
2021
Solar Applied Materials Technology Corp.
ESG Report

SOLAR and Circular Economy

Company Profile

Established in 1978, Solar Applied Materials Technology Corporation (SOLAR) is the world's leading supplier of sputtering targets. Founded upon a platform of recycling and refining precious and rare metals, we are particularly focused on the research, development and manufacturing of high-value functional materials applied in data storage, optoelectronic displays and semiconductors. We have made it our mission to develop critical materials in Taiwan and create value through innovation. By integrating resources within the company, we built a complete and fast product development cycle and a business model in the circular economy. We are able to offer clients a total solution covering everything from the supply of raw materials, manufacturing of sputtering targets, component production and maintenance, parts cleaning, recycling and refining, to management of precious and rare metals.

In terms of functional materials, SOLAR has developed over 3,000 alloys and 30 types of metal oxides with a combination of more than 50 elements. With extensive experience in material design, we offer products in the form of thin-film sputtering target, evaporation material, wire, powder, chemical and catalyst. As for recycling and refining precious and rare metals, we run a competitive business model – our technology can raise the purity of waste materials to industrial grade 3N5 (99.95%). We also attained accreditation from the London Bullion Market Association (LBMA) in gold, silver and platinum bars. SOLAR offers recycling and refining services in five precious metals and three rare metals.

Additionally, SOLAR is actively involved in electronic waste recycling. We are dedicated to promoting a complete circular economy model for precious and rare metals, offering clients the solution to transform scraps into high-end materials. In 2019, we became the world's first sputtering target supplier to pass BS 8001 Circular Economy Certification with Level 4, the highest level. In 2020, four of our products were validated to UL 2809 Standard for Recycled Content, including potassium gold cyanide (PGC), evaporation slug, gold kilo bar and ITO sputtering target.

Circular Economy – Transforming Scraps into High-end Materials

With the vision of “Green, Value and Future” in mind, SOLAR recycles scraps of precious and rare metals, processing them into industrial-grade raw materials through proprietary refining and purification technologies. These refined materials are directly made into various industrial products for use by domestic and global clients, thus implementing the circular economy model of transforming scraps into high-end materials.

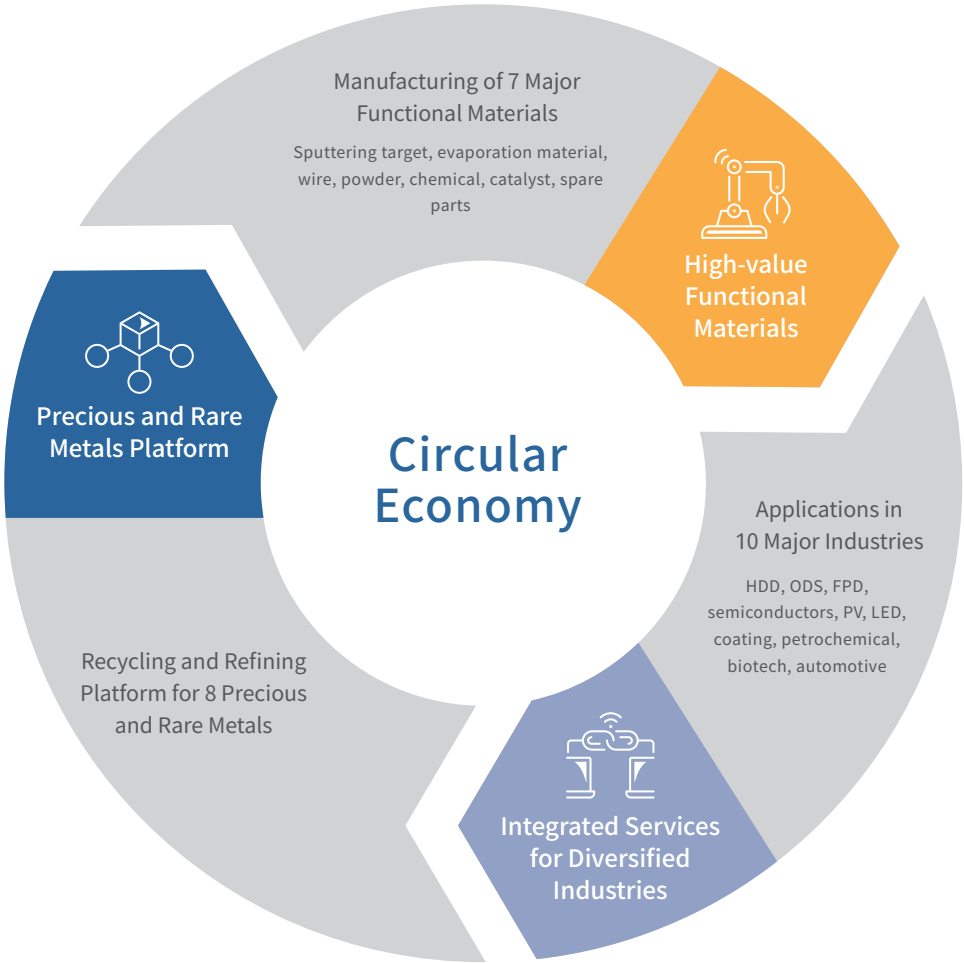
SOLAR continued to implement the concept of circular economy by recycling around 291 tonnes of raw materials in 2021. Regarding our recycled volumes in 2021, gold and silver respectively increased by 14% and 16% due to an increasing volume of imported materials. Platinum and ruthenium respectively grew by 16% and 19% due to higher demand and relevant capacity expansion. Palladium soared by 132% due to growth in waste liquid recycling. Indium dropped by roughly 15% due to reorganization of production lines.

▼ Total amount of raw materials recycled by SOLAR over the past three years (unit: kilogram)

Material	Recycled Volume		
	2019	2020	2021
Gold（Au）	9,794	12,967	14,726
Silver（Ag）	126,092	146,553	169,499
Platinum（Pt）	2,967	3,913	4,552
Ruthenium（Ru）	11,959	12,150	14,513
Palladium（Pd）	156	209	484
Indium（In）	101,750	103,194	87,344
Total	252,718	278,986	291,118

Note: Recycled volume of silver (Ag) excludes the processing of imported materials from LBMA.

▼ SOLAR’s complete circular economy model for precious and rare metals



Carbon Emissions Reduced by Metals Recycling and Refining

With rapid development in global economy and technology industry, electronic waste has become a major environmental issue. The *Global E-waste Monitor 2020* report released by the UN found that 53.60 million tonnes of global electronic waste was dumped in 2019, but only 17.4% was recycled and reused. Here at SOLAR, we believe in circular economy and urban mining. We extract precious and rare metals from electronic waste so that waste materials can be recycled and reused, thereby reducing dependence on imported resources, maximizing the use of resources, and reducing environmental impact created by resource exploitation. Our goal is to build a green circular economy.

SOLAR recycles nearly 300 tonnes of precious and rare metals annually. Based on data retrieved during 2020 and statistics collected from internal inventory, we conducted a differential analysis between greenhouse gas emissions generated by metals recycling and by mining. Result shows that metals recycling generates far less carbon emissions than mining. The former reduces carbon emissions by ~350,000 tonnes per year, which is equivalent to the carbon footprint produced by 32,500 people in Taiwan. Our business model creates the double effect of reusing recycled resources and reducing carbon emissions. We will continue to focus on this aspect and work with our partners to facilitate a sustainable future.

▼ Carbon emissions reduced by precious and rare metals recycling and refining

Mining

Note: Taiwan's carbon emissions per capita reached 10.77 tonnes in 2019 (data retrieved from Environmental Protection Association and International Energy Agency).

Metals recycling and refining reduce carbon emissions by

~350,000 tonnes per year

Total Carbon Reduction

Equivalent to the carbon footprint generated by

~32,500 people in Taiwan

Urban Mining

Environment

Energy Management

SOLAR sets forth energy management policy and goal to comply with regulations and promote autonomous energy saving. We facilitate sustainability through the purchase of renewable energy, energy saving, carbon emission reduction and energy efficiency improvement. In order to reach the goal of saving ≥1% energy annually, we have made the following improvements:

Our air conditioning system uses variable frequency to adjust and control chilled water temperature, saving **46,000** kWh of power in 2021.

Our air compressor set is adjusted and controlled via variable frequency, saving **58,500** kWh of power in 2021.

Drive-motors used in our manufacturing processes are operated via variable frequency, saving **291,955** kWh of power in 2021.

We introduced tubular daylighting system, saving **35,200** kWh of power in 2021.

Status of Energy Consumption

We mainly use non-renewable energy purchased externally. In 2021, SOLAR consumed 66,808,860 kWh of purchased non-renewable energy (electricity) and 18,773,155 kWh of non-renewable energy (natural gas, gasoline and diesel), which totaled to 85,582,015 kWh of energy consumption.

▼ Energy consumption over the past three years (unit: kWh)

Year	2019	2020	2021
Non-renewable energy (A) (Note)	13,324,511	16,076,409	18,773,155
Purchased non-renewable energy (B)	57,993,416	62,119,300	66,808,860
Heating, cooling, steam and other energy sources (C)	0	0	0
Sale of non-renewable energy (D)	0	0	0
Total energy consumption (A+B+C-D)	71,317,927	78,195,709	85,582,015

Note: Calculation of non-renewable energy = consumption * carbon emissions coefficient. We use the list of various energy commodities' heat values published by the Bureau of Energy, Ministry of Economic Affairs, to convert to carbon emissions coefficients (natural gas = 9.3; motor gasoline = 9.07; diesel = 9.77).

SOLAR is dedicated to using power efficiently and developing energy-saving solutions. In 2021, our energy consumption per NT$1,000 revenue was 6.28kWh. With energy management system up and running, our energy intensity continues to drop on a yearly basis, showcasing our success in energy management.

▼ Energy intensity over the past three years

Year	2019	2020	2021
Total energy consumption (kWh/year)	71,317,927	78,195,709	85,582,015
SOLAR's revenue (NT$1,000)	9,862,352	11,730,877	13,622,814
Energy intensity (kWh/NT$1,000)	7.23	6.67	6.28

In response to Taiwanese government's sustainable environment policies, we have installed solar panels with a peak power of 545.7kWp on the roofs of Solar Park and ESTP Plant. Our PV system generated 1,191,000 kWh of power in 2021 and reduced 598 tonnes of carbon dioxide emissions.

▼ Results of our rooftop solar panels over the past three years

Year	2019	2020	2021
Power generation (kWh)	1,152,455	1,226,193	1,191,280
Carbon reduction (tonne CO_2e/year)	587	616	598

Note: Solar power includes those generated by Solar Park, ESTP Plant and QGT Building. Our carbon reduction data are calculated based on 2020 Electricity Carbon Emission Factor released by Taipower (0.509 kg CO_2e/kWh in 2019; 0.502 kg CO_2e/kWh in 2020 and 2021).

Greenhouse Gas Inventory and Management

Climate change is a pressing global concern. It affects a wide range of realms, including natural environment, global competition, economic development, etc. It is crucial to take actions to reduce greenhouse gas (GHG) emissions and combat climate change. In 2012, SOLAR introduced ISO 14064-1, International Standard for GHG Emissions Inventories and Verification, in order to understand GHG sources and emissions through annual internal inventory management and impartial third-party verification. ISO 14064-1 provides a reference for how much emissions should be reduced and how carbon reduction measures should be executed. SOLAR further added Scope 3 in 2021 to holistically examine GHG emissions by including the following categories: (a) indirect GHG emissions from transportation; (b) indirect GHG emissions from products used by organization; (c) indirect GHG emissions associated with the use of products from the organization; (d) other sources. Additionally, SOLAR has started organizing employee trainings since 2020 to equip employees with knowledge on GHG as well as carbon reduction goal and measures. This also demonstrates our determination in sustainable development.

ISO Introduced ISO 14064-1 International Standard for Greenhouse Gas Emissions Inventory and Verification

2012	Scope 1 and Scope 2
2021	Scope 3

Greenhouse Gas Emissions

SOLAR's GHG emissions mainly come from purchased power and stationary combustion, which account for 96% of total emissions. In 2021, our GHG emissions under Scope 1 and Scope 2 amounted to 40,092 tonnes of CO_2e, showing a year-over-year drop of 3.7%. After Scope 3 was introduced in 2021, we reported 824,744 tonnes of CO_2e emissions under Scope 3. Our data received reasonable assurance from BSI (impartial third-party) in 2022, as stated in the verification opinion statement.

▼ GHG emissions (under Scope 1 and 2) over the past three years (unit: tonne CO_2e)

Scope	Category	2019	2020	2021
Scope 1	Stationary combustion	4,514	8,276	8,338
	Process emissions	0	1	0
	Mobile emissions	662	685	954
	Fugitive emissions	764	800	946
Scope 2	Indirect energy emissions	29,755	31,856	29,854
Total		35,695	41,618	40,092

▼ GHG emissions (under Scope 3) in 2021

(unit: tonne CO_2e)

Category			Emissions
Category 3: indirect GHG emissions from transportation			
3.1	Emissions from upstream transport and distribution of goods	GHG emissions from transport of raw materials and consumables procured during the inventory period	502
3.3	Emissions from employee commuting	Employees commuting includes car, motorbike, etc.	4
3.4	Emissions from client and visitor transport	Client/visitor transport includes car, motorbike, public transport, etc.	5
Category 4: indirect GHG emissions from products used by organization			
4.1	Emissions from purchased goods	Raw materials and consumables associated with plant production	619,524
		Purchased energy associated with production but excluding emissions categorized under Scope 1 and Scope 2	7,459
4.3	Emissions from disposal of solid and liquid waste	Waste disposal inventory, such as annual disposal volume and transport of disposal (consumer waste, recycled products, etc.)	187,855
Category 5: indirect GHG emissions associated with the use of products from the organization			
5.4	Emissions from investments	Electricity, gasoline and diesel used at investment locations	9,395
Total			824,744

Greenhouse Gas Emissions Reduction

To reduce ecological footprint generated by our products, SOLAR values harmonious coexistence with the environment and spares no effort in reducing carbon emissions. In 2021, SOLAR started rationing the usage of various raw materials, water, electricity and fuel in accordance with Environmental Performance Index (EPI) through coordination among different departments (e.g., manufacturing process, plant affairs, general affairs and laboratory). We managed to reduce 151,744 tonnes of CO_2e emissions in 2021.

▼ Carbon emissions reduced in accordance with EPI in 2021

(unit: tonne CO_2e)

Plant	TTIP Plant	Solar Park	ESTP Plant	Total
Raw material conservation (Note 1)	42,574	95,907	9,989	148,470
Water conservation (Note 2)	7	2	0	9
Power conservation (Note 3)	395	165	110	670
Fuel conservation (Note 4)	20	0	1,959	1,979
Waste reduction (Note 5)	2	529	85	616
Total	42,998	96,603	12,143	151,744

Note 1: Raw material rationing conversion coefficient is retrieved from Carbon Footprint Information Platform and Simapro 9.1.1.1.
Note 2: Water saving conversion coefficient is retrieved from Taiwan Water Corporation (0.15 kg CO_2e/1m3 of water).
Note 3: Power saving conversion coefficient is retrieved from Bureau of Energy, Ministry of Economic Affairs (0.502 kg CO_2e/kWh).
Note 4: Fuel rationing conversion coefficient is retrieved from the average heating value provided by CPC; emission coefficients of CO_2, CH_4 and N_2O are calculated based on 6.0.4 version of GHG Emissions Coefficients.
Note 5: Waste reduction conversion coefficient is retrieved from Carbon Footprint Information Platform.

Water Resources Management

Water is an indispensable substance to human survival. It is also an important lifeline to business operations. The lack of water resources has gradually become an important issue. SOLAR values water recourses management. We properly manage water intake and discharge of wastewater. In 2021, our water intake and wastewater discharge respectively reached 436.702 million liters and 184.376 million liters, with total water consumption of 252.326 million liters.

▼ Water consumption over the past three years

(unit: million liter)

Year	2019	2020	2021
Total water intake	451.311	439.123	436.702
Total water discharge	235.000	265.393	184.376
Total water consumption	216.311	173.730	252.326

SOLAR encourages operating personnel to propose water saving solutions. We built a wastewater treatment system dedicated to recycling and reusing water resources and improving water efficiency. Specifically, our system reclaims wastewater used during manufacturing process and recycles rainwater collected on site for use in tower washing or other purposes. We recycled 10,285 tonnes of wastewater in 2021.

▼ Water recycling and statistics over the past three years (unit: tonne)

Year	2019	2020	2021
Reuse of effluent in manufacturing processes (Note 1)	486	671	389
Rainwater recycling (Note 2)	1,302	1,306	2,503
Reuse of wastewater from manufacturing processes (Note 3)	136	217	0
Reuse of wastewater from back-end processes in tower washing (Note 4)	417	255	287
Water reclaim system (Note 5)	6,704	5,851	7,106
Total volume of recycled water	9,045	8,300	10,285

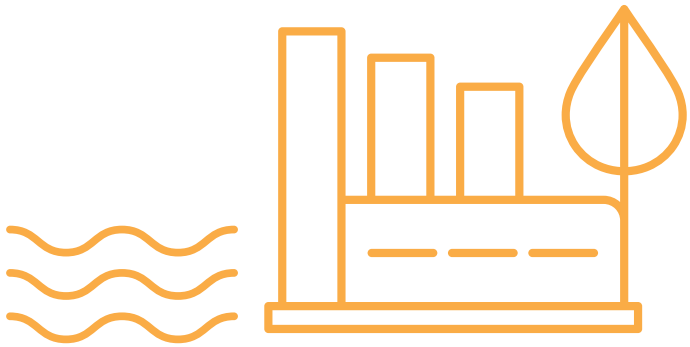
Note 1: Effluent recycling is mainly used in the incinerator dust wash-off process. We replace tap water with wastewater to save the cost and usage of tap water. Based on the kilogram of incinerator dust, we use 200 times as much wastewater to wash off dust (for example, 30kg incinerator dust * 200 times of wastewater = saving 6 tonnes of tap water = reducing the generation of 6 tonnes of wastewater).
Note 2: Calculation = rainfall * recycled area (storage).
Note 3: Calculation = 15~20 batches are generated per month; the consumption of tap water per batch used to be 15~20 tonnes, but after improvement we saved around 1 tonne of tap water. By reusing 1 tonne of water, we can reduce the generation of 15~20 tonnes of wastewater per month.
Note 4: In the first round, each batch of powder needs to undergo 18 rounds of washing process with 60L of water added; in the second round, each batch of powder needs to undergo 3 times of washing process with 170L of water added. Calculation = (number of batches * number of washing in the first round * volume of water added) + (number of batches * number of washing in the second round * volume of water added).
Note 5: Water reclaim system in the wastewater treatment plant of Solar Park

Waste Management

We have waste management system in place for treating the waste generated by three plants. In 2021, 3,793.36 tonnes of waste were generated, of which 1,674.24 tonnes (44.14%) were recycled and reused, and 670.82 tonnes (17.68%) were treated internally by SOLAR.

▼ Volume of waste generation and method of waste treatment over the past three years (unit: tonne)

Year	2019	2020	2021
Volume of waste generation	3,308.88	2,603.74	3,793.36
Recycling and reuse	735.38	831.15	1,674.24
Proportion of recycling and reuse	22.22%	31.92%	44.14%
Internal waste treatment	2,180.19	1,252.27	670.82
Proportion of internal waste treatment	65.89%	48.10%	17.68%
Outsourced (external) waste treatment	393.31	520.32	1,448.30
Proportion of outsourced waste treatment	11.89%	19.98%	38.18%



Social Aspects

SOLAR highly values the development and interests of our employees. We strive to build a workplace where safety, respect, ethics, equality and diversity are valued, enabling our employees to fulfil their potential and ambition here. We continue to work towards building a better, healthy, diverse and inclusive workplace in order to attract more talents. Our people are the core strength behind our sustainable operations.

Human Resources Policy

Our talent development mission is aimed at building the best team for each business unit to strengthen our competitive edge on a continuing basis through comprehensive selection, training, placement and retention of talents. In order to achieve organizational goal, we launched three phases of talent development (TD) strategies as follows: (a) three TD strategies from 2016 to 2018 for transformation during crisis; (b) five TD strategies from 2019 to 2021 for our return to glory; (c) eight TD strategies from 2021~2030 for a decade of prosperity. We continue to create value and empower our people to become more competitive through diversified talent development programs.

Previous Stage (2016-2018)
3 talent development strategies for transformation during crisis

New Era (2019-2021)
5 talent development strategies for our return to glory

A Decade of Prosperity (2021-2030)
8 talent development strategies for sustainable development

SOLAR has designed various management training programs that are in line with our talent development mission. Starting from 2018, we have completed 34 rounds of management training programs covering 19 topics for 1,260 employees. By organizing training programs for managers of all levels, the number of employees being promoted to managerial positions has grown from 23 in 2017 to 40 in 2021. Not only did this figure nearly double, the proportion of promotion to managerial positions also rose from 13.0% to 22.2%.

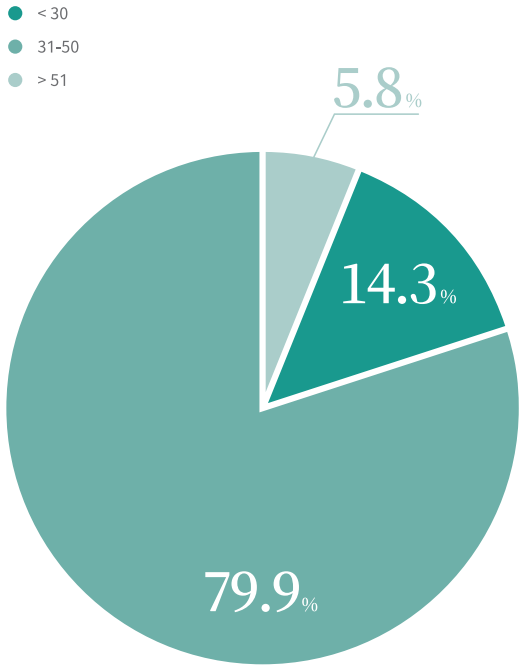
- Training for New Manager
- General Managerial Functions
- Talent Management Cycle
- Strategic Performance Management
- Strategic Team Building

We have completed 34 rounds of management training programs, covering 19 topics for 1,260 employees since 2018

Workforce Structure and Composition

As of the end of 2021, SOLAR has 1,186 employees. Among them, male employees and female employees account for 74.9% and 25.1%, respectively. In terms of age distribution, early adulthood constitutes the primary workforce – employees aged between 31 and 50 account for 79.9%; employees below the age of 30 account for 14.3%; employees above the age of 51 account for 5.8%. Compared to 2020, the total number of employees increased by 152 people.

▼ Age distribution of our employees



▼ Workforce structure and composition

Region	Category	Group	Female		Male		Total	
			Number of employees	Proportion	Number of employees	Proportion	Number of employees	Proportion
Taiwan	Age	<30	42	3.5%	128	10.8%	170	14.3%
		31-50	242	20.4%	705	59.5%	947	79.9%
		>51	14	1.2%	55	4.6%	69	5.8%
	Type of Contract	Indefinite	292	24.6%	810	68.3%	1,102	92.9%
		Fixed-term	6	0.5%	78	6.6%	84	7.1%

Note 1: SOLAR has 1,186 employees as of December 31, 2021.
Note 2: Our employees are hired full-time; only one employee works part-time who is hired back after retirement as technology director. Employees on fixed-term contract include migrant workers, interns and hourly workers.

In 2021, SOLAR's new hires were mostly aged between 31 and 50 (9.2% of total employees), followed by employees aged below 30 (3.7% of total employees). SOLAR's resigned employees were mostly aged between 31 and 50 (7.3% of total employees), followed by employees aged below 30 (3.3% of total employees). In comparison to 2020, employees aged between 31 and 50 increased the most by 8 people, while employees below the age of 30 decreased the most by 51 people.

▼ Proportions of new hires and resigned employees by age group and gender

Region	Category		Female		Male		Total	
			Number of employees	Proportion	Number of employees	Proportion	Number of employees	Proportion
Taiwan	New hire	<30	14	1.2%	30	2.5%	44	3.7%
		31-50	25	2.1%	84	7.1%	109	9.2%
		>51	0	0.0%	3	0.3%	3	0.3%
		Total	39	3.3%	117	9.9%	156	13.2%
	Resigned employee	<30	12	1.0%	27	2.3%	39	3.3%
		31-50	15	1.3%	72	6.1%	87	7.3%
		>51	0	0.0%	2	0.2%	2	0.2%
		Total	27	2.3%	101	8.5%	135	11.4%

Note 1: We have 1,186 employees as of December 31, 2021.
Note 2: Calculation = number of new hires and resigned employees / total number of employees.

Diverse Learning Channels

SOLAR encourages mid-level and senior management to promote knowledge sharing and self-directed learning among employees through effective and diverse learning programs. We built various learning channels, including e-learning, team sharing, corporate internal training, external training, course taught by consultant, reading club, experiential and interactive course, and online discussion forum. Our corporate culture and knowledge are shared via “hybrid courses” consisted of both digital learning materials and brick-and-mortar courses.

SOLAR is fully committed to and invested in talent development. Our training system is comprised of five major sections as follows: (a) training for new hires; (b) general training; (c) professional training; (d) management training; (e) self-directed development. We cover both general and specialized trainings through job design and training/development. Our people are empowered to choose and plan their career paths.

SOLAR plans different training courses for various job functions based on human resources strategy and policy. We strive to enhance learning efficiency and improve work quality and performance of our employees through a variety of general trainings and self-development courses. Our employees may not only improve competency in cross-functional collaboration and project management but also apply learning into practice to create a positive cycle of persistent improvement. In 2021, we planned 161 internal training courses, of which 137 courses were conducted. Combined with external training courses, 591 courses were executed with an average training hours of 15.7 hours per employee and an average satisfaction score of 4.6 (out of 5).

▼ Annual average training hours per employee

Item	Managerial role		Non-management (IDL)		Non-management (DL)		Total
	Female	Male	Female	Male	Female	Male	
Number of employees during the reporting period (A)	55	113	188	186	57	587	1,186
Hours of training received during the reporting period (B)	1,450	3,294	2,775	3,377	492	7,224	18,612
Average training hours during the reporting period (C) C=B/A	26.4	29.2	14.8	18.2	8.6	12.3	15.7

Note: We have 1,186 employees as of December 31, 2021.

Friendly Workplace

Effective Communication Channels

SOLAR has built a diverse, equal and healthy workplace through comprehensive human resources policy. We established effective communication channels to accommodate different ideas and voices. Moreover, we hold campaigns against infringing acts in the workplace, offering training courses to new hires and sending notice to current employees on an irregular basis to raise awareness. We also conduct preventative surveys every year to highlight employees who are exposed to high risks and offer them assistance.

If any of our employees suffers from physical or mental harm during the execution of duties due to the infringing acts committed by employer, supervisor, co-worker, client or other third party in the workplace, or if anyone has any comment or feedback to share, he or she can report directly to the CEO's email or a physical mailbox for employees.

Cordial Labor Relations

In addition to strengthening cross-functional communication, SOLAR encourages voluntary consultation and collaboration between employees and employer, so as to enhance communication, build consensus and work jointly towards an agreed resolution. We organize employer-labor meeting on a long-term and regular basis. This meeting is attended by an equal number of representatives from both sides (namely, five representatives from each plant) and discussed through presentation and proposal. A resolution is made with approval from three-fourths of the representatives, creating the vision of a mutually beneficial relation and a win-win situation. In 2021, SOLAR held 4 quarterly employer-labor meetings, where the number of attendees met the quorum in every meeting.

Human Rights of Labors are Respected

Here at SOLAR, we believe everyone should be treated with respect. We invest in manpower and ensure various regulations and labor management are in line with the principles of human rights and justice. Meanwhile, we comply with laws and regulations. We prohibit the use of child labor and forced labor, slavery and trafficking of persons. Our employees' rights to freedom of association and collective bargaining are respected without any form of discrimination. We also implement humane treatment by reasonably arranging work hours and rest hours for employees and providing reasonable salary and benefits. Furthermore, we continue to improve employee benefits and interests in connection with regulatory changes and external information, and periodically examine whether these are compliant with laws and regulations.

During the reporting period, none of the following major human rights violations occurred at SOLAR:

- Evidence of any operational base that may violate or seriously endanger the freedom of association and collective bargaining
- Sexual harassment incident
- Use of child labor at any perational base
- Forced labor at any operational base

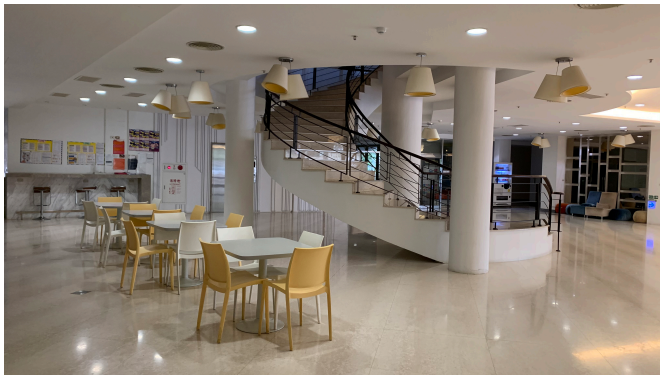
Gender Equality is Implemented

SOLAR highly values gender equality in the workplace. We formed a Gender Equality Committee in accordance with the Act of Gender Equality in Employment. Not only did we implement gender equality, we also followed the principle of equal pay for equal work in employment, compensation and reward system regardless of race, ethnicity, social class, ancestry, religion, physical and mental disabilities, gender, sexual orientation, family responsibilities, marital status, political belief and age. Female employees enjoy the same minimum wage as their male counterparts at a ratio of 1 to 1. Furthermore, female employees account for 33% of total managerial roles. When it comes to career development, we value personal competency, not gender.

Diversity and Inclusion

According to statistics from the Ministry of Labor, Tainan has the fourth largest population of migrant workers in Taiwan. SOLAR values the human rights of migrant workers just as much as those of Taiwanese workers. We make sure migrant workers receive equal treatment and enjoy the same or even better benefits. Each migrant worker is entitled to a single room in employee dormitory, rent subsidy and free use of paid TV channels. Employee dormitory is equipped with a gym, karaoke facility and new basketball shooting machines for free use. A bar in the common area and self-service laundry are also available for use.

▼ Various facilities are available for use in the dormitory



Occupational Safety and Health Management

In compliance with the Environment, Health and Safety (EHS) Policy, we have introduced ISO 45001 Occupational Health and Safety (OH&S) Management System to ensure everyone's safety at work. We built a team and management system responsible for OH&S and set forth stringent policy, procedures and management standards to promote internal occupational safety. In 2021, we continued to pass SGS audit and verification, making sure our management system remains current and effective. Our employees and non-employees (contractors) are all covered by the scope of OH&S management system. We will ensure every aspect in the OH&S system is thoroughly implemented in the future.

SOLAR executed 26 improvement plans in 2021 to ease the burden from operating personnel and reduce their exposure to hazardous risks. Moreover, we encourage everyone to propose specific improvement plans with a proactive and innovative approach. Gift vouchers are issued to employees whose improvement plans are accepted and implemented. Those proposing exceptional plans are rewarded with cash bonus.

▼ 2021 occupational health and safety improvement plans

Total 26 Improvement plans

- 7 Reduce chemical hazards
- 7 Reduce exposure to musculoskeletal hazards
- 5 Reduce dust hazards
- 2 Reduce noise hazards
- 5 Reduce other safety and health risks

▼ Chairman Chien-Yung Ma conducting acceptance inspection of rooftop wastewater treatment area with senior management

Occupational Health Services

SOLAR is concerned about employee health and safety management. We organize a number of events and seminars every year to promote physical and mental well-being and enhance awareness on employee health and safety. We see our people as our greatest asset. SOLAR offers annual health check-ups to employees who have joined SOLAR for more than a year. In 2021, 944 employees participated in health check-ups with an attendance rate of 98.7% (those not attending were still within the legal timeframe). Moreover, employees are classified based on their health conditions. Those with abnormal conditions are recommended to have a follow-up examination and a face-to-face consultation with on-site physician.

Regarding health protection, SOLAR conducts health screening for employees who perform night shift or special tasks in accordance with applicable regulations. We combine workplace monitoring with on-site inspection and assessment to build a safe work environment. We also protect the safety of employees who are exposed to high occupational risks, including those working with noise, ionizing radiation, hazardous substances (dust, specific chemicals, organic solvent) and lead. Employees involved in tasks with special health hazards (as defined above) are required to undergo special health screening prior to work commencement. For employees currently hired by SOLAR, we arrange special health examinations for them every year. If an employee is classified as under second-tier health management, we offer on-site physician consultation, health education and follow-up. In 2021, 774 of our employees completed special health examinations, including 189 employees working with noise, 11 employees working with ionizing radiation, 165 employees working with dust, 86 employees working with specific chemical (manganese), 31 employees working with organic solvent (n-hexane), 16 employees working with lead, and 259 employees involved in other tasks (DMF, arsenic, chromic acid, nickel, Indium).

Solar Charity Foundation

We place a strong emphasis on social participation. Since there are still many people in our society who need long-term support, we founded Solar Charity Social Welfare Foundation on April 28, 2008 (hereinafter as Solar Charity Foundation) with the purpose of pursuing educational equality for the underprivileged and supporting the vulnerable. By setting up a foundation and holding charity events, we wish to set an example and send our kind regards to the wider community, thereby inspiring more acts of kindness. We are actively involved in social charity events every year, mostly in local services but occasionally in cross-regional services.

Music Project: “Follow Your Dreams”

“The best gift you can give to others is companionship, especially meaningful companionship.” Inspired by this vision, we have partnered with Guitar Maniac Co., LTD. to launch a music project called “Follow Your Dreams”, which is designed to promote guitar culture and discover young musical talents. We believe that “education is the best way to eradicate poverty” and “music learning can shape one’s character”. As the sponsor of this event, we donate guitars to two students selected separately from Sin-Shan Elementary School and Chong-Xi Elementary School (near the Solar Park) in May and September, 2021. Afterwards, we invited students majoring in guitar from National Taipei University of Education to teach guitar to elementary students through remote learning session. Children in rural area often lack learning resources. Through collaboration with Guitar Maniac, we hope to bring more music elements and resources into children’s daily learning routine.

▼ Donating guitar to a student from Sin-Shan Elementary School

▼ Donating guitar to a student from Chong-Xi Elementary School

Collaboration and Sharing Between Industry and Academia

In addition to teaching in schools, SOLAR has actively tapped into industry-academia exchange. Since 2008, we have launched an industry-academia exchange program offering students opportunities of internship, seminar and research presentation at SOLAR during academic year, school semester and summer vacation. Several universities and colleges across Taiwan participated in our program, including National Taiwan University, National Tsing Hua University, National Cheng Kung University, National Chung Hsing University, National Chung Cheng University, National Sun Yat-sen University, National Taiwan University of Science and Technology, National Kaohsiung University of Science and Technology, Southern Taiwan University of Science and Technology, Ming Chi University of Technology, Kun Shan University, etc.

Sponsoring National Tsing Hua University's "Treeman Foundation" to Nurture Young Scholars

In an effort to extend the fundamentals of teaching and research, the College of Engineering, National Tsing Hua University, set up "Treeman Foundation" in 2020. This foundation is formed to raise the salaries of young scholars and create incentives for attracting and retaining talents in Taiwan. SOLAR understands the difficulties in talent incubation. As a company, we do our part in creating an excellent research and education environment. We facilitate knowledge exchange between industry and academia to form a positive cycle. From 2020 to 2022, we have donated NT$1.5 million to the Treeman Foundation, supporting sustainable development in education. It is our hope to nurture more talents for the society through school-enterprise cooperation.

▼ Woodcraft from Treeman Foundation in commemoration of our sponsorship

Holding a Scientific Contest with National Chung Cheng University for Junior High School Students

Chairman Chien-Yung Ma believes education is the best way to narrow the gap between urban and rural areas. We are very concerned about education development in rural areas. SOLAR aims to promote school-enterprise cooperation, implement corporate social responsibilities, and foster scientific talents through the launch of various scientific events.

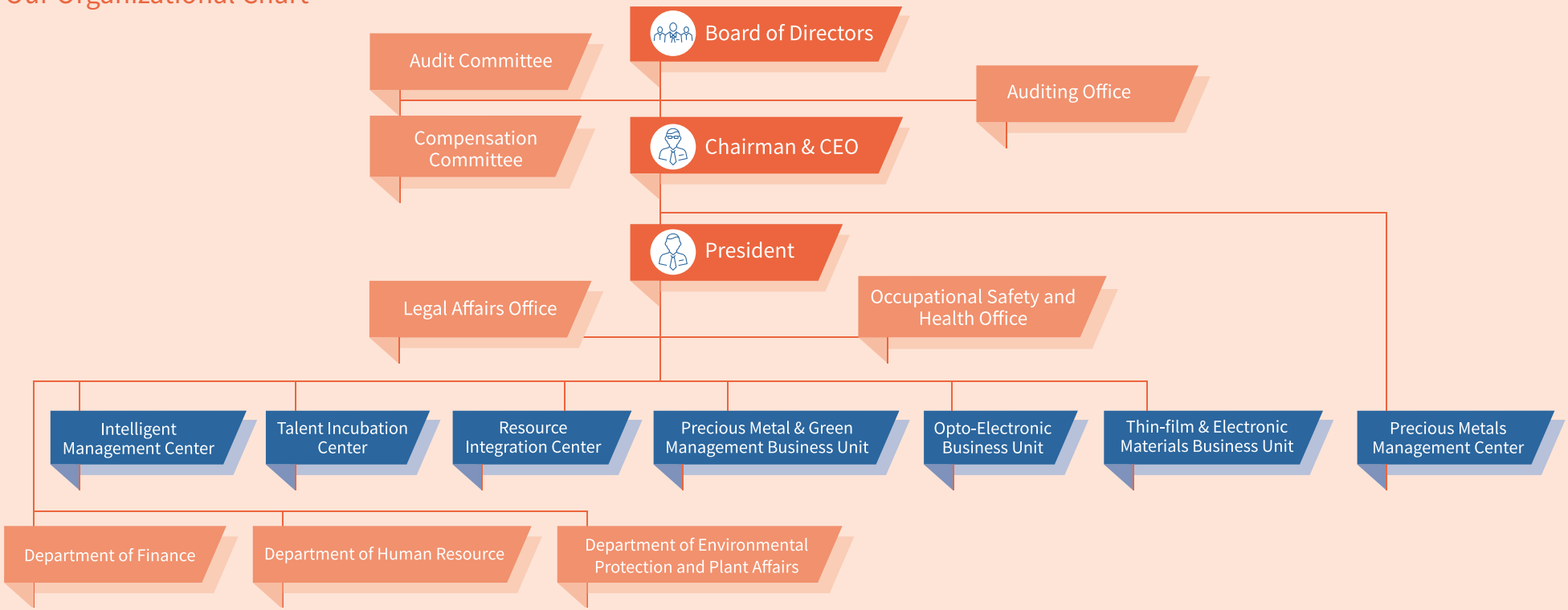
We co-hosted a scientific video contest called "Solar Scientific Challenge: Communicating Science in an Innovative Way" with the Science Education Center, National Chung Cheng University, for high school students in Yunlin, Chiayi and Tainan. This contest is designed to spark students' interest in fundamental science and inspire them to explore more about science while developing competency in oral presentation. Students are encouraged to present two major science themes that have been highly relevant to our society since 2019, including: (a) virus and vaccination; (b) gravity and black hole. NT$258,000 in cash prizes were awarded in this event, with 18 winners out of nearly 70 junior high school contestants and 17 winners out of 28 high school contestants.

▼ Group photo of chairman Chien-Yung Ma and his wife (left), professor Shuchun Yu and professor Wei-Ping Hu from National Chung Cheng University

Governance

SOLAR values corporate governance. We fulfil our responsibilities as a business operator, protect the rights of our shareholders, and consider the interests of other stakeholders. To implement good corporate governance, we established a governing body to assist with business operations and provide effective supervisory mechanism.

Our Organizational Chart



Functioning of the Board of Directors

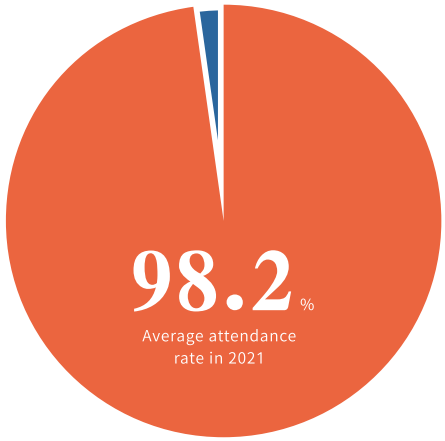
The board of directors (“the Board”) at SOLAR prioritizes the long-term interests of the company and shareholders, exercises the Board’s powers objectively and independently, and follows the principles of corporate governance. The Board is elected by shareholders. Various functional committees are established under the Board to strengthen its functions. SOLAR adheres to high-standard corporate governance policy to ensure effective functioning of the Board, thereby protecting the rights and interests of shareholders.

In accordance with SOLAR's internal regulations and the "Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies", we elect board members based on their judgement and competency in operations and management, accounting and financial analysis ability, crisis management, industry knowledge, perspective on global markets, leadership and decision-making ability. During the reporting period, SOALR had 9 members in the Board, including 3 independent directors (who accounted for 33% of total board members). The Board is composed of professionals from different backgrounds who are well equipped with the knowledge, skills and competency required for execution of duties. Independent directors specialize in the financial, legal and commercial fields. Other directors specialize in the fields of metallurgy, metal materials, industrial engineering, financial management and electronics. Two of our directors are female, with one being an independent director.

The Board follows corporate governance principles, reviews business performance, and discusses important strategic issues relevant to economic, environmental and social impacts as well as risks and opportunities. Any resolution made by the Board is posted on the TWSE Market Observation Post System (MOPS) immediately to keep stakeholders informed. Meanwhile, SOLAR has made the following information public and accessible for domestic and foreign investors: (a) the articles of incorporation; (b) regulations governing the board meetings; (c) functioning of the Board; (d) the recusal of board members from matters concerning conflict of interests.

Board Performance Evaluation

SOLAR started implementing board performance evaluation in 2020. The performance of the Board is periodically reviewed to examine efficiency and strengthen its supervisory role. In 2021, board members rated the overall board performance as "excellent" through self-assessment.



The board meeting is held at least once every quarter. Six board meetings were held in 2021 with an average attendance rate of ~98.2%

▼ SOLAR implements board performance evaluation

Frequency	Once a year
Duration	From January 1, 2021 to December 31, 2021
Participant	The Board, individual board members and functional committees
Method	Self-assessment by board members
Scope of Evaluation	1. Awareness of responsibilities 2. Degree of participation in company operations 3. Improving the quality of decision made by the Board and functional committees 4. Composition and structure of the Board and functional committees 5. Board election and continuing professional development 6. Staying on top of company goal and mission 7. Internal control 8. Internal relationship management and communication
Result	The overall board performance is rated as "excellent" by board members' self-assessment. It is recommended that board members be provided with meeting agenda via online meeting or by post before the commencement of board meeting in order to increase communication channels and allow timely provision of feedback or recommendation.

Other Governing Bodies in the Company

Audit Committee

Organization

(1) Founded on July 20, 2016
(2) Audit Committee is composed of three independent directors
- Chang-Po Wu (convener)
- Mei-Hui Wu
- Chen-Ming Fang

Key Responsibilities

(1) Assist the Board in fulfilling its oversight of the quality and integrity of accounting, financial reporting and auditing procedures of the Company
(2) Strengthen internal supervisory mechanism within the Company
(3) Establish or revise internal control system, and verify the effectiveness of such system
(4) Review matters concerning the personal interests of directors
(5) Substantial asset transaction or derivatives trading
(6) Substantial monetary loan, endorsement or provision of guarantee
(7) Offering, issuance, or private placement of any equity-type securities
(8) Appointment, dismissal or remuneration of a certified public accountant
(9) Appointment or dismissal of finance, accounting, or internal auditing officers

State of Implementation

Audit Committee holds at least one meeting every quarter. Five meetings were held in 2021 with an average attendance rate of 86.7%.

Compensation Committee

Organization

(1) Founded on December 16, 2011
(2) Compensation Committee is composed of three independent directors
- Chang-Po Wu (convener)
- Mei-Hui Wu
- Chen-Ming Fang

Key Responsibilities

(1) Periodically evaluate the performance of directors and managers, and formulate policies, framework, standards and structure concerning compensation
(2) Periodically evaluate the compensation paid to directors and managers
(3) Compensation, as mentioned above, includes cash remuneration, stock option, offering of stock ownership, retirement benefits or severance pay, allowances or stipends of any kind and other substantive incentive measures; its scope shall be consistent with that set out in the "Regulations Governing Information to be Published in Annual Reports of Public Companies"

State of Implementation

Compensation Committee holds at least two meetings per year. Five meetings were held in 2021 with an average attendance rate of 100%.

Corporate Governance Officer

Organization

(1) President Chii-Feng Huang assumed the role of corporate governance officer in 2021 in accordance with the Board's approval
(2) Corporate governance officer shall serve in a managerial position related to legal, financial or stock affairs at a public company for more than 3 years and complete professional training as per regulatory requirements

Key Responsibilities

(1) Provide information required for directors to execute their duties
(2) Assist directors with legal compliance
(3) Company incorporation registration or alteration of registration
(4) Process matters related to board meetings and shareholder meetings in compliance with laws
(5) Prepare meeting minutes for board meetings and shareholder meetings

State of Implementation

(1) Assist directors with execution of duties, provide information of the Company to directors, and facilitate smooth communication between directors and various business unit managers
(2) Provide relevant training information to directors, and arrange for the professional development of directors
(3) Facilitate communication among Audit Committee, CPA and chief auditor
(4) Assist with performance evaluation of the Board and committees, and submit performance evaluation to the Board
(5) Send meeting agenda to directors and provide meeting information 7 days prior to the board meeting; issue a reminder if any subject of discussion requires the avoidance of conflict of interests; send meeting minutes to directors within 20 days after the meeting
(6) Assist with handling affairs related to shareholder meetings

Internal Audit

Organization

(1) An internal audit unit is established under the Board as per regulatory requirements
(2) Audit unit is composed of five auditors (including chief auditor)
(3) Appointment and dismissal of chief auditor is approved by Audit Committee and the Board

Key Responsibilities

(1) Assist the Board and managers to inspect and evaluate the soundness and effectiveness of internal control system
(2) Provide consultation and feedback for improvement of internal control system to ensure effective execution of internal control

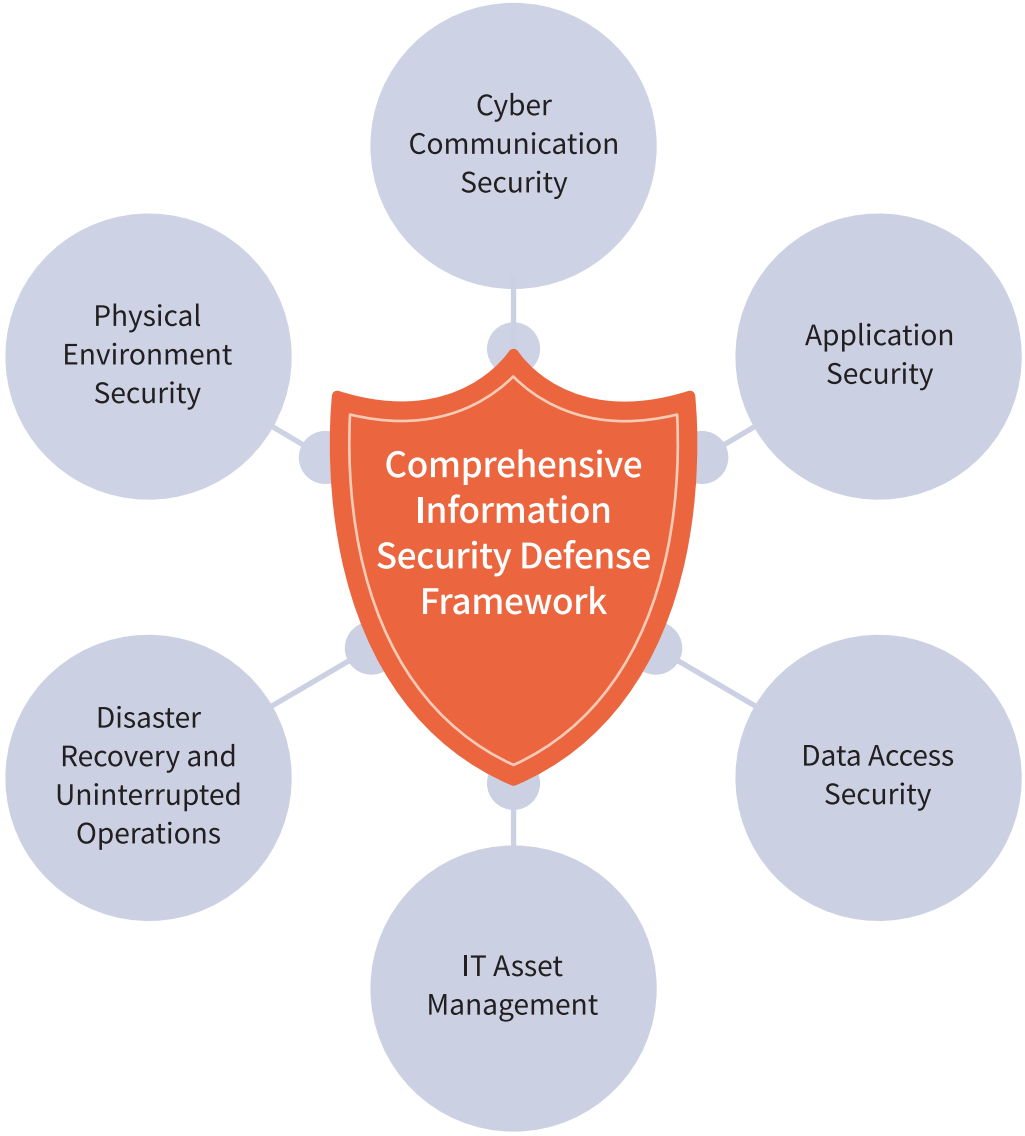
State of Implementation

(1) Formulate annual audit plans based on regulatory requirements and self-assessment of risks and internal control
(2) Conduct auditing, issue report, and follow up on improvements
(3) Periodically report to the Board and Audit Committee on the execution of audit work to ensure smooth communication

Information Security Management Geared to International Standards

Information security and protection of confidential information are the commitments we have made to our clients, shareholders and employees. SOLAR has launched an information security management system, specifically set out relevant policies, management procedures and guidelines, and further published the "Information Security Policy" to declare our determination in defending and promoting information security. We strive to remain competitive in market and safeguard the interests of our clients and partners.

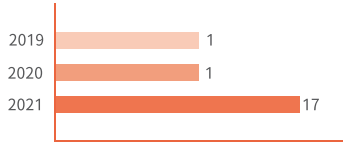
Our Information Security Office coordinates the formulation of relevant policies, execution, risk management and compliance audit. We also set up an Information Security Committee to hold a review meeting every year and report the results of information security management, including relevant topics, framework, system, evaluation of the introduction of new information security product or technology, results and review. SOLAR designed a security framework from a comprehensive perspective, while setting out various guidelines to ensure safe, stable and effective function of each system inside the framework.



Policy

17 Guidelines

Formulated and revised 17 information security guidelines.



Certification

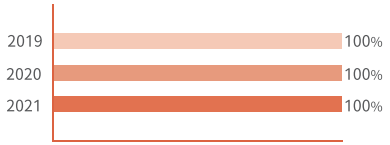
Received International Information Security Management System Certification (ISO/IEC 27001:2013)

Scope includes system development and maintenance of IT office, computer facilities management, environment monitoring and daily operations.

Training and Campaign

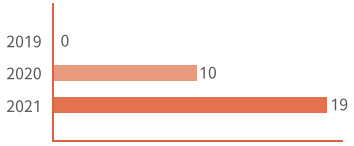
100%

All new hires are required to complete training on information security



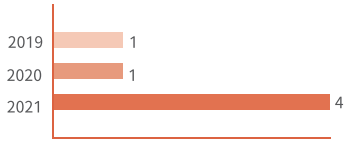
19 Campaign Posters

Created 19 campaign posters to deliver important guidelines on information security and safe use of device



4 Campaign Videos

Created 4 campaign videos to deliver important guidelines on information security and safe use of device



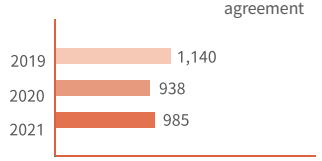
2 Social Engineering Assessments

Completed 2 email phishing tests with more than 800 participants

985 Employees

985 employees completed annual information security online training, including:

- Mobile device security
- Email security
- Data leak and cybersecurity management
- Importance of signing confidentiality agreement



Control

More than **7,500** electronic devices are managed under plant access control

Over 60,000 pieces of control labels are issued to electronic devices, with more than 7,500 electronic devices under control

Passing Third-party Verification

- ISO 9001 Quality Management System
- ISO 14001 Environmental Management System
- ISO 14064-1 Greenhouse Gas Emissions Inventory and Verification
- ISO 17025 Laboratory Quality Management System
- ISO 27001 Information Security Management System
- ISO 45001 Occupational Health and Safety Management System
- ISO 50001 Energy Management System
- CNS 45001 Taiwan Occupational Safety and Health Management System (TOSHMS)
- IATF 16949 Automotive Quality Management System
- AEO Authorized Economic Operator
- BS 8001 Circular Economy
- UL 2809 Environmental Claim Validation Procedure for Recycled Content

Solar Applied Materials Technology Corp.

2021 ESG Report