Internal electronic TIPS audit forms are also in place. Even more importantly, SAS organizes regular intellectual property training to reinforce the staff's understanding and awareness of the importance of confidentiality management and to 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.

SAS Customer Service Principles

3.4 Product Liability

Product Safety and Liability

Solar wafer and cells are green products. SAS submits all products to certified and impartial third-party laboratories for testing to ensure conformity to the EU RoHS directive (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment) and customer requirements regarding hazardous substances. SAS also requires its raw materials and packaging material suppliers to submit regular laboratory testing reports on hazardous substance contents conducted by certified and impartial third-party laboratories. The goal is to implement requirements of product safety and non-toxicity requirements and to strengthen environmental protection and eco-friendliness.

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 used 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.

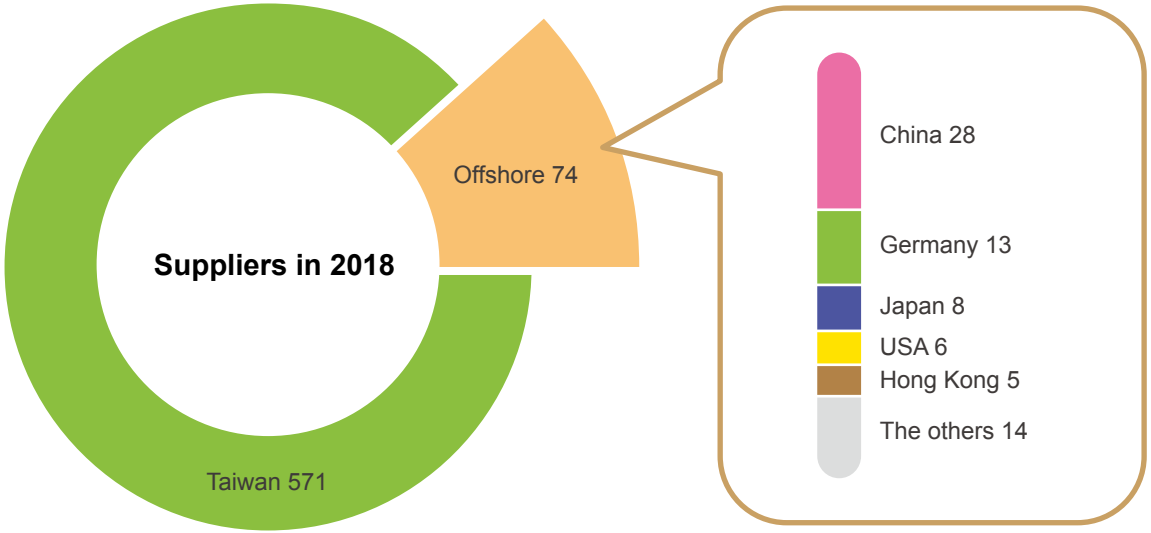
3.5 Up- and Down-stream Supply Chain

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.

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. In 2018, there are 645 suppliers in total, of which 571 are in Taiwan, accounting for 88.5% of all suppliers.

Facilitating supply chain localization will achieve the goal of reducing production cost through lowered transportation cost and cycle stocks to strengthen the solar industry’s cost competitiveness. SAS adheres to concepts of green procurement from localized procurement to the management of raw materials. Localized procurement can enhance national competitiveness, increase local employment and stimulate local economic activities, minimize environmental impact and damage caused by long-distance transportation of raw materials, and thus reduce the importance of timeliness.



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Sustainable Environment

4
Sustainable Environment

Material Topics

Energy resource consumption (including energy conservation measures), GHG emissions, waste management, pollution control (air, water)

Significance to SAS

As a member of the green energy industry, SAS is firmly committed to legal compliance, air pollution control, and waste water treatment. In addition, the company implements GHG reduction and adaptation actions in response to global climate change. The company also actively embrace circular economy concepts and ensure optimal use of resources through reduction, reuse, and recycling to balance economic development and environmental protection. In addition to the aforementioned three Rs, SAS has also been giving focus to the fourth R (Redesign) hoping to implement improvements at the source and thereby achieve reduction, reuse, recycling, and sustainability through product/process design planning.

Management Mechanism

- Through the implementation of the ISO 14001 environmental management system (2015 version) and the adoption of product life cycle concepts, SAS aims to achieve a genuine reduction of materials at the source by relying on improvements in the manufacturing process and product design stages. With respect to prevention of air pollution and water pollution, the company also works with the promulgation of the environment management system. Each year, goals for energy conservation, water conservation, waste reduction and resource saving are established in order to lower energy resource consumption while achieving results of reducing greenhouse gas emission. With respect to waste management, traditional cleaning and disposal are transferred into the concept of effective resource management in order to reduce waste generation. Meanwhile, audit management on waste clearance companies is enhanced to ensure that waste is disposed in an appropriate manner. SAS insists on stringent compliance with all relevant laws and regulations in its operations and conducts conformity assessments for all internal and external issues related to the environment. Should any legal risks be detected, detected, immediate, preventive improvement measures are carried out and policy implementation is ensured through comprehensive management and actual operations.

Future Goals

- Plant power conservation rate exceeds ***1%***.
- In line with the “Regulations Governing Determination of Reasonable Due Care Obligations of Enterprises Commissioning Waste Clearance”, plant waste management procedures are stipulated with checks on high-risks waste clearance companies at least once a year.

2018 Key Achievements

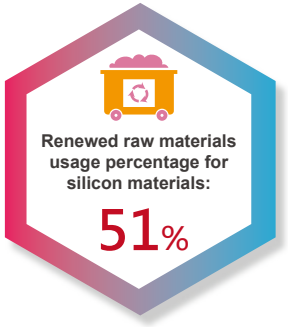
- Renewable raw materials used as silicon raw materials exceeded ***50%***.
- The total installation for grid-tie operation exceeded 26MW and reduced the CO_2 emission by 9,890 tons per year.
- For the past 3 years, the energy intensity has gradually declined by the year (28.52→11.26→6.08 MJ/KNT).
- The energy conservation measures and management of the year can reduce about 1,531 metric tons of CO_2 emission.
- Add burners at the screen printing output to reduce VOC emissions per wafer by ***83%***.
- Reduce commissioned BDG waste water treatment by ***70%*** per month.

4 Sustainable Environment

4.1 Energy Resources Consumption and Reduction

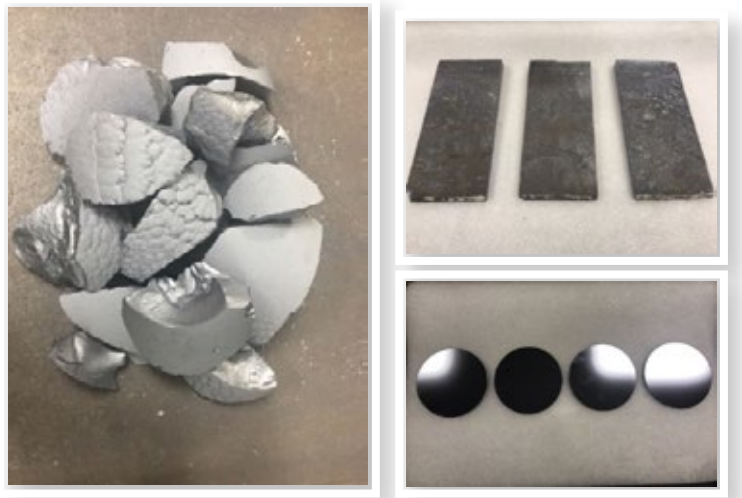
4.1.1 Raw Materials Management

The main materials used by SAS in its production processes are silicon and silicon wafers. Although it is impossible to use recycled wafers for solar cell production processes, the company uses discarded or broken silicon wafers which are recycled in the plants for the crystal growth stage whenever possible. The company also uses a certain proportion of externally purchased recycled materials. This helps save material costs and reduce the generation of waste.



Usage of Recycled Materials in 2018			
Item	Annual Consumption Quantity (tons)	Annual Recycled Quantity (tons)	Annual Recycling Rate
Silicon materials	2,866.0	1,462.7	51.04%

Notes:
1. SAS silicon materials can be divided into the following three categories: virgin materials, foundry returns, and indirect materials, as shown in the images below. Indirect materials and foundry returns are recycled materials.
2. The percentage of recycled materials is equivalent to the ratio of indirect materials and foundry returns to the total amount of materials.



▲Types of silicon materials: virgin materials (left), foundry returns (top right), and indirect materials (bottom right)

In addition, SAS designs and develops product processes based on ecological concepts through the implementation of the ISO 14001 environmental management system (2015 version), adoption of product life cycle concepts, and the fourth R (Redesign) of the cyclic economy concept to implement green design and clean production methods. Process design and technical improvements, enhanced production capacity, and reduced consumption of raw materials ensures reduction of energy consumption and pollutant emissions at the source as well as decreased operating costs, energy consumption, and environmental impacts.

In line with the latest market developments, the adoption of diamond cutting processes for the cutting of solar wafers represents one of the major changes in the solar energy industry in recent years. In the past, mortar cutting was utilized for multi crystalline wafers (diamond cutting has been adopted for mono crystalline wafer in recent years) because the adoption of diamond cutting for multi crystalline products poses a significant challenge. However, due to cost and market pressures, the adoption of diamond cutting processes has turned into an inevitable trend in the solar energy industry. The replacement of mortar cutting with diamond cutting also conforms to the 4th R (Redesign) of the cyclic economy concept. Due to the high cutting speed and non-use of mortar, the adoption of the new process design helps increase unit production capacity (decrease of energy and raw material consumption). In addition, the new process does not require the use of the supporting agent (propylene glycol) and minimizes the generation of oil sludge, which represents a significant contribution to environmental protection, energy conservation, and carbon reduction. The SAS Process Development Team is fully prepared for rapid market transformations. Under the guidance of the management level, the change and adoption of the new process technology has been completed within a very short time. Starting from April 2018, all processes have already been converted to diamond cutting. Since ingots cutting no longer requires the use of cutting oil, they help reduce raw material consumption, VOCs (Volatile Organic Compounds), waste generation, and environmental impacts caused by transportation.

4.1.2 Energy Management

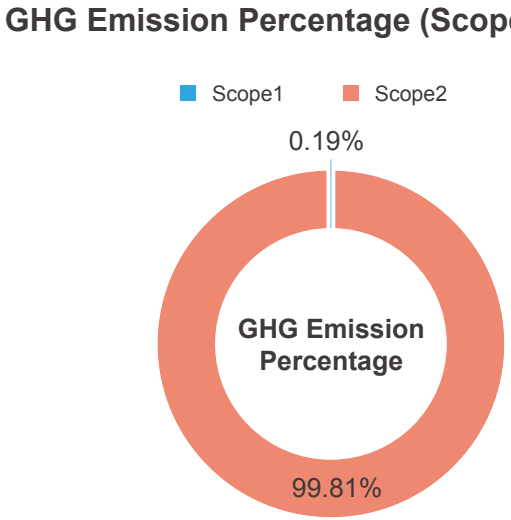
Carbon Emission Quantity

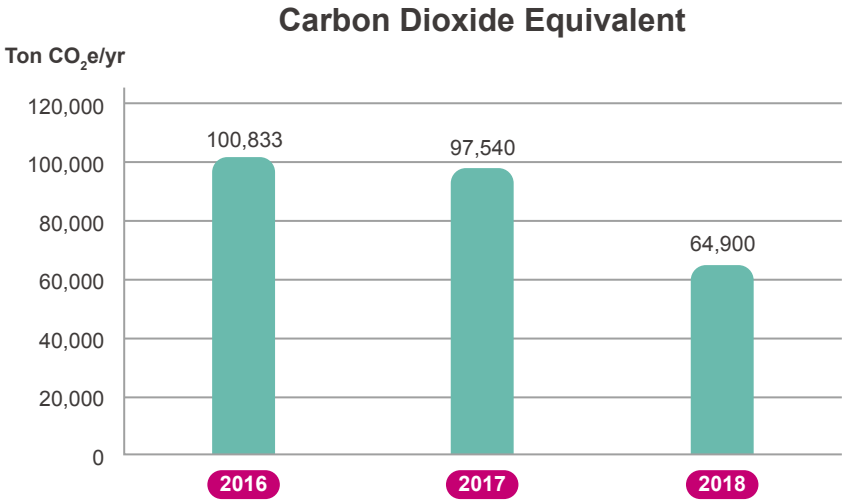
In recent years, the issue of global warming has received growing attention. SAS has therefore actively invested in solar power plants since 2015. The company has constructed a power plant in Palo on Leyte Island, Philippines, in cooperation with its subsidiary Sunrise Energy and has made an all-out commitment to the deployment of solar power plants in Taiwan in line with the “Nuclear-Free Homeland” Policy of the Taiwanese government and the Million Rooftop PVs and the Two-Year Solar Power Promotion Program of the Bureau of Energy to assist the government in the promotion of renewable energy power generation. The total grid-connected capacity exceeded 26 MW in 2018, resulting in an annual reduction of CO2 emissions by 9,890 metric tons.

SAS Greenhouse gas emission sources can be divided into the following three categories: Scope 1 are direct emissions of each plant including GHG used for

processes and GHG generated during fuel combustion (such as natural gas, gasoline, and Diesel) as well as fugitive emissions of septic tanks and fire equipment. Scope 2 are indirect emissions generated by externally purchased energy sources including electricity and steam. Scope 2 emissions of SAS plants exclusively stem from externally purchased electricity. Scope 3 encompasses other indirect emissions generated by business trips, product and material transportation, production of materials by suppliers, and waste recycling and treatment. The results of a GHG emission inventory carried out by SAS indicate that electricity and other indirect emissions account for 99.81% (64,778 metric tons of CO2e) and 0.19% (122 metric tons of CO2e) of all emissions, respectively. The main focus of the efforts of the company in the field of GHG emission reductions therefore will focus on reducing power consumption.

SAS GHG emission ratios and emission amounts for the past three years have been on a decline In particular, 2018 saw a sharp slump mainly due to the moderated production capacity by cutting off Chunan Branch Plant 1 and Yilan Branch Plant 2 in 2018. In addition, SAS plans new energy conservation plans for each year and continues with the management of the already executed energy conservation measures so as to reduce energy resources usage and GHG emissions.





Note:
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2. In 2018, the Chunan Branch Plant 1 and the Yilan Branch Plant 2 were cancelled in 2018. The calculation scope covered Chunan Branch (formerly Plant 2) and Yilan Branch (Plant 1 and Plant 3).
3. Inventories are conducted based on the GHG Coefficient Management Chart (Version 6.0.1) announced by the Environmental Protection Administration.
4. Power/carbon emission coefficients are 0.554 (kg CO2e/ kWh) as released in 2018 by the Bureau of Energy, MOEA.

Energy Consumption

SAS is a solar cells manufacturer. Not only do we aggressively review our internal energy consumption conditions to reduce energy waste, we also actively promotes renewable energy sources. In 2019, SAS teams up with its subsidiary, FZtech Inc., in the construction of compound energy system on the rooftops of the Chunan Plant that integrates the 99kW self-weight photovoltaic solar system, 100 kW/350 kWh power storage system, 600 kW adjustable grid-tie power generators. SAS has also switched to micro-grid systems inside the plant. The subsystem installations are expected to be completed by Q2 this year, while simultaneously blending the energy storage device development and integrating it into the energy management system platform in response to the future market demand for power storage management.

In 2018 our energy consumption quantity dropped immensely compared with that in 2017, mainly because we have cancelled the Chunan Branch Plant 1 and the Yilan Branch Plant 2 in 2018. Regarding the consumption of natural gas, we adopted an air compressor waste heat recovery system in the Chunan Branch in 2017, which was put into full operation in 2018. Chunan Branch requires nearly zero use of natural gas.

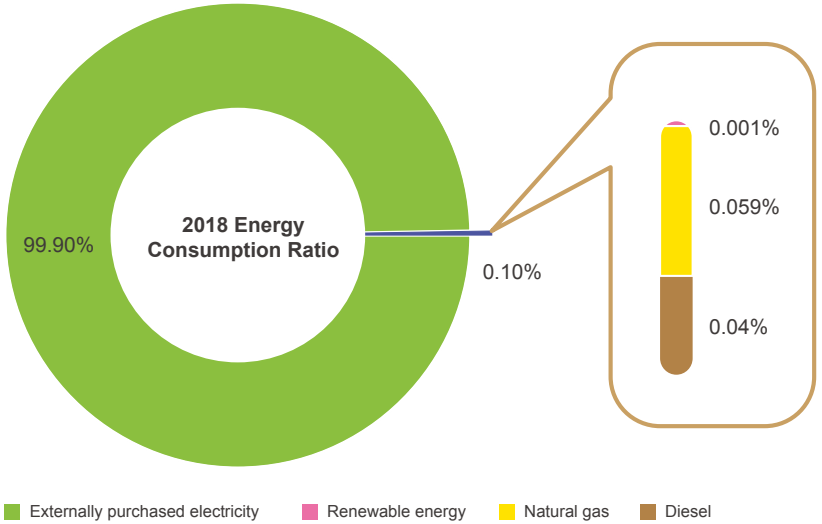
4
Sustainable Environment

Quantity of Energy Consumption

Unit: MJ

	Item	2016	2017	2018
Item	Externally purchased electricity	885,406,896	666,304,246	420,796,022
	Renewable energy (solar power)	228,722	192,074	5,760
	Natural gas	15,280,838	1,711,381	247,086
	Diesel	360,004	196,962	151,126

2018 Energy Consumption Ratio



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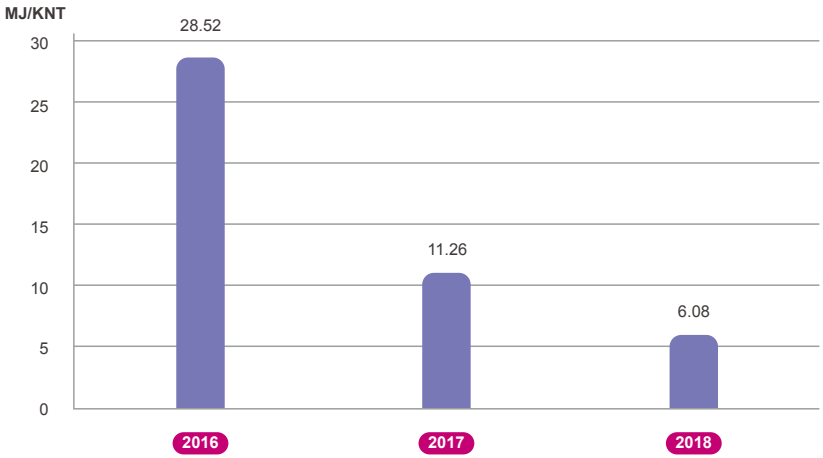
3. The conversion unit: 1 kWH = 3.6 million Joule; 1 cubic meter of natural gas = 47.7 million Joule; 1 liter of Diesel = 31.524 million Joule.

Energy Intensity



Note: Energy Intensity is calculated as units of energy (MJ) per unit of GDP (NT$ 1000).

Energy Conservation Measures

Every year we establish an energy conservation plan with the target of reaching an electricity conservation rate of over 1% for each plant. In 2018, our newly added energy conservation measure was able to reduce 1,531 metric tons of CO2 emission and continued with supervision and management of already executed energy conservation measures while implementing our energy conservation targets.

Energy Conservation Achievements in 2018

Type	Measures	Total Power Savings (kWh)	Converted CO_2 Emission Reductions ($kgCO_2e$)
Air conditioning system	1. Variable frequency conversion for AHU and cooling water pumps * Electricity saving calculation: The power gap (kW/RT) before/after installing air AHU frequency conversion x refrigeration capability (RT) x utilization time 2. Add one Make-up Air Unit (MAU) for joint operation (there were two pieces originally and now add on the third) * Electricity saving calculation: The air-conditioner electricity fee includes the third make-up air unit (MAU) that we add to the existing two MAUs. Note 2:The air-conditioner electricity consumption for the 2 MAUs is based on variable frequency energy conservation formula.	626,178	346,903
Lighting sources	Replacement of T5 lighting with T8 lighting * Electricity saving calculation: The power gap of replacing T5 with T8 x no. of light tube replaced x Utilization time.	6,497	3,599
Manufacturing process	The SW wafer cutting time was formerly 10 hours. The adoption of DW wafer can reduce the overall cutting hours for the purpose of electricity conservation. * Electricity saving calculation: The electricity usage gap between the SW wafer and the DW wafer (kWh/pc) ×wafer production output (pc).	2,130,092	1,180,071
Renewable energy	Installation of solar panels on the rooftops of plant buildings for power generation; the solar panels also provide shade for roof plates, thereby reducing temperatures and air conditioning loads with the goal of decreasing total power consumption. * Electricity saving calculation: the solar energy kWh as actually measured.	1,600	886

Note: Power/carbon emission coefficients are 0.554(kg CO_2e/ kWh) as released by Bureau of Energy, MOEA, 2018.

▲Variable frequency conversion for AHU and cooling water pumps

▲Add one make-up air unit (MAU) for joint operation

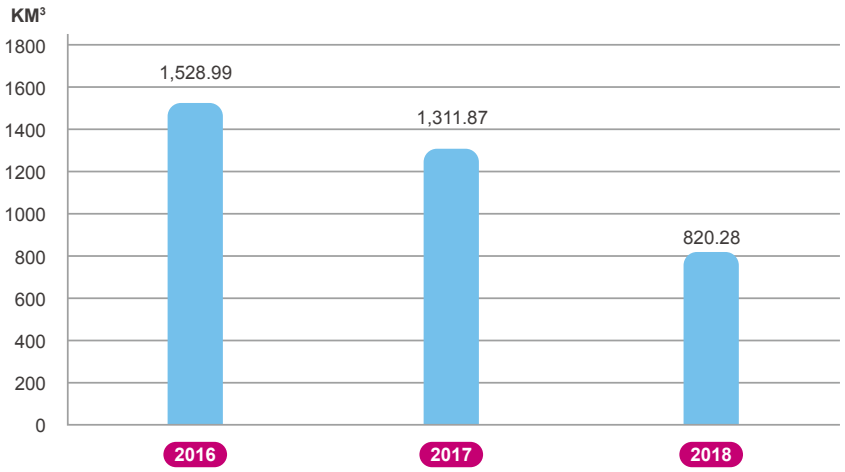
4.1.3 Water Resources Management

In recent years, global climate change has caused extreme precipitation patterns in Taiwan which underscores the importance of water resource management. SAS plants mainly use running water supplied by the Taiwan Water Corporation. The company does not use ground water and therefore does not cause damage to ecosystems through excessive pumping and resulting ground subsidence. The water supply and raw water sources of the Chunan Plant and Yilan Plant are Dongxing Water Purification Plant /Yongheshan Reservoir and Longde Water Purification Plant/Xincheng River, respectively. The raw water source areas have not been designated national or international natural reserves or sensitive water bodies (related areas, special functions, rare, threatened, endangered systems, or habitats of endangered species as determined by experts). In the field of water resource conservation, SAS plant employees are fully committed to recycling (including rainwater and process water recycling) and reuse. Preservation of precious water resource has been incorporated as a key link of water recycling operations.

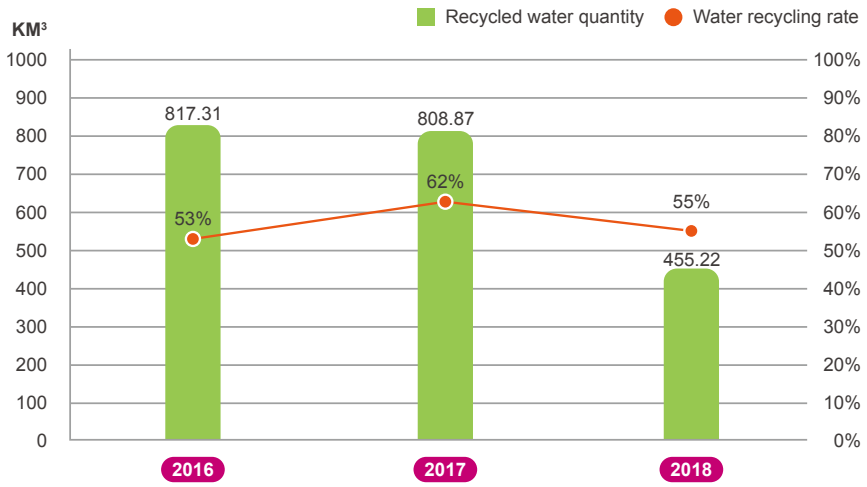
4 Sustainable Environment

Our total water withdrawal quantity in 2018 decreased greatly compared with that in 2017 mainly because of the reduced production capacity and the cancellation of the Chunan Branch Plant 1 and the Yilan Branch Plant 2.

Water Withdrawal Quantity



Recycled Water



Note:

1. Water Recycling Rate = Volume of recycled water ÷ Total volume of water withdrawn. Both Chunan Plant and Yilan Plan comply with local requirements. As Chunan Plant adheres to the Hsinchu Science Park Administration, its total water recycling rate exceeds 85%.
2. The calculation scope in 2016 and 2017 covered Chunan Branch (Plant 1 and Plant 2) and Yilan Branch (Plant 1, Plant 2 and Plan 3)
3. In 2018, the Chunan Branch Plant 1 and the Yilan Branch Plant 2 were cancelled in 2018. The calculation scope covered Chunan Branch (formerly Plant 2) and Yilan Branch (Plant 1 and Plant 3).

Water Conservation Measures

In 2018, the water conservation measures and management carried on with the previous models (rainwater collection, OAC condensed water recycling, replacement of water-saving equipment, installation of water recycling system). In our Chunan plant, the daily discharge of concentrated waste water from condensation water tower is directly recycled and restored to supplement the water tank for the cleaning of air pollution prevention equipment. Approx. 1,600 metric tons of water is thus saved per month.

▲Condensation water tower.

▲Condensed concentrated waste water is discharged and channeled to assembled water tanks for storage.

▲To supplement the water tank for the cleaning of air pollution prevention equipment.

4 Sustainable Environment

4.2 Pollution Prevention

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.

4.2.1 Air Pollution Prevention

In 2018, in the SAS Yilan Plant, following the principle of combustion, burners were added at the screen printing output to reduce VOCs emissions per wafer by about 80%. Prior to the burner installation, our VOC emission quantity was 0.12 kg/hr, which was reduced to 0.02 kg/hr with the installation of burners. By comparison the VOCs emission was lowered by 83%.

▲Burners were added at the screen printing output to reduce VOCs emissions.

Different production and manufacturing processes result in slightly different process waste gases. Chunan Plant generates four major types of waste gases: acid exhaust, alkali exhaust, VOCs, and particulate matter pollutants, while Yilan Plant, three major types of waste gases: acid exhaust, alkali exhaust, and VOCs. On handling waste gases, we have central waste gas scrubbers for acid and alkali exhaust. Due to varied characteristics in different factories, VOCs in Chunan Plant are treated in waste gas scrubbers, and VOCs in Yilan Plant are treated in activated carbon adsorption towers. Particulate matter pollutants are generated only in Chunan Plant and treated with bag-type dust collectors.

The operation of SAS air pollution control equipment conforms to relevant requirements set forth in environmental laws and regulations. Annual inspections are conducted in a required frequency in order to determine the emission concentration of controlled substances in accordance with relevant laws. In Chunan Plant, annual inspections are conducted on acid pollutants, VOCs and particulate matter pollutants. In Yilan Plant, inspections are conducted on acid pollutants once every five years, and on VOCs every year. The air pollutants emissions as disclosed below do not include the acid pollutants in Yilan Plant that are inspected once every five years out of consideration for the consistency of the annual calculation scope.

Air Pollution Emission Quantity

Unit: (ton/yr)

Pollutant Item	2016	2017	2018
Particulate matter pollutants (Par)	4.668	1.589	0.179
Nitric acid (HNO3)	0.036	0.019	0.001
Hydrofluoric acid (HF)	0.038	0.002	0.001
Hydrogen chloride (HCl)	0.006	0.003	0.0005
Volatile organic compound (VOC)	3.045	3.423	0.480

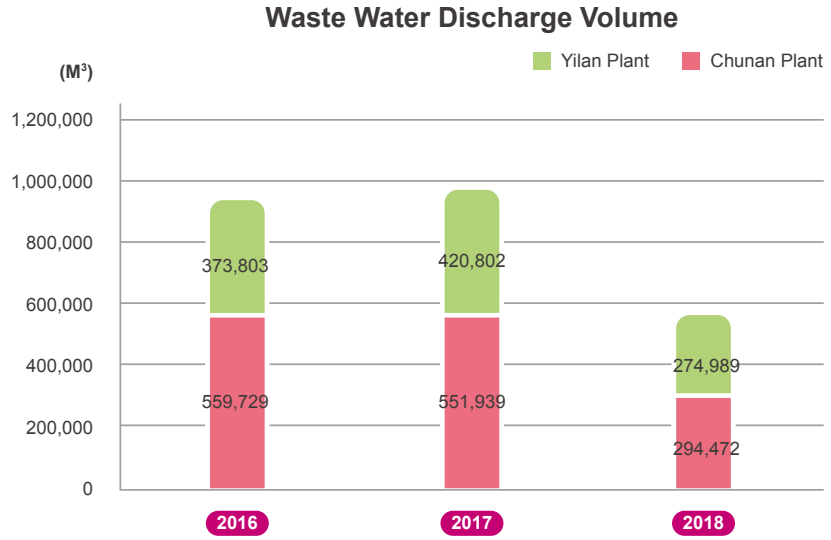
Note:

1. The calculation scope in 2016 and 2017 covered Chunan Branch (Plant 1 and Plant 2) and Yilan Branch (Plant 1, Plant 2 and Plan 3)
2. In 2018, the Chunan Branch Plant 1 and the Yilan Branch Plant 2 were cancelled in 2018. The calculation scope covered Chunan Branch (formerly Plant 2) and Yilan Branch (Plant 1 and Plant 3).
3. The calculation scope for Particulate matter pollutants, Nitric Acid, Hydrofluoric Acid, Hydrogen Chloride: Chunan Branch; the calculation scope for VOCs: Chunan Branch, Yilan Branch
4. Emission quantity estimation is based on third-party certified laboratory test report statistics and the raw materials quantity consumed that year (or product outputs).

4.2.2 Water Pollution Prevention

Due to the different locations of the plants, waste water is discharged and treated in the Wastewater Treatment Plants of the Hsinchu Science Park Administration in Chunan and Li Ze Industrial Zones where real-time monitoring and responsive measures are conducted. Pre-discharge water quantity and quality monitoring facilities (tracking of PH values and fluoride concentrations) have been established to facilitate regular monitoring and reporting. The quality of discharged water meets or exceeds relevant regulations. Administrations also dispatch personnel to conduct spot checks at the discharge outlets on a non-scheduled basis, as a measure for two-tier water quality control. No major instances of leakage or overflow in SAS plants were reported in 2018.

The primary focus of SAS in its pollution control strategy is on the principle of source reduction, waste liquid segregation and classification. Upon classification based on individual properties, waste water is treated by plant treatment facilities. Chunan Plant 2 features chemical and biological treatment facilities (treatment by aerobes and anaerobes) to ensure optimal wastewater treatment results. In 2018, the pH values of wastewater discharged by plants all fell in the range of 6 and 9 (the required standard for both areas is 5-9), while SS concentrations were maintained below 250mg/l (the required standards by the Hsinchu Science and Industrial Park Administration and Li Ze Industrial Zone Service Center are < 300mg/l and < 320mg/l, respectively). COD was maintained below 250mg/l (the required standards by the Hsinchu Science Park Administration and Li Ze Industrial Zone Service Center are < 500mg/l and < 480mg/l, respectively), and fluoride concentrations were kept below 11mg/l (the required standard for both areas is <15 mg/l). This clearly indicates that the SAS wastewater treatment facilities are high in performance and stability.



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3. Tests and inspections in the Chunan and Yilan Plants are conducted in accordance with the regulations of the Hsinchu Science Park Administration and the Long Te (with Li Ze) Industrial Park Service Center attached to the Industrial Development Bureau, MOEA, respectively.

4.3 Waste Management

SAS waste management strategies mainly focus on source reduction from process design improvements and reduced use of materials to in-factory recycling and reuse to decrease the amount of new materials purchases and thereby minimize waste generation and its environmental impacts. Furthermore, the recycling and reuse of external resources helps increase the salvage value of waste. Finally, external waste treatment businesses are commissioned (to incineration, physical treatment, chemical treatment, and landfills). All generated waste is currently processed domestically without any instances of offshore treatment.

▲BDG reduction treatment equipment

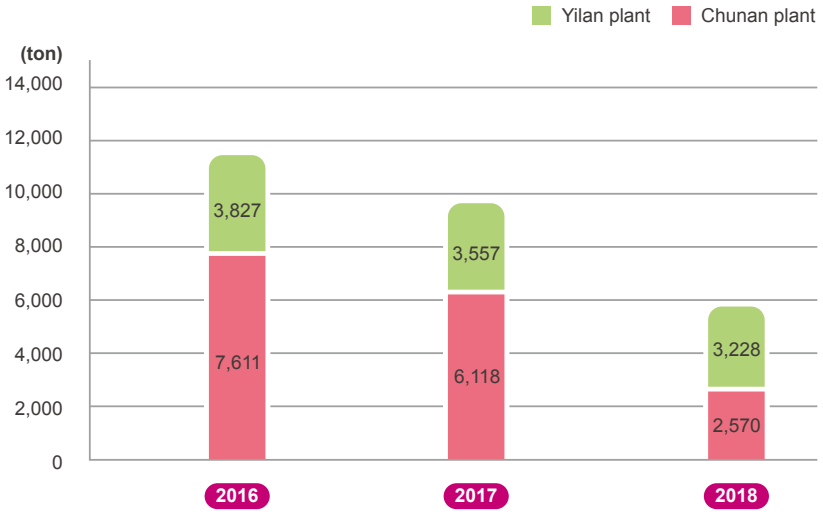
The BDG waste liquids in Yilan Plant is of strong alkali substance, toxic and expensive to dispose. Therefore, this year we prioritized the assessment of in-factory stratified reduction treatment. The upper layer liquid is high-concentration COD waste liquid and requires externally commissioned clearance, while the lower layer liquid is low-concentration COD waste liquid and can be treated in the in-factory organic wastewater system in order to achieve the reduction of high energy consumption treatment and fulfil our corporate environmental protection responsibility. After the trial run for reduction equipment was completed in January/February 2018, the stratified reduction treatment procedures were under way starting from march, with the average monthly externally commissioned clearance quantity reduced by 70%.

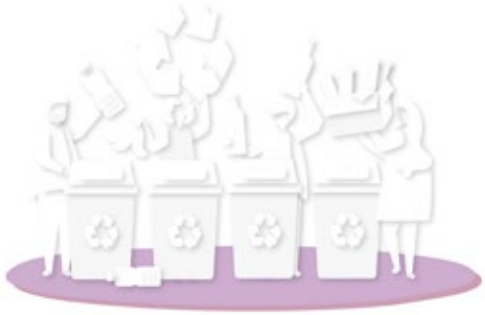
The waste quantity generated by SAS in 2018 was drastically lower than that in 2017. In addition to such causes as the reduced production capacity and cancellation of Chunan Branch Plant 1 and Yilan Branch Plant 2, the primary factor is the adoption of DW wafers and the immensely reduced supporting agent usage and waste cutting oils (sludge) output quantity in the Chunan Plant and the stratified treatment of the BDG waste liquids to reduce externally commissioned clearance quantity in the Yilan Plant. Of all handling methods for general industrial waste, the reutilization accounted for 51% as the highest percentage (for 2,923.36 metric tons), followed by physical handling, 23% (for 1,320.99 metric tons). All handling methods for hazardous industrial waste, i.e. pH>12.5 waste liquids and empty barrels containing chemicals, are commissioned for chemical handling (95%, 59.97 metric tons), and for reutilization (5%, 3.14 metric tons), respectively.

4
Sustainable Environment

In 2018 no major instances of leakage in all factories and no major instances of violations by commissioned waste treatment (and re-utilization) contractors were reported in 2018.

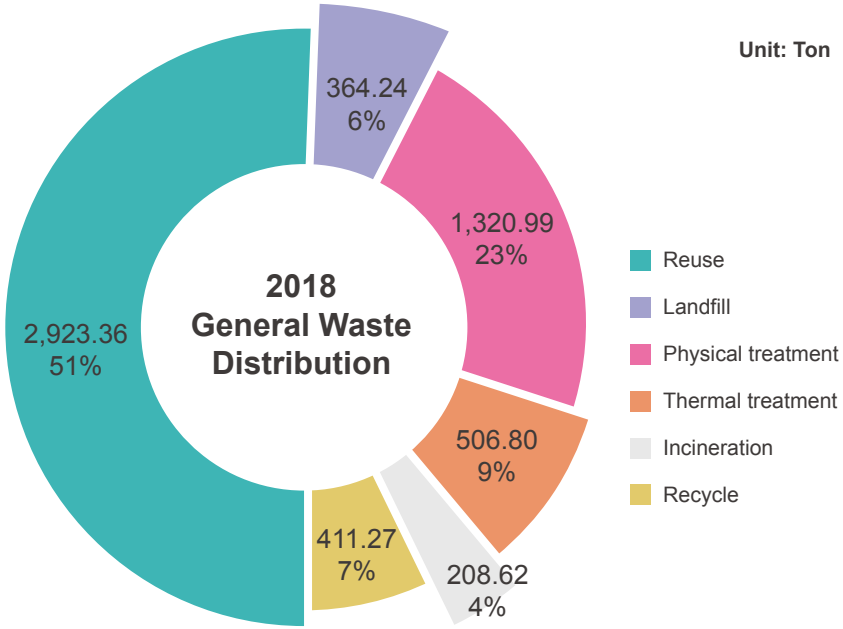
Waste Output Quantity





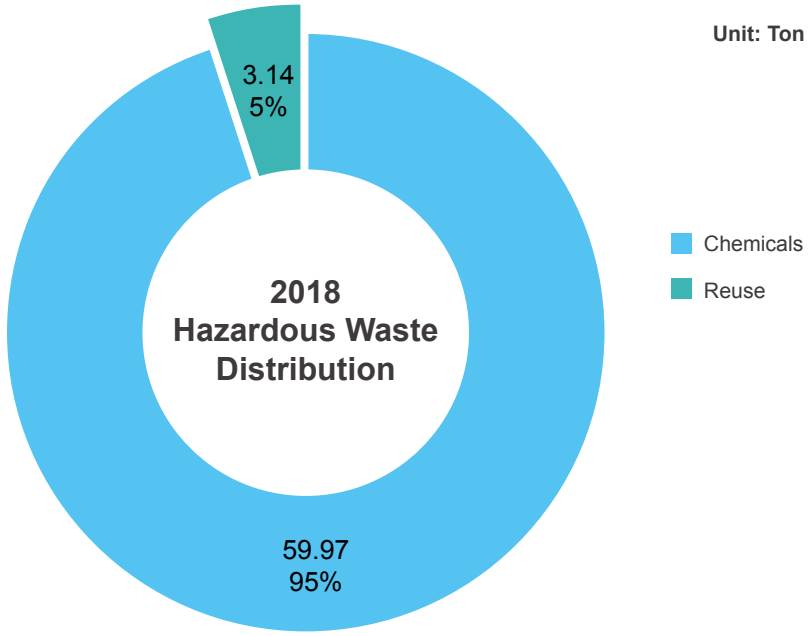
Note:
1. The calculation scope in 2016 and 2017 covered Chunan Branch (Plant 1 and Plant 2) and Yilan Branch (Plant 1, Plant 2 and Plan 3)
2. In 2018, the Chunan Branch Plant 1 and the Yilan Branch Plant 2 were cancelled in 2018. The calculation scope covered Chunan Branch (formerly Plant 2) and Yilan Branch (Plant 1 and Plant 3).
3. Data filing is submitted in accordance with the “Industrial Waste Report and Management Data System” by the Environmental Protection Administration.

Unit: Ton



Note:Data filing is submitted in accordance with the “Industrial Waste Report and Management Data System” by the Environmental Protection Administration

Unit: Ton



5

Friendly Workplace

Material Topics

Benefits policies, Friendly workplace, Staff training

Significance to SAS

SAS views its employees as its key asset and provides them with an excellent and comprehensive benefits system, abides by all regulations and stipulates a host of work systems and governing guidelines in compliance with labor laws, as well as respecting employees' consent regarding labor service provision, never imposing forced or compulsory provision of labor services. The company builds a friendly work environment for its employees to ensure workplace safety. It cares about the physical and mental health and work-life balance of its employees. It provides an all-round diverse learning environment for the staff members to grow continuously.

5
Friendly Workplace

Managemen Mechanism

- Establishment of an Employee Benefits Committee and active pursuit of more benefit measures for employees such as group insurance policies, monitoring meals, staff outings, and year-end banquets.
- In line with the new policy in the Labor Standards Act, we amend our leave system and management mechanism accordingly and sign labor agreements with our employees. Workers will not be forced or mandated to provide labor services.
- In response to the switch to the ISO 45001 certification from the former from the former OHSAS 18001 edition regarding the occupational health and safety management system, the focus is now on social expectations, managerial and staff participation, and occupational health and safety (OHS) is no longer regarded as an independent operation but has to be viewed from the angle of operation soundness and sustainability.
- 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.

Future Goals

- Employee outings (in spring and autumn); Birthday cash presents and cakes for employees.
- Occurrence of occupational injuries ***≤0*** (excluding traffic accidents).
- Walking stairs are added for the condensation water towers to enhance patrol safety.
- Concern and follow-up monitoring of special groups ***100%***.

2018 Key Achievements

- Successfully switched to the ISO 45001 certification for the occupational health and safety management system.
- ***100%*** Tracking of abnormal health check findings and special groups.
- ***0*** increase of occupational injuries ≤0 (excluding traffic accidents).

5 Friendly Workplace

5.1 Talent Recruitment and 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.

In 2018, SAS employed a total of 919 full-time employees. In terms of gender, male and female employees accounted for 75.4% and 24.6% of the total workforce, respectively. In terms of age, employees aged under 30, between 30 and 50, and over 50 made up 26.9%, 70.7%, and 2.4% of the total workforce, respectively. The average age of employees was 38.

Based on work localities, the majority of the company's employees work in the Yilan Plant (77.1%), followed by Chunan (18.5%) and Hsinchu (4.4%).

Based on work characteristics, employees can be further divided into direct personnel (68.9%) and indirect personnel (31.1%). In terms of employment types, SAS solely employs full-time personnel and does not hire any part-time or temporary workers. In terms of employment contracts, employees on fixed-term contracts and non-fixed term contracts account for 13.9% and 86.1% of the total workforce, respectively. In terms of education level, junior college degree holders or above account for 73.3% of all employees.

2018 Human Resources

Age	Male (no. of people)	Percentage	Female (no. of people)	Percentage
< Age 30	196	21.3%	51	5.5%
Age 30~50	481	52.3%	169	18.4%
> Age 50	16	1.7%	6	0.7%
Total	693	75.4%	226	24.6%

Hiring of Local Personnel and Disabled Persons

Based on social concern principles, SAS has set up employment routes to support employment of the mentally and physically challenged. In 2018, the company employed a total of 13 mentally and physically challenged employees, accounting for 1.4% of the total workforce. SAS strictly abides by all national laws and regulations governing the hiring of the mentally and physically challenged. In addition, SAS also provides job opportunities to local residents. By end of 2018, the local hires accounted for 73.2% of the total workforce.

Note: "Local" means the employee is located in the same city according to his/her registered household location as the factory where he/she served.

2016-2018 Staff Structure Analysis

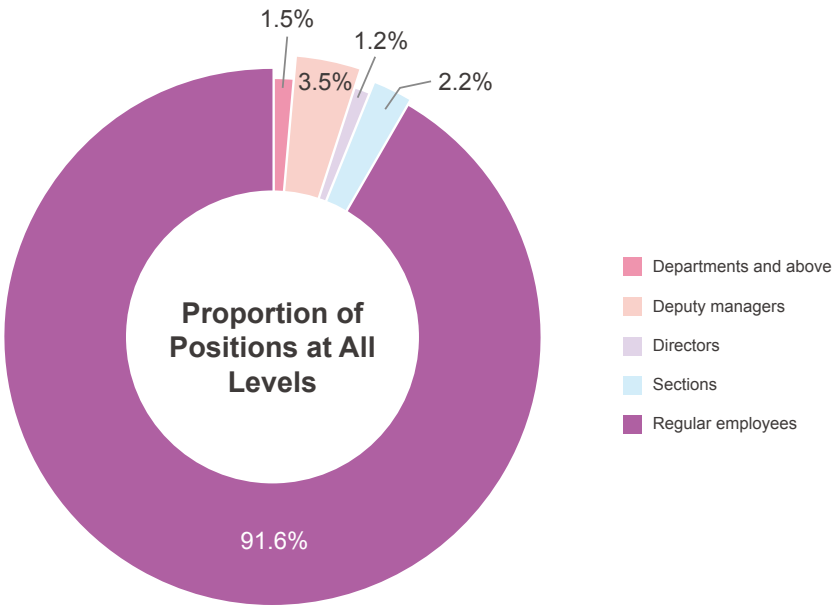
Staff Structure \ Year		2016	2017	2018
Average age		32.8	33	38
Average years of service		4.9	4.2	6
By gender	Male	1,173	1,207	693
	Female	394	394	226
Full-time/part-time (sas solely employs full-time personnel)	Official	1,567	1,601	919
	Non-official	0	0	0
By employment contract	Unfixed term	1,430	1,380	791
	Fixed term (contract-based, interns, migrant workers, seasonal workers)	137	221	128
By nature of work	Direct	1,158	1,212	633
	Indirect	409	389	286
By education level	Doctorate degree	7	7	4
	Master degree	135	131	97
	College	840	892	573
	Senior high school and vocational school	517	499	213
	Senior high school and below	68	72	32

5 Friendly Workplace

Female Executives

In terms of managerial positions, the company has a total of 77 executives, of which 77.92% are male and 22.08%, female. In terms of managerial levels, the company has 14 high-ranking executives (i.e., division managers or above), 32 managers and assistant managers, 11 directors and 20 section chiefs.

All Levels	Male	Female	Total	Percentage
Departments and above	11	3	14	1.5%
Deputy Managers	26	6	32	3.5%
Directors	9	2	11	1.2%
Sections	14	6	20	2.2%
Regular Employees	633	209	842	91.6%
Total	693	226	919	100.0%



In 2018, the number of new recruits in SAS was 77. Broken down by gender, male new recruits accounted for 5.9% of total workforce, and female new recruits, 2.5%. Broken down by age, new recruits aged between 30 and 50 made up 4.5%, followed by those aged under 30, accounting for 3.7%. By end of 2018, the number of new recruits remaining in service was 32. 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.

2016-2018 New Recruits Statistics Analysis

Year	2016				2017				2018			
Age	Male (no. of people)	Percentage	Female (no. of people)	Percentage	Male (no. of people)	Percentage	Female (no. of people)	Percentage	Male (no. of people)	Percentage	Female (no. of people)	Percentage
< Age 30	230	14.7%	70	4.5%	273	17.1%	87	5.4%	25	2.7%	9	1.0%
Age 30~50	187	11.9%	66	4.2%	138	8.6%	48	3.0%	27	2.9%	14	1.5%
Age 50 and above	2	0.1%	1	0.1%	0	0.0%	0	0.0%	2	0.2%	0	0.0%
Total	419	26.7%	137	8.7%	411	25.7%	135	8.4%	54	5.9%	23	2.5%

2016-2018 Resigning Employees Statistics Analysis

Year	2016				2017				2018			
Age	Male (no. of people)	Percentage	Female (no. of people)	Percentage	Male (no. of people)	Percentage	Female (no. of people)	Percentage	Male (no. of people)	Percentage	Female (no. of people)	Percentage
< Age 30	320	20.4%	75	4.8%	181	11.3%	70	4.4%	202	22.0%	53	5.8%
Age 30~50	240	15.3%	69	4.4%	198	12.4%	63	3.9%	348	37.9%	130	14.1%
Age 50 and above	4	0.3%	2	0.1%	6	0.4%	0	0.0%	16	1.7%	6	0.7%
Total	564	36.0%	146	9.3%	385	24.0%	133	8.3%	566	61.6%	189	20.6%

Note: The percentage of new recruits and resigning employees is measured against the total workforce at the end of the said year.

5 Friendly Workplace

5.2 Remuneration 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. In 2018, the "average salary" for full-time employees in non-managerial positions is NTD662,000.

Note 1: "Executive Positions" refer to company managers in accordance with the application scope of "Managers" as defined by governing authorities: presidents and their equivalents, vice presidents and their equivalents, assistant managers and their equivalents, financial department directors, accounting department directors and other position holders entitled to manage company affairs and sign on behalf of the company Consistent with the boundaries of the internal reporting personnel (managers) and annual report disclosure (as managers) at shareholders meetings

Note 2: "Full-time Employees" refer to those whose work hours reach the regular number as required by the company or by the law. In cases of non-regulated work hours, the average weekly work hours exceed 35 hours.

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.

For workers who meet the regulations of the old labor pension system, SAS offers a 2% monthly contribution deposited in a pension fund account in the Bank of Taiwan. By end of 2018, sufficient pensions funds were deposited to ensure the rights and interests of our retired employees. For employees who meet the criteria of the new pension system, a 6% monthly contribution is deposited in the employee's labor pension account.

Unpaid Child Care Leaves

SAS employees are entitled to unpaid child care leaves. Employees with a minimum of six months in service may apply for unpaid child care leaves to take care of children under the age of three. A total of 103 staff members applied for such leaves between 2016 and 2018.

Execution Results of Unpaid Child Care Leave Application

Item	Gender	Total Number / Ratio		
		2016	2017	2018
Total employee staff number eligible for unpaid child care leave	Male	201	182	87
	Female	92	66	44
Total number of employees who actually took unpaid child care leave	Male	9	13	11
	Female	24	23	23
Total number of reinstated employees upon the expiration of their child care leaves	Male	7	13	5
	Female	11	16	17
Total number of employees who actually resumed their duties upon the expiration of their child care leaves	Male	2	10	3
	Female	7	13	7
Ratio of employees who resumed their duties upon the expiration of their child care leaves (reinstatement rate)	Male	28.6%	76.9%	60.0%
	Female	63.6%	81.3%	41.2%
Total number of employees still in service 12 months after expiration of their unpaid child care leaves	Male	2	1	5
	Female	5	7	6
Ratio of employees still in service 12 months after expiration of their unpaid child care leaves (retention rate)	Male	50.0%	50.0%	50.0%
	Female	38.5%	100.0%	46.2%

5
Friendly Workplace

Employment Meals

SAS provides free meals for its employees during working hours at 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.

Employee Benefits Committee

The SAS Employee Benefits Committee was established in 1988 to actively strive for employee benefits and welfare measures, including emergency relief to help those in 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, yearend 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.

▲Promotional poster for staff family day

▲Staff family day

5 Friendly Workplace

5.3 Education Training

All-Round Learning Environments

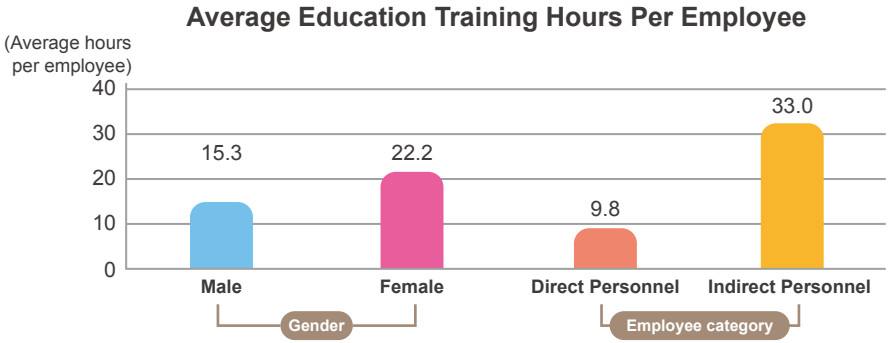
SAS organizes annual training courses and provides an all-around, diversified learning environment to enhance employee skills and literacy, optimize the use of human resources, and ensure continued personal development. Training plans for the following year are formulated by various departments in line with the company operation goals, company, 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 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. In 2018, SAS invested a total of 15,629.5 training hours. Divided by gender, male and female employees received an average of 15.3 and 22.2 training hours, respectively. In terms of employee types, direct personnel and indirect personnel receives an average of 9.8 hours and 33 hours respectively.

▲SAS provides an all-around, diversified learning environment.

2016 – 2018 Number of Employees Receiving Education Training and Hours

Training Type	2016				2017				2018			
	Number of Sessions	Number of People	In Session Total Hours	Total Instruction Hours for the Entire Company	Number of Sessions	Number of People	In Session Total Hours	Total Instruction Hours for the Entire Company	Number of Sessions	Number of People	In Session Total Hours	Total Instruction Hours for the Entire Company
Competency training for new recruits	255	1,309	1,967	7,696	124	548	815.5	3,609.0	36	71	235	478.5
Professional competency training	523	5,559	2,137	8,430	1,673	30,865	3,546.0	29,156.0	706	6,851	2,384	12,042.5
General management competency training	239	2,446	597	5,094	134	1,396	253.5	1,829.5	226	2,201	411	3,108.5
Total	1,017	9,314	4,700.5	21,220.0	1,931	32,809	4,615.0	34,594.5	968	9,123	3,030	15,629.5



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 and so on.

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.

5.4 Friendly Workplace

SAS firmly embraces the concept of “Workplace Health and Safety”. In addition to strict compliance with occupational health and safety laws and other relevant legal requirements, the company is firmly committed to organizational operations and staff participation. The company also continues to provide optimized resources for health and safety facilities improvements in the plants in accordance with the nature and risks of the organization to prevent injuries and hazards. The ultimate goal is to safeguard the health and safety of employees, contract workers, and relevant third parties.

5.4.1 Safe Work Environment

Occupational Health and Safety Management System

In 2018, we have successfully switched from the OHSAS 18001 occupational health and safety management systems to the ISO 45001: 2018 system in all plants, with heightened focus on social expectations and managerial and staff participation. Occupational health and safety (OHS) is no longer regarded as an “independent operation” but has to be viewed from the angle of sound operation and sustainability. We adheres to the provision of safe and healthy work environments and modified pollution prevention and occupational hazards eradication, while conducting counselling with workers and their representatives, with the entire workforce made aware of individual liabilities and engaged in the environmental health and safety activities.

Occupational Health and Safety Organizations

All SAS plants convene quarterly meetings of OHS committees. The President or Vice Presidents in the plants are appointed to oversee the meetings as the chairman. Also present throughout the meetings are all department supervisors and labor representatives. Discussions cover OHS related matters including OHS management plans, operational environment monitoring/improvements/strategies, OHS training/audits/management appraisal, accident prevention and education as well as and health management and promotion. Meeting deliberations are recorded, implemented and improved with continuous tracking.

Labor Representatives Ratio in the Occupational Safety Committee

Chunan Plant		Yilan Plant	
Labor representative	7 people	Labor representative	5 people
Committee members	17 people	Committee members	14 people
Ratio	41 %	Ratio	36 %

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

Joint Responsibility for Work Safety and Safety Culture

SAS is fully aware of the importance of workplace safety. Since 2015, the company has been organizing “Work Safety and Safety Culture” activities to raise employees’ safety awareness and strengthen employee literacy and discipline to ensure effectively decreased the occurrence of accidents. Starting from 2017, SAS launched the second stage of “Work Safety and Safety Culture” activities to achieve various KPIs including prevention of repeated mistakes and strengthening of autonomous safety management and employee safety concern to emphasize the importance of discipline and autonomous management. Employees are encouraged to actively report false alarm incidents and watch out for each other regarding workplace safety. The goal is to continuously strengthen employees’ safety awareness and enhance workplace safety.

Occupational Hazards Management

SAS constantly organizes training activities and has established an accident reporting and investigation mechanism to maintain a safe and healthy workplace. Accident causes must be analyzed and adequate preventive measures must be taken. We utilize Disabling Frequency Rate (FR) and Disabling Severity Rate (SR) as defined by the Ministry of Labor as key indicators for the assessment of safety and health management efficiency to achieve continuous improvements in safety and health performance. No occupational fatalities or diseases were reported in 2018. Occupational injuries were mostly caused by contact with hazardous objects (3 incidents), and other types of occupational injuries include cuts and abrasions, impact and fallen objects.

5 Friendly Workplace

2016 − 2018 Disabling Frequency Rate (FR) and Disabling Severity Rate (SR)

Year	2016		2017		2018	
	Male	Female	Male	Female	Male	Female
Disabling frequency rate (F.R)	2.04	0.00	4.38	0.00	3.50	3.03
Disabling severity rate (SR)	9	0	180	0	41	21
Occupational disease rate (ODR)	0	0	0	0	0	0

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
3. Occupational disease rate = Total cases of occupational disease x 200,000 / Total work hours

2016 – 2018 Absence Statistics Analysis

Year	2016		2017		2018	
	Male	Female	Male	Female	Male	Female
People	1,173	394	1,207	394	693	226
Days in absence-A	6,102.2	4,009.6	3,316.3	2,007.8	6,921	2,945
Working days-B	291,480	97,880	264,572.6	88,135.6	167,708	54,246
Absence rate (AR)=A/B	2.09%	4.10%	1.25%	2.28%	4.13%	5.43%

Note:

1. Absence rate (AR)= Total days of absence / Total working days x 100%
2. Definition of absence: Sick leaves (menstrual leaves), personal leaves, occupational injury leaves, and absenteeism excluding granted vacations, maternity and paternity leaves, and bereavement leaves

Contractor Management

SAS cooperates with a huge number of contractors in an effort to spur the industry development. We have formulated clearly defined contractor management guidelines to safeguard the health and safety of our partners and fulfill our pledge to provide a safe and healthy work environment.

▲Contractor tool box meeting

When signing contracts with contractors, we request that they comply with OSH related laws and regulations and abide by relevant requirements of the company regarding personnel qualifications, construction work, machine tools and materials, and safety equipment. Accident occurrence rates are minimized through a series of management measures including pre-contracting and pre-construction hazard notices, construction application management by responsible units, access controls for contractors, management of construction operations, and post-construction verification in addition to sporadic on-site audits by health and safety management personnel in plant areas.

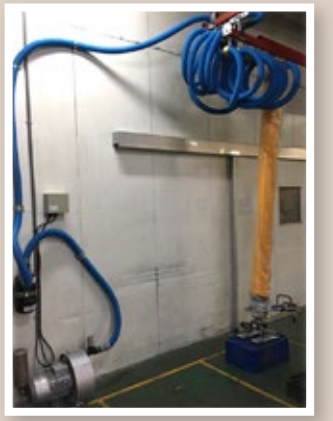
5.4.2 Healthy Workplace

The physical health of employees is a key factor for the maintenance of work-life balance. Exceeding legal requirements, SAS has hired general practitioners to provide free on-site services including health consultation, guidance and assessment, as well as follow-up tracking health issues, referrals and medical services. In addition, SAS is firmly committed to the three pillars of maternal care, prevention of ergonomic hazards and prevention of burnout. The company safeguards the physical and mental health of our staff members through a wide range of health care initiatives, sporadic health talks, and health promotion activities in an effort to create a blissful and healthy work environment.

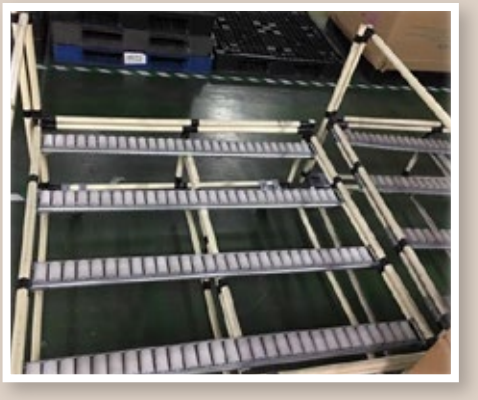
The Four Pillars of Health Protection

Pillars	Execution Direction	Achievements in 2018
Maternity care	Assessment of health risks is conducted for female employees during pregnancy, after childbirth, and prior to return to the workplace. The mental and physical health of pregnant, postpartum, and breastfeeding employees is guaranteed via the provision of consultation and concern.	First-level management: 17 people Second-level management: 3 people Health risk assessment completion rate: 100%
Prevention of burnout	Based on employee health examination data, Framingham Risk Scores and burnout scale, high-risks groups are screened and identified. Workplace physicians are arranged to give consultations and health guidance with follow-up tracking and concern. Meanwhile, department supervisors are notified for stringent control and management of their work hours so as to prevent occurrence of employee burnout.	Tracking management: 28 people
Prevention of unlawful violation	To provide a healthy and positive workplace, we conduct a risks assessment for the entire factory once every two years. Positivity courses like unlawful violation and spiritual growth are arranged to construct an excellent work environment.	Seminars on and emotions management and unlawful violation in the workplace are hosted.
Prevention of ergonomic hazards	We conduct ergonomic 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 ergonomic hazards.	− Ergonomic improvements for crystal growth feedstock preparation operation Risk grade 4→1 − Life time ingot transportation improvements Risk grade 3→1

5
Friendly Workplace



- To ease the personnel off the loading/unloading of weight, pneumatic labor-saving racks are added to replace manual loading/unloading.



- The height of the operation surface is elevated, and boards are replaced by revolving trolleys to reduce the occurrence of the herniated intervertebral disc caused by the weight impact on the caudal vertebra.

▲Ergonomic improvements for crystal growth feedstock preparation operation(Risk grade 4→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.

SAS organizes a wide range of health promotion activities including vision care, blood donation, first aid training, bone mineral density tests and health seminars. In 2018, a total of 1,587 employees participated in these training courses. In addition, information related to health and major diseases is shared via EDM to raise employees' health awareness and provide information on weight management. The company also provides free influenza vaccination and comprehensive inoculation consultation for its employees to protect them from contracting contagious diseases (e.g. influenza) and other illnesses. Convenience of employee vaccination inside plants is enhanced and a safety protection network is established to guarantee employee health.

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 risks
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.

5
Friendly Workplace

2016 – 2018 Health Promotion Activities

Unit: Persons

Year	2016	2017	2018
Health seminars	412	466	279
Influenza vaccination	314	479	366
Blood donation activity	149	175	187
Bone mineral density tests	99	65	81
Betel nut cessation activities	16	0	0
First aid training courses	0	234	674
Total number of people	990	1,419	1,587

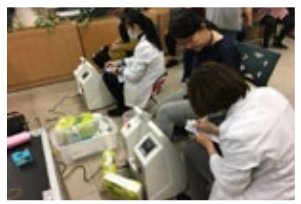
The health center utilizes annual health check and incoming employee data in conjunction with work burnout questionnaire and working time analysis results to identify medium- and high-risk groups. Health management measures such as one-on-one counseling with physicians, individual health education guidance, 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 ensure workplace environmental safety, starting from 2018, there have been installations of 24-hour Automated External Defibrillators (AED) inside the factories and arranged for 70% factory employees to attend CPR + AED education training so as to equip them with basic first-aid capabilities which can thus be applied on the site of incidents in a bid to construct a workplace conducive to employees health and safety. We are honored with the special safe workplace certification of safe workplace by the Ministry of Health and Welfare.

▲Safe places

▲CPR + AED first aid training

▲Spiritual growth courses



▲Bone mineral density tests

5 Friendly Workplace

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.

The company will also provide concern and psychological support for staff suffering from occupational injuries or traffic accidents. Depending on individual needs, counseling is also provided by visiting professional physicians to facilitate an early return to their posts. For lingering cases, RPNs will provide continued tracking and concern through phone calls and report the recovery status of each case to unit supervisors.

2016 – 2018 Special Groups Tracking and Numbers of Service Sessions

Number of Service Sessions	Yilan Plant	Chunan Plant	Headquarters
2016	868	1,317	24
2017	366	1,077	29
2018	171	829	21
Total number of people	1,405	3,223	74

Number of People in Special Groups Being Tracked	Yilan Plant	Chunan Plant	Headquarters
2016	162	417	0
2017	112	419	8
2018	67	34	2
Total	341	870	10

Safe and Healthy Workplace

SAS has designated parking spaces for expectant mothers to provide a convenient and safe work environment for our female employees during pregnancy. The company also supports breastfeeding and has therefore established nursery rooms in its plants to provide breastfeeding mothers with a worry-fee and comfortable space. SAS also offers childbirth subsidies and exclusive concessions for SAS employees at designated child-care centers and kindergartens to provide worry-free child care services to SAS employees while they are at work.

SAS designs smart healthy eating slogans in all staff restaurants in order for the staff members to pay more attention to dietary health. In 2018, we implemented sugar reduction campaign in all plants in an effort to watch over our employees' health and their weight control so as to reduce risks of chronic diseases. An E-Health Academy has been established to provide employees with first aid, health management and disease prevention knowledge so that our employees can have a rapid access to real-time health-related information and activities.

Sugar Reduction Campaign

- Reduce the sales of sugary drinks and increase the allocation of sugar-free drinks
- Install Ministry of Health and Welfare's mini grocery stores with information stating minimum quantities
- Add vending machines selling fresh packets of beverages (including high-fiber low-sugar or sugar-free soya milk; fresh milk…)
- Water dispensers: covered with slogans to encourage drinking more water

▲Water dispensers: with slogans to encourage drinking more water

▲E-health academy

Physical and Mental Balance and a Blissful Workplace

SAS views its employees as its key assets. Only with healthy employees can we raise the corporate productivity. As such, besides a firm commitment to providing a safe, healthy and friendly workplace, the company organizes several staff outings through its Benefits 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.

5.5 Social Concern

Since 2003, compassionate manufacturers in the Hsinchu Science Park have been organizing Christmas gift collection activities on Christmas Eve to fulfill the dreams of underprivileged children. SAS continues to promote this Dream Fulfillment Activity in cooperation with Accton Cultural & Educational Foundation. These little gifts help fulfill the dreams and desires of these children. We are all Santa Clauses who can spread hope and love to these children. SAS has participated in a total of 10 activities, and each year, our employees have all taken part in the gift sponsorship activities with great enthusiasm. Over the years, a great number of Christmas gifts have been given to children in remote areas and social welfare organizations through the platform of this activity.

Since 2010, SAS has been serving as a sponsor for the heartwarming and compassionate fair activity organized by the Taiwan Fund for Children and Families, a family support charity. This activity aims to show concern for disadvantaged families and abused children in foster care in the Hsinchu area. The company also promotes the recycling and reuse of resources by conducting charity sales of second-hand goods. In addition, the health center organizes annual blood donation drives. These activities enable employees to demonstrate social concern. Every bag of blood saves a life and extends the passion and love of the donors.

Based on a passionate commitment to social welfare and assistance for underprivileged groups, SAS employees donate their moon cakes in a spirit of compassion and love for these groups. The moon cakes are donated to charitable organizations under the company's name to demonstrate the love of all employees. The following underprivileged groups are the beneficiaries of this activity.

▲Dream fulfillment project sidelights

▲Tidbits of the compassionate blood donation activities

▲Charity moon cakes distribution sidelights

GRI Guideline Index

GRI Guideline Index

Index No.	Description	Corresponding Chapters	Page No.	Note / Reasons for Non-Disclosure	External Guarantee / Assurance
Organizational Profile (Core Selection)					
102-1	Organization name	About the company - Company profile	8		◎
102-2	Activities, brand, products and services	About the company - Company profile - Market and product services	8 9		◎
102-3	Headquarters location	About the company - Company profile	8		◎
102-4	Operation site	About the company - Company profile	8		◎
102-5	Nature of ownership and legal form	About the company - Company profile	8		◎
102-6	Markets served	About the company - Company profile - Market and product services	8 9		◎
102-7	Organization scope	About the company - Company profile	8		◎
102-8	Employees and other works' data	5.1 Talent recruitment and human resources	54		◎
102-9	Supply chain	3.5 Up- and down-stream supply chain	41		◎
102-10	Organization and major changes in its supply chain	About the company - Company profile	8		◎
102-11	Precaution principles or guidelines	2.4 Risk management	32		◎
102-12	External advocacy	-	-	Not attending relevant advocacy	◎
102-13	Association membership status	About the company - Participation in external associations	12		◎
Strategies (Core Selection)					
102-14	Decision maker disclaimers	Message from the chairman	6		◎
Ethics and Integrity (Core Selection)					
102-16	Values, principles, standards and conduct guidelines	2.2.2 Ethics and integrity	27		◎
Governance (Core Selection)					
102-18	Governance structure	About the company 2.1 Sustainable organization 2.2.1 Corporate governance framework	8 22 23		◎

GRI Guideline Index

Index No.	Description	Corresponding Chapters	Page No.	Note / Reasons for Non-Disclosure	External Guarantee / Assurance
Stakeholders Communication (Core Selection)					
102-40	Stakeholders group	1.1 Stakeholder identification	15		◎
102-41	Group agreement	-	-	There are currently no union organizations. Therefore no employees have signed group agreements.	◎
102-42	Identification and selection of stakeholders	1.1 Stakeholder identification	15		◎
102-43	Guidelines for communication with stakeholders	1.2 Stakeholder communication and response	15		◎
102-44	Identified material aspects and boundaries	1.3 Identification and analysis of material aspects	16		◎
Report Profile (Core Selection)					
102-45	Content in consolidated financial report	About this report	1		◎
102-46	Defining report content and topic boundaries	1.3 Identification and analysis of material aspects	16		◎
102-47	Listing of material aspects	1.3 Identification and analysis of material aspects	16		◎
102-48	Information re-compiling	About this report	1		◎
102-49	Report change	About this report	1		◎
102-50	Reporting period	About this report	1		◎
102-51	Date of the previous report	About this report	1		◎
102-52	Reporting cycle	About this report	1		◎
102-53	Contact person able to answer questions regarding the report	About this report	1		◎
102-54	Announcement of compliance with GRI report principles	About this report	1		◎
102-55	GRI guideline index	GRI guideline index	65		◎
102-56	External guarantee / assurance	Verification disclaimer	70		◎◎
Category: Economy					
Economic Performance (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 2 governance and operation	16 20		◎
201-1	Direct economic value generated and distributed by organizations	2.3 Operation performance	30		◎

GRI Guideline Index

Index No.	Description	Corresponding Chapters	Page No.	Note / Reasons for Non-Disclosure	External Guarantee / Assurance
201-2	The financial impact, other risks and opportunities that climate change caused on organizational activities	2.4 Risk management	32	Other risks caused by climate change on organizational activities are illustrated, but its financial impact is not yet calculated.	◎
Anti-Corruption (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 2 governance and operation	16 20		◎
205-1	Operation bases that have conducted corruption risks assessment.	2.2.2 Ethics and integrity	27		◎
205-2	Communication and training regarding anti-corruption policies and procedures	2.2.2 Ethics and integrity	27		◎
205-3	Confirmed incidents of corruption and action taken	2.2.2 Ethics and integrity	27		◎
Category: Environment					
Materials (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 4 sustainable environment	16 43		◎
301-1	The weight and volume of all raw materials	4.1.1 Raw materials management	44		◎
301-2	Renewable materials used	4.1.1 Raw materials management	44		◎
Energy (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 4 Sustainable Environment	16 43		◎
302-1	Energy consumption quantity within the organization	4.1.2 Energy management	46		◎
302-3	Energy intensity	4.1.2 Energy management	46		◎
302-4	Reduce energy consumption	4.1.2 Energy management	47		◎
Water (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 4 Sustainable Environment	16 43		◎
303-1	Total volume water withdrawal by source.	4.1.3 Water resources management	47		◎
303-2	Water sources distinctly affected by water withdrawal	4.1.3 Water resources management	47		◎
303-3	Total volume of water recycled and reused.	4.1.3 Water resources management	48		◎
Discharge (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 4 sustainable environment	16 43		◎

GRI Guideline Index

Index No.	Description	Corresponding Chapters	Page No.	Note / Reasons for Non-Disclosure	External Guarantee / Assurance
305-1	Direct (Scope 1) greenhouse gas emissions	4.1.2 Energy management	44		◎
305-2	Indirect energy (Scope 2) greenhouse gas emissions	4.1.2 Energy management	44		◎
305-5	Reduced greenhouse gas emissions	Message from the chairman 4.1.2 Energy management	6 44		◎
305-7	NOx, SOx and other major gas emissions	4.2.1 Air pollution prevention	49		◎
Waste Water and Objects (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 4 sustainable environment	16 43		◎
306-1	Water discharge quantity classified by water quality and discharge destination	4.2.2 Water pollution prevention	49		◎
306-2	Waste classification by types and disposal methods	4.3 Waste management	50		◎
306-3	Severe spills	4.3 Waste management	51		◎
306-4	Waste transportation	4.3 Waste management	50		◎
306-5	Water bodies affected by discharged water or other discharges (on the ground surface)	4.2.2 Water pollution prevention	49	Waste water discharge is directed into the sewage management of the science park / the Industrial Development Bureau and does not impact or influence the water body or relevant habitats.	◎
Legal Compliance Regarding Environmental Protection (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 2 governance and operation	16 20		◎
307-1	Violation of environmental protection regulations	2.2.4 Legal compliance	28		◎
Category: Society					
Labor-Management Relationships (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 5 friendly workplace	16 53		◎
401-1	New recruits and leaving employees	5.1 Talent recruitment and human resources	55		◎
401-2	Benefits provided to full-time employees (excluding temporary and part-time employees)	5.2 Remuneration and benefits	56		◎
401-3	Maternity leave	5.2 Remuneration and benefits	56		◎

GRI Guideline Index

Index No.	Description	Corresponding Chapters	Page No.	Note / Reasons for Non-Disclosure	External Guarantee / Assurance
Occupational Health and Safety (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 5 friendly workplace	16 53		◎
403-1	Represented by workers in the official safety and hygiene committee consisting of both the labor and the management	5.4.1 Safe work environment	59		◎
403-2	Injury types; rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities	5.4.1 Safe work environment	59		◎
Training and Education (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 5 friendly workplace	16 53		◎
404-1	Average hours of training received by each employee per year	5.3 Education training	58		◎
404-2	Enhance employees' occupational competency and the number of transition assistance programs	5.3 Education training	58		◎
404-3	Percentage of employees regularly receiving performance and professional development appraisal	5.2 Remuneration and benefits 5.3 Education training	56 58		◎
Employee Diversity and Equal Opportunities					
405-1	Governing department and employee diversity	5.1 Talent recruitment and human resources	54	Undisclosed information about the board of directors	◎
405-2	Ratio of basic salary and remuneration of women to men	5.2 Remuneration and benefits	56	No gender pay gap	◎
Customer Privacy					
418-1	Complaints verified to have violated customer privacy or lost customer data	3.3 Protection of confidential customer information	40	No complaints regarding customer privacy violation or customer data loss	◎
Compliance with Social Economic Regulations (Material Aspect)					
103	Management guidelines	1.3 Identification and analysis of material aspects Chapter 2 governance and operation	16 20		◎
419-1	Laws and regulations violating social and economic spheres	2.2.4 Legal compliance	28		◎

Verification Statement Issued by Independent Third-party

Independent Assurance Statement

DNV·GL

Independent assurance statement

Scope and approach

Sino-American Silicon Products Inc. ("SAS" or the "Company") commissioned **DNV GL Business Assurance Taiwan** ("DNV GL") to undertake independent assurance of the 2018 Corporate Social Responsibility Report (the "Report") for the year ended 31 December 2018

We performed our work using DNV GL'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.

We understand that the reported financial data and information are based on data from SAS'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.

We planned and performed our work to obtain the evidence we considered necessary to provide a basis for our assurance opinion. We are providing the evaluation of reporting principles and selected performance information with a Moderate level of assurance, according to the DNV GL VeriSustain™.

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 GL 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 3'rd year that we have provided assurance. DNV GL'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 GL 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 corporate responsibility 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 visits to the major production site at Chunan, 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 2018 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).
- The verification was conducted based only on the Chinese version Report.

Opinion

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

DNV·GL

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.

- For understanding the needs and expectations of stakeholders, besides questionnaire surveys, it is suggested to analyse the data/information from stakeholder communication records.
- Strengthening the materiality assessment process by integrating the key issues raised from all relevant management system, i.e., QMS, EMS, OHS and TIPS management system, etc.
- To improving the data reliability and accuracy, it is suggested to establish a standard process to collect data/information from daily operation and implementing internal audit to verify the accuracy of the data/information.

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 CSR issues identified through this process are reflected in the Report.

Sustainability Context
Corporate Social Responsibility Report provides an accurate and fair representation of the level of implementation of related Corporate Social Responsibility (CSR) 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 CSR performance. In accordance with Moderate level assurance requirements, we conclude that no systematic errors were detected which causes us to believe that the specified CSR data and information presented in the Report is not reliable.

For and on behalf of DNV GL Taiwan
Date: 10 May 2019

Chun-Nan Lin
Lead Verifier
DNV GL – Business Assurance Taiwan

David Hsieh
Sustainability Service Manager,
Greater China

Statement Number: 00004-2019-ACSR-TWN

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