

**2024**

## Environmental, social and governance Report

Yuncheng Solar Technology Co., Ltd.

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# About the report

This is the third Environmental, Social and Corporate Governance Report (hereinafter referred to as the "ESG Report") issued by Yuncheng Solar Technology Co., Ltd. (hereinafter referred to as the "Yuncheng Solar"). Adhering to the principles of truthfulness, accuracy and completeness, this report details the practices and achievements of Yuncheng Solar and its subsidiaries in environmental protection, employee rights and interests protection and corporate governance optimization in 2024. Through this report, we aim to enhance communication with various stakeholders and jointly promote sustainable development.

## Scope of the report

This report covers the period from January 1, 2024 to December 31, 2024. In order to enhance the completeness of the disclosure, some of the contents are beyond the aforementioned timeframe.

Unless otherwise stated, this report takes Yuncheng Solar as the subject of disclosure, and the relevant sections cover Yuncheng Solar and its subsidiaries (see table below).

production base	be used in place of
Buildings E and H, Phase II, Standard Factory Building, Runzhou Road, Industrial Transformation and Concentration Zone, Huishan District, Wuxi, China	Wuxi Base (Yuncheng Solar Technology Co., Ltd.)
Jalan Brigjen Katamso, Desa/Kelurahan Tanjung Uncang, Kec. Batu Aji, Kota Batam, Provinsi Kepulauan Riau	Indonesia Base (PT THORNOVA SOLAR INDONESIA)

## Reporting standards

in accordance with	<ul style="list-style-type: none"><li>Global Reporting Initiative (GRI) Sustainability Reporting Standards (GRI Standards)</li><li>United Nations Sustainable Development Goals (SDGs)</li></ul>
refer to (another document)	<ul style="list-style-type: none"><li>Sustainability Accounting Standards Board (SASB) Sustainability Accounting Standards - Yuncheng Solar Technology and Project Development Sector</li></ul>

## Data sources

The information and data disclosed in this report are obtained from the internal official documents, statistical reports and definitions of Yuncheng Solar and its subsidiaries.

Unless otherwise stated, financial information in this report is expressed in RMB .

## Reporting statement

The contents of this report has been reviewed by the Board of Directors to confirm that there are no false records, misleading statements or material omissions.

## Report access and response

The Chinese and English versions of this report can be downloaded from The Company's website ([www.thornovasolar.com](http://www.thornovasolar.com)).

Please contact us if you have any suggestions or comments on this report:

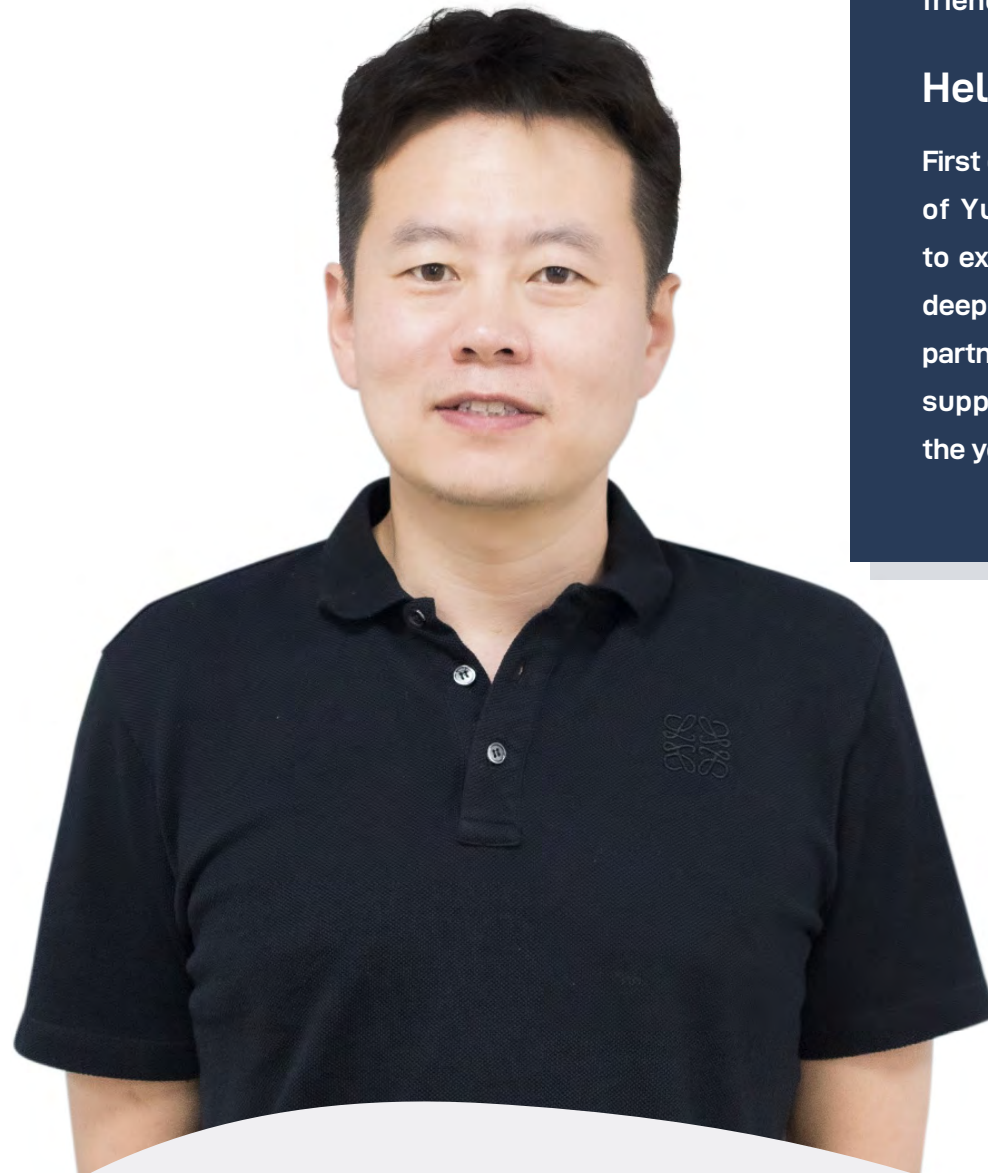
Contact: Miao Bofeng

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Email: [bofeng.miao@thornovasolar.com](mailto:bofeng.miao@thornovasolar.com)



# Message from the Chairman



Dear colleagues, partners and  
friends from all walks of life.

**Hello, everyone!**

First of all, on behalf of all the staff  
of Yuncheng Solar, I would like  
to extend our sincere thanks and  
deepest respect to all our friends,  
partners, and colleagues who have  
supported and stood by us over  
the years.

Looking back at the past year, the transformation of the global energy structure has accelerated, and green and low-carbon development have become a global consensus. Yuncheng Solar industry, as an important part of clean energy, has ushered in unprecedented development opportunities. Our company has always been adhering to the concept of "innovation-driven, green development", closely following the industry trend, continuing to increase investment in technology research and development, optimize the production process, improving product quality, and strive to provide customers with efficient and reliable PV module products.

This year, we have achieved remarkable results: our production capacity has been steadily increased, our market share has been broadened further, and our products have been exported to many countries and regions around the world. At the same time, we have also made breakthroughs in technological innovation, launching a variety of high-efficiency PV modules, which have been widely recognized by the market. These achievements were made possible by the hard work of our staff and the support of our partners.

However, we are also keenly aware that the PV industry is facing fierce market competition and the challenge of technological change. The pace of global energy transformation is accelerating, and customers are putting forward higher requirements on the performance, efficiency and reliability of PV products. To this end, we will continue to adhere to the innovation drive, increase investment in research and development, promote technological progress and enhance product competitiveness. At the same time, we will further strengthen the synergy and cooperation with our partners to jointly respond to market changes and realize mutual benefits and win-win situations.

Looking ahead, the outlook for the PV industry remains bright. With the advancement of global carbon neutrality, photovoltaic power generation will play a more important role in the energy structure. We will continue to uphold the concept of "green development, innovation and leadership", unswervingly take the road of sustainable development, and contribute to the promotion of global energy transformation and the realization of green and low-carbon development.

Finally, thank you again for your support and trust! Let's work hand in hand to meet a better tomorrow for the PV industry!

Thank you all!

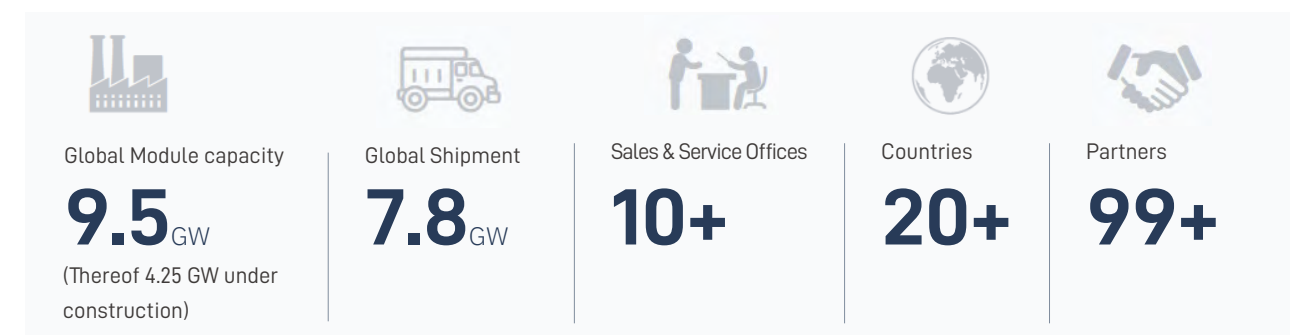
Chairman of the board  
**Wanruo Song**



# About Yuncheng Solar

## Company profile

Yuncheng Solar is a global tier-1 energy solutions provider specializing in the design and manufacturing of Thornova Solar (PV) modules, inverters and solar energy storage systems. Since its inception in 2016, The Company has continuously optimized its material sourcing, operations management and logistics systems to ensure the delivery of efficient and cost-effective renewable energy products. Yuncheng Solar has local warehousing and a close-knit sales network to achieve fast delivery and high-quality service, providing customers with one-stop energy solutions.



## Vision

- We specialize in the global distributed PV market and are committed to making Yuncheng Solar a one-stop solution provider of products and services.
- We are committed to fair and socially responsible standards of work and are committed to carbon neutrality and to becoming the world's leading green energy provider for the Yuncheng Solar business

## Mission

- Become the most user-centered energy company.

## Business and Product Introduction

As a globally operating Tier 1 company, Yuncheng Solar provides efficient support to its customers around the world by virtue of its profound industry experience and comprehensive localized services. The Company's global headquarters is located in China, and regional headquarters have been set up in Frankfurt, Germany (Europe), San Francisco, USA (North America), and Sao Paulo, Brazil (South America), to build a global business network.

To ensure fast delivery and supply chain stability, Yuncheng Solar has set up warehouses in Sao Paulo, Brazil; Rotterdam, Netherlands; and the United States (New York, Long Beach, and Houston), which effectively shorten the delivery cycle and improve customer experience. In addition, the company has sales representatives in the Benelux, Central Asia, Poland, Germany, Spain, and Italy, to provide customized support and ensure timely response to customer needs.

In the local markets, the company relies on distribution partners to provide high-quality products and services to further strengthen market coverage and service depth. Yuncheng Solar will continue to deepen its global layout and help the global clean energy transition with more efficient and reliable solutions.

## Global Presence



全球分销网络

Global Distribution Network



Yuncheng Solar Module Products

Yuncheng Solar offers high-efficiency, high-quality solar PV modules under its Thornova Solar brand name, including the Zosma series with PERC technology and the Tangra series with N-type technology. Both series are available as single-glass and double-glass PV modules, covering three different size categories, and are suitable for various scenarios, including residential rooftops, commercial rooftops, ground-mounted power plants, and large-scale ground-mounted power plants.

S size

M size

L size

Solar System

The Thornova Solar balcony system integrates high-efficiency solar panels, microinverters and adjustable brackets. It is easy to install and suitable for balconies, courtyards, railings and other environments. Users can lower their electricity bills, reduce carbon emissions, and easily obtain sustainable energy for green living.



Development Milestones

2016

- Yuncheng Solar Technology Co., Ltd founded in Wuxi, China.
- Setting up 1st 200MW production facility.

2017

- Yuncheng Solar Group AUS PTY LTD founded in Australia.

2018

- Thornova Solar Vietnam Company Limited founded in Vietnam.

2019

- The Brazilian branch of Yuncheng Solar was established.
- The annual cumulative shipment reached to 500 MW.

2020

- Production capacity expanded to 600 MW.
- Adopt large wafer size technology.
- Top 10 most popular module manufacturers in Brazil awarded by.

2021

- Production capacity expanded to 1 GW.
- The annual cumulative shipment reached to 2 GW.
- Reinsurance of warranties with PINGAN, Ariel - Re and Lloyd's.

2022

- Production capacity expanded to 2.5GW.
- Construction of additional Factories in China and Vietnam commenced. Operations planned to start in Q1 2023.

2023

- Became **BNEF Tier 1** Player
- Building **warehouses** in Rotterdam / Itaja / Milan.
- Signed performance guarantee insurance with **Munich RE**

2024

- Set up **1GW** differentiated product line.
- Expanded **9GW** cell capacity
- Started construction of **new HQ** at Wuxi Yanqiao.
- Yuncheng Solar starts up 2.5GW capacity at Indonesia plant
- Becoming **EUPD TOP Brand PV** in Brazil

Honors and Accreditation

Association

Signatory member of the United Nations Global Compact

Member of ACESOL Chile

Member of the German BSW Solar Industry Association

Member of SEIA, USA

Member of the African AFSIA Association

Member of ABGD Association, Brazil

Wuxi New Energy Chamber of Commerce

Member of the Committee of Solar Energy Professionals, CPEF, Mexico

Management System Development

Wuxi Base



ISO9001



ISO 14001



ISO 45001



SA8000

Indonesia Base



ISO9001



ISO 14001



ISO 45001



2024 Honors Recognition



Tier 1 Global PV Tier 1 Module  
Manufacturers, Q2 2024  
Bloomberg New Energy Finance (BNEF)



PV TECH Bankability Rating B  
Tech



Top Brazilian Solar brands  
EUPD



ESG Transparency Award  
EUPD



Most Influential Brand (ranked second)  
Greener, Brazil



Best performing component manufacturer  
PVEL



Global PV Module Manufacturers  
Ranking 13  
Wood Mackenzie



Top 500 Energy Companies in China  
China Energy News



High-tech enterprises in Jiangsu  
Province



Jiangsu Provincial Science and  
Technology Enterprises Listing  
Cultivation Program Enterprises



Green Factory in Jiangsu Province



Jiangsu Gazelle Enterprise





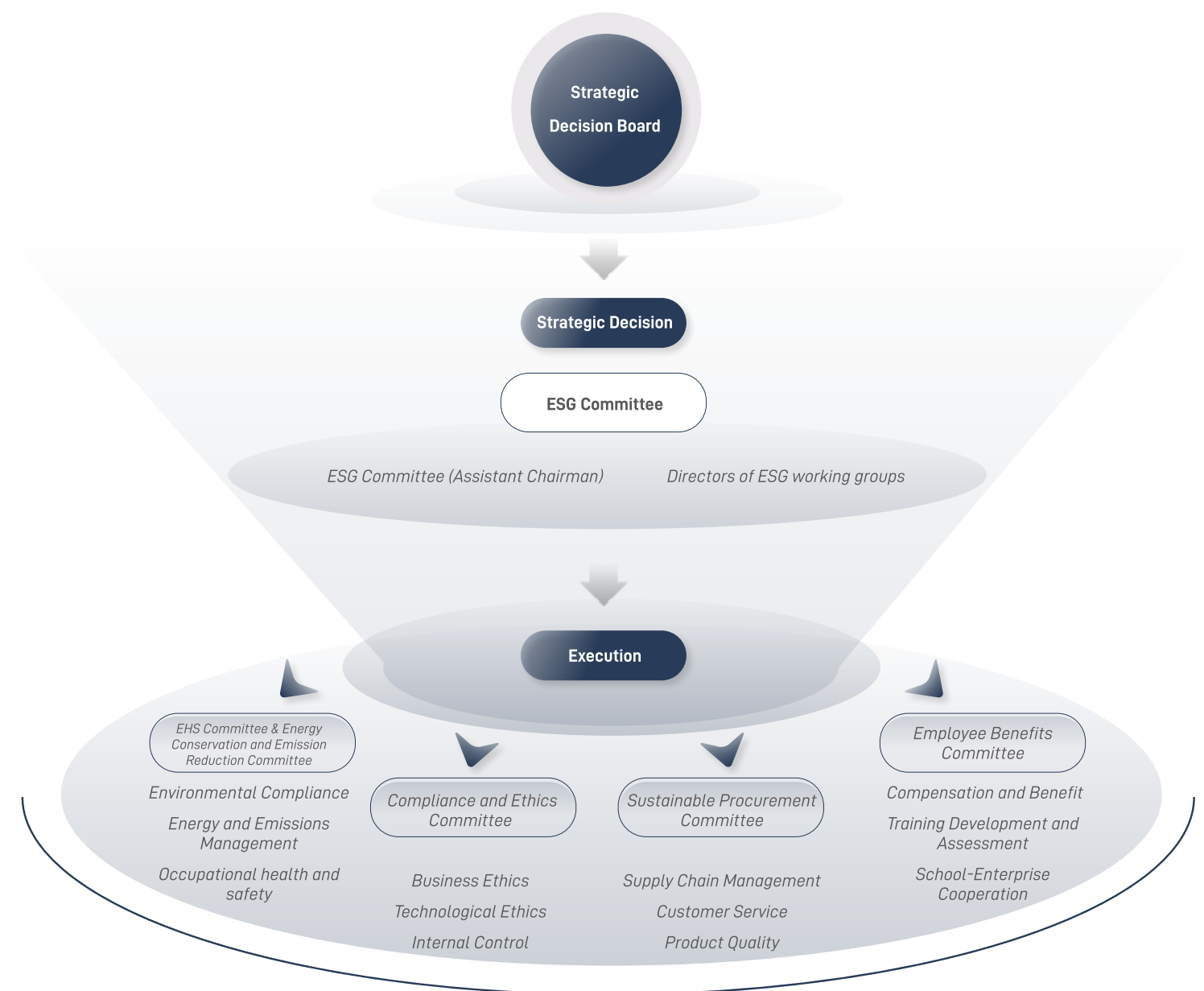
# Sustainable Development Management

## Sustainable development highlights performance



# Sustainable Management


Yuncheng Solar is firmly committed to the concept of sustainable development and actively responds to the opportunities and challenges brought about by climate change, environmental protection, human rights protection and market changes. The Company has established a top-down ESG governance system with clear responsibilities and powers, including the Board of Directors, the ESG Committee, and the Specialized Committee on ESG Issues, to ensure that ESG work is deeply integrated with corporate strategy and operations. Through continuous optimization of the governance structure, The Company has effectively enhanced the effectiveness of sustainable development management, promoted the implementation of ESG practices, and contributed to long-term sound development.



Yuncheng Solar Sustainability Governance Framework

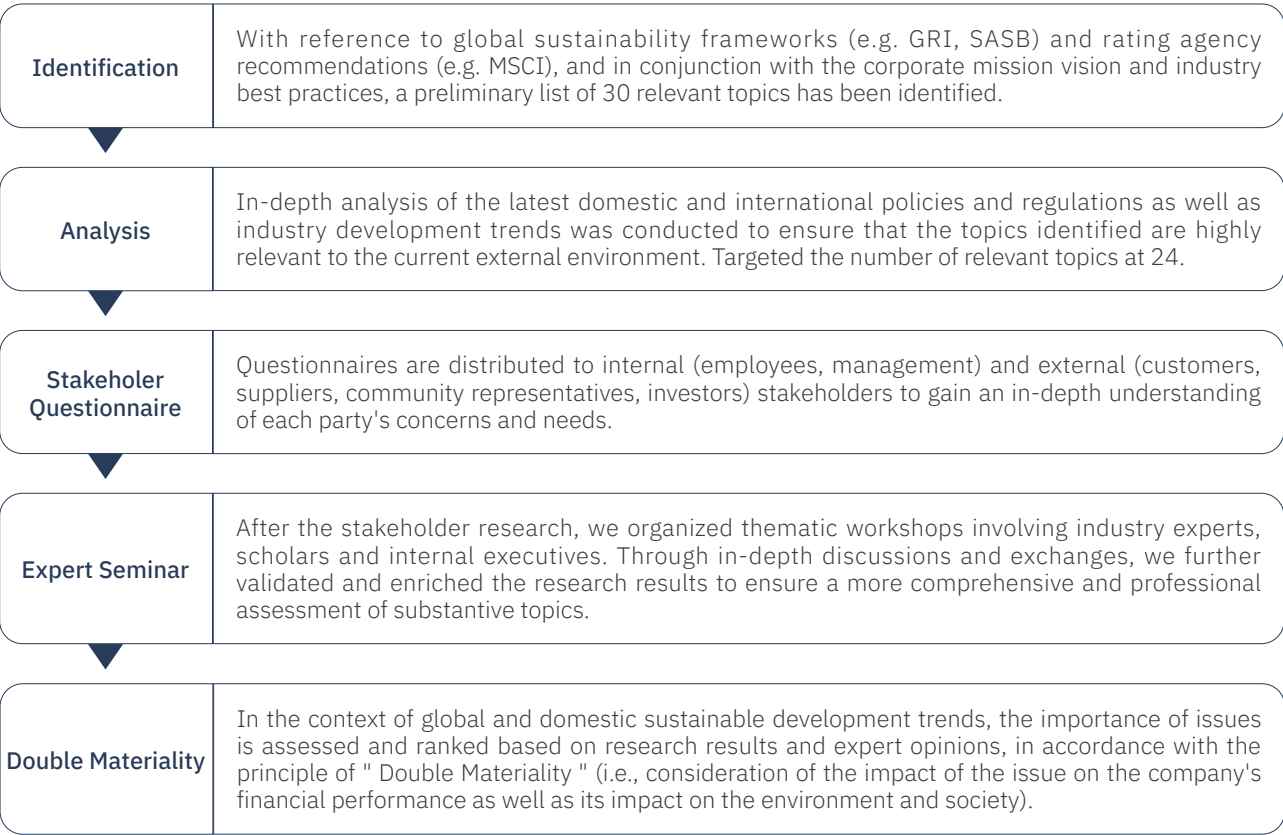
Stakeholder Communication

In 2024, Yuncheng Solar further deepened its communication mechanism with various stakeholders to ensure that the needs and expectations of all parties are responded to in a timely and effective manner. Below is an overview of this year's communications:

Stakeholders	Subjects of concern	Communication method
<div><div>Government and regulatory bodies</div></div>	Environmental Compliance Energy management Ecological protection	Regular policy reporting Special meeting Policy advice
<div><div>Shareholders and investors</div></div>	Corporate governance Financial performance Risk management	Disclosure of information Investor Relations Activities
<div><div>Clients</div></div>	Service Quality Management Product quality and safety Green and low-carbon products Data security and privacy protection	Regular communication Exhibitions Satisfaction survey
<div><div>Employees</div></div>	Employee rights and benefits Employee Training and Development Working environment Occupational Health and Safety Compensation and Benefits Equality, Diversity and Inclusion	Internal email Bulletin boards, suggestion boxes Employee Symposium Sectoral meeting Reporting and complaint mechanisms
<div><div>Value Chain Partners</div></div>	Technological innovation Product quality and safety Chain management Responsible procurement	Offline exchange of visits Vendor Audit Supplier Conference Exhibitions Complaint mechanisms
<div><div>Community (including residents) and environment</div></div>	Waste management Water management Community relations Charity Ecological impact	Media communication Community Activities Volunteer Program Disclosure of information

Through diversified communication channels, Yuncheng Solar is committed to establishing long-term, trusting relationships with various stakeholders and jointly promoting the sustainable development of the company.

Materiality Analysis





# Commitment

## Promote environmental protection, contribute to zero carbon emissions

Green Operation Practices  
Resource Management Optimization  
Enhanced Pollution Control

Green and Low Carbon Commitment  
Ecologically Harmonized Symbiosis  
Environmental management performance

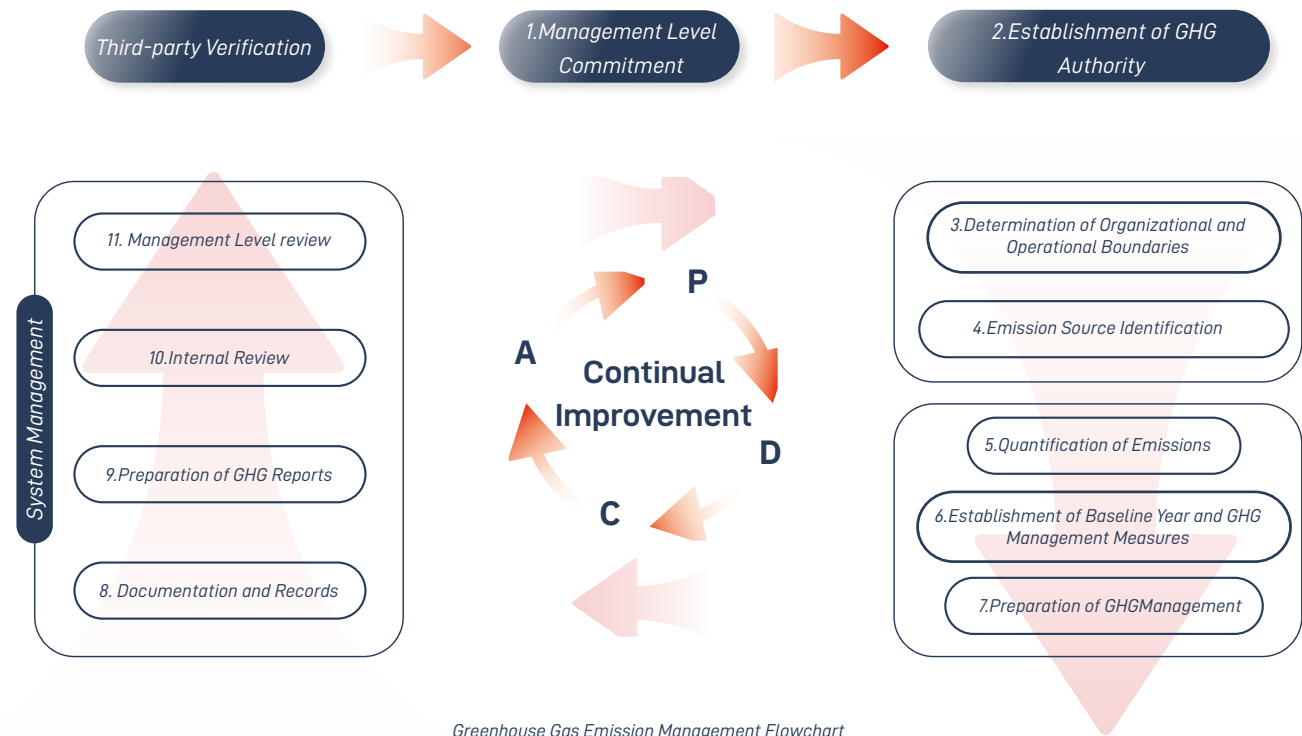




# Green Operation Practices

Yuncheng Solar strictly complies with national and local environmental regulations and continuously improves its environmental management system to ensure compliant operations. During the reporting period, the company actively responded to climate change by integrating low-carbon concepts into its strategies and operations, optimizing its energy management system, improving energy utilization efficiency, and promoting the application of cleaner production technologies to reduce its environmental footprint.

In order to strengthen carbon emission management, Yuncheng Solar regularly carries out greenhouse gas emission accounting, and completes the quantification of the carbon footprint of PV modules in accordance with the ISO 14067:2018 standard, so as to accurately measure the carbon emission of each link from the cradle to the door, and provide a scientific basis for the formulation of carbon reduction programs. At the same time, The Company increases the R&D of low-carbon PV products, continuously improves the conversion efficiency and durability of modules, helps the development of global clean energy, and promotes the realization of carbon emission reduction goals.



Greenhouse Gas Emission Management Flowchart

# Resource Management Optimization

Yuncheng Solar always insists on energy saving and consumption reduction, improves the efficiency of energy and water utilization, and promotes sustainable operation. In 2024, the company completed an energy saving diagnosis of energy use of 2023, analyzed the main energy-using links in-depth, identified the potential for energy saving, and proposed optimization measures. Based on the results of the diagnosis, the company deepened the construction of its energy management system in 2024, promoted high-efficiency energy-saving renovation, and further enhanced the efficiency of resource utilization.

## Energy Management and Optimization

The results of the 2024 energy conservation diagnosis show that the company's 2023 comprehensive energy consumption equivalent value was 2,252.35 tons of standard coal, and the comprehensive energy consumption per unit of output value was 0.0090 tons of standard coal per 10,000 yuan, which was better than the industry benchmark (0.0154 tons of standard coal per 10,000 yuan), demonstrating a higher level of energy utilization . However, the diagnosis also found that there is still room for optimization in energy structure, equipment energy efficiency and energy management. In response to these issues, the company has implemented a series of improvement measures in 2024, including:

### Upgrade the intelligent energy management system

enhance the ability of energy monitoring and data analysis, realize precise energy use regulation and control, and reduce unnecessary energy consumption.

### Promote equipment energy-saving renovation

for high energy-consuming equipment in 2023, the company carried out energy-saving upgrades of key equipment such as transformers and air compressors in 2024 to improve equipment energy efficiency and optimize operation modes .

### Accelerate the use of renewable energy

Yuncheng Solar plans to build a 1MW distributed power station on the roof of the plant in the future, which is expected to generate 1 million kWh of electricity annually, replacing 298 tons of standard coal and reducing 645 tons of carbon dioxide emissions, and further optimizing the energy structure .

## Water Management

The 2024 Energy Savings Diagnostic shows that the company's water use efficiency steadily improved in 2023 . However, there is still room for further optimization, so the company is in 2024:



### Strengthening water management

Optimizing the water recycling system and improving the water reuse rate;



### Optimizing water-saving technologies

Reducing one-time water consumption in the production process to ensure more sustainable water use.

Based on the results of the energy-saving diagnosis carried out during the reporting period, the company will further deepen its energy-saving and consumption reduction initiatives in the future, continue to optimize its energy structure, promote intelligent energy-saving management and explore more efficient energy-use control strategies, so as to lay a solid foundation for the realization of long-term green and low-carbon development.

## Enhanced Pollution Control



### Waste gas management

For the organic waste gas generated in the production process, the company is equipped with purification equipment such as activated carbon adsorption device, which meets the standard after efficient treatment, and commissions regular monitoring by qualified organizations to ensure that the waste gas emissions continue to comply with national standards.



### Wastewater management

The company's production wastewater mainly comes from equipment cleaning and domestic water, which is discharged into the park's sewage pipeline network after pre-treatment in the factory and meets the standard, and is not directly discharged into the natural water bodies, so as to prevent and control the water pollution from the source. In addition, the company has established a strict water and drainage management system, real-time monitoring of water quality, to ensure the stable operation of wastewater treatment facilities.



### Solid Waste Management

The company implements waste classification management and minimization measures. General industrial solid waste (such as packaging materials, trimmings, etc.) is reused by professional recycling organizations; hazardous waste (such as leaded solder residue, used engine oil, etc.) is stored, marked and collected in a classified manner in strict accordance with the hazardous waste management system, and is entrusted to qualified units for regular safe disposal. In the future, The Company will continue to optimize the management of hazardous waste, promote the application of advanced technology, enhance the recycling rate of hazardous waste and further reduce the environmental impact.

Through systematic pollution control measures, Yuncheng Solar continuously improves the level of environmental management and realizes green and sustainable development.

## Green and Low Carbon Commitment

Yuncheng Solar is committed to providing green and low-carbon solar products and implementing full life cycle environmental management. The company actively carries out carbon footprint accounting and certification. According to the third-party assessment in 2024, the carbon emission of PV modules from raw material acquisition, transportation to manufacturing stage can be as low as 0.637 kg CO<sub>2</sub>e; based on the 30-year service life and power generation, the carbon emission per kWh is only 22-25 g CO<sub>2</sub>, which is in line with the ultra-low carbon standard of the European Union's PV Carbon Footprint Class I.



Carbon Footprint Verification Statement for  
Yuncheng Solar Products



EPD of Yuncheng Solar

In addition, the company's products have obtained multiple environmental certifications both domestically and internationally, including RoHS and REACH. In 2024, the company was awarded an Environmental Product Declaration (EPD) under the EPD Italy program. This declaration covers various models of monocrystalline silicon solar modules and adopts a cradle-to-grave life cycle boundary. The third-party evaluation results were positive. The EPD certification not only highlights the company's transparency in disclosing environmental performance data but also provides authoritative environmental compliance assurance for users in global markets.

Focusing on life cycle management, the company plans to establish a green supply chain and recycling system. In the raw material procurement phase, suppliers that meet environmental standards such as ISO 14001 are prioritized, and joint carbon reduction measures are promoted—for example, encouraging suppliers to conduct carbon footprint accounting and contribute to industry databases, thereby reducing embedded carbon emissions at the source.

During the manufacturing process, the company continuously optimizes processes to reduce resource consumption and pollutant emissions, enhancing environmental performance. In the product use phase, high-efficiency Thornova Solar modules consistently provide clean electricity throughout their life cycle, supporting downstream users in reducing carbon emissions. At the end-of-life stage, the company is committed to establishing a comprehensive recycling system to promote the recycling and resource utilization of decommissioned modules, thereby minimizing environmental impact from waste.

Through these initiatives, Yuncheng Solar is committed to realizing the green control of the whole process from supply chain, production, use to recycling, fully fulfilling the environmental responsibility of PV enterprises, and contributing to the low-carbon transformation of global energy.

# Ecologically Harmonized Symbiosis

While developing rapidly, Yuncheng Solar is committed to reducing the impact of its business on the ecological environment and realizing harmonious coexistence with nature. The company's Indonesia base follows the principle of ecological priority in the site selection and construction stages, prioritizing industrial parks with high environmental carrying capacity, avoiding the occupation of sensitive ecological land, and rationally planning the layout of the plant to reduce land disturbance.

During the construction process, the company's Indonesia base took measures to protect the native vegetation, reduce the impact on the surrounding animal and plant habitats, and enhance the greening of the plant to improve the quality of the ecological environment. During the operation stage, the Indonesia base optimizes lighting design to avoid light pollution at night; adopts anti-reflection coating to reduce the interference of reflections from components on living creatures; and strictly controls noise and electromagnetic radiation to reduce the impact on birds, insects and other living creatures.

In addition, the company's Indonesia base carries out regular environmental monitoring to keep an eye on the status of water bodies, soil and organisms, and takes timely measures to minimize ecological risks. The company's Indonesia base also actively supports local biodiversity conservation programs and fulfills its corporate citizenship responsibilities. Through these initiatives, Yuncheng Solar combines green production with ecological protection to realize sustainable development.

## Environmental management performance

### Environmental Base Data

Indicator	2022	2023	2024	Unit
Environmental violations and penalties	0	0	0	count
Total investment in energy conservation and environmental protection	15,000	30,000	35,000	RMB
Duration of environmental training	15	30	35	hour
Number of participants in environmental training	39	50	52	count
Percentage of total employees receiving environmental training	100	100	100	%
Percentage of all workplaces where environmental risk assessments are conducted	100	100	100	%
Percentage of operating sites certified to ISO 14001 environmental management system over all sites	100	100	100	%
Number of operations owned, leased, managed in biodiversity-rich areas located in or adjacent to protected areas and outside protected areas	0	0	0	count

### Energy and Resource Use

Indicator	2022	2023	2024	Unit
Non-renewable energy (diesel) use	5,753	6,770	3,224	liter
Total non-renewable energy (purchased electricity)	10,954,233	12,891,797	20,175,105.60	kWh
Total water withdrawal	1,548	5,524.4	6,779	ton
total displacement	1,200	1,241.9	6,779	ton
Total water consumption	348	4,282.5	0	ton
Package usage	135.5	203.6	455.7	ton
Use of non-renewable raw materials	0	0	0	ton
Use of renewable raw materials	370.29	556.39	439.21	ton
Recycled Material Usage	/	43.67	34.47	ton
Glass Recycling	/	5,952	4,698.5	kg
Aluminum Recycling	/	1,244	982	kg
Silicon Recycling	/	36,367.1609	28,708.22	kg
Other metal recycling materials	/	104.7	82.65	kg

### Waste and Greenhouse Gas Emissions

Indicator	2022	2023	2024	Unit
Hazardous waste emissions	31.2	47.1	9.81	ton
Non-hazardous waste emissions	30.6	112.2	88.57	ton
Waste emissions	0.23	159.3	125.8	ton
Scope I greenhouse gas emissions	92.33	138.73	109.52	tCO <sub>2</sub> e
Scope II greenhouse gas emissions	7,706.30	11,579.36	9,140.74	tCO <sub>2</sub> e
Total greenhouse gas emissions	7,798.63	11,718.09	9,250.26	tCO <sub>2</sub> e



# Responsibility

## People Oriented, Shaping Tomorrow

Responsible Procurement

Safeguarding Employee Rights and Interests

Partnering for Employee Growth

Promotion of occupational health

Social Management Performance



# Responsible Procurement

## Sustainable Procurement

Yuncheng Solar continuously optimizes supply chain management and strengthens supplier cooperation to promote sustainable development. The company has established a supplier hierarchy management mechanism, covering the whole life cycle management of development, introduction, audit and evaluation, and withdrawal, and has also implemented green procurement, evaluating suppliers based on environmental and social standards to ensure compliant supply chain operations.

In 2024, the company added and required all suppliers to sign the following commitment to standardize business practices and fulfill social responsibility:

- Commitment on Non-Use of Conflict Minerals: Commitment not to purchase or use minerals originating from conflict areas and to ensure the legality and traceability of raw material supply.
- Integrity Agreement: Suppliers shall abide by the principle of fair competition and shall not provide any form of kickbacks, cash, gifts or other improper benefits to Yuncheng Solar employees.
- Environmental Protection Agreement: Suppliers commit to comply with environmental regulations, optimize production processes, reduce pollutant emissions and continuously improve green production methods.

## Supply Chain Risk Management

Yuncheng Solar effectively reduces the risks of fluctuating procurement prices, unstable quality, shortage of raw materials and interruption of supply through multi-channel procurement, supplier due diligence, monitoring of safety stock, and strengthening of supplier communication to ensure the stability of the supply chain. On the premise of meeting delivery requirements, the company gives priority to local suppliers to shorten the delivery cycle and reduce the impact of transportation on the environment.

Yuncheng Solar strictly carries out supplier due diligence, focusing on assessing qualification compliance, labor management, occupational health and safety, environmental protection and social responsibility fulfillment to ensure that suppliers have stable supply capacity and sustainable development conditions. During the reporting period, the company actively carried out on-site audits on social responsibility, covering key aspects such as labor compliance, occupational health and safety, environmental management, etc., to promote the optimization of suppliers' management, enhance the transparency and compliance of the supply chain, and ensure that the overall operation meets the requirements of sustainable development.



## Supply Chain Empowerment

In 2024, Yuncheng Solar launched offline training for suppliers to strengthen their knowledge and practice in social responsibility, compliance management, fair competition and anti-corruption. The training covers labor and human rights protection, environmental compliance, and business ethics to ensure that suppliers meet sustainability standards while fulfilling their contracts. Through the training, Yuncheng Solar promotes supply chain transparency, improves overall operational compliance, and builds a responsible business ecosystem.

## Green Logistics

Yuncheng Solar actively promotes green procurement and reduces resource consumption and environmental impact by optimizing supply chain management. The company has taken a number of environmental protection measures in packaging and transportation, including:



### Pallet recycling

Promote reusable pallets, reduce the use of disposable wooden or plastic pallets, and reduce the waste of resources.



### Adhesive film crate use

Mechanical adhesive film crates are used to ensure safe storage and transportation while reducing packaging material consumption.



### Reducing disposable packaging

Prioritize the use of recyclable and biodegradable packaging materials, optimize packaging size and improve transport efficiency.





# Safeguarding Employee Rights and Interests

Yuncheng Solar always adheres to the concept of "people-oriented" and is committed to providing employees with a safe, healthy and fair development environment and effectively protecting their legitimate rights and interests. The company strictly abides by the *Labor Law of the People's Republic of China*, *Labor Contract Law of the People's Republic of China*, *Personal Information Protection Law of the People's Republic of China*, *Special Protection Provisions for Underage Workers* and other laws and regulations in the places where it operates, and at the same time, it actively benchmarks itself against the Universal Declaration of Human Rights, the International Labor Organization Convention, and SA8000 and other international standards of social responsibility, so as to continually optimize the management system of its employees and the environment of career development. In order to strengthen the protection of employees' rights and interests, we have formulated and implemented the Employee Handbook and the Social Responsibility Management Handbook, which clearly define the management requirements in key areas such as occupational health and safety, working conditions, remuneration and welfare, and career development, and ensure that employees work and grow in an environment of equality, respect and tolerance.

Based on the above policy, the company has adopted a series of specific measures in employee management and rights protection, mainly including the following aspects:

## Labor security in accordance with the law

 <p>Legal Employment and Labor Contract Management</p>	<p>The company strictly enforces recruitment and employment standards to ensure that all employees go through a formal hiring process and sign a formal labor contract that specifies the rights and obligations of both parties. The Human Resources and Administration Department is responsible for reviewing the recruitment process on a regular basis to ensure that all new employees meet the age requirements and that child labor and forced labor are eliminated.</p>
 <p>Freedom of Association and Labor-Management Negotiation</p>	<p>The company respects employees' freedom of association and right to collective bargaining, holds regular labor-management meetings, listens to employees' opinions, and promotes effective communication between management and employees.</p>
 <p>Advance Notice of Major Changes</p>	<p>The company is committed to providing at least 30 days' formal notice of major operational changes that may affect employees and their representatives, and to providing the necessary transition support.</p>

## Diverse and inclusive work environment

### Equal Employment and Anti-Discrimination Policy

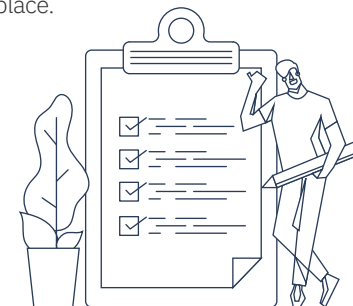
The company adheres to a diverse and inclusive corporate culture to ensure that all employees are not discriminated against on the basis of gender, age, ethnicity, religious beliefs and other factors. All hiring, promotion, training and compensation decisions are based on the principles of fairness and equity.

### No Harassment and Anti-Forced Labor

The company strictly prohibits any form of harassment, coercion, corporal punishment or mental oppression, and protects the rights and interests of employees through an internal reporting mechanism.

### Workplace Equality Advocacy

In 2024, the company launched a workplace equality poster to encourage employees to eliminate gender and career stereotypes and promote diversity in the workplace.





## Comprehensive remuneration and benefits system



### Salary payment and compliance

The company follows the principle of "equal pay for equal work and distribution according to work", and optimizes the salary system on a regular basis by taking into account the minimum wage standard of the place of operation, market research and the operating efficiency of the company. Salary components include basic salary (basic salary+ positional salary), performance salary, full attendance bonus, night shift subsidy, etc. Salary adjustments are also made based on individual performance appraisal for position or performance, which motivates employees to continuously improve their ability and contribution.



### Employee benefits

The company provides statutory holidays, paid annual leave, paid parental leave, high temperature subsidies and other statutory benefits in accordance with the law, and additionally provides employees with commercial insurance, health checkups, working meals, holiday benefits, team activities, birthday parties, retirement gifts, afternoon tea and other caring benefits to enhance the quality of life and sense of belonging of employees.



### Social insurance and outsourcing management

The company strictly complies with the laws and regulations related to social insurance, pays five insurance and one gold for all regular employees according to the regulations, and regularly reviews the labor compliance of outsourcing contractors to ensure that they pay social insurance on time and pay salaries in full, so as to effectively safeguard the legitimate rights and interests of all workers.

## Yuncheng Solar Employee Benefits



New Year's Welfare Distribution



New Year's Red Packet



Summer Cooling Mung Bean Soup



Employee Retirement Ceremony



Christmas Events



## Open channels of communication

- Multi-dimensional communication mechanism:** The company establishes a multi-channel, two-way interactive communication mechanism, encourages employees to actively express their suggestions and opinions, and ensures that the management can listen to employees' voices in a timely manner. Through employee symposiums, suggestion boxes, internal forums, satisfaction surveys, etc., the company enhances the interaction between employees and the company, and promotes the optimization of corporate management.
- Frontline employee care:** HR department regularly visits the production line, observes the working condition of the employees, takes the initiative to understand the demands of the employees, and cooperates with the relevant departments to follow up and improve in a timely manner.
- Grievance and feedback mechanism:** The company has established a formal grievance channel to guarantee that employees can obtain fair and just treatment through reasonable channels when they encounter unfair treatment or work problems. The HR department regularly classifies and analyzes employee feedback and promotes rectification and optimization to ensure that employee rights and interests are fully protected.



New Employee Orientation Interview



Regular talks



suggestion box



staple



cultivate

Through the above measures, Yuncheng Solar is committed to creating a harmonious and positive working environment for its employees, protecting the rights and interests of each employee, and realizing the common development of the employees and the enterprise.

## Compliance First, Care Along

## Social Security for Thornova Solar Indonesian Employees

In order to improve the level of protection for overseas employees, Yuncheng Solar uniformly applies for and pays the BPJS Ketenagakerjaan (Indonesian National Employment Security System) for the employees of the Indonesia plant, including work accident insurance, death insurance, pension and medical insurance, etc. This initiative not only complies with the mandatory requirements of employers' social insurance under the Indonesian labor law, but also reflects the company's "people-oriented" management concept, which effectively enhances employees' sense of belonging and security. In the process of implementation, the company completes employee registration, salary declaration and monthly contribution through SIPP online system to ensure that employees enjoy legal social security from the first day of employment. In addition, the company also regularly verifies the compliance of local outsourcing service providers to ensure that their employees are also included in the social security system, so as to effectively safeguard the compliance of overseas employment and the protection of employees' rights and interests.

# Partnering for Employee Growth

Yuncheng Solar always adheres to the strategy of prioritizing talent cultivation, and through qualification management, multi-faceted rotation plan and hierarchical training system, it continuously improves the professional skills and career competitiveness of its employees, and contributes to the growth of individuals and the development of the company.

## Management of professional qualifications

The Company has established and implemented the Professional Qualification Management System, building a clear grade system and a scientific evaluation mechanism:

### Clear career development paths

We established six career levels — Entry, Assistant, Intermediate, Senior, Advanced, and Expert — to ensure that employees have structured opportunities for advancement.

### Evaluation criteria and promotion mechanism

adopting the two-dimensional evaluation of "knowledge and skills+ behavioral standards", and combining written tests, defenses, and verification of performance results to conduct the grade evaluation.

### Dynamic management and talent incentives

implementing the dynamic adjustment strategy of "upward and downward", employees with outstanding performance can get accelerated promotion opportunities.

## Multi-faceted rotational training program

The Company has implemented the "multi-faceted rotational training program" and is committed to cultivating complex talents:

### Cross-departmental rotation mechanism

marketing personnel are required to rotate to factory sites, technical support, marketing, business management and other key positions to expand business horizons and enhance cross-departmental collaboration.

### Mentorship

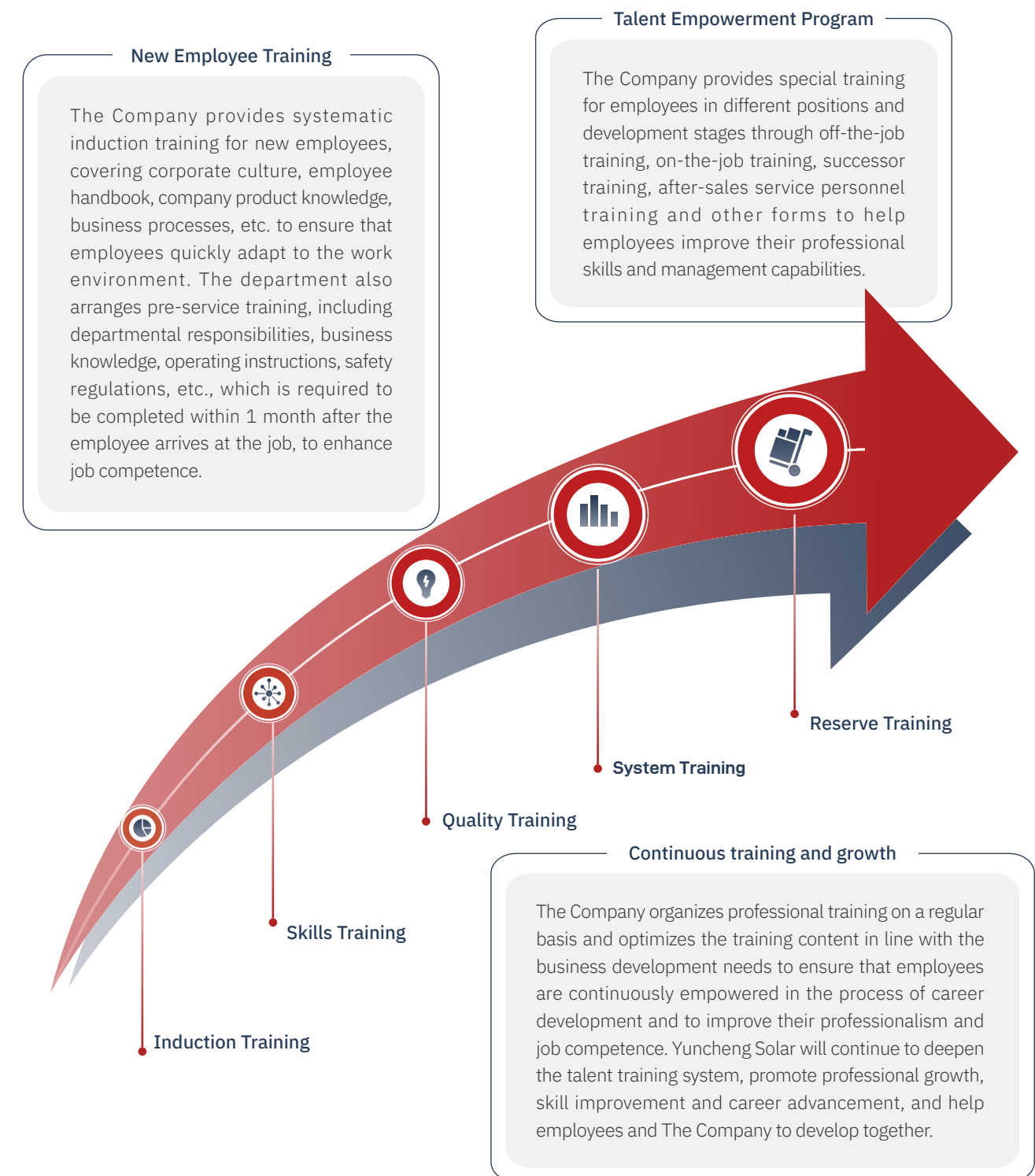
each rotating employee is equipped with a senior mentor to provide professional training and practical guidance to ensure that the employee adapts quickly to the new position.

### Appraisal and Evaluation Mechanism

at the end of the rotation, a performance evaluation will be conducted and those with excellent performance will be offered additional development opportunities or rewards.

## Multi-level training system

The Company has established a perfect training system covering all stages of employees' career, covering induction training, skills training, quality training, institutional training and reserve training, to ensure the continuous growth of employees and help The Company's high-quality development.

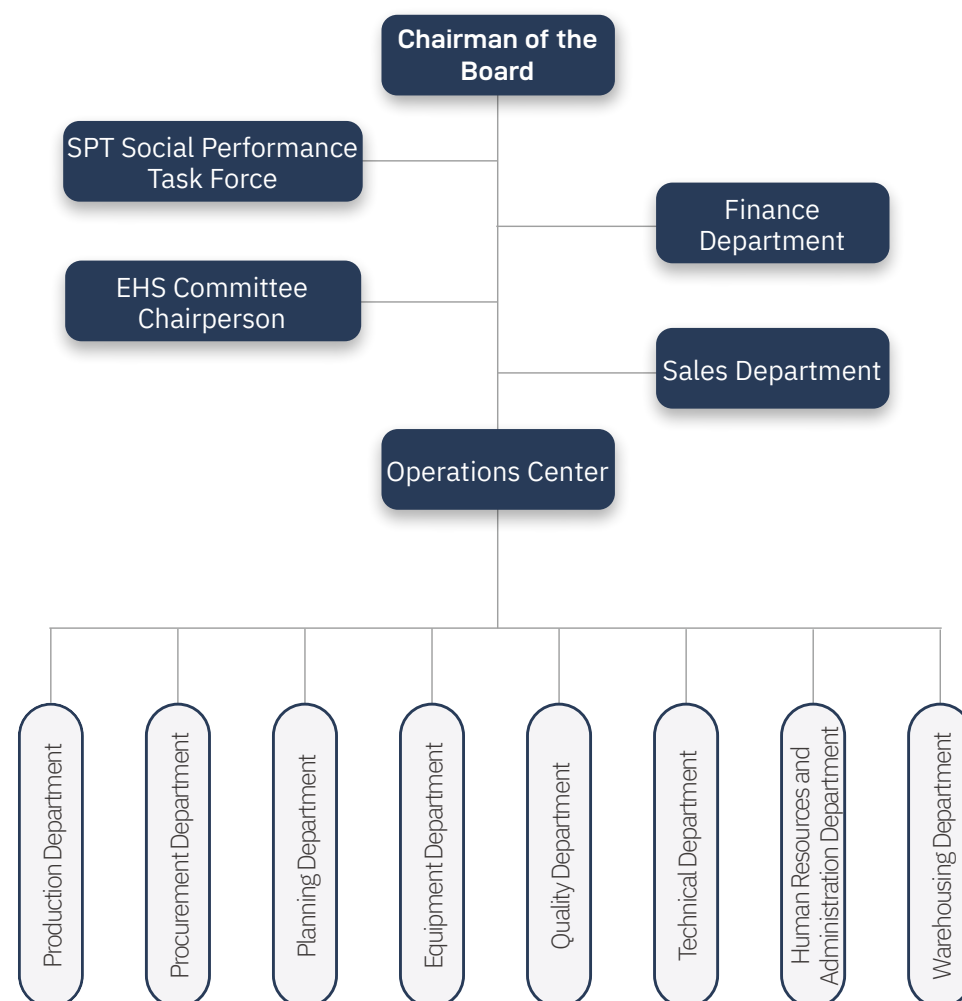


# Promotion of occupational health

## Management approach and commitment

Yuncheng Solar strictly abides by the national occupational health and safety regulations and incorporates safety management into the core aspects of daily operation. The company adheres to the production safety policy of "safety first, prevention first, comprehensive management", It has established a safety management system covering all employees, and has formulated standardized documents such as "Environmental, Occupational Health and Safety Operation and Control Procedures", "Emergency Response Plan for Safety Production Accidents", "Dangerous Sources Identification, Risk Evaluation and Risk Control System", etc. The company has also set up a safety management system to ensure the safety of all employees.

At present, all major production bases of the company have passed ISO 45001 Occupational Health and Safety Management System Certification, and continue to optimize the management system in order to improve the level of occupational health and safety management. The company has set up a production safety committee, led by the chairman of the board of directors, with the participation of the operation center, finance, sales, purchasing, planning, personnel administration, warehousing, production, equipment, quality and technology departments, to ensure the full coverage of occupational health and safety management.



Yuncheng Solar Safety Production Committee Organizational Structure

## Security performance and objectives

In 2024, the company continued to strengthen its safety management, striving to achieve the following goals:

Production safety objectives	in the end
Zero fire and explosion accidents	fulfillment
Zero major workplace injuries and no more than 5 minor injuries	fulfillment
Zero occupational disease injuries	fulfillment
Zero major fire incidents	fulfillment
Zero incidence of "three violations"	fulfillment
Zero occupational diseases	fulfillment
100% of hazard sources identified and controlled as required	fulfillment
100% coverage of employee safety education and training	fulfillment
100% funding of security investments	fulfillment
100% pass rate of rectification of general accident hidden dangers	fulfillment
Special equipment testing qualification rate of 100%, 100% of special equipment operations licensed rate of induction	fulfillment
100% utilization rate of qualified labor insurance products	fulfillment

During the reporting period, the company's production safety management was in place and no general or above production safety accidents occurred.

## Employee Health Management

The company conducts regular employee occupational health inspections, focusing on the occupational health risks of specific positions, to ensure that the physical condition of employees meets safety standards. A third-party organization is commissioned to conduct testing and assessment of occupational disease hazards every year, and to communicate occupational risks and their protective measures to employees in the form of notification boards and warning signs in prominent locations.

According to the needs of different operating environments, the company equips employees with personal protective equipment that meets national standards, such as dust masks, protective gloves and noise-reducing earplugs, and inspects their use on a regular basis. At the same time, the company carries out safety inspections of production equipment, investigates and eliminates potential hazards to ensure that the workplace meets health and safety requirements.



## Work safety training

In 2024, the company organized a total of 13 training sessions on work safety, covering fire safety, machinery operation indicators, work safety responsibilities, emergency response, etc., to ensure that employees are equipped with the necessary safety knowledge and skills.

Full training

All employees are required to attend the annual safety training to ensure that basic safety awareness is widespread.

Specialized training

Professional safety skills training for the main person in charge, safety officers and transferring and returning employees to ensure safety on the job.

Practical exercises

Combined with fire drills, organize practical training in fire extinguishers, first aid and other skills to improve emergency response capabilities.

## Accident response and continuous improvement

In 2024, the company organized 10 emergency evacuation and fire drills, on average once a month, covering all employees. The drills included:

Emergency Evacuation

Simulate the fire scene in the workshop, and organize the staff to evacuate to the safe gathering point according to the evacuation route.

Fire extinguishing practice

Members of the rescue and fire-fighting team use fire extinguishers and fire hydrants to carry out extinguishing drills.

During the exercise, the rescue and fire-fighting group, evacuation guidance group, communication security group and medical rescue group in their respective roles to ensure that the entire exercise is safe and orderly.

In addition, the company has established an accident reporting and investigation mechanism to review and analyze each drill and safety incident and formulate improvement measures in order to continuously improve the safety management level. In the future, the company will continue to optimize the occupational health and safety management system, strengthen the safety awareness of all staff, and build a safer and healthier working environment.



Yuncheng Solar Emergency Evacuation and Fire Drill Site

# Social Management Performance

## Supply Chain Management

Indicator	2022	2023	2024	Unit
Add a new supplier	5	20	10	count
Qualified vendor	57	61	72	count
Vendors trained in anti-corruption	30	50	60	count
Suppliers screened using environmental and social criteria	6	21	25	count
Proportion of procurement budget spent with vendors in Jiangsu Province	62	60	60	%
Percentage of signatories to sustainable procurement charters/supplier codes of conduct	100	100	100	%
Percentage of suppliers with environmental, labor and human rights requirements in place	100	100	100	%
Percentage of targeted suppliers that have undergone CSR assessments (e.g., questionnaires)	100	100	100	%
Percentage of target suppliers audited on-site for social responsibility	30	50	50	%
Number of incidents of termination of cooperation with vendors due to corruption	0	0	0	case
Identification of suppliers with environmental and/or negative impacts	0	0	0	case

## Employment Management

Indicator		2022	2023	2024	Unit
Total number of employees		201	393	298	people
By gender	Male employees	115	215	158	people
	Female employees	86	178	140	people
By age	Employees under 30 years of age	69	186	97	people
	Employees aged 30-50	122	203	196	people
	Employees over 50 years of age	10	4	5	people
By ethnicity	Han ethnic group	194	370	283	people
	national minority	7	23	10	people

Indicator		2022	2023	2024	Unit
By Location	Employees in China	191	356	273	people
	Overseas Staff	10	37	25	people
By grade	Members of the governing body	2	3	3	people
	Non-members of governing bodies	199	390	295	people
Employee Diversity	Employees with disabilities	0	0	0	people
	Number of incidents of discrimination	0	0	0	case
	Number of cases involving discrimination	0	0	0	case
Female executives	Percentage of women on boards of directors	/	0	0	people
	Percentage of women in senior management positions	/	1.78	4.02	%
Local Employment	Total number of executives	10	15	10	people
	Number of executives hired from local communities	3	5	3	people
	Percentage of executives employed in local communities	30	33	30	%

## Recruitment Management

Indicator		2022	2023	2024	Unit
new employee		/	258	109	people
Employee hiring rate		/	66	37	%
By gender	Male employees	/	144	59	people
	Female employees	/	114	50	people
By age	Employees under 30 years of age	/	83	42	people
	Employees aged 30-50	/	60	67	people
	Employees over 50 years of age	/	1	0	people
Departing Employees		/	158	201	people
Employee turnover rate		/	40	67	%





# Leadership Governance Consolidation

Corporate Governance  
Business Ethics  
Quality of Services

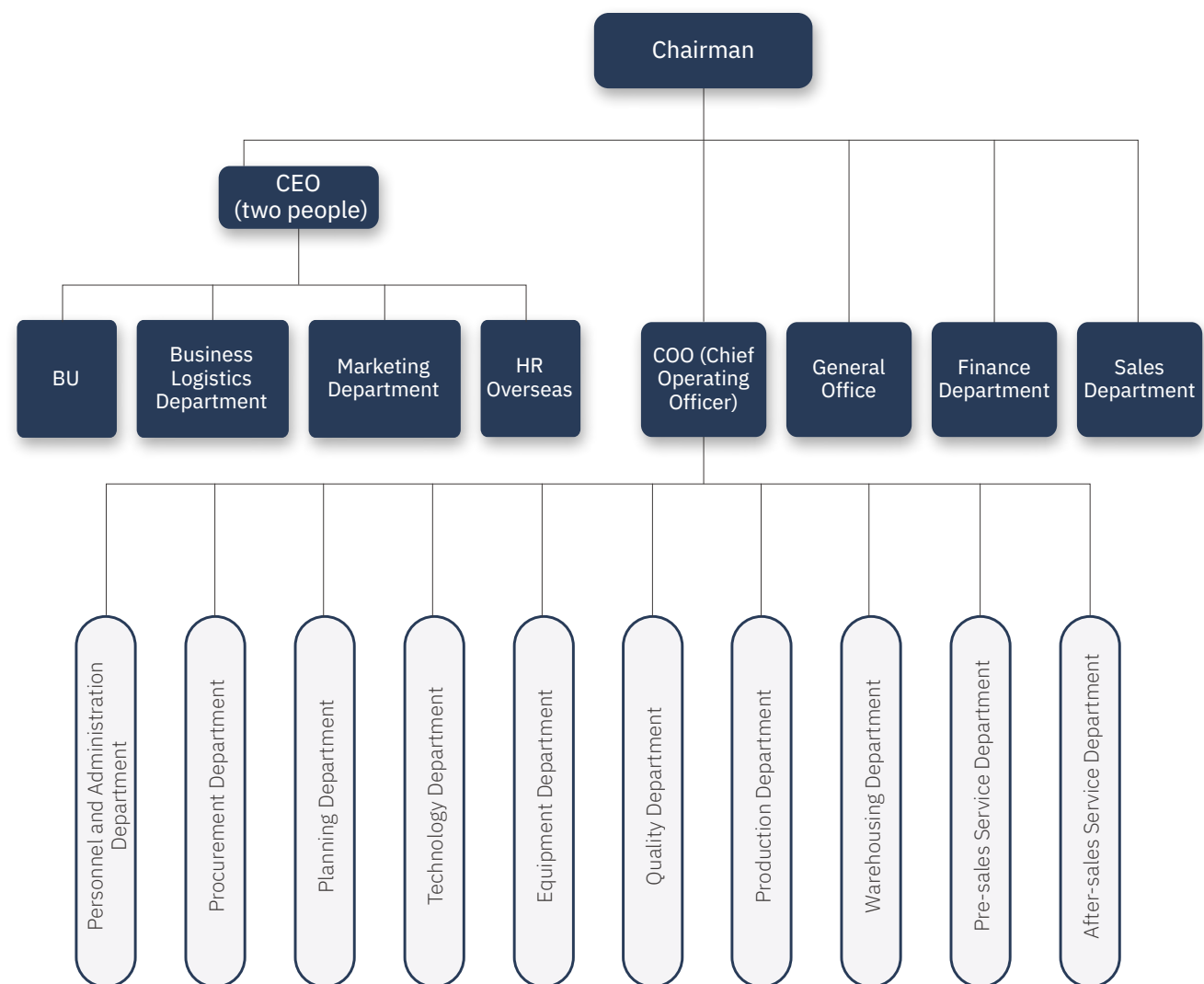
Technological Innovation  
Governance Management Performance



# Corporate Governance

Yuncheng Solar has always insisted on building a perfect corporate governance system to ensure that the enterprise operates soundly and steadily under a compliant and efficient framework. In strict accordance with the provisions of the company Law of the People's Republic of China, the company has formulated and implemented the Articles of Management of Yuncheng Solar, and established a modernized governance structure to enhance the transparency and stability of its operations, while safeguarding the interests of all parties and promoting the long-term sustainable development of the enterprise.

At the same time, we believe that a diverse board of directors can effectively promote the company's innovation and market competitiveness, and further enhance its overall value. The members of the Board of Directors have over 15 years of experience in the industry, including international education background and extensive experience in business and supply chain management, providing multi-dimensional wisdom to support corporate strategy development and business decision-making.



## Tax Administration

Yuncheng Solar has incorporated tax payment in accordance with the law into the core of ESG governance, and has paid a total of 19.87 million RMB in 2024, strictly fulfilling its corporate citizenship responsibility. The company ensures the compliance and transparency of the entire chain of tax base accounting, declaration and payment through standardized tax process and dynamic supervision mechanism. In the future, the company will continue to strengthen its tax management capability, fulfill its commitment to sustainable development with higher compliance standards, and realize a virtuous cycle of economic benefits and social values.

## Business Ethics

Yuncheng Solar adheres to high standards of business ethics, operates in accordance with the law and maintains a level playing field. The company has formulated "Business Ethics Behavior Management Regulations", "Code of Business Conduct", "Conflict of Interest Management System", "Vendor Management Procedures" and other systems to clarify the code of business conduct for employees, and implement zero tolerance for corruption, bribery and other irregularities, and require the management to set a good example, and promote the establishment of a sense of compliance among all the employees and partners, so that they can jointly build a stable market order.



Business Ethics Training 2024



Promotion of a culture of integrity

The company establishes an integrity risk prevention and control system, identifies job risks by means of supervision and reporting telephone, joint meeting system, and records of disciplinary departments, and manages them according to the classification of high, medium, and low grades, and supervises the implementation by the Integrity Group to ensure the transparency of power. At the same time, Yuncheng Solar strictly implements the principle of avoidance of special relationships, builds an online management system for gifts, and standardizes the management of gifts in business interactions. In addition, the company has a whistleblower protection mechanism to safeguard the privacy of complainants and encourage the reporting of wrongdoing to ensure the development of corporate integrity and compliance.

### Complaint channels

86 0510 8595 9369

info@thornovasolar.com

Address: 16/F, Building A1, Wuxi National IC Design Center, Binhu District, Wuxi City, Jiangsu Province, China

## Responsible Marketing

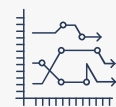
Yuncheng Solar has always practiced responsible marketing, ensured that marketing is in line with the principles of integrity, fairness and compliance, clarified the correct use of trademarks and brand logos, prevented misleading publicity, and safeguarded corporate image and market credibility. In 2024, the company formally changed its brand name to Thornova Solar, to further unify its global brand image, and to enhance its market recognition and competitiveness. At the same time, the company updated its brand logo management guidelines to strengthen brand consistency and compliance. The new logo guideline specifies the logo authorization, size specification, color application and prohibited changes to ensure the unity of the brand image in print, digital media, marketing and other channels.



### Internal control ▶▶▶

In 2024, Yuncheng Solar conducted an internal audit of its integrated management system (ISO9001/14001/45001/IEC62941), covering quality, environment, OHS management system and supply chain traceability requirements. The audit covered all core departments of the company, focusing on system document compliance, environmental management, occupational health and safety, and operational compliance, and overall compliance with the standard requirements.

A number of non-conformities were identified during the audit, all of which have been rectified, with a rectification rate of 100%. In the future, the company will continue to optimize the management system, strengthen training, process control and supply chain management to ensure efficient and compliant operation of the system and promote sustainable development of the enterprise.



rectification rate of

100%

## Quality of Services

Yuncheng Solar always adheres to the core of high quality and reliability, strictly follows the IEC international standards, and adopts advanced automated equipment and refined quality control processes to ensure the excellent performance of its products. With a strict quality management system, Yuncheng Solar provides a 15-year product quality warranty for its PV modules, including a 25-year performance warranty for PERC solar panels and a 30-year warranty for N-type modules. In addition, the company cooperates with PICC, Ariel Re, Lloyd's, Munich Re and other well-known insurance organizations to provide additional PV warranty insurance to ensure that customers have no worries during the entire life cycle, which further strengthens market confidence.

In terms of global certifications, Yuncheng Solar has passed ISO 9001 quality management system certification and has been recognized by a number of international authoritative organizations, including double-glass CQC certification, single-glass certification of TUV SUD, ETL certification of Mexico, fire prevention certification of Italy, MCS certification of the United Kingdom, and SEC certification of Chile, which comprehensively enhances the competitiveness of the products in the market and the safety and reliability of the products. In addition, the company's latest products have also successfully passed the PVEL reliability certification, further verifying the durability and excellent performance of the modules in extreme environments. In the future, Yuncheng Solar will continue to deepen the construction of quality management system, drive sustainable development with technological innovation, and provide more efficient and safer clean energy solutions for global customers.



## Service Quality Management

Yuncheng Solar has implemented a perfect customer relationship management system and formulated documents such as "Customer Feedback Control Procedures", "Customer Demand Review Procedures", "Customer Complaint Handling Management Regulations", "Customer Return Procedures", etc., to ensure that customer feedbacks are efficiently responded to. The sales team regularly conducts satisfaction surveys through meetings, telephone communications, questionnaires, etc., covering key dimensions such as product quality, delivery cycle, service attitude, etc., and sets up five levels of satisfaction assessment to accurately identify the direction of improvement.

In response to customer complaints, the company adopts a controlled process for management to ensure that all issues are documented and corrective and preventive measures are taken when necessary. At the same time, it regularly analyzes the trend of repeated complaints, compiles customer complaint reports, and optimizes its services in collaboration with relevant departments to continuously improve customer satisfaction.

## Data security and privacy protection

Yuncheng Solar strictly implements "Information Security Management System", "Information Security Risk Control Management System" and "Information Security Reporting Management System", strengthens information security through standardized measures, and guarantees business continuity and the confidentiality, integrity and availability of customer data. The company requires 100% of its employees and suppliers to sign confidentiality agreements to clarify the responsibility of information protection. At the technical level, the company adopts measures such as data backup, deployment of anti-virus software, network security isolation and rapid switching of backup systems, and strictly enforces the privacy protection mechanism to comprehensively enhance the level of customer information security.

### Case 2024 Yuncheng Solar Emergency Drill

In March 2024, the company organized an information system cyber attack emergency drill to test the feasibility of the emergency plan and enhance the network security protection capability. Directed by the Emergency Exercise Working Group, the drill simulated an emergency event, covering scenarios such as network troubleshooting, virus defense, website tampering handling, and public opinion response. All departments worked closely together, network administrators quickly troubleshooted and ensured stable business operation through system isolation, data recovery, defense adjustment and other measures to implement the principle of "prevention first, rapid disposal" and further strengthen the emergency response capability and employees' awareness of network security.

### Information security training ▶▶▶

During the reporting period, Yuncheng Solar organized information security training to enhance employees' awareness of network security and protection ability. The training covered core contents such as information security overview, computer virus prevention, hacking and network security, Internet fraud prevention, antivirus software and firewall application, etc., which helped the employees to master measures to deal with security risks such as network attacks, data leakage and malware.





# Technological Innovation

Yuncheng Solar specializes in the research, development and manufacturing of distributed PV products worldwide, and is committed to the development of distributed power plants to provide one-stop energy solutions. Since its establishment, the Company has continuously increased its resource investment and actively promoted the research and development of high-efficiency PV modules to adapt to a variety of environmental conditions and meet the power needs of different scenarios.

## Examples of Innovative Products ▶

In 2024, Yuncheng Solar launched the **Smart Balcony Solar Kit**, which is designed for balconies, gardens and railings, providing efficient and convenient distributed PV solutions. The product adopts an **all-in-one design**, integrating high-efficiency PV modules, microinverters and connecting cables, realizing **plug-and-play**, significantly reducing installation difficulties, and can be put into use without professional construction. With the **adjustable angle** design, users can optimize the light angle according to the environment and improve power generation efficiency. In addition, the product is **lightweight and portable**, making it easy to transport and move, and suitable for a variety of application scenarios. Yuncheng Solar provides a **15-year solar panel warranty** and a **12-year microinverter warranty** at to ensure the long-term stable operation of the product. Equipped with the **APsystems intelligent monitoring platform**, users can monitor power generation in real time, view historical data, and obtain energy efficiency analysis and operational status warning through cell phone APP.

THORNOVA solar | TIER 1 BloombergNEF

### Smart Balcony Solar Kit

THORNOVA-EZI-430M  
THORNOVA-EZI-430



Suitable For

- Balcony
- Garden
- Railing

**Adjustable Angle**  
According to different installation environments and requirements, the angle of the bracket can be adjusted to obtain the maximum power generation.

**All-in-one Design**  
The system integrates with solar panels, inverters and cables. Portable and foldable for various applications.

**Portable**  
Compact and small sized be transported

**Easy Installation**  
Plug & play connection, no requirement for professional installation, saving installation costs.

**Guaranteed Quality**  
Under one system of THORNOVA SOLAR warranty, Micro inverter 12 years warranty, Solar panels 15 years.

2024 Yuncheng Solar introduces **Tangra™ M Pro 580-600W** high-efficiency bifacial double-glazed PV modules with **N-type high-efficiency cell technology**, designed to enhance power generation efficiency and durability. Its **bifacial power generation technology** can harvest **up to 30% additional energy** from the back of the module, significantly increasing overall power generation. At the same time, the product has a **longer 30-year service life** than traditional P-type modules and offers **10-30% higher power generation performance**.


The Tangra™ M Pro offers **excellent low-light performance**, maintaining efficient output even in low-light environments. The optimized electrical design reduces hot spot losses and improves temperature management. In addition, the module utilizes industry-leading low thermal coefficient technology to improve overall operational stability. To ensure long-term reliability, the product has undergone 100% EL testing to effectively reduce the risk of hidden cracks, and has been **certified for 2400Pa wind load and 5400Pa snow load** for stable operation in extreme environments.

Yuncheng Solar provides a **15-year product quality guarantee** and a **30-year linear power warranty**, with an annual decay rate as low as **0.40%**, to ensure efficient power generation over the long term. Tangra™ M Pro has also obtained international quality and safety certificates, such as **ISO 9001, ISO 14001, ISO 45001, and SA8000**, and enjoys insurance coverage from renowned organizations such as **Lloyd's, Munich Re and Ping An of China**, providing a more reliable green energy solution for customers around the world.

THORNOVA solar | TIER 1 BloombergNEF


### Tangra™ M Pro 580-600W

N-Type High efficiency Bifacial Dual Glass Module



- Bifacial technology enables additional energy harvesting from rear side (up to 30%)
- 30-year lifespan delivers 10-30% more power compared with conventional P-type modules
- The natural lack of LID in the N-type solar cell can increase power generation
- Excellent low irradiance performance
- Better light trapping and current collection to improve module power output and reliability
- Industry leading, lowest thermal coefficient
- Optimized electrical design and lower operating current for reduced hot spot loss and better temperature
- Certified to withstand 2400 Pa of wind load and 5400 Pa of snow load
- 100% triple EL test, which greatly reduces the hidden cracks rate

**LINEAR PERFORMANCE WARRANTY**



**COMPREHENSIVE CERTIFICATES**

WARRANTY INSURANCE

ISO 9001: Quality Management System  
ISO 14001: Environmental Management System Standard  
ISO 45001: International Occupational Health and Safety Assessment System Standard  
SA8000: 2014 Social Accountability Management System

\* Different markets have different certification requirements. Also, the products are under rapid innovation. Please confirm the certification status with regional sales representatives.

www.thornvosolar.com



## Intellectual Property Management

Yuncheng Solar attaches great importance to intellectual property management, and is committed to promoting the development of the solar industry through technological innovation. The company strictly follows the "Patent Law" and "Enterprise Intellectual Property Management Standards", formulates "Intellectual Property Management System" to continuously improve the patent management system, and strengthens the legal protection and commercialization application of the innovation achievements. in 2024, Yuncheng Solar applied for a total of 8 invention patents, which cover a number of key technical fields such as deep learning, cell inspection, PV module optimization and manufacturing process. Among them, one patent has been successfully authorized and maintains the status , and the remaining seven are in the review stage.

## Product Design and Lifecycle Management

Yuncheng Solar has formulated "Finished Component Inspection Standards", "Incoming Material Inspection Control Program", "Inspection and Experimentation Control Program" and other quality management systems to strictly control all aspects of the products from raw material purchasing, design, production to packaging. Suppliers are required to provide REACH and RoHS test reports and accept inspections by Yuncheng engineers and third-party organizations to ensure compliance with quality standards.

During the design and production stages, The Company adopts FMEA failure mode analysis to identify potential risks and propose preventive and improvement measures to improve product quality and life span. During the production process, The Company strictly implements the "Four Eyes Principle", implements "6S" management, and combines intelligent systems to identify and isolate nonconforming products to avoid unintended outflow.

In addition, The Company has formulated "Nonconforming Product Control Program" and "Corrective and Preventive Measures Control Program" to establish a closed-loop management system to segregate, audit, rectify and follow up the nonconforming products to ensure that the product quality meets the standards and to reduce the defective rate and rework rate.

### Case Raw material optimization cost reduction and efficiency case

In 2024, The Company continued to promote material optimization and process improvement, successfully introduced 400g high-transparency EVA adhesive film to enhance PV module performance and reduce costs. During the trial production stage, The Company optimized the lamination process and adjusted the temperature of the equipment to significantly reduce the problems of confluence strip and edge bubbles, and the defective rate was further reduced from the initial 0.83%. After the optimization, the module quality is more stable and the production efficiency is improved, while reducing material waste and significantly lowering manufacturing costs.

# Governance Management Performance

## Business Ethics

Indicator	2022	2023	2024	Unit
Operational sites for which corruption risk assessments have been conducted	2	4	4	Case
Percentage of operating sites for which a corruption risk assessment has been conducted	100	100	100	%
Anti-corruption and anti-bribery training rate	100	100	100	%
Substantiated incidents of corruption	0	0	0	Case
Lawsuits on Unfair Competition, Antitrust Practices	0	0	0	Case
Incidents of fines for violations of marketing (advertising, marketing, sponsorship) regulations	0	0	0	Case
Number of complaint incidents involving leakage of customer privacy	0	0	0	Case
Incidents of fines for violations of product/service safety regulation	0	0	0	Case

## Customer Satisfaction

Indicator	2022	2023	2024	Unit
Customer Satisfaction	95.3	96.5	95.67	%
Product recalls occur	0	0	0	Case
Product-induced security incidents	0	0	0	Case

## Patent inputs

Indicator	2022	2023	2024	Unit
R&D investment	7069.11	7551.53	8368.7	10,000 RMB
Accumulated patents	34	28	46	Item
Of which: patents for inventions	7	2	4	
utility model	27	26	42	

# Appendices

## GRI Standards Content Index

Statement of use	GRI 1 used	Applicable GRI Sector Standard(s)
Yuncheng Solar has reported in accordance with the GRI Standards for the period from 1st January 2024 to 31st December 2024.	GRI 1: Foundation 2021	No applicable sector standard

GRI STANDARD DISCLOSURE	LOCATION	OMISSION
GRI 2: General Disclosures 2021		
The organization and its reporting practices		
2-1 Organizational details	05	
2-2 Entities included in the organization’ s sustainability reporting	01	
2-3 Reporting period, frequency and contact point	02	
2-4 Restatements of information		Not applicable, there is no information restatement
2-5 External assurance		Not applicable, this report has not been externally verified but has been reviewed by the Board of Directors
Activities and workers		
2-6 Activities, value chain and other business relationships	06	
2-7 Employees	27	
2-8 Workers who are not employees	27	
Governance		
2-9 Governance structure and composition	43	
2-10 Nomination and selection of the highest governance body	43	
2-11 Chair of the highest governance body	43	
2-12 Role of the highest governance body in overseeing the management of impacts	43	
2-13 Delegation of responsibility for managing impacts	43	
2-14 Role of the highest governance body in sustainability reporting	12	

GRI STANDARD DISCLOSURE	LOCATION	OMISSION
2-15 Conflicts of interest	13	
2-16 Communication of critical concerns	13	
2-17 Collective knowledge of the highest governance body	13	
2-18 Evaluation of the performance of the highest governance body		Confidentiality constraints, which relate to private information
2-19 Remuneration policies		Confidentiality constraints, which relate to private information
2-20 Process to determine remuneration		Confidentiality constraints, which relate to private information
2-21 Annual total compensation ratio		Confidentiality constraints, which relate to private information
Strategy, policies and practices		
2-22 Statement on sustainable development strategy	12	
2-23 Policy commitments	12	
2-24 Embedding policy commitments	12	
2-25 Processes to remediate negative impacts	12	
2-26 Mechanisms for seeking advice and raising concerns	12	
2-27 Compliance with laws and regulations	10	
2-28 Membership associations	9	
Stakeholder engagement		
2-29 Approach to stakeholder engagement	13	
2-30 Collective bargaining agreements	27	
GRI 3: Material Topics 2021		
3-1 Process to determine material topics	14	
3-2 List of material topics	14	
GRI 201: Economic Performance 2016		
3-3 Management of material topics		Confidentiality constraints, which relate to private information
201-1 Direct economic value generated and distributed		Confidentiality constraints, which relate to private information
201-2 Financial implications and other risks and opportunities due to climate change		Confidentiality constraints, which relate to private information
201-3 Defined benefit plan obligations and other retirement plans	29	



GRI STANDARD DISCLOSURE	LOCATION	OMISSION
201-4 Financial assistance received from government		Not applicable
GRI 202: Market Presence 2016		
3-3 Management of material topics		Confidentiality constraints, which relate to private information
202-1 Ratios of standard entry level wage by gender compared to local minimum wage		Confidentiality constraints, which relate to private information
202-2 Proportion of senior management hired from the local community	38	
GRI 203: Indirect Economic Impacts 2016		
3-3 Management of material topics		Confidentiality constraints, which relate to private information
203-1 Infrastructure investments and services supported		Not applicable
203-2 Significant indirect economic impacts		Not applicable
GRI 204: Procurement Practices 2016		
3-3 Management of material topics	26	
204-1 Proportion of spending on local suppliers		Confidentiality constraints, which relate to private information
GRI 205: Anti-corruption 2016		
3-3 Management of material topics	44	
205-1 Operations assessed for risks related to corruption	50	
205-2 Communication and training about anti-corruption policies and procedures	50	
205-3 Confirmed incidents of corruption and actions taken	50	
GRI 206: Anti-competitive Behavior 2016		
3-3 Management of material topics	45	
206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	50	
GRI 207: Tax 2019		
207-1 Approach to tax	44	
207-2 Tax governance, control, and risk management	44	
207-3 Stakeholder engagement and management of concerns related to tax	44	
207-4 Country-by-country reporting		Not applicable

GRI STANDARD DISCLOSURE	LOCATION	OMISSION
GRI 301: Materials 2016		
3-3 Management of material topics	18-20	
301-1 Materials used by weight or volume	22	
301-2 Recycled input materials used	22	
301-3 Reclaimed products and their packaging materials	22	
GRI 302: Energy 2016		
3-3 Management of material topics	18	
302-1 Energy consumption within the organization	22	
302-2 Energy consumption outside of the organization	22	
302-3 Energy intensity	22	
302-4 Reduction of energy consumption	18	
302-5 Reductions in energy requirements of products and services	18	
GRI 303: Water and Effluents 2018		
3-3 Management of material topics	19	
303-1 Interactions with water as a shared resource		Information unavailable
303-3 Management of water discharge-related impacts	19	
303-3 Water withdrawal	22	
303-4 Water discharge	22	
303-5 Water consumption	22	
GRI 304: Biodiversity 2016		
304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	21	
304-2 Significant impacts of activities, products and services on biodiversity		Not applicable
304-3 Habitats protected or restored		Not applicable
304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations		Not applicable
GRI 305: Emissions 2016		
3-3 Management of material topics	17-19	
305-1 Direct (Scope 1) GHG emissions	22	
305-2 Energy indirect (Scope 2) GHG emissions	22	

GRI STANDARD DISCLOSURE	LOCATION	OMISSION
305-3 Other indirect (Scope 3) GHG emissions		Information unavailable
305-4 GHG emissions intensity		Information unavailable
305-5 Reduction of GHG emissions		Information unavailable
305-6 Emissions of ozone-depleting substances (ODS)		Not applicable
305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions		Not applicable
GRI 306: Waste 2020		
3-3 Management of material topics	19	
306-1 Waste generation and significant waste-related impacts	22	
306-2 Management of significant waste-related impact	19	
306-3 Waste generated	22	
306-4 Waste diverted from disposa	22	
306-5 Waste directed to disposal	22	
GRI 308: Supplier Environmental Assessment 2016		
3-3 Management of material topics	26-27	
308-1 New suppliers that were screened using environmental criteria	26-27	
308-2 Negative environmental impacts in the supply chain and actions taken	26-27	
GRI 401: Employment 2016		
3-3 Management of material topics	27-30	
401-1 New employee hires and employee turnover	38	
401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employee	29	
401-3 Parental leave	39	
GRI 402: Labor/Management Relations 2016		
3-3 Management of material topics	27	
402-1 Minimum notice periods regarding operational changes		Not applicable
GRI 403: Occupational Health and Safety 2018		
3-3 Management of material topics	33-36	
403-1 Occupational health and safety management system	33	

GRI STANDARD DISCLOSURE	LOCATION	OMISSION
403-2 Hazard identification, risk assessment, and incident investigation	36	
403-3 Occupational health services	34	
403-4 Worker participation, consultation, and communication on occupational health and safety		Information unavailable
403-5 Worker training on occupational health and safety	40	
403-6 Promotion of worker health	34	
403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	34	
403-8 Workers covered by an occupational health and safety management system	33	
403-9 Work-related injuries	40	
403-10 Work-related ill health	34	
GRI 404: Training and Education 2016		
3-3 Management of material topics	31-32	
404-1 Average hours of training per year per employee	39-40	
404-2 Programs for upgrading employee skills and transition assistance programs	31-32	
404-3 Percentage of employees receiving regular performance and career development reviews	39-40	
GRI 405: Diversity and Equal Opportunity 2016		
3-3 Management of material topics	28	
405-1 Diversity of governance bodies and employees	43	
405-2 Ratio of basic salary and remuneration of women to men		Confidentiality constraints, which relate to private information
GRI 406: Non-discrimination 2016		
3-3 Management of material topics	27-28	
406-1 Incidents of discrimination and corrective actions taken	27-28	
GRI 407: Freedom of Association and Collective Bargaining 2016		
3-3 Management of material topics	27-28	
407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk		Not applicable





DISCLOSURE			LOCATION
ISSUES	CODE	ACCOUNTING METRIC	
Ecological Impact in Project Development	RR-ST-160a.1	Number of project delays related to ecological impacts	Not applicable
		Duration of project delays related to ecological impacts	Not applicable
	RR-ST-160a.2	Description of efforts in solar energy system project development to address community and ecological impacts	Ecologically Harmonized Symbiosis
Energy Infrastructure Integration and Regulatory Management	RR-ST-410a.1	Description of risks associated with integration of solar energy into existing energy infrastructure and discussion of efforts to manage those risks	Green and Low Carbon Commitment
	RR-ST-410a.2	Description of risks and opportunities associated with energy policy and its impact on the integration of solar energy into existing energy infrastructure	Green and Low Carbon Commitment
End-of-Life Product Management	RR-ST-410b.1	Weight of reusable or recyclable items of product sold	Confidentiality constraints
		Weight of product sold	Information unavailable
		Percentage of products sold that are recyclable or reusable	Information unavailable
	RR-ST-410b.2	Weight of end-of-life material recovered	Information unavailable
		Total Weight of Scrap Material	Information unavailable
		Percentage of Recycling	Information unavailable
	RR-ST-410b.3	Percentage of Products Containing IEC 62474 Declarable Substances, Arsenic Compounds, Antimony Compounds, or Beryllium Compounds, Calculated by Revenue	Information unavailable
	RR-ST-410b.4	Describe Methods and Strategies for Designing High-Value Recyclable Products	Green and Low Carbon Commitment
Raw Material Procurement	RR-ST-440a.1	Description of Risk Management Related to the Use of Critical Materials	Information unavailable
	RR-ST-440a.2	Description of Environmental Risk Management Related to the Polysilicon Supply Chain	Information unavailable
Business Activities	RR-ST-000.A	Total Capacity of Yuncheng Solar Modules	Into Yuncheng Solar
	RR-ST-000.B	Total Capacity of Installed Solar Systems	Into Yuncheng Solar
	RR-ST-000.C	Total Amount of Project Development Assets	Into Yuncheng Solar

# Reader feedback

Dear Stakeholders, We aim to listen to your valuable feedback in order to continuously improve the quality of our ESG reporting. We invite you to fill out the feedback form below and email it to bofeng.miao@sunova-solar.com .

## Reader Feedback Form

Your satisfaction with the overall content of this report:

☐ Very Satisfied      ☐ Satisfied      ☐ General      ☐ Unsatisfactory      ☐ Very dissatisfied

Which parts of this report did you find most valuable? (Multiple answers possible)

- ☐ Stakeholder communication
- ☐ Social Responsibility Practices and Performance
- ☐ Analysis of substantive issues
- ☐ Corporate Governance Practices and Performance
- ☐ Environmental Practices and Performance
- ☐ Other: \_\_\_\_\_

Your evaluation of the completeness and transparency of the information in this report:

☐ Very high      ☐ High      ☐ Moderate      ☐ Low      ☐ Very low

Your comments on the layout and readability of this report:

☐ Very Satisfied      ☐ Satisfied      ☐ General      ☐ Unsatisfactory      ☐ Very dissatisfied

Your overall assessment of Yuncheng Solar in terms of sustainability:

☐ It's very well accepted      ☐ Endorsement      ☐ Neutrality      ☐ Disapproval      ☐ Strongly disapprove

Your suggestions for improvement or other comments on this report:

Your feedback will help us to continuously improve the quality and usefulness of our ESG reports. Thank you very much for your participation and support!

**THORNOVA** *solar*

