正信光电
ZNSHINESOLAR

2024

Environmental, Social and Governance (ESG) Report

ZNSHINE PV-TECH CO., LTD

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About the Report

Report Overview

This is the Environmental, Social and Governance (ESG) Report for the year 2024 of ZNSHINE PV-TECH CO., LTD (referred to as "ZNSHINE", "the Company" or "we"), which aims to focus on the disclosure of the company's key environmental, social and governance practices and achievements in response to the expectations and concerns of stakeholders and to promote the company's continuous improvement in its sustainable development performance.

Reporting Scope

The Report is an annual report, covering the period from January 1, 2024, to December 31, 2024. To enhance the comparability and completeness of the Report, some contents and data may exceed the above period.

The Report takes ZNSHINE PV-TECH CO., LTD as the main body, covering the three major bases of Changzhou, Suqian, and Dali, namely:

-ZNSHINE PV-TECH CO., LTD (hereinafter referred to as the "Suqian Headquarters"). Address: No.229 Tongda Avenue, Suqian Economic and Technological Development Zone, Suqian City, Jiangsu Province, China.

-ZNSHINE POWERTEK CHANGZHOU CO. LTD (hereinafter referred to as the "Jintan Base"). Address: No.1, South Zhenxing Road Industrial Zone, Zhixi Town, Jintan Zone, Changzhou, Jiangsu Province, China.

-Zhengxin Photoelectric Technology (Suqian) Co., Ltd (hereinafter referred to as the "Suqian Base"). Address: No. 1589 Guangzhou Road, Suqian Economic and Technological Development Zone, Suqian City, Jiangsu Province, China.

-ZNSHINE Prosperous Tech Co., Ltd. (referred to as the "Suqian Base Phase II")[1]. Address: No.229 Tongda Avenue, Suqian, Economic and Technological Development Zone, Suqian City, Jiangsu Province, China.

-ZNSHINE PV-TECH DALI CO., LTD (hereinafter referred to as the "Dali Base"). Address: No.2 Workshop, Phase II, Shangdeng Industrial Park, Shangdengzhong Area, Dali Economic and Technological Development Zone, Dali City, Dali Bai Autonomous Prefecture, Yunnan Province, China.

Reporting Principles

Materiality: The report identifies and responds to material ESG issues that affect the Company's sustainability based on the stakeholder survey and information analysis.

Quantitative: The report quantitatively presents the Company's ESG Key Performance Indicators (KPIs) and explains the statistical caliber and accounting methodology used.

Balance: The content of this report reflects objective facts and discloses both positive and negative indicators.

Consistency: The report is the second ESG report of the Company. Unless otherwise specified, the key indicators and statistical methods in this report are consistent with the Annual Financial Report.

1 Suqian Base Phase II was commissioned in December 2024, less than one year after official commissioning, and is not covered by the data in this report.

Reporting Standard

The report is prepared in accordance with the requirements of the "Environmental, Social and Governance Reporting Guide" (the "ESG Reporting Guide") as set out in Appendix C2 to the Rules Governing the Listing of Securities (the "Listing Rules") of The Stock Exchange of Hong Kong Limited (the "SEHK"). While extensively referencing relevant provisions from the Global Reporting Initiative (GRI) Sustainability Reporting Standards (2021 version).

Access to the Report

The Report is available in both Chinese and English, with the Chinese version taking precedence in the event of any discrepancies.

The report is released in electronic format and can be accessed for reading and downloading at https://www.znshinesolar.com/

Contact

Address: 229 Tongda Road, Economic and Technological Development Zone, Suqian City, Jiangsu Province, China.
Email-Address: info@znshinesolar.com
Contact Person: Ms. Wang
Phone Number: +86 519 6822 0233

Board Statement

The Board of Directors follows the Environmental, Social, and Governance (ESG) Reporting Guide and continuously seeks to improve the ESG governance framework and institutional systems. By enhancing oversight at the board level and increasing engagement in corporate ESG management, the organization actively incorporates ESG principles into strategic planning, decision-making processes, and operational practices.

Board Role

The Board of Directors is ultimately responsible for the company's ESG strategy, governance, and the preparation of related reports. The Board oversees the company's commitments and performance on important ESG issues and collaborates with senior management and various business units to integrate ESG governance into internal control systems, risk management frameworks, and core operational procedures. By maintaining a thorough understanding of the current ESG governance status, the Board has the final decision-making authority on ESG matters and is committed to continually improving the ESG governance structure.

This report delineates the Company's 2024 ESG advancements and achievements, formally reviewed and approved by the Board of Directors on May 8, 2025.

ESG Governance Principles

The company deeply integrated ESG concepts into daily management and operations with fully implemented ESG management strategies, including evaluating the significance of ESG factors, managing ESG data, formulating ESG policies, reviewing implementation, and disclosing ESG information.

Message from the Director

In 2024, the photovoltaic industry entered a new dynamic equilibrium phase between policy-driven and market-driven within the global energy transition. Grounded in our foundational creed of "Fairness and Trust", ZNSHINE has charted a unique, sustainable development course through persistent cultivation, emerging resiliently under the dual pressures of heightened market volatilities and intensified regulatory headwinds. Confronting the relocated supply-demand curve and the redefined competitive foundation, we executed strategic breakthroughs in technological evolution and ESG-aligned innovation, systematically harnessing differentiated competitive capacities to propel China's socioeconomic transition toward high-efficiency, high-quality, and sustainable development frameworks.

Pioneering the Photonic Frontier, Engineering an Energy-Efficient Future. ZNSHINE is driving strategic alignment with China's carbon peaking and carbon neutrality goals. The company has established intelligent manufacturing systems featuring AI-empowered production lines and closed-loop waste management by implementing green design principles that optimize material selection and product lifecycles from R&D inception. Through tiered supply chain decarbonization initiatives encompassing mandatory ESG compliance and blockchain-enabled carbon tracking, we collaborated with 85 strategic partners to construct green industrial ecosystems. In 2024, ZNSHINE achieved a global shipment amount of 1.8 GW.

Crafting Excellence, Redefining Service. We established ZNSHINE's leadership through a "Quality Supremacy" ethos, combining precision manufacturing processes with cutting-edge research and development. Our goal is to provide advanced and meaningful clean power solutions. By pioneering innovative technologies that are validated through international certifications, we drive industry advancement while promoting cross-border collaborations that enhance resource synergies and foster knowledge co-creation. Grounded in a client-centric philosophy, ZNSHINE can quickly adapt to changing green energy market landscapes. We refine our service models through responsibility-driven engagement strategies that enhance customer value and set new standards for sustainable growth.

Collective Synergy, Compassionate Impact. ZNSHINE implements its governance philosophy of "Integrity as Anchor, Trust as Compass," guided by the principle of Putting People First. At the company level, we prioritize labor rights and work to enhance employees' sense of belonging through thoughtful measures, which in turn support the company's efficient development. At the social level, ZNSHINE is committed to the local educational sector through strategic initiatives, including endowed scholarship foundations and structured philanthropic programs. We practice corporate social responsibility through practical actions.

At this pivotal moment of industry transformation, ZNSHINE remains true to our original aspirations, adhering to the development philosophy of "Technology First, Green First". We are dedicated to building a cleaner, low-carbon, safe, and efficient energy system. Through technological innovation and advancements in productivity, ZNSHINE aims to achieve significant breakthroughs in photovoltaic technology, product innovation, and market expansion. We are determined to move forward resolutely toward our goal of becoming a leading enterprise in the industry.

Director
Yingchun Wang

About ZNSHINE

About us

Established in 2006, ZNSHINE PV-TECH CO., LTD. is one of the pioneers in the photovoltaic industry. We are fully involved in developing, operating, and maintaining power plants, EPC services, and module manufacturing. The Company has established three major production bases in Changzhou, Suqian, Jiangsu, and Dali, Yunnan, with a total production capacity of 10GW. Its business operations span over 60 countries and regions worldwide.

In 2016, ZNSHINE became a publicly owned energy company listed on the Third-board Market. ZNSHINE has been identified as a national high-tech enterprise rated as a Jiangsu enterprise technical center. Meanwhile, it has been honored with titles including China Well-Known Trademark, National Green Factory, Provincial Top Ten Outstanding Enterprises, Provincial Pilot Enterprise for Two-in-One Integration, Provincial AA Quality Credit Enterprise, Changzhou Quality Management Advanced Unit, Changzhou Star Enterprise, and Changzhou Intelligent Workshop.

Enterprise Culture

Mission

To make green power more efficient.

Vision

Where there is SUNSHINE, there is ZNSHINE.

Values

Regard customers first, embrace change, work as a team, be upright and have integrity.

Sustainable development concept

ZNSHINE is committed to building a sustainable future and has established a management philosophy of "full staff engagement, compliance-driven governance, source-level risk prevention, and energy efficiency optimization." With green factory development as the cornerstone of our ESG strategy, we continuously advance green process innovations, upgrade eco-friendly equipment, and strengthen sustainable supply chain systems. We are steadily progressing toward long-term net-zero emissions by integrating full life cycle management principles across all production and operational processes. These efforts drive the green transformation of the renewable energy sector and contribute to the global economy's sustainable development through the synergistic integration of industrial innovation and environmental stewardship.

Industrial Layout

Solar Modules

182 Series

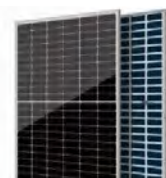182 mm Cell Solar Module

210 Series

210 mm Cell Solar Module

Rectangular Cells Module

Single Glass Module Series

Bifacial Double Glass Module Series

ZNGreen Energy Cloud

Sooth Cloud-Lightweight Reinforced Modules

Color Cloud-Architectural Facade Modules

Light Cloud-Ultra Lightweight Reinforced Modules

Energy Storage

PV+BESS

Integrated Energy Intelligent Management – Commercial & Industrial PV Intelligent Storage & Charging Solution;
Residential Smart Energy Management – Residential PV + Energy Storage Integrated Solution

PV + Hydrogen Solution

A multi-energy complementary integrated system integrating solar energy, hydrogen energy, thermal energy, lithium battery and fuel cell, suitable for single-family or multi-family residential photovoltaic hydrogen production and distributed hydrogen storage system.

Integrated Rooftop System

SRS-Standard Rooftop Solution

SIMPLE: Simplified module selection and quick installation

SWIFT: Standardized packaging and installation, efficient transportation and sorting

RELIABLE: Rigorous testing and verification

Green Power Tile System

ZNSHINE High Power Tile - New rooftop BIVP project solution

Continuous Wall - Aluminum-rich zinc magnesium coated tile

Industry-leading high-power module 600w+

Quick installation clip SNAP
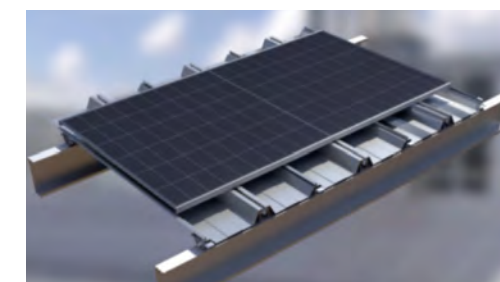
ZNSHINE Waterproof Tile System – Old Rooftop Renovation Project

Continuous length coated tile - aluminum-rich zinc magnesium coating

Highly adaptable fit for various rooftops, modules and rooting parts

Quick installation clip-T-PUSHNUT

Industrial Layout

EPC Services: Development, Construction, Operation

PV Plant

Hubei PV Plant

Location: Hubei

Installation Capacity: 10MW

Type: Utility

Inner Mongolia PV Plant

Location: Inner Mongolia Autonomous Region

Installation Capacity: 50 MW

England PV Plant

Location: England

Installation Capacity: 70MW

Module Type: Polysilicon ZXP6-60

Agricultural Complementation

PV Agricultural Complementation Project

Location: Linfen, Shanxi

Installation Capacity: 20 MW

Cable Car Project

London Olympic Cable Car Project

Location: London

Installation Capacity: 10.53kWp

Honors and Awards

2023 Most Influential Photovoltaic Module Company

2023 Most Influential Photovoltaic EPC Company

Top 30 in the New Quality Productivity Talent Plan for Young Energy Entrepreneurs

2024 Green Sustainable ESG Case TOP100

TOP PERFORMER 2024 Kiwa PVEL

Top Brand PV Brazil 2024

2024 China Top 100 EPC Enterprise Award in Photovoltaic and Energy Storage

2023-2024 BIPV Excellence Solution and Outstanding Leadership Awards[2]

Leading China's Top 100 Renewable Energy Photovoltaic Enterprises in 2023

2023 High-quality Household and Industrial Photovoltaic Module Brand

Top 15 Global Solar PV Module Manufacturers in 2024 by WOOD MACKENZIE

2024 World's PVBL Top 100 Solar PV Brands

Global Top 500 New Energy Companies

2023 Asian Photovoltaic Innovative Enterprise

2 Some of the 2023 honorary titles/awards were got in 2024

ESG Governance

ZNSHINE adheres to the principle of "Governance for Development," providing robust assurance for effective ESG implementation through establishing an ESG governance framework, conducting materiality assessments, listening to and embracing the demands of various stakeholders, and striving for continuous communication with partners across our value chain and the wider community.

ESG Management Structure

ZNSHINE established a Three-level ESG management structure, namely "ESG Management Committee - ESG Promotion Office - ESG Internal and External Coordination Organization," to improve the management mechanism of ESG matters from the top to the bottom.

ZNSHINE Three-level ESG management structure
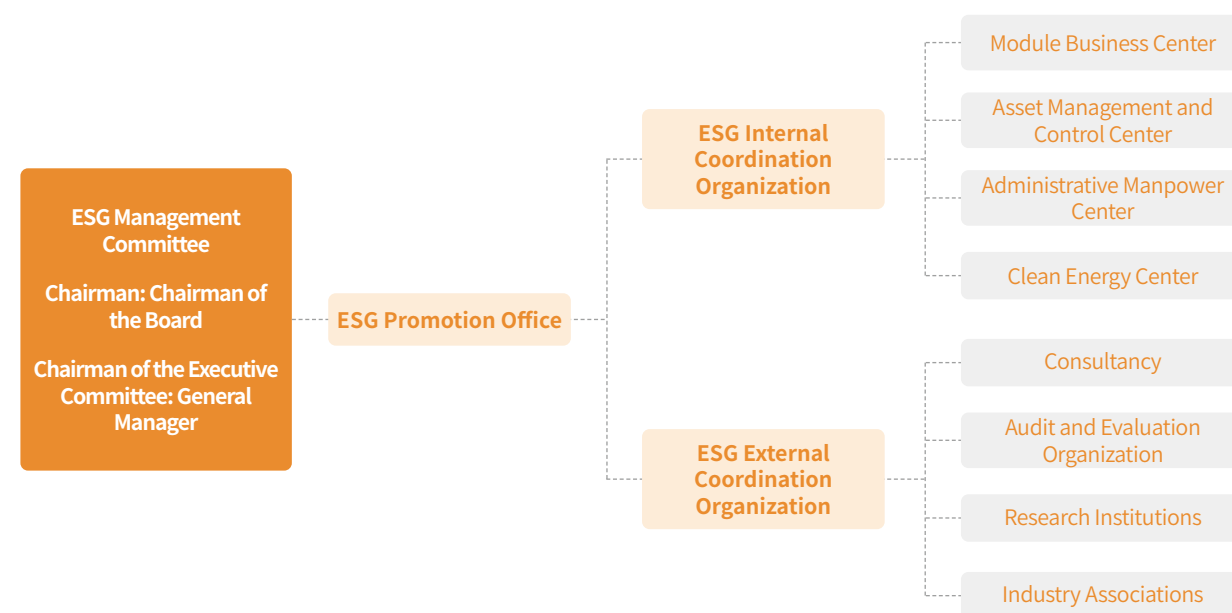
ESG Management Committee

- Chaired by the Board Chairman, the general manager serves as Executive Committee Chair. This governing body directs corporate ESG strategic alignment (including climate change mitigation, carbon emission reduction, and water stewardship) while resolving implementation bottlenecks. It institutionalizes ESG considerations into decision-making processes, prioritizing decarbonization roadmaps and climate resilience strategies that undergo board reporting.

ESG Promotion Office

- The ESG Promotion Office consists of the heads of ESG-related departments and ESG full-time employees to provide professional support and action planning for the Company's ESG work. They must regularly update the ESG Management Committee on plans, progress, and achievements, ensuring it promptly fulfils its supervisory duties on ESG issues.

ESG Internal and External Coordination Organization

- The Internal Coordination Organization, made up of department heads and key liaisons related to the company's ESG initiatives, is mainly responsible for undertaking ESG projects and keeping in close touch with the ESG Promotion Office to keep up with project progress. The External Collaborative Organization, formed by entities closely linked to the company, like consulting firms, audit and evaluation agencies, research institutions, and trade associations, offers external intellectual and data support to boost the company's ESG efforts.

ESG Material Issues

The company embeds ESG responsibility into its strategy and operations, abiding by the HKEX ESG Reporting Guide and GRI Standards. It engages stakeholders to identify, assess, and disclose material ESG issues. After management interviews and considering external expert views, the company finalizes the material issues crucial for it and its stakeholders this year.

Stakeholder engagement

Maintaining regular communication with investors, customers, government entities, and other stakeholders, noting their interests and specific concerns, and then preparing to respond to their various appeals.

Issues identification

Identifying relevant issues based on the regulatory policies of the regions where we operate, feedback and demand analysis from domestic and international customers, ESG disclosure standards such as ESG Reporting Guide and GRI, insights from industry peers, media monitoring, and communication results from investors and other stakeholders.

Issues evaluation

The Board and management review and confirm the evaluation results of alternative issues.

This year, the company ranked the importance of substantive issues and identified 23 ESG issues, including 5 governance issues, 6 environmental issues, and 12 social issues, according to the importance assessment results.

Governance	Environment	Social
1.Corporate Governance	6.Environmental Management	12.Technology Innovation
2.Compliance & Risk Prevention	7.Energy Management	13.Intellectual Property Rights
3.Business Ethics	8.Emission Management	14.Product Quality
4.Information Security & Privacy Protection	9.Water Resource Management	15.Labor Rights Protection
5.Market Performance	10.Packaging Material Management	16.Employee Welfare & Care
	11.Response to Climate Change	17.Equality & Diversity
		18.Employee Education
		19.Occupational Health & Safety
		20.Sustainable Supply Chain
		21.Customer Service Management
		22.Support community Development
		23.Enhance Green Development

Stakeholder Communication

The company prioritizes multi-stakeholder engagement, continuously diversifying communication channels to proactively incorporate stakeholder insights into operational frameworks. We have established a regular communication mechanism with stakeholders and communicate with them at least once or twice a year to understand and respond to their concerns and demands in a timely manner.

Stakeholder	Expectations	Communication Channel
Government & Regulatory Authorities	Business Ethic Regional economic development Safety & Security Compliance	Institution Investigate Supervision and Inspection Information Disclosure Projects Declaration
Shareholders & Investors	Information Transparency Management Structure Risk Management	General Meeting of Shareholders Periodical Report Field Research Investor Hotline
Customers	Customers Service Customers Satisfaction Product Quality	Customer Communication Meetings Product launches Industry Exhibition Customer Research Technical Seminars Satisfaction Surveys
Suppliers & Partners	Supply Chain Management	Supplier Training Supplier Audits Supplier Conference Industry Exhibition Industry Training
Community & Public	Energy Consumption Management Waste Discharge Social Welfare	Community Communication Project Collaboration Public Welfare Activities Corporate Open Day
Employees	Equality & Diversity Employee Care Career Development & Paths Occupational Safety & Health	Employee Activities Employee Training Employee Feedback Employee Satisfaction Surveys
Community & NGOs	Information Disclosure	Website News Release

01

Anchoring in Governance, Advancing through Determined Action

ZNSHINE has established a governance framework centered on "Standardizing Corporate Governance, Strengthening Risk Management, Upholding Business Ethics, and Ensuring Information Security," solidifying the foundation for sustainable growth and long-term value creation.

O Improving Corporate Governance

O Strengthening Risk Management and Control

O Practicing Business Ethics

O Safeguarding Information Security

Improving Corporate Governance

The Company has always been adhering to a highly responsible attitude towards shareholders, customers and society, insisting on a sound governance mechanism, continuously optimizing the governance structure, and clearly defining the boundaries of responsibilities of each department; at the same time, the Company attaches great importance to investor relationship management, and safeguards the legitimate rights and interests of investors with practical actions.

Governance Framework

The company strictly adheres to laws and regulations such as the Company Law of China, Securities Law of China, and Enterprise Income Tax Law of China. It has established a comprehensive governance framework including Articles of Association, Procedural Rules for the General Meeting of Shareholders, the Procedural Rules for the Board of Directors, the Procedural Rules for the Board of Supervisors, the Determination System for External Guarantees, and The Management System for External Investments to ensure standardized operations and effective risk control.

To achieve scientific and standardized governance, ZNSHINE implements a Three-Level Governance Structure comprising the general meeting of stockholders, board of directors, and board of supervisors, with their respective responsibilities outlined as follows:

General meeting of stockholders

- The General meeting of stockholders serves as the supreme decision authority, legally responsible for deciding the company's operating policies and investment plans. Both the Board of Directors and the Board of Supervisors are required to submit reports to the Shareholders' General Meeting. Directors, supervisors, and senior management must provide explanations and clarifications in response to shareholders' inquiries and suggestions during the meeting.

Board of Directors

- The Board of Directors Office is established under the Board to handle daily affairs. The Board Secretary serves as the head of this office and is responsible for safekeeping the official seals of the Board and the Board Office. The Board Secretary may designate assistants like Securities Affairs Representatives to support daily operations.

Board of Supervisors

- As the oversight body, the Board of Supervisors exercises supervisory authority to safeguard the interests of shareholders, investors, and the company while being accountable to the General Meeting of Shareholders. The Board of Supervisors operates a Supervisory Board Office to manage its daily affairs, with the Chair of the Supervisory Board concurrently serving as the head of the office.

As of the end of the reporting period, the Company's Board of Directors consisted of 5 directors, including 5 incumbent directors and 3 female directors. During the year, the Company held 12 general meetings of shareholders, 25 meetings of the Board of Directors, and six meetings of the Board of Supervisors, thoroughly discussing and voting on various proposals to ensure the Company's decision-making was rigorous and efficient. Among them, 11 shareholders' meetings were held through online and on-site voting to enhance the convenience of the Company's shareholders, especially the small and medium-sized shareholders, participating in major decisions.

The Company has implemented a Three-level Organizational Structure ("Governance-Management-Execution") to ensure strategic alignment and operational efficiency. Governance Level: This level, which consists of the Board of Directors, including the Chairman and Directors, is responsible for formulating corporate strategies, approving significant decisions, and overseeing compliance with legal frameworks. Management Level: This level comprises headquarters departments, including the Module Business Center, Finance & Asset Control Center, Administration & HR Center, and Clean Energy Center, and oversees translating strategic goals into actionable plans, coordinating cross-departmental workflows, and monitoring daily operations. Execution Level: This level consists of subordinate units (e.g., Manufacturing Sub-Center, Technical Sub-Center under the module Business Center) and focuses on specialized implementation in areas like technological innovation, supply chain optimization, and quality control to drive project delivery.

ZNSHINE Organize Structure
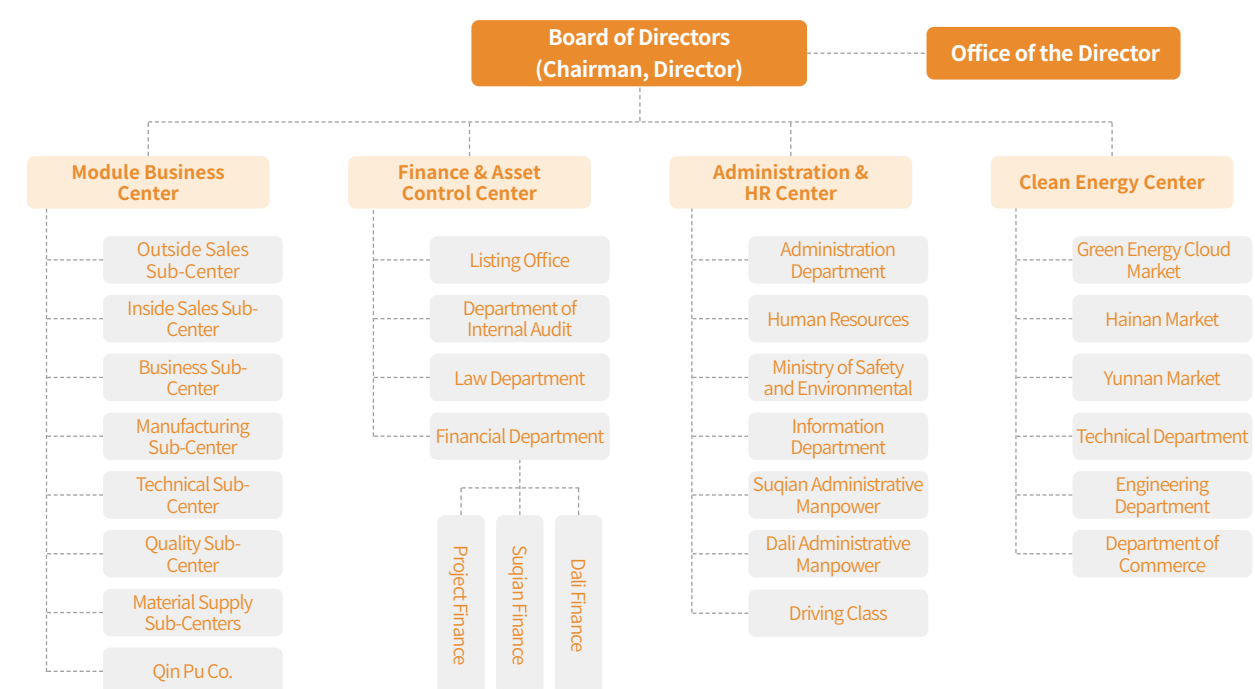
Investor Relations

ZNSHINE places a strong emphasis on Investor Relations Management and prioritizes the interests of its investors. The company has established institutional frameworks, including the Investor Relations Management System and Information Disclosure Management System, to foster mutual benefits and achieve win-win outcomes with its investors. The Board of Directors is responsible for overseeing information disclosure matters, which include hosting investor receptions, responding to inquiries, engaging with shareholders, and providing publicly disclosed materials to investors. This year, the company successfully prepared and disclosed 2 periodic reports and 172 interim reports, diligently fulfilling its disclosure obligations.

ZNSHINE meets its information disclosure obligations through a range of methods. These include periodic reports, interim announcements, general meetings of shareholders, official websites, one-on-one communications, on-site visits, and media coverage. This approach ensures the timely, accurate, and comprehensive distribution of essential information, such as operational performance, financial data, and strategic plans. By actively listening to investor feedback and suggestions, the company enhances trust in its information and fosters alignment with its corporate values.

Strengthening Risk Management and Control

To strengthen internal oversight and mitigate potential risks, the company continuously refines its risk management framework by establishing operational safeguards and supporting regulations, including the Control Procedures for Risks and Opportunities and the Control Procedures for Identification of Laws, Regulations and Other Requirements. This ensures the methodical implementation of compliance management and risk prevention initiatives.

Within the organizational structure, the collaborative efforts of business units, administrative departments, and audit divisions form integrated risk defense lines, jointly ensuring the effective operation of risk management protocols across all operational levels.

The business department
- The department establishes a Risks and Opportunities Assessment Team, which conducts annual risk identification and evaluation to identify potential risks systematically. Responsible departments screen and identify risks in workshops, production processes, and personnel. This structured approach ensures comprehensive risk management aligned with organizational objectives.

The administrative department
- The department establishes a risk monitoring system targeting risks identified by business units, develops risk management protocols, and oversees the implementation of risk response measures by business departments.

The audit department
- The department is responsible for independent oversight and evaluating the effectiveness of monitoring systems. It also provides risk assurance through measures such as formulating Regulations on Standardizing Contract and Document Reviews and conducting regular audits, including inventory management audits and financial audits, to ensure compliance and operational integrity.

Based on its operational realities, the company continuously improves its assessment and management of key sustainability-related risks, including environmental risks, compliance risks, PV industry risks, workplace safety risks, and product quality risks. By establishing a "risk identification-risk assessment-risk response" control framework, the company systematically enhances its risk management capabilities to align with long-term development goals.

Risk Identification

Identify and confirm risk types, followed by detailed risk profiling.

Risk Assessment

Establish risk evaluation criteria by integrating dimensions such as severity of impact and likelihood of occurrence. Risks are then classified into special levels.

Risk Response

For different levels of risk, risk acceptance, risk reduction, risk avoidance, and other countermeasures should be taken respectively.

Practicing Business Ethics

ZNSHINE strictly adheres to national legislation, including the Criminal Law of China, the Anti-Unfair Competition Law of China, the Anti-Money Laundering Law of China, and the Anti-Monopoly Law of China. In alignment with these legal frameworks, we have institutionalized the Anti-Bribery System to enhance institutional oversight mechanisms, enforce fair competition protocols and rules, implement system-driven anti-corruption initiatives, and establish a Key Stakeholder Integrity Pledge System targeting high-risk engagements; thus, the architecture proactively mitigates unethical practices.

To employees

The company has signed the Anti-Bribery Commitment and Diligence & Integrity Commitment with key departmental employees. These documents strictly prohibit employees from accepting kickbacks, gifts, or personal benefits from suppliers, partners, or contractors under any pretext. Furthermore, employees are also required to refrain from leveraging their positions for private interests and avoid participating in entertainment activities organized by suppliers, partners, or contractors or recommend relatives or friends to engage in projects or supply materials, including finished/semi-finished products and equipment, to partners. As of the end of the reporting period, 100% of employees have signed these commitment letters, aligning them with internal controls and industry anti-corruption standards.

To suppliers

Suppliers are bound by Anti-Bribery/Anti-Corruption Agreements that forbid collusive negotiations, undisclosed agreements, or offering tangible/intangible inducements to employees. Violations by suppliers trigger immediate termination of all collaborations. As of the end of the reporting period, 100% of active suppliers have signed these agreements, ensuring full compliance with global anti-corruption standards and the internal governance framework

ZNSHINE has actively promoted the development of a talent pool for professional compliance management. This year, we conducted the "Shaping Excellence" online live training program targeted at middle and senior management to enhance compliance awareness and capabilities among managerial staff.

The company has set up a strong anti-corruption reporting and complaint mechanism, formalized in the Procedural for Complaint Resolution. This system actively encourages employees and partners to report unethical or corrupt activities. During the reporting year, the company received no reports of business ethics or corruption violations.
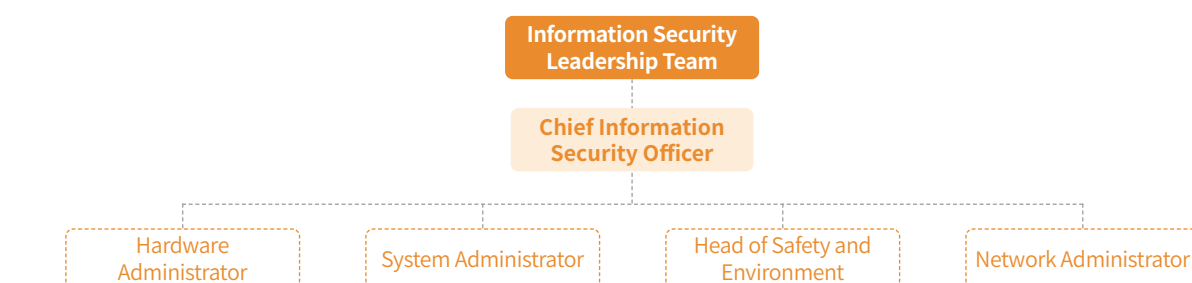
To further strengthen its anti-corruption culture, the company conducted a 1-hour anti-corruption training session through internal channels, with 12 participants from key departments, including procurement. This initiative aligns with ongoing efforts to embed integrity and compliance awareness across all operations.

Safeguarding Information Security

Amidst the accelerating wave of digital transformation, information security has become a critical priority in the company's operational processes. Strictly adhering to Chinese regulations, including the Cybersecurity Law of the People's Republic of China, Data Security Law of China, Personal Information Protection Law of China, and the Administrative Measures for the Graded Protection of Information Security, we have established comprehensive governance frameworks such as Information Security Management System, Informatization Resource Management System, and Informatization Emergency Plan. A three-level organizational structure dedicated to information security oversight ensures continuous enhancement of our data protection and privacy preservation systems.

ZNSHINE Information Security Management Framework

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                  ┌────────────────────────────┐
                  │  Information Security       │
                  │  Leadership Team            │
                  └────────────────────────────┘
                  ┌────────────────────────────┐
                  │  Chief Information          │
                  │  Security Officer           │
                  └────────────────────────────┘
   ┌──────────────┬──────────────┬──────────────┬──────────────┐
┌─────────┐  ┌─────────────┐  ┌──────────────┐  ┌──────────────┐
│Hardware │  │System       │  │Head of Safety│  │Network       │
│Administ-│  │Administrator│  │and           │  │Administrator │
│rator    │  │             │  │Environment   │  │              │
└─────────┘  └─────────────┘  └──────────────┘  └──────────────┘
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Information Security Leading Group

- The Leading Group oversees the company's comprehensive information security framework, establishes the information security management system, and provides full support and resource guarantees for implementing related initiatives.

Chief Information Security Officer (CISO)

- CISO oversees the company's holistic information security operations, including ensuring the complete protection of information systems and data, enforcing security policies and protocols, reporting periodically, and reporting to the Information Security Leading Team from time to time.

All Levels Administrators and Managers

- All personnel must maintain fundamental awareness and skills in information security, strictly comply with the organization's established information security protocols, proactively report identified security vulnerabilities or breaches, and promptly implement corrective actions to mitigate risks.

In response to potential risk events, the company builds an information technology emergency treatment working group led by the Information Technology Management Department, formulates an emergency plan, and in the event of damage to the network and information system caused by natural disasters, power failures, network damages, equipment failures, and man-made damage to the information system, it investigates the causes of system failures according to the troubleshooting process, classifies the failure emergencies into four levels, and adopts different treatment measures for the different levels.

Access Qualification Review

- Conduct rigorous reviews of user access privileges, immediately deactivate accounts upon employee termination, and enforce strict compliance with established protocols across all subsidiaries.

Access Segregation

- The company enforces strict controls over access privileges for its application systems. This includes careful management of user registration, modification of privileges, and revocation of access. We utilize identity authentication and encrypted login mechanisms to grant user access rights based on their roles. This ensures that sensitive information is only available to authorized personnel, preventing any unauthorized disclosure of personal information and related data.

System Backup Protocols

- The company has established a comprehensive data backup system where MES, and CRM system databases undergo weekly full backups to ensure data integrity. In addition, real-time incremental backups are triggered immediately after large-scale data updates.

The company mandates that employees in roles with access to personal information sign the Information and Data Confidentiality Commitment and undergo data security education programs. During the reporting year, the company conducted two dedicated training sessions on information security, involving 33 employees from multiple critical business departments.

02

Prioritizing Quality Standards, Innovating with Ethical Foundations

ZNSHINE is committed to being at the forefront of the photovoltaic industry, taking innovation leadership as the core driving force for the development of new quality productivity, and driving photovoltaic technology forward with patents. Meanwhile, we adhere to internal quality management, actively participate in the construction of a sustainable supply chain, share advanced experiences, and discuss the path to sustainable development with partners.

- Forging Exceptional Standards
- Innovation-Driven Development
- Safeguarding Customer Value
- Following Responsible Procurement

Forging Exceptional Standards

ZNSHINE consistently prioritizes product quality, adhering to the principle of "Quality Supremacy" and guiding its actions by the values of "Integrity as the Foundation, Customer-Centricity, Continuous Improvement, and Pursuit of Excellence", and does a good job in quality management from the perspective of quality system construction, quality capability construction and quality culture construction.

Establishing Quality Framework

The company has established a comprehensive and systematic quality management system encompassing four key modules:" System Management, Incoming Inspection, Process Inspection, and Customer Service". This framework, from macro to micro vision management, covers every critical stage from raw material procurement to final product delivery, ensuring robust quality assurance across all product lines.

In system governance, strict compliance with the Product Quality Law of the People's Republic of China is maintained while integrating internationally recognized quality standards and industry benchmarks to formulate a scientifically rigorous quality management architecture. The ZNSHINE Management Manual explicitly defines requirements for products/services, product design/production development, external provision controls, measurement/analysis/evaluation mechanisms, and continuous improvement processes, empowering operational precision for quality assurance implementation.

During the reporting year, the company updated institutional documents, including Process Inspection Management Regulations, Module Finished Product Sampling and Inspection Management Regulations, and Non-Conformance Feedback Management Regulations, optimizing quality governance workflows and clarifying role-specific responsibilities. As of the end of the reporting period, corporate headquarters and multiple subsidiaries have obtained ISO 9001:2015 Quality Management System Certification.

ZNSHINE PV-TECH CO., LTD   ZNSHINE PV-TECH CHANG-ZHOU CO., LTD   ZNSHINE PV-TECH DALI CO., LTD   Zhengxin Yixin Suqian Technology Co., Ltd

The company has implemented advanced inspection equipment and established a professional testing team to conduct thorough quality checks on every batch of raw materials and manufacturing processes. These comprehensive inspections evaluate appearance, performance, dimensional specifications, and module analysis, ensuring that all materials entering the production lines and all finished goods meet the highest standards. The company's primary quality goal is to achieve a finished product first-pass rate of at least 99.5%. During the reporting year, this target was successfully met across all manufacturing bases: 99.6% at the Jintan Base, 99.52% at the Suqian Base, and 99.84% at the Dali Base. This demonstrates that the production management level consistently complies with stringent quality benchmarks.

Incoming Inspection

Defined Responsibility and Workflow

- The company has established clear procedures for introducing new materials, processes, and suppliers, as well as managing engineering changes. This includes delineating cross-departmental responsibilities, fostering proactive communication with suppliers, and strengthening constraint mechanisms to ensure that each batch of raw materials complies with quality specifications.

Full-Scale Inspection and Evaluation

- Manufacturing departments set 158 inspections for full scanning of each batch of raw materials, including battery efficiency, Electroluminescence testing, glass light transmittance and hydrophilic contact angle, EVA cross-linking degree, Junction box thermal endurance, and Tin coating integrity on copper strips.

Process Inspection

Workflow Capability Enhancement

- Implemented standardized operational protocols and preventive systems to identify and rectify process deviations promptly. Conducted pre-production assessments of material-process compatibility to ensure manufacturing stability while establishing Out-of-Control Action Plan (OCAP) procedures for rapid anomaly resolution. Optimized module yield rates through statistically validated process controls.

Testing Protocol Optimization

- Enforce triple-layer Electroluminescence (EL) Testing on each product, Pre-lamination EL Testing, Post-lamination EL Testing, and Final EL Testing, to refine cost management.

Rigorous Outbound Inspection

- Execute 100% final product verification prior to shipment, including power output validation and appearance inspection. Shipment authorization is strictly contingent upon full compliance with predefined quality requirements, ensuring end-user receipt of products meeting necessary performance benchmarks.

As of the end of the reporting period, ZNSHINE operates a product performance testing center that is compliant with ISO/IEC 17025 standards, holding CNAS-accredited national laboratory status and TUV SUD TMP Witness Testing Laboratory certification. The center conducts comprehensive photovoltaic performance tests aligned with IEC, UL, and relevant national standards, providing scientifically validated data to drive continuous product quality enhancement. Furthermore, the company has secured international product certifications, including TUV, CSA, BIS, KS, MCS, CQC, and CEC, ensuring globally recognized compliance for product exports.

CASE | **ZNSHINE SOLAR Dual Protection Fire Safety and Sustainability to Safeguard Italy's PV Projects**

In Sep 2024, 136 PV modules from ZNSHINE SOLAR successfully passed rigorous testing by Italy's renowned testing institute, Istituto Giordano S.p.A., earning the highest fire safety rating, Class 1 (uno/one), according to Italian standard UNI 9177. This top-level certification demonstrates the modules' exceptional fire resistance and minimal combustion risk, positioning our modules as a benchmark for fire safety in the Italian market.

CASE | **PVEL 2024 Top Performer Certification**

On June 5, 2024, the globally authoritative third-party reliability testing laboratory Kiwa PV Evolution Labs (Kiwa PVEL) released its 2024 PV Module Reliability Scorecard Report. Due to the outstanding performance of its N-type 182 Bifacial Double Glass Module series, ZNSHINE once again distinguished itself among global photovoltaic manufacturers and was awarded the "Top Performer" certification.

The ZNSHINE N-type 182 Bifacial Double Glass Module Series employs SMBB technology, which reduces the distance between main and sub-busbar, minimizes current loss, enhances overall efficiency, and maintains stable power output under low-light conditions. The non-destructive cutting technology avoids cell damage, significantly improving module reliability, stability, efficiency, and total energy yield.

Quality Capacity Establishment

To constantly promote a quality system framework, ZNSHINE integrates strict controls across all operational stages by streamlining quality management systems and processes, enhancing quality control measures and models, and accelerating digital empowerment initiatives.

Process Analysis
- Conduct a comprehensive review of current departmental workflows and provide employee training across all units, with execution monitored by the quality department.
- Systematize document archiving lists for each department, mandating timely monthly submission of relevant forms to the systems department for filing.

Mechanism Enhancement
- Implement a company-wide participatory quality control model allowing all workflow employees, from R&D to frontline staff, to propose quality improvement suggestions.
- Adopt "Internet Plus" technology to establish an "employee responsibility contracting system" at production sites, strengthening staff accountability for product quality.

Digital Enablement
- Deploy fully automated production lines integrated with intelligent monitoring systems for real-time tracking of key process parameters, enhancing efficiency while reducing human-induced quality variations.
- Establish a Manufacturing Execution System (MES) to record product, material, personnel, and equipment data throughout production. This will enable process supervision and product traceability.
- Develop a big data system to shift management focus from inspection to assurance. Through data intelligence integration, visualize hidden issues and embed "quality control checkpoints."

To safeguard customer rights effectively, we have established and implemented the Product Recall Management Guidelines, providing detailed operational procedures for recall initiation timing, evaluation, approval processes, execution steps, and post-recall monitoring and closure. In 2024, the company updated its Product Recall Procedure and Corrective and Preventive Actions (CAPA) to refine the management of product quality issues further. During the reporting year, no incidents involving recalls of products sold due to health or safety reasons were reported.

Embodying Quality-Centric Enterprise Culture

ZNSHINE is committed to fostering a quality-centric enterprise culture with full employee participation by continuously implementing diversified cultural development approaches to advance quality awareness. In 2024, through management training programs, production line immersion initiatives, and competency assessment systems, we have elevated organizational emphasis on product excellence, focusing on quality control protocols, standardized operational procedures, equipment maintenance best practices, safety compliance frameworks, and continuous improvement methodologies.

Quality Management Tools Training	Production Line Immersion	2024 Quality Month Initiatives
Created training programs for engineers through seminars, case studies, and on-site Q&A sessions. These covered quality principles, management systems, essential quality tools, standards, and control plans to improve employees' skills in quality analysis methodologies.	Organized hands-on learning for quality engineers and trainees in photovoltaic module production lines, focusing on Standard Operating Procedures (SOP) workflows and quality benchmarks to strengthen process mastery and critical control point management.	During Quality Month, the company implemented several measures, including enhanced inspections, process optimizations, and skills development campaigns. By rigorously monitoring production lines, we promptly resolved emerging issues and boosted module yield rates and manufacturing efficiency.

◉ **In 2024, ZNSHINE conducted multiple quality-themed training programs for its quality department employees across all manufacturing bases**

Including,

Jintan Base

Organized **48** training sessions, achieving full annual training coverage for **30** quality personnel.

Suqian Base

Organized **48** training sessions, achieving comprehensive training for **46** quality personnel.

Dali Base

Organized **22** training sessions, covering **10** quality team members for the year.

Innovation-Driven Development

ZNSHINE steadfastly pursues the principle of innovation-driven development, proactively implementing measures in management system optimization and digital technology integration to advance the construction of intelligent governance platforms. Concurrently, the company rigorously safeguards intellectual property and innovation management frameworks, providing strategies for sustainable technological advancement.

Adhere to the driving force of innovation

Since our establishment, ZNSHINE has accumulated profound manufacturing expertise, specializing in the research, production, and sales of PV modules while offering comprehensive EPC power plant services to deliver integrated solutions for the renewable energy sector. By actively pursuing R&D initiatives aligned with its core business, the company drives product performance optimization, innovation in product portfolios, and enhanced market competitiveness through technological advancements and production efficiency improvements.

The company prioritizes R&D technology and elevates its technical capabilities via industry-university collaborations. Partnerships with leading institutions such as Shanghai Jiao Tong University, the University of Science and Technology of China, and other international laboratories focus on cutting-edge projects, including solar cell efficiency enhancement, Graphene self-cleaning coatings, and Advanced light-trapping structures, aiming at improving the conversion efficiency of solar cells, continuously promoting the optimization of photoelectric conversion technology, and committing itself to improving the efficiency of the modules to the international leading level.

As of the end of the reporting period, Jintan base has been recognized as a "National Development of Specialized and Sophisticated Little Giants" and "Intelligent Workshop" title, and Suqian base has been awarded the Provincial "Intelligent Workshop" title. This year, the company had 142 R&D personnel, more than 20 R&D projects, and invested RMB 58 million in R&D expenses.

This year

The company had **142** personnel

More than **20** R&D projects

Invested RMB **58** million in R&D expenses

CASE | **Solar PV-X Simulation Software Enhanced Standardized Rooftop PV Solution**

This year, ZNSHINE PV collaborated with the Hohai University Anneng team to develop SolarPV-X simulation software, an intelligent photovoltaic plant design and simulation tool designed to provide comprehensive design support and optimization for Standardized Rooftop PV Solutions (SRS). This advancement elevates rooftop PV systems to new heights in intelligence, precision, and efficiency.

The SRS system inherently offers simplified design, rapid installation, and high reliability. Standardized modules and integrated clamping designs significantly reduce installation and maintenance costs. The integration of SolarPV-X further enhances SRS's capabilities, including One-click panel arrangement based on roof profiles, Instant Bill of Materials optimization, and enhanced module placement and material configuration accuracy. This strategic partnership drives continuous innovation in rooftop PV markets and delivers cutting-edge solutions for global solar rooftop projects, accelerating the widespread adoption of clean energy technologies.

Digital System Applications

Digital Manufacturing

The Company actively advanced its innovative manufacturing initiatives by adopting intelligent, precise, and digitally integrated technologies to improve production efficiency and product quality. Implementing systems such as the Manufacturing Execution System (MES), Warehouse Management System (WMS), and IoT-enabled equipment monitoring platforms (IOT) have achieved full transparency and intelligent management across the entire production cycle. Additionally, the Company has established automated production workshops centered on cutting-edge technologies for high intelligence, precision, and efficiency, complemented by intelligent warehousing and eco-friendly facilities. These efforts aim to create a large-scale, energy-efficient smart factory dedicated to photovoltaic manufacturing, supporting streamlined and sustainable industrial operations.

CASE | **ZNGreen Energy Cloud Cell Solar Module**

ZNGreen Energy Cloud Cell Solar Module is an innovative PV product and solution platform launched by ZNSHINE, designed to address green energy needs across diverse scenarios through technological innovation and product diversification. The platform covers multiple critical stages of the EPC process, enabling project teams to monitor and manage progress by systematically overseeing these key phases.

This year, to support the "Ninglang Residential Project" initiative, ZNSHINE, under the guidance of its IT department, has integrated the entire lifecycle of Ninglang County's residential PV power station projects—from R&D, material preparation, distribution, and construction to operations and maintenance—into a unified management system. This systematic approach has significantly enhanced project execution efficiency.

Digital Operation

Beyond manufacturing, ZNSHINE has vigorously advanced digital empowerment across daily operations, including customer management, resource management, financial management, and office administration, accelerating the development and application of digital systems. Currently, digital operation platforms such as the Customer Relationship Management (CRM) System and Ding Talk enable the Company to enhance management efficiency and operational quality. By driving digital enablement across multiple business dimensions, the Company not only optimizes internal processes but also delivers more efficient, transparent, and high-quality services to clients and partners.

Intellectual Property Protection

The Company has established the Intellectual Property Management System in accordance with the Patent Law of the People's Republic of China, Rules for the Implementation of the Patent Law of the People's Republic of China, Jiangsu Provincial Enterprise Intellectual Property Management Standards, and its specific circumstances, to ensure standardized and systematic intellectual property management.

We always place great emphasis on intellectual property protection, adopting stringent measures against any infringing activities to safeguard our brand reputation. In the U.S. market, for instance, ZNSHINE explicitly states its commitment to pursuing legal actions against infringement and advises customers to purchase authorized products through official channels.

In recent years, we have actively pursued patent applications and expanded our patent portfolio. As of the end of the reporting period, it had accumulated 155 authorized patents, including 3 invention patents added during the period. Notable utility model patents include the "Smart Photovoltaic Street Light" and "Lightweight Flexible PV Module", highlighting the Company's ongoing commitment to technological innovation and intellectual property protection.
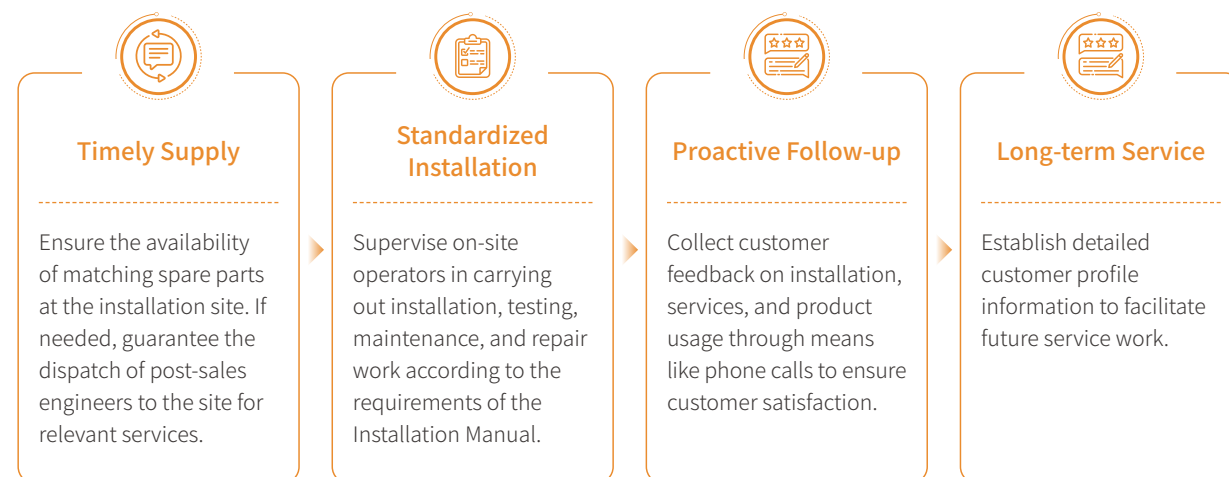
Safeguarding Customer Value

Continuously improving product quality and service capability, defining an outstanding reputation, protecting customer value, and growing with our customers, we never forget the core spirit of Customer-Centricity. Thus, we emphasize customer interchange through variable methods and recognize all kinds of feedback from customers.

Customer Service

The company is committed to providing comprehensive, high-quality services to customers across pre-sales, in-sales, and post-sales stages. We have established institutional processes such as the Customer Management Regulations, Customer Credit Management Regulations, Customer Post-Sales Service Management Measures, and Post-Sales Installation and Service Handling Procedure to protect customer rights and interests. These measures are reinforced through a Customer Relationship Management (CRM) System to ensure implementation and enhance service standards.

For post-sales management, the company has developed systematic documentation including Warranty Certificates and Installation Manuals to ensure product reliability during customer use and self-installation. Customer information is strictly protected through role-based data access and inquiry policies in the CRM system, alongside confidentiality agreements signed by relevant staff members.

Installation & Post-Sales Service Process

Timely Supply

Ensure the availability of matching spare parts at the installation site. If needed, guarantee the dispatch of post-sales engineers to the site for relevant services.

Standardized Installation

Supervise on-site operators in carrying out installation, testing, maintenance, and repair work according to the requirements of the Installation Manual.

Proactive Follow-up

Collect customer feedback on installation, services, and product usage through means like phone calls to ensure customer satisfaction.

Long-term Service

Establish detailed customer profile information to facilitate future service work.

The Company prioritizes customer service training by conducting internal sessions for its personnel and providing external training for distributors. This year, it organized numerous online and offline training activities that covered business operations, products, and policies, which included 12 customer service training sessions and 8 offline distributor training programs, with full participation from all customer service staff in the annual service-related training.

CASE | **Special training for Tunisian dealers**

To enhance collaboration with Tunisian distributors, ZNSHINE hosted an offline training session this year specifically for distributors in the Tunisian market. The training focused on the company's brand, development strategies, and product services, and invited over 20 Tunisian clients. During the event, representatives showcased the company's innovative products and technologies, including the Road Map, PU frames, and the SRS system. This initiative not only highlighted the company's technical expertise and product advantages in the photovoltaic sector but also established a foundation for market expansion and technology promotion in the region.

Customer Communication

Satisfaction Survey

The company has formulated the "Customer Satisfaction Survey Control Program" and established various channels to communicate with customers, such as official telephone, email, WeChat, WhatsApp, Info mailbox, LinkedIn, etc. In order to grasp customers' feedback on products and services, the company regularly visits customers to inquire about the use of products and conducts customer satisfaction surveys to form an analysis report. Among them, the satisfaction survey covers the quality of products, services, timeliness, and reliability of goods delivery, etc., aiming to understand customers' demands in all aspects.

- In 2024, the HQ and each base of ZNSHINE have an average customer satisfaction score of **96.11** points。

Complaint Handling

ZNSHINE places high priority on customer complaints, establishing institutional processes such as the Customer Complaint Handling Management Regulations and Customer Complaint Resolution Procedures to address grievances. Aiming to "reduce customer complaints annually and strive for zero complaints", the company thoroughly identifies and analyzes complaints, implementing effective tracking to prevent recurrence of issues.

For critical customer concerns, the quality department promptly initiates containment actions, including quarantining non-conforming products, isolating suspected inventory, re-inspections, enhanced monitoring of similar in-production items, and notifying affected clients to prevent losses. In bulk sub-quality products, the company immediately dispatches personnel to isolate and sort non-compliant products on-site, assisting clients with resolution. This year, the company achieved a 100% complaint response rate, guaranteeing initial contact within 12 working hours, preliminary root cause analysis within two working days, and initial solutions or corrective actions within seven working days.

Accountable Marketing

The company adheres to the Advertising Law of the People's Republic of China. It has established a responsible marketing framework, including guidelines such as the ZNSHINE Marketing Resource Download Guidelines, ZNSHINE Webinar Planning Guidelines, and Trade Exhibition Planning Guidelines. These documents provide clear operational standards and procedural guidance for the internal marketing team while fostering a transparent and fair marketing environment for partners and clients.

The company conducts marketing activities through multiple channels, combining online and offline efforts to amplify outreach. On the one hand, the company leverages digital technologies to enhance the timeliness and interactivity of campaigns, expanding global product reach through targeted outreach and data-driven strategies. On the other hand, the company actively participates in industry conferences and events, showcasing product capabilities and innovations through face-to-face demonstrations and exchanges. This approach strengthens customer engagement and facilitates business collaboration discussions.

Digital Marketing Platform

The company has established a three-level digital promotion network, including a website, mini-programs, and social media, spanning 25 platforms to integrate online traffic and amplify global brand influence and product visibility.

Media Partnerships

Through collaborations with authoritative media, industry associations, and organizations, such as the Green Energy Promotion Association, Colombian ACESOL, and the China Photovoltaic Industry Association, the company leverages professional platforms to enhance brand authority, strengthen market credibility, and expand industry reach.

Exhibitions & Events

The company has organized or participated in 22 global exhibitions and events. Engaging in international summits and interacting with industry experts and partners showcases forward-thinking innovation and market insights in clean energy, solidifying its leadership in the global arena.

Following Responsible Procurement

ZNSHINE maintains a responsible procurement philosophy that focuses on ensuring a stable supply of high-quality raw materials while promoting sustainable development throughout the supply chain. This is accomplished by implementing a rigorous supplier management system, standardizing procurement processes, prioritizing supplier sustainability, mitigating market risks, and encouraging collaborative innovation with suppliers.

Supplier Management

The company has established a comprehensive and rigorous full-cycle supplier management system, covering processes such as supplier investigation, qualification, and audits. This year, it continued implementing the Supplier Development and Management Procedures and optimized management mechanisms like the Supplier Comprehensive Evaluation Form. These efforts further refined departmental responsibilities, sample assessments, and bulk verification protocols and standardized the entire process of supplier development, selection, evaluation, approval of qualified suppliers, and ongoing management.

Supplier Sourcing

Develop a potential supplier database and validate qualifications through detailed questionnaires and on-site verification when needed.

Supplier Qualification

Set mandatory system certification requirements for approved suppliers, particularly for solar cell and auxiliary material providers, who must obtain relevant certification credentials.

Supplier Evaluation

Regularly evaluate and analyze the performance of our suppliers in terms of quality management, product performance, technological innovation, cost advantage, delivery capability, sales and service, corporate social responsibility and business ethics, and based on the results of the evaluation, our suppliers are classified into five grades ranging from A to E.

Currently, the company selects at least three leading qualified suppliers for key raw materials to ensure long-term supply stability. It conducts annual evaluations of suppliers, eliminating unqualified ones while building stable partnerships with compliant suppliers, continuously optimizing supplier resources, and enhancing their competitiveness. For new materials provided, the company requires the completion of sample evaluations, batch testing, and reliability validation. New suppliers must pass offline audits and attain qualified supplier status before bulk procurement can proceed.

For key material suppliers, the company carries out annual on-site assessments, takes countermeasures for suppliers of different grades, realizes the grading management of supplier risks, and improves supplier management efficiency.

Grades	Actions
A: Excellent	Ease the frequency of incoming inspection requirements and/or reward with better commercial terms.
B: Good	Maintain the status quo and encourage better performance.
C: Average	Increase sampling frequency (if necessary) to encourage better performance.
D: To be improved	Submit corrective and preventive action reports; increase sampling frequency (if necessary)
E: Unqualified	Re-evaluation of qualifications if no measures for effective improvement

Supplier Communication & Cooperation

The company actively collaborates with suppliers, including executive-level exchanges, regular information sharing, and expert training programs. These efforts aim to enhance supplier capabilities in delivering higher-quality products, improved delivery timelines, and cost-effective services, creating competitive advantages and maximizing added value for both parties. Concurrently, the company prioritizes developing local suppliers to reduce transportation distances and energy consumption, lower procurement costs, and achieve mutual benefits in both social responsibility and economic efficiency.

Supplier ESG Risk Management

As global markets increasingly prioritize sustainable development, the company, a multinational photovoltaic enterprise, has significantly emphasized ESG risk management across its supplier network. To ensure ethical and sustainable sourcing, the company is proactively building a traceable supply chain system that verifies the legality and sustainability of raw material origins. During supplier qualification, ESG criteria—such as environmental management practices, social responsibility commitments, and corporate governance standards—are rigorously integrated into the evaluation process, aligning procurement strategies with global sustainability benchmarks.

Environmental Dimension

Continuously advance green procurement initiatives, such as sourcing new materials with lower carbon footprints across their entire lifecycle compared to traditional alternatives.

Social Dimension

Uphold suppliers' human rights, labor practices, and social responsibility commitments.

Governance Dimension

Implement the Supplier Anti-Bribery/Anti-Corruption Agreement, requiring suppliers, service providers, and contractors to sign the agreement and include integrity commitment clauses in procurement contracts. Suppliers found engaging in fraudulent practices or unethical conduct will be disqualified from the approved supplier list.

CASE | Management of potential risks in conflict minerals

The company placed high importance on tracking and investigating the sources of raw materials to ensure no conflict minerals are involved in any supply chain links. Furthermore, we have incorporated raw material traceability controls into supplier audit evaluations, guiding and encouraging suppliers to conduct traceability management of their products. This initiative aims to prevent material procurement from conflict mineral-related regions and ensure the reliability of our supply chain system in conflict mineral management.

This year, in response to an international client's requirement that "suppliers must ensure no involvement of forced labor at any stage of the supply chain", the company has pledged in its supply commitment letter to "conduct thorough due diligence on suppliers, maintain a steadfast commitment to human rights, labor practices, and social responsibility, and ensure that no part of the supply chain involves forced labor".
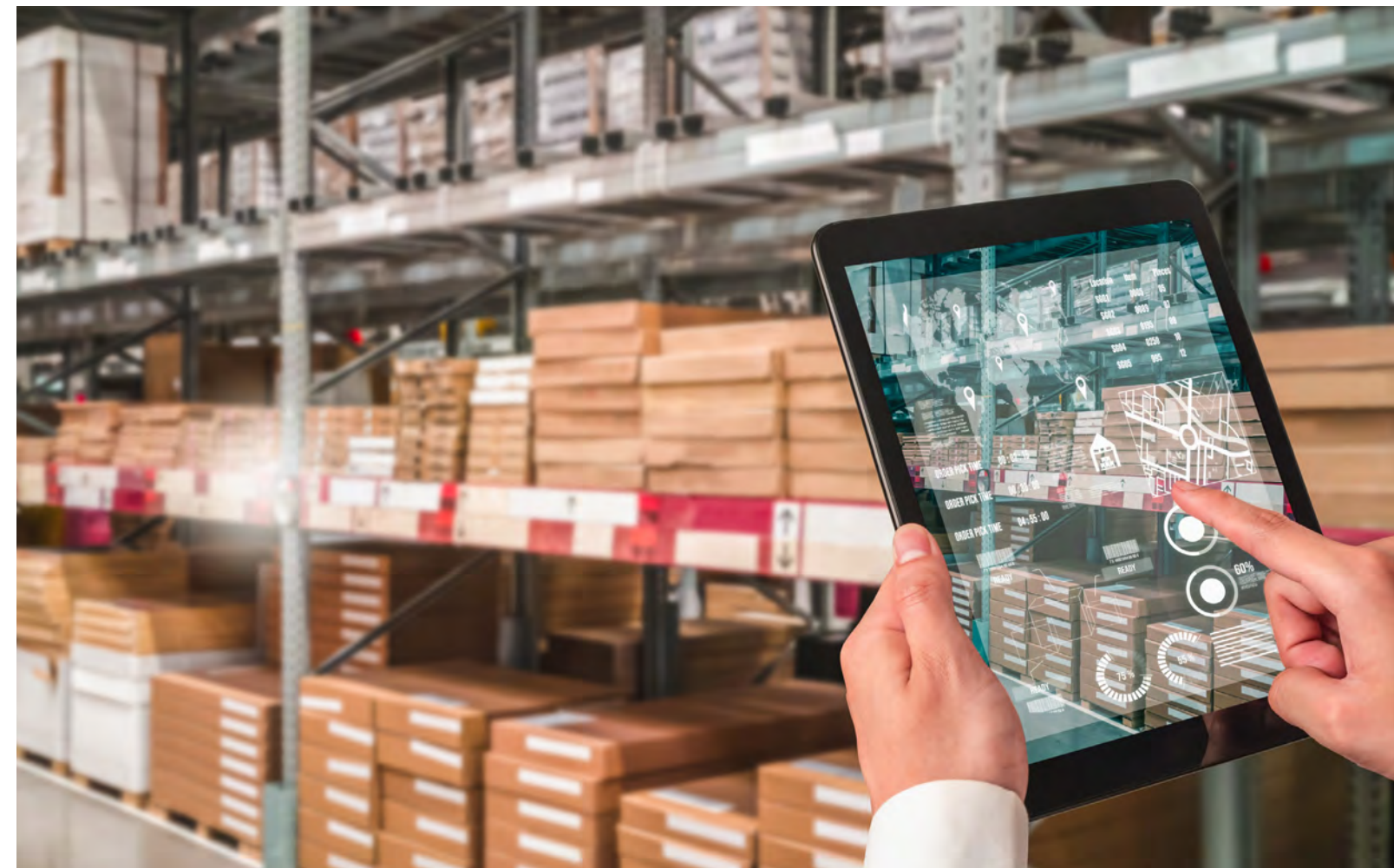
03

Centering Human Dignity, Flourishing through Value Symbiosis

ZNSHINE adheres to the core philosophy of "Put People First," ceaselessly deepening our customer-centric service creed. We are dedicated to creating a diverse, inclusive, and safe workplace environment for employees and striving to provide equitable training opportunities and career advancement pathways that fully unleash individual potential and value.

Committed to social responsibility, we actively engage in philanthropic initiatives through multi-dimensional, cross-sectoral, and diversified approaches, fulfilling our creed to customers, employees, and the broader community.

- ○ Attracting and Cultivating Talents
- ○ Ensuring Employee Health
- ○ Facilitating Industry Progress
- ○ Creating a Harmonious Society Jointly

Attracting and Cultivating Talents

Employees are the cornerstone of ZNSHINE's sustainability, and we prioritize talent acquisition and cultivation through comprehensive employment management systems, diversified training programs, human-centric employee care initiatives, and innovative workplace environments to defend employees' rights, guide career development, and empower individuals to realize their full potential while driving organizational success.

Talent Acquisition

The company strictly complies with local labor laws and regulations, including the Labor Law of the People's Republic of China, the Labor Contract Law of the People's Republic of China, the Prohibition on Child Labor Regulations, and the Employment Promotion Law of the People's Republic of China. We have established systematic institutional frameworks such as the Recruitment Management System, Employee Handbook, and Labor Contract to standardize hiring procedures and safeguard employees' legal rights and interests.

The company strictly enforces the labor system of the country and the location of the enterprise, adheres to the principle of fair employment, clearly stipulates the age requirement of the recruited employees during the recruitment period, resolutely refrains from the use of child labor and underage labor, prohibits forced labor, maintains the dignity of the employees, eliminates all kinds of discrimination in terms of gender, ethnicity, age and so on, and effectively safeguards the lawful rights and interests of the employees.

The Company has set up labor unions to safeguard employees' legitimate rights and interests, prohibit discrimination, and is committed to creating a diversified and inclusive corporate culture. During the year, the Company updated the Recruitment Management System and the Employee Handbook to further optimize the provisions related to protecting employees' rights and interests.

We develop annual recruitment plans aligned with departmental needs to attract talent, continuously optimizing our HR system through campus recruiting, social recruitment, and internal referrals. These multi-channel approaches promote integration among employees from diverse backgrounds while building a specialized and diversified talent pool.

For long-term industry development, we collaborate with institutions like Jiangsu University of Technology and Changzhou Institute of Technology on joint training programs. Focused on disciplines such as Electrical Engineering, Mechanical and Electrical Integration, and Marketing, these partnerships include curriculum development initiatives tailored to specific professional requirements.

To facilitate new employees' adaptation, we provide comprehensive onboarding training and safety education programs, implementing hierarchical training architectures across company-wide, departmental, and team levels. Simultaneously, we advance localized recruitment strategies in operation regions to reduce comprehensive labor costs, promote cultural exchange and integration, and drive employment development in local communities.

CASE | New Employee Training

On March 4, 2024, ZNSHINE held an orientation training session for 42 new employees from the Manufacturing and Quality Divisions. The training program focused on labor discipline education, which included legal compliance, factory rules and regulations, workplace safety, and corporate culture. The goal was to ensure that employees understood the company comprehensively.

Specialized courses were created to help employees adapt more quickly to their job responsibilities. Those in operational positions received training on product documentation standards and process specifications to establish proper operating practices. Meanwhile, management and technical staff participated in training on product introduction and operational methods to enhance their professional expertise further.

Employee Care

ZNSHINE strictly adheres to local laws and regulations and has established a fair, reasonable, and incentive-driven remuneration management system for employees. This system includes rules such as the Remuneration and Benefits Management Regulations and Performance Evaluation Management Regulations, which form a systematic remuneration and benefits management framework.

The company provides employees with statutory holidays and supplementary leave benefits such as paid annual and maternity/paternity leave. It implements standard working hours systems and flexible work arrangements based on the nature and requirements of different positions. Additional benefits include meal allowances, shuttle bus services, accommodation for non-local employees, holiday vouchers, annual occupational health checkups for critical workshop positions, and special subsidies for female employees.

Annually, the company organizes the "Chinese New Year with Warmth" Campaign to support financially struggling employees. This year, the cumulative expenditure on employee assistance reached RMB 9,000 and covered three employee families.

CASE | "Chinese New Year with Warmth," supporting financially struggling employees

On January 9, 2024, as the Spring Festival approached, ZNSHINE's Party Branch, Trade Union, and Administrative Department jointly launched a welfare assistance and condolences program for employees facing financial difficulties. During this initiative, a team conducted in-depth home visits to understand the situations of the needed employees. They adhered to principles of fairness and equity, providing targeted support through financial subsidies and consolation gifts. This program offered tangible help to those requiring assistance and reinforced the corporate culture of unity, mutual support, and warmth. It strengthened employees' sense of belonging and cohesion while fostering a harmonious and inclusive workplace atmosphere.

Employee Training & Development

The Company emphasizes enhancing employees' comprehensive skills. We have established the Training Management System to define responsibilities and authorities, training content, implementation requirements, assessment, and incentive mechanisms. Thus, the system provides an organized framework for training activities to ensure standardized processes and accountability.

Aligned with business objectives in the long run, we develop training plans through the Training Plan Schedule and Qualified Position Training Process, specifying detailed arrangements and timelines for each program to guarantee efficient organization and transparent execution. Tailoring training to diverse employee needs, we offer customized programs, including Professional technical training, Management competency development, Employee quality enhancement, and Business ethics education. We provide financial support and guidance for further employees in key positions to obtain professional qualifications and industry certifications. In 2024, we achieved 100% employee participation in training programs with an average training duration of 23.94 hours per employee, effectively building a high-standard, ethically compliant talent pool aligned with organizational goals.

Professional Skills Training
- The company provides employees with technical training tailored to various roles. These programs equip employees with essential technical knowledge, enhance operational efficiency and product quality, and ensure compliance with production process requirements.

Management Capability Development
- The company designs empowerment programs for management at all levels, covering professional expertise such as ISO 9001 standards, occupational health and safety, energy management, and intellectual property. It also offers training in management skills, communication techniques, performance evaluation, and plant-specific leadership development to ensure efficient company-wide operations.

Employee Skill Advancement Support
- The company supports personalized skill enhancement by offering vocational qualification certification assistance and subsidies for full-time, part-time, and contract workers. This initiative aims to elevate employees' technical proficiency and strengthen workplace safety awareness.

CASE | Financial Accounting Training

On Aug 16, 2024, the company held a six-hour management training session titled "How Finance Can Drive Corporate Profit Mining" for employees in the finance department. This program focuses on key areas such as refined cost accounting and statistical analysis, securing loans for operational rights financing, negotiating deposit agreements with banks to optimize capital allocation, and balancing corporate operational health with cost reduction and efficiency improvements. The training was designed to deepen participants' understanding of the strategic importance of financial management. It provides practical guidance to enhance their ability to tackle real-world challenges, driving profitability and promoting sustainable business practices.

CASE | CNAS Laboratory equipment during the verification implementation training

On Feb 6, 2024, the company conducted a specialized training session on intermediate verification of CNAS-certified laboratory equipment for five employees from the Technology Department. This comprehensive program covered essential aspects such as identifying and assessing equipment performance inconsistencies, implementing corrective actions based on verification results, and documenting findings in compliance with CNAS standards. By systematically strengthening employees' theoretical understanding of verification methodologies and practical skills in systematic inspections and data analysis, the training aimed to ensure strict adherence to CNAS accreditation requirements while maintaining the accuracy and reliability of laboratory test results.

Ensuring Employee Health

As a company that emphasizes labor safety as an element of social responsibility, we constantly care about employee health. As of the end of the reporting period, the Suqian Headquarters, Jintan Base, and Suqian Base of ZNSHINE have been awarded ISO 45001:2018 certification and "Safety production standardization level 3 Enterprise". Between 2022 and 2024, the Company did not experience any workplace fatalities.

The company has established a comprehensive safety governance system comprising the Safety, Environmental, and Fire Safety Information Handbook, Production Safety Responsibility System, Internal "Whistleblower Reward" System for Accident Hazards, Emergency Response Plan for Production Safety, and System for Prevention and Control of Occupational Disease Hazards. These institutional frameworks provide employees with explicit operational guidelines and behavioral standards to ensure systematic safety, production, and health management implementation. By constructing a hierarchical governance architecture across all bases with clearly defined responsibilities at every organizational level, the company has formed a top-down accountability mechanism where functional departments collaborate seamlessly to enforce safety protocols. This integrated system delivers multi-dimensional safeguards through procedural standardization, risk prevention, emergency preparedness, and occupational health monitoring, ensuring compliance with international safety standards while fostering a culture of proactive risk management and sustainable, safe production operations.

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Safety Manufacturing Management

ZNSHINE has consistently reinforced its primary responsibility by establishing annual safety management objectives and systematically advancing workplace safety initiatives. To effectively manage occupational health and safety risks in manufacturing processes, we guide grassroots production units in conducting on-the-job safety training, safe production workshops, and emergency drills. These efforts are complemented by campaigns such as "Production Safety Month" to ensure the practical implementation of safety measures, maintaining sustained operational stability. This year, all workplace safety targets were achieved with 100% compliance, solidifying our commitment to safeguarding employee well-being and operational integrity.

Pre-Employment Safety Training
- The company conducts mandatory safety training for new hires and organizes specialized safety sessions post-holiday resumptions, ensuring all new and existing employees acquire essential safety knowledge and operational skills before resuming their duties.

Manufacturing Safety Training
- Senior management and safety personnel regularly participate in safety certification tests and occupational health training to strengthen their professional competence and emergency response capabilities.

Emergency Response Drills
- Annual drills include emergency evacuations, initial fire response training, chemical safety protocols, and specialized equipment handling exercises. These simulations enhance employees' safety awareness and crisis management skills through practical scenarios.

Workplace Safety Month
- This year's campaign, themed "Everyone Talks about Safety, Everyone Knows about Emergency Response—Unchoke Pathways for Life," promoted a safety culture through extensive awareness initiatives that reinforced employee vigilance.

Internal Whistleblower Initiative
- The company actively implements a "Whistleblower Program" and has developed and published the Internal Whistleblower Reward System for Accident Hazards. Employees receive monetary incentives for anonymously reporting safety risks, fostering greater accountability and engagement in hazard identification.

CASE | Base conducted risk control and safety training

On March 16, 2024, Jintan Base conducted risk control safety training for 39 employees from the Manufacturing, Technical, and Quality Sub-center. The training covered comprehensive risk management strategies, including engineering techniques, risk management measures, personal protection, and emergency response. It centrally showed safety information for six critical positions (String soldering, layup, lamination, framing, cleaning, testing, and packing), including job-specific safety risk levels, accident-prone categories, hazardous factors, and concrete control measures. This effectively enhanced employees' safety awareness and mastery of risk control measures.

CASE | Three-level safety training program

This year, the company has implemented a three-level safety training program for new employees, covering company-wide safety regulations, position-specific safety guidelines, including series welding, layer stacking, lamination, framing, cleaning, testing, etc., fire safety knowledge, differentiation of warning signs, and environmental protection concepts. Additionally, the company mandates that pre-job safety training for new hires must exceed 24 hours, with employment eligibility contingent upon passing a written proficiency exam, to ensure the systematic enforcement of safety management protocols.

Occupational Health Management

ZNSHINE strictly complies with national and local regulations such as the Occupational Disease Prevention and Treatment Law of the People's Republic of China and the Occupational Safety and Health Ordinance, ensuring full compliance with legal requirements. We prioritize employee occupational health and safety, continuously improving our health management system, fostering a strong safety culture, optimizing workplace environments, and strengthening personal protective measures. These efforts aim to prevent and control hazardous factors in the workplace that may cause occupational diseases, thereby safeguarding the health of production line employees and creating a safe, comfortable, and healthy working environment for all staff.

Occupational Hazard Monitoring
- The company has signed agreements with third-party organizations to regularly monitor occupational hazard factors and issue the Annual Monitoring and Evaluation Report for Occupational Hazard Factors, ensuring that all hazards are promptly identified and addressed. This year, the occupational exposure limits for hazardous factors in the company's workplaces fully complied with the requirements of GBZ 2.1-2019 Occupational Exposure Limits for Hazardous Agents in the Workplace Part 1: Chemical Hazardous Agents and GBZ 2.2-2007 Occupational Exposure Limits for Hazardous Agents in the Workplace Part 2: Physical Agents.

Occupational Health Check-ups
- For positions exposed to occupational hazards, the company collaborates with professional medical institutions to conduct annual on-the-job occupational health examinations, assisting employees in the early identification of health risks. This year, based on the occupational hazard factors monitoring results in the workplace, the company conducted occupational health examinations for all affected employees.

Special Equipment Inspections
- The company performs safety accessory calibrations, including safety valves, pressure gauges, equipment maintenance, and annual inspections for special equipment such as forklifts, elevators, gas storage tanks, and their attachments to ensure compliance with safety standards.

Provision of Protective Gear
- Based on job roles and work environments, the company establishes distribution standards for personal protective equipment (PPE) across different positions and strengthens inspections and assessments of proper PPE usage.

Facilitating Industry Progress

As a global leader in innovative photovoltaic energy solutions, ZNSHINE has remained committed to facilitating the transformation and upgrading of China's new energy industry. We collaborate with top-level universities worldwide to actively implement talent development partnership programs, continuously supplying the photovoltaic sector with highly qualified professionals. Simultaneously, we jointly conduct R&D initiatives for innovative technologies and products, persistently advancing breakthroughs in photovoltaic technological innovation to support standardized and high-quality development of the industry.

Industry-University Collaborations	
Donghua University	Jointly promote the ZNSHINE Global Young Talent Practice Program to promote cross-cultural talent exchange and practice.
University of Science and Technology of China	Signed a strategic cooperation agreement on graphene application technology
Hohai University	SolarPV-X simulation system cooperation to create ZNSHINE's differentiated products and SRS system development
University of Caxias do Sul, Brazil	The theme forum on PV technology innovation and youth talent training.

CASE | ZNSHINE Global Young Talent Practice Program

In Feb 2024, the company launched a cross-cultural talent exchange and practical training program in collaboration with Donghua University, recruiting seven American students for internship placements. The internship program covered diverse areas such as social media operations, website development, photovoltaic industry research, and market data optimization. Through this initiative, the interns accumulated valuable international work experience while bringing fresh perspectives and innovative thinking to the company. Simultaneously, the program provided overseas participants with an in-depth platform to understand the photovoltaic industry and corporate operations, cultivating innovative talents with a global vision for the company and enhancing its brand influence in international markets.

Adhering to the concept of openness and sharing, the company actively participates in industry exchange activities at home and abroad, demonstrates the company's market observation, product strength and innovation achievements in the field of clean energy, and exchanges and interacts with the global industry experts, laying the foundation for the company to further broaden the market. This year, we appeared in more than twenty domestic exhibitions and participated in more than ten overseas summits and exchanges, giving full play to our own resource advantages, demonstrating our strong R&D capabilities, and contributing our wisdom to developing technological innovation in the photovoltaic industry.

Domestic industry exchange activities

- 6/2024 -- **ZNSHINE participated in the SNEC photovoltaic exhibition:** ZNSHINE has become the audience's focus with its revolutionary "Light Cloud-Ultra lightweight Reinforced Modules" series and various innovative solutions.
- 6/2024 -- **Cooperate and exchange with Jiangsu renewable energy industry:** ZNSHINE ranks among the top 100 global photovoltaic brands.
- 10/2024 -- **Collaborative exchange activities with the Green Energy Industry Development Association:** ZNSHINE won two awards at the Asian Optical Storage Forum and shared the SRS standardized installation solution.

International industry exchange activities

- 2/2024 – **Participated in the European Solar Finance and Investment Summit:** Share insights into the photovoltaic industry and introduce the company's latest innovative photovoltaic solutions
- 6/2024 -- **Intersolar Europe 2024:** Launch Color Cloud-Architectural Façade Modules
- 8/2024 -- **The smarter E South America:** The company showcased multiple high-performance products, including the Sooth Cloud-Lightweight Reinforced Modules.
- 11/2024 – **Mexico Energy year:** ZNSHINE debuted with Double Glass Module Series in the international market.

CASE | "Sooth Cloud-Lightweight Reinforced Modules" series of innovative products appeared at the 17th SNEC Exhibition

In June 2024, the company participated in the Shanghai International Solar PV & Smart Energy Exhibition (SNEC), a premier global event for the photovoltaic industry. The exhibited "Sooth Cloud-Lightweight Reinforced Modules" series represents a groundbreaking photovoltaic product designed for high efficiency and ultra-lightweight construction. With a weight reduction of 70% and a thickness under 2mm, its glass-free innovative design alleviates structural loads on buildings and extends architectural lifespan. It also enables flexible bending capabilities, making it ideal for diverse distributed power station applications.

The product demonstrates exceptional performance in low-light conditions while incorporating multiple advanced technologies: PID degradation resistance, salt mist corrosion resistance, ammonia gas corrosion resistance, sandstorm erosion resistance, and hail impact resistance. These features collectively address stringent requirements in the building sectors for load-bearing capacity, installation complexity, and extreme weather resilience, thereby delivering more efficient and sustainable power generation solutions for the construction industry.
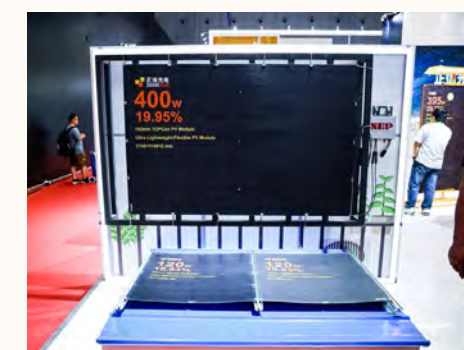
CASE| Color Cloud-Architectural Facade Modules shown at Intersolar Europe 2024

In June 2024, ZNSHINE exhibited its Color Cloud-Architectural Facade Modules at Intersolar Europe in Munich, Germany. This innovative product line combines vibrant color customization with high-efficiency photovoltaic performance. It features PU-framed borders that can be tailored to match architectural aesthetics, enabling seamless integration into building environments. Powered by patented colored glass technology, the modules achieve customizable hues and patterns through internal structured coatings while maintaining exceptional light transmittance and power output.

The series has demonstrated superior durability through rigorous certification by the National Photovoltaic Quality Inspection Center (CPTV). As a building-integrated photovoltaic (BIPV) solution, the Color Cloud series addresses critical demands in sustainable architecture by balancing aesthetic flexibility with functional performance. This makes it an ideal choice for green building certifications like LEED and BREEAM while reducing construction carbon footprints through lightweight, durable design.

Creating a Harmonious Society Jointly

ZNSHINE actively fulfills its corporate social responsibility by leveraging its business and resource strengths to support community education initiatives vigorously. Since establishing the Zhixi ZNSHINE Optoelectronics Guangcai Education Fund in 2023, the company has annually allocated funds to award four distinction titles:" Love and Learning Scholarship"," Outstanding Student Award"," Excellent Educator Award", and" Excellence in Teamwork Award". This year, we allocated RMB 300,000 from the fund to support scholarship and academic award programs in Zhixi Town, motivating students and educators to pursue excellence and contribute to advancing education.

CASE| Zhengxin Photoelectric Technology (Suqian) Co., Ltd. donated a batch of school supplies to the Red Cross Society of Sucheng District

On Mar 12, 2024, Suqian Base donated 100 school bags, 100 stationery boxes, and other learning supplies to the Suqian District Red Cross Society to promote and support local public education initiatives. In recognition of this contribution, the Suqian District Red Cross Society presented the company with a donation certificate, expressing heartfelt gratitude and high commendation for its commitment to advancing social welfare in the district.

04

Originating Green Ecology, Collaborating Globally with Integrity

As a dedicated green energy pioneer, ZNSHINE is committed to "To make green power more efficient". We drive comprehensive environmental management through resource efficiency measures and circular economy initiatives to achieve sustainable operations. Beyond operational excellence, we actively enable the green industrial chain by promoting the industry's transition toward eco-friendly and sustainable practices, thereby contributing to global green economic growth while proactively addressing climate change challenges.

- Responding to Climate Change
- Enhancing Environmental Management
- Implementing Sustainable Operations

Responding to Climate Change

Climate change represents a critical global challenge, making enhanced climate governance a top priority for enterprises. As a pioneering force in green energy, ZNSHINE has remained closely attentive to global climate trends and strategically identifies risks while capitalizing on emerging opportunities. Aligning with China's national "Carbon Peak by 2030 and Carbon Neutrality by 2060" strategic goals, we anchor our efforts in the clean energy sector to seize climate-related opportunities proactively. By developing innovative solar solutions and advancing energy storage technologies, we directly contribute to reducing carbon emissions across energy systems, driving the low-carbon transformation of global energy structures.

Climate Risk Management

We prioritize climate change mitigation and its implications for operational resilience and strategic growth. By systematically conducting climate risk assessments aligned with its business characteristics, we identify transmission pathways and potential impacts of climate risks, including direct threats to supply chains, production facilities, and regulatory compliance.

Climate-related risk identification and response measures		
Types of risk	**Climatic risk**	**Risk Counter Measure**
Physical risk — Short-term risk	Sudden natural disasters can disrupt production and destabilize supply chains.	Implement climate risk mitigation measures during factory construction, such as applying waterproofing, rainproofing, and corrosion-resistant treatments to warehouses. Develop and periodically conduct emergency drills based on the Emergency Plan for Sudden Environmental Incidents. Optimize raw material selection and logistics strategies, establish backup suppliers, and ensure secure supply chain resilience.
Physical risk — Long-term risk	Long-term climate risks such as prolonged high temperatures and water shortages could affect company productivity and increase costs.	Develop and implement an Emergency Plan for Firefighting with regular training sessions and drills to ensure staff readiness. Proactively integrating high-fire-resistance standards into PV module design specifications to enhance safety performance. Invest in energy-efficient technologies and equipment while optimizing water recycling systems to achieve higher water utilization efficiency.
Transition risk — Policy and legal risks	Increased compliance costs to meet increasingly stringent regulatory requirements. Increased operational costs due to strategic adjustments in response to emerging regulations	ZNSHINE's operational zones continuously monitor local laws and regulations and ensure timely internal communication. The company strengthens compliance training and stays abreast of emerging regulatory requirements
Transition risk — Market risk	Climate risks may propagate through the supply chain, increasing the company's raw material procurement costs. The EU export market has implemented carbon pricing mechanisms and carbon border taxes, coupled with subsidy reductions, driving up operational expenses and eroding the company's competitive position.	ZNSHINE will conduct regular supply chain resource inventories to enhance resilience, building strategic reserves while developing mitigation strategies for raw material cost escalation. The company plans to extend carbon footprint verification to all bases with localized carbon management frameworks, while expanding the scope of module products subject to lifecycle carbon footprint assessments
Transition risk — Technical risk	Failure to accurately anticipate key technological trends in the photovoltaic industry has resulted in suboptimal production efficiency, eroding market competitiveness	ZNSHINE must fortify technological innovation capabilities to drive continuous product iteration that maintains market responsiveness
Transition risk — Reputational risk	Failure to meet stakeholders' escalating sustainability expectations is eroding corporate reputation while undermining financing capacity and market valuation	ZNSHINE is committed to continuously enhancing the quality of non-financial disclosures, disseminating sustainability performance data through official corporate portals and dedicated ESG reports to ensure real-time responsiveness to stakeholder inquiries and expectations

Contributing to the Global Energy Transition

Global Business Layout

Currently, the Company's products are exported to over 60 countries and regions worldwide. Since 2018, it has consecutively ranked as India's largest Chinese PV module supplier for multiple years and has been recognized as a BloombergNEF Tier 1 global top-tier PV module manufacturer. The Company established a long-term strategic partnership with Munich Reinsurance Group in 2019 and has been recognized as "Top Performer" on the PVEL Photovoltaic Module Reliability Scorecard multiple times consecutively.

ZNSHINE's Global Layout
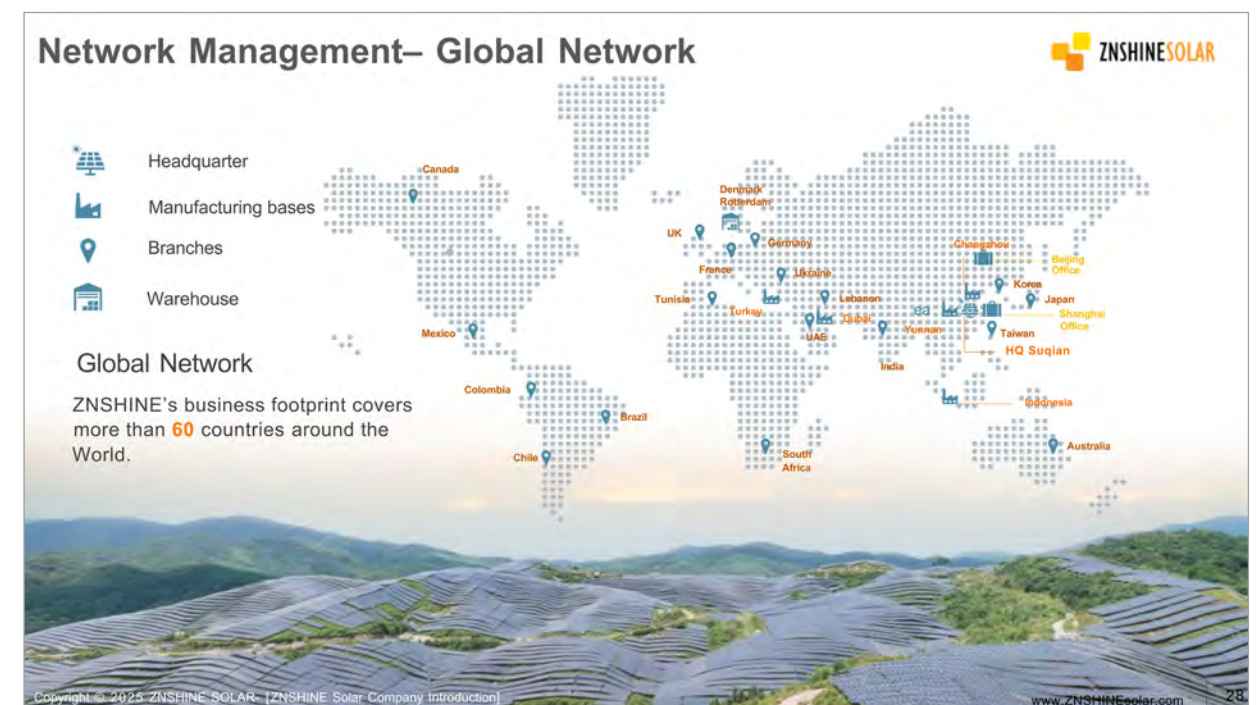
Green Product R&D

ZNSHINE attaches paramount attention to the development and innovation of green products, consistently integrating eco-conscious principles throughout the entire product life cycle. While delivering efficient and reliable products to customers, we strive to minimize or eliminate environmental impacts across all stages, including R&D, storage, logistics, usage, and recycling. To institutionalize this commitment, the company has compiled the Design and Development Guidelines, directing R&D teams to holistically address environmental considerations during product development and design phases, thereby achieving environmentally friendly product engineering.

Environmental Impact Integration into Review

- We incorporate environmental impact assessments and compliance verification as critical review criteria during the product development and design phase. This job ensures the reduction and control of the product's environmental footprint across its entire lifecycle, aligning with circular economic principles.

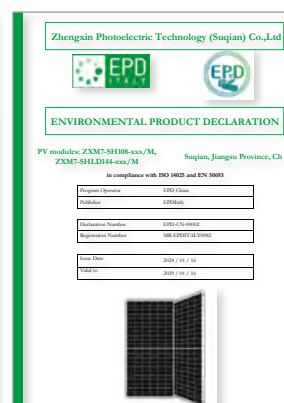### Environmental Product Declaration (EPD) Certification

- The PV modules of Suqian base have obtained several authoritative green product certifications, such as EPD China and EPD Italy (Environmental Product Declaration) PV Module Environmental Product Declaration Certification, etc. We will continue to provide customers with high-efficiency green module products.

Product Recyclability Certification

- The company actively promotes green recycling and circular utilization of products. Through a strategic partnership with PV Cycle Europe, it adheres to the Waste Electrical and Electronic Equipment (WEEE) Directive requirements. End-of-life PV modules are professionally collected and processed via a network of European recycling facilities, providing customers with closed-loop recycling services and advancing the sustainable development of the PV industry.

EPD China-Certificate of Environmental Product Declaration | EPD Italy - Certificate of Environmental Product Declaration | PV CYCLE Product Recycling Certification

Certified Green Factory

Green factories provide a foundational emphasis for achieving the company's green production objectives. Following the energy management philosophy of "Scientific Compliance, Energy Conservation & Environmental Protection for Value Creation; Cleaner Production, Continuous Improvement for Excellence," we implement operational strategies focused on "Energy Saving, Cost Reduction, and Resource Efficiency" to promote energy recycling and improve economic benefits, thus driving the ongoing development of green factories. Notably, the Jintan Base received certification as a "National Green Factory" in 2018, while the Suqian Base earned the "Green Factory of Suqian City" certification in 2023, illustrating compliance with regional sustainability standards and rigorous evaluation frameworks for infrastructure optimization, energy efficiency, and waste management.

Certification of National Green Factory | Certification of Green Factory of Suqian City

Greenhouse Emission Management

The Company has continued to strengthen its GHG emissions management capabilities and promote emissions identification and accounting. We identified and accounted for the GHG emission categories and emissions of Jintan Base, Suqian Base, and Dali Base for the year 2024, of which the Scope 1 emission types were mainly stationary combustion and mobile combustion, and the Scope 2 indirect emission types were mainly purchased electricity. In the current year, the GHG emissions of each base are as follows:

GHG Emissions from the Company's bases in FY2024

FY2024	Total GHG Emissions (tCO$_2$e)	Scope 1 Emissions (tCO$_2$e)	Scope 2 Emissions (tCO$_2$e)
Jintan Base	9,491.22	117.66	9,373.56
Suqian Base	9,008.56	162.62	8,845.94
Dali Base	326.85	30.02	296.83

Tips: In 2024, the methodologies for calculating greenhouse gas emissions and the emission factors primarily reference the "Guidelines for Accounting and Reporting Greenhouse Gas Emissions Other Industrial Enterprises" (Trial Version) issued by the National Development and Reform Commission (NDRC), and the "Announcement on the Release of 2022 CO2 Emission Factors for Electricity" jointly published by the Ministry of Ecology and Environment (MEE) and the National Bureau of Statistics (NBS).

Scope 2 indirect emissions have been accounted for as the company's main source of GHG emissions. As a result, the Company is actively pursuing energy conservation measures to reduce electricity use and losses in order to mitigate indirect GHG emissions:

- Adopting energy-saving equipment: Such as LED lighting, frequency-conversion equipment, and equipment with Grade 2 energy efficiency or above.
- Reducing energy consumption: Adjust the production operation mode, promote the upgrading and reconstruction of equipment, and improve the operational efficiency of equipment. Such as replacing outdated motors and laminating machines, and completing the iterative update of key equipment.
- Strengthening equipment maintenance: Regularly maintaining, inspecting, and repairing the equipment to reduce the abnormal operation of the equipment.

In addition to identification and accounting, the Company attaches importance to the authenticity and accuracy of accounting data and actively carries out certification work. During the year, Suqian Base carried out 2023 GHG verification and certification to provide a scientific basis and baseline reference for the Company to set emission reduction targets in the coming years. Meanwhile, to further grasp the carbon emissions of the whole life cycle of products, the Company has carried out product carbon footprint evaluation for some PV modules, adopted the "cradle-to-gate" system boundary for product carbon footprint accounting, and clarified the key phases of product carbon emissions, so as to provide a data basis for precise management of carbon reduction in the product value chain.

Greenhouse Gas Verification Statement of Zhengxin Photoelectric Technology (Suqian) Co., Ltd

Product Carbon Footprint Certificate of Zhengxin Photoelectric Technology (Suqian) Co., Ltd

Enhancing Environmental Management

ZNSHINE steadfastly adheres to a green development method, strictly complying with environmental regulations, including the Environmental Protection Law of the People's Republic of China, the Law of the People's Republic of China on Environmental Impact Assessment, and the Regulations on the Administration of Construction Project Environmental Protection. As of the end of the reporting period, the Suqian Headquarters, Jintan Base, and Suqian Base have obtained ISO 14001:2015 Environmental Management System (EMS) Certification.

ZNSHINE PV-TECH Co., Ltd.

ZNSHINE PV-TECH CHANGZHOU CO., LTD

Zhengxin Photoelectric Technology (Suqian) Co., Ltd

To institutionalize environmental governance, the company has established protocols such as the Control Procedure for Identification and Evaluation of Environmental Factors and the Control Procedure for Emergency Preparedness and Response. These frameworks define processes for identifying and assessing environmental risks, supported by tailored tools like the Environmental Factors Identification and Evaluation Matrix and Critical Environmental Factors Register to prioritize and monitor impacts across operations.

The Human Resources and Administration Department leads cross-departmental collaboration in environmental impact assessments, conducts regular audits, and ensures the effectiveness of EMS implementation. Environmental and Safety Responsibility Agreements, clarifying individual compliance obligations under Article 22 of the Environmental Protection Law.

We have stringent environmental performance metrics: wastewater, exhaust gases, and noise emissions must meet national standards, annual electricity consumption is capped at ⩽ 25,000 kWh/MW to optimize energy efficiency, and hazardous waste disposal achieves 100% compliance. All environmental targets were successfully met in 2024.

Environmental Impact Monitoring

- The company conducts annual third-party environmental impact monitoring to assess the effects of production operations on the surrounding environment. Monitoring covers water and wastewater, organized emissions, unorganized gas emissions, and industrial noise at factory boundaries.

Environmental Risk Management

- The company implements regular environmental risk identification and assessment, conducts internal environmental factor audits and reviews, and performs emergency resource inventories to clarify emergency response protocols for potential ecological incidents.

Environmental Performance Evaluation

- Environmental management objectives are integrated into the corporate performance evaluation system. The Environmental Safety Department establishes clear evaluation criteria to ensure accountability and continuous improvement.

Employee Environmental Training

- The Environmental Safety Department and Production Departments organize regular safety and environmental risk control training to ensure compliance with regulations and enhance employees' ecological awareness.

CASE | Suqian Base organized an emergency drill

On June 5, 2024, Suqian Base organized an emergency drill for sudden environmental incidents to strengthen its environmental emergency response system and mitigate environmental risks. Participants, including emergency response teams and production staff, followed protocols outlined in the Emergency Plan for Sudden Environmental Incidents. The practice involved immediate activation of emergency procedures, step-by-step reporting of incident information, and coordinated actions among specialized teams to contain simulated accidents effectively.

CASE | Jintan Base and Suqian Base conducted comprehensive environmental factor identification and evaluation

In 2024, the Jintan Base and Suqian Base conducted comprehensive environmental factor identification and evaluation across multiple facilities to assess potential environmental hazards arising from operational activities. This process involved analyzing impacts on energy resources, air quality, water systems, soil, and community environments. Risks were systematically evaluated through quantitative scoring that considered factors such as frequency of occurrence, probability of detection, likelihood of incidents, and severity of consequences. Key environmental hazards identified included wastewater discharge, organized/unorganized exhaust emissions, noise pollution, and hazardous waste generation.

Implementing Sustainable Operations

ZNSHINE resolutely advances green development by integrating low-carbon principles into corporate operations and daily management, systematically minimizing environmental impacts from production activities. We maintain rigorous oversight of production emissions and resource stewardship while actively exploring synergies between solar energy expansion and ecological conservation. This strategic approach drives dual value creation: operational excellence and sustainable ecosystem services, delivering measurable green dividends to society.

To fulfill our corporate energy conservation and emission reduction goals, we have consistently enhanced the efficiency and effectiveness of energy management through initiatives such as promoting high-efficiency energy equipment and technologies, strengthening building energy retrofits, and adopting energy-saving lighting systems. Additionally, we have gradually reduced fossil fuel consumption by optimizing transportation systems and increasing the adoption of renewable energy sources. The company also prioritizes the responsible use and management of natural resources. To advance water conservation and waste reduction objectives, we have implemented closed-loop cooling tower water recycling technology in refrigeration systems, adopted clean production technologies and processes, and conducted ongoing employee awareness campaigns on energy conservation and emission reduction. These comprehensive efforts underscore our commitment to driving green and low-carbon development across all aspects of production and operations.

Resource Management

Energy Management

ZNSHINE strictly adheres to national and provincial regulations, including the Energy Conservation Law of the People's Republic of China and Jiangsu Province Energy Conservation Regulations, having established robust energy management systems such as the Energy Management System Regulations and Corporate Water & Electricity Usage Standards. This year, the Suqian production base achieved ISO 50001:2018 Energy Management System Certification, demonstrating its commitment to global energy governance standards.

The company has implemented a three-level energy management structure encompassing headquarters, plants, and workshops, with an Energy Management Leadership Group chaired by the General Manager at the strategic level, plant-level units directed by facility managers, and workshop task forces supervised by production leads alongside certified energy controllers. This vertically integrated governance framework ensures rigorous implementation of energy conservation measures across all operational layers, providing systematic guarantees for achieving standardized, high-efficiency energy management alignment.

CASE | Suqian Base energy management training

On November 11, 2024, Suqian Base organized a comprehensive corporate energy management training program for 126 employees from its manufacturing, quality assurance, and technical divisions. The training focused on three key areas: the fundamental aspects of industrial energy governance and the current priorities for optimizing operational energy. This initiative aimed to enhance both the conceptual understanding of energy stewardship frameworks and the practical skills needed for implementation, resulting in measurable outcomes.

Electricity Management

The company optimizes equipment load rates through rational scheduling to reduce unit power consumption. Production areas are prohibited from using incandescent bulbs higher than 500W, which are being phased out in favor of high-efficiency LED lighting. High-power equipment is equipped with dedicated energy meters for real-time monitoring, and unauthorized wiring or meter bypassing is strictly prohibited. Office spaces and kitchens universally adopt energy-saving lighting and commercial induction cookers to minimize energy waste.

Fuel Management

Fuel supply plans are formulated based on production schedules. Storage, custody, and procurement of refined oil require strict procedures, including weighing, documentation, and verification. Fuel requisitions must be accompanied by approved material requisition forms, with warehouse personnel verifying fuel type and quantity to ensure accountability.

Education & Training

The company provides energy management training for both energy supervisors and operators of high-consumption equipment. Managers undergo annual training covering quota management, energy statistics, and consumption analysis, while frontline staff focus on energy-efficient operation techniques and equipment protocols. New hires must complete more than 16 hours of pre-job training. Additionally, the company biannually promotes the best practices in energy conservation through diverse media, like workshops and digital platforms, enhancing workforce awareness and operational efficiency.

Water Resource Management

The company prioritizes water conservation, efficiency, and sustainable utilization in its production operations. It strictly complies with the Water Law of the People's Republic of China and the Law of the People's Republic of China on the Prevention and Control of Water Pollution. It has formulated an Internal Water Conservation Management Policy to clarify departmental responsibilities. The company implements daily supervision and maintenance of water equipment and pipelines to advance sustainable water management practices, eliminate leakage and wastage. Monthly real-time monitoring and statistical analysis of water usage are conducted to identify and rectify anomalies promptly, and all departments enforce employee education programs on water-saving practices and implement quota-based water usage plans.

Packaging Material Management

ZNSHINE focuses on achieving environmental sustainability and cost efficiency in packaging management through targeted material reduction initiatives. For instance, the Dali production base has replaced traditional cartons with reusable wooden edge protectors, enhancing durability while enabling recycling material and significantly reducing packaging costs. Additionally, the company optimized the design of box cushioning panels from a five-layer to a three-layer structure, effectively decreasing packaging material usage per product unit.

Emission Management

The company strictly complies with relevant laws and regulations, including the Atmospheric Pollution Prevention and Control Law of the People's Republic of China, the Law of the People's Republic of China on the Prevention and Control of Water Pollution, and the Regulation on the Administration of Permitting of Pollutant Discharges. It has formulated the Waste Emission and Monitoring Management Regulations, clearly defining management requirements for various emissions.

Wastewater Management

The Company strictly enforces environmental standards for wastewater management. Each base follows the drainage principle of "separate rainwater and sewage, separate clean water and sewage", with rainwater discharged directly through an independent rainwater pipe network. At the same time, domestic wastewater is treated in septic tanks and discharged into the park's sewage pipe network after reaching the standard for unified treatment by a municipal wastewater treatment plant. Third-party organizations are invited to conduct wastewater discharge testing. During the year, the total amount of wastewater discharged by the Company was 24,646 tons, and all bases achieved 100% of the standard discharge of wastewater, as follows:

Wastewater Discharge from the Company's bases in FY2024

Wastewater Discharge KPIs	Unit	Total	Jintan Base	Suqian Base	Dali Base
Wastewater Discharge	Tons	24,646	18,856	4,476	1,314

Waste Gas Management

We strictly comply with national pollutant discharge permit requirements, managing waste gases generation, treatment, and emission processes. Regular external emission testing ensures compliant discharges. All production facilities are equipped with ventilation fans and fume hood extraction systems, while equipment involving non-methane hydrocarbons (NMHC) utilizes "activated carbon adsorption-desorption + CO catalytic combustion" treatment units for exhaust gas purification. At the Suqian production base, real-time online monitoring systems are deployed to precisely track emission concentrations of key pollutants such as NMHC, ensuring transparency and traceability of emission data. During the year, the total non-methane hydrocarbon emissions from the Suqian Base were 1.668 tons. Waste gases generated from transportation during operation are mainly sulfur oxides. During the year, the Company's key performance indicators for primary emissions from the transportation of each base are as follows:

Waste Gas Emissions from the transportation of the Company's bases in FY2024

Waste Gas Emissions KPIs	Unit	Total	Jintan Base	Suqian Base	Dali Base
Emissions of SOx	g	1,906.10	736.90	977.59	191.61

Wasted Material Management

The company strictly complies with the Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste. It has established three internal management systems: Waste Management Measures, Scrap Material Disposal Procedures, and Hazardous Waste Management Regulations. These regulations standardize the collection, classification, storage, treatment, and disposal of all types of waste, including general waste, scrap materials, and hazardous waste. During the year, waste generation at each of the Company's bases was as follows:

Waste Generation from the Company's bases in FY2024

FY2024	Total Waste Generated (Ton)	Total Hazardous Waste (Ton)	Total Non-hazardous Waste (Ton)
Jintan Base	155.68	1.24	154.44
Suqian Base	143.98	2.46	141.52
Dali Base	2.08	0.78	1.30

Categorized Storage
- The company implements classified storage of waste materials, with designated collection points at each production base featuring clear identification labels. These points are regularly cleared and transported to specialized storage facilities, ensuring compliance and operational efficiency.

Safety Measures
- Waste storage areas are equipped with safeguards against sewage leakage. Firefighting equipment is placed within a 20-meter radius of waste sites to mitigate fire risks, adhering to fire safety regulations.

Regular Inspections
- The company conducts frequent checks to address issues such as scattered or overflowing waste. During rainy and typhoon seasons, inspections of storage zones are intensified, and waste removal frequency is increased to prevent environmental hazards.

Third-Party Disposal
- All waste treatment partners undergo rigorous qualification reviews and sign formal agreements. For hazardous waste, the company strictly complies with the Hazardous Waste In/Out Inventory Ledger and the Hazardous Waste Transfer Manifest systems, ensuring traceability and regulatory compliance.

Recycling and Reuse
- Recyclable waste is either processed through partnerships with certified recycling firms or repurposed internally. This approach minimizes resource waste and aligns with green production goals, leveraging circular economy principles.

Outlook

In recent years, global climate disasters have intensified, with frequent extreme weather events leading to immeasurable losses in human productivity and livelihoods. As climate risks escalate, the urgency of transitioning to clean energy has become increasingly clear, requiring a vigorous promotion of renewable energy sources. Against this backdrop, continuous innovation in the photovoltaic industry will not only drive significant momentum towards a green and low-carbon development but will also provide strong support for achieving the national carbon peaking and carbon neutrality goals.

We recognize that climate change is a global challenge requiring global solutions. As a world-renowned PV module manufacturer, EPC services supplier, and a comprehensive clean energy solutions provider with years of expertise in the green energy sector, ZNSHINE remains committed to research and innovation in green energy, striving to establish solar power as the most economical and sustainable energy form.

In 2025, the photovoltaic industry will enter a critical period of structural transformation, marking a turning point full of opportunities and challenges and a pivotal moment for reshaping the industry landscape. For ZNSHINE, this is a crucial juncture to regroup and scale new heights. With firmer resolve and more precise objectives, we will embark on a new journey toward more remarkable achievements.

In the new year, we will continue to expand domestic and international markets, optimizing our green footprint. Domestically, we will deepen collaboration with existing clients, explore new business areas, and enhance market share. Globally, we will actively develop emerging markets, strengthen communication and cooperation with international partners, and elevate our brand's global influence.

In the new year, we will keep a close eye on industry trends, understand market dynamics, and cater to customer needs. By continuously refining and optimizing our product portfolio, we will explore competitive opportunities within specialized sectors. Through technological innovation and product enhancements, we aim to provide higher-quality, more efficient, and environmentally friendly photovoltaic solutions.

In the new year, we will uphold our core values of "strengthening management as the foundation, improving quality as the prerequisite, and winning customer trust as the imperative". We remain mindful of our social responsibilities and developmental mission, striving to achieve harmonious coexistence between corporate growth, society, and the environment.

As we look ahead, we will firmly engage in global environmental governance, adopt an open and collaborative approach, and share green development philosophies and technologies to strengthen regional capabilities in tackling climate change. Together with international partners, we will harness green energy to serve as a new engine for global development, spearhead the clean energy era through innovation, and contribute to creating a brighter future. We are dedicated to leaving a clean, beautiful, and prosperous world for future generations.

Appendix 1. ESG KPIs

Governance Performance

Financial Performance

Indicator	2024	Unit
Total Assets	2.63	Billion (RMB)
Operating Revenue	1.40	Billion (RMB)
Net Assets	0.94	Billion (RMB)
Net Profit Attributable to Parent Company	-17.00	Million (RMB)
Total Tax Paid	53.82	Million (RMB)

Corporate Governance

Indicator	2024	Unit
Board of Directors Meetings Held This Year	25	Time
Supervisory Board Meetings Held This Year	6	Time
Shareholders' Meetings Held This Year	12	Time
Concluded Corruption Litigation Cases During Reporting Period	0	Case
Annual Anti-Corruption Training Hours	1	Hour
Number of Anti-Corruption Training Participants	12	Person

R&D Performance

Indicator	2024	Unit
Product R&D Investment	58	Million (RMB)
Total R&D Personnel	142	Person
Cumulative Authorized Patents	155	Item
Applied for Scientific Research Funds/Government Subsidies	3.88	Million (RMB)
Industry Standards Participated in During the Reporting Period	1	Item
Number of Collaborative Institutions	2	Institution
Number of Collaborative Projects	2	Project

Indicator	2024	Unit
Annual Technical Training Hours	137	Hour
Number of Technical Training Participants	50	Person

Supplier Management

Indicator	2024	Unit
Total Suppliers	93	Unit
North China Suppliers	1	Unit
East China Suppliers	70	Unit
South China Suppliers	5	Unit
Central China Suppliers	8	Unit
Northwest China Suppliers	2	Unit
Southwest China Suppliers	7	Unit
ISO 14001 Certified Suppliers	37	Unit
ISO 14001 Certification Rate	39.78	%
ISO 45001 Certified Suppliers	28	Unit
ISO 45001 Certification Rate	30.11	%
Suppliers Signed Anti-Bribery/Corruption Agreements	93	Unit
Anti-Bribery/Corruption Agreement Signing Rate	100	%

Social Performance

Employee Hiring

Indicator		2024	Unit
Total	Total Employees	616	Person
	Disabled Employees	\	Person
Gender	Male Employees	383	Person
	Female Employees	233	Person
	Female Managers	18	Person
Age Group	Employees under 30 years old	68	Person

	Indicator	2024	Unit
Age Group	Employees between 30 and 50 years old	448	Person
	Employees over 50 years old	100	Person
Regional	Jiangsu Province Employees	575	Person
	Yunnan Province Employees	20	Person
	Other Regions Employees	21	Person
Education Level	Master's Degree or Higher	18	Person
	Bachelor's Degree	128	Person
	Below Bachelor's Degree	470	Person
Employment Type	Full-time Employees	616	Person
	Part-time Employees	\	Person
	Top-level Management	21	Person
	Middle-level Management	47	Person
	Grassroots Staff	548	Person
Board	Board Members	5	Person
	Female Board Members	3	Person

Employee Turnover

	Indicator	2024	Unit
Total	Annual Cumulative Turnover	177	Person
	Overall Turnover Rate	22.32	%
Gender	Male Employee Turnover	111	Person
	Male Turnover Rate	22.47	%
	Female Employee Turnover	66	Person
	Female Turnover Rate	22.07	%
Age Group	Under 30 Turnover	37	Person
	Under 30 Turnover Rate	35.24	%
	30-50 Turnover	110	Person
	30-50 Turnover Rate	19.71	%
	Over 50 Turnover	30	Person
	Over 50 Turnover Rate	23.08	%

	Indicator	2024	Unit
Location	Jiangsu Turnover	170	Person
	Jiangsu Turnover Rate	22.82	%
	Yunnan Turnover	5	Person
	Yunnan Turnover Rate	20.00	%
	Other Regions Turnover	2	Person
	Other Regions Turnover Rate	8.70	%

Employee Health & Safety

Indicator	2024	Unit
Recordable Workplace Injuries	3	Person
Lost Workdays Due to Injuries	12	Day
Work-related Deaths	0	Person
Work-related Mortality Rate	0	%
Workplace Safety Incidents	2	Case
Safety Hazard Rectification Rate	100	%
Safety Investment	0.50	Million (RMB)
Annual Safety Training Hours	18,228	Hour
Safety Training Participants	616	Person

Employee Training

	Indicator	2024	Unit
Training Participation Rate		100	%
Total Training Hours		14,746	Hour
Average Training Hours per Employee		23.94	Hour/Person
Senior Management	Training Participation Rate	3.41	%
	Average Training Hours	0.10	Hour/Person
Middle Management	Training Participation Rate	7.63	%
	Average Training Hours	20.38	Hour/Person
Junior Staff	Training Participation Rate	88.96	%

Indicator		2024	Unit
Male Employees	Average Training Hours	25.16	Hour/Person
	Training Participation Rate	62.50	%
	Average Training Hours	24.00	Hour/Person
Female Employees	Training Participation Rate	37.50	%
	Average Training Hours	23.84	Hour/Person

Employee Satisfaction

Indicator	2024	Unit
Employee Satisfaction Rate	94.33	%
Employee Feedback Received	3	Case
Employee Feedback Resolved	3	Case

Quality Service

Indicator	2024	Unit
Number of customer complaints	12	Case
Customer complaint resolution rate	100	%
Product delivery satisfaction rate	99.44	%
After-sales service satisfaction rate	98.77	%
Percentage of products recalled for health/safety reasons	0	%
Number of quality training sessions	695	Time
Annual total hours of quality training	348	Hour
Number of employees receiving quality training	472	Person

Information Security

Indicator	2024	Unit
Number of information security training sessions	2	Time
Annual total hours of information security training	2	Hour
Number of Information Security Trainees	33	Person
Number of Information Security Breach Incidents	0	Case

Social Welfare

Indicator	2024	Unit
Total Public Welfare Investment	0.31	Million (RMB)
Employee Welfare Investment	0.28	Million (RMB)
Welfare Beneficiaries	1,500	Person-time

Environmental Performance

Environmental Management

Indicator	2024	Unit
Environmental Emergency Drill Frequency	3	Time
Environmental Protection Investment	0.49	Million (RMB)
Annual Environmental Training Hours	124	Hour
Employee Coverage Rate of Environmental Training	90	%

Resource Consumption

Indicator	2024	Unit
Total Energy Consumption	42,275.21	MWh
Direct Energy Consumption	9,031.29	MWh
Indirect Energy Consumption	33,243.91	MWh
Energy Intensity	4.23	MWh/MW
Gasoline Consumption	43,189.53	Liter
Diesel Consumption	78,957.81	Liter
LPG Consumption	0.28	Ton
Total Electricity Consumption	41,061.95	MWh
Purchased Electricity	33,243.91	MWh
Self-consumed PV Electricity	7,818.03	MWh
Total Water Consumption	144,865	Ton
Water Intensity	14.49	Ton/MW
Total Packaging Material Usage	9,774	Ton

Indicator	2024	Unit
Paper Packaging	1,583	Ton
Wood Packaging	8,191	Ton

Emissions Management

Indicator	2024	Unit
Total GHG Emissions	18,826.63	tCO$_2$e
Scope 1 Emissions	310.30	tCO$_2$e
Scope 2 Emissions	18,516.32	tCO$_2$e
GHG Emission Intensity	1.880	tCO$_2$e/MW
Wastewater Discharge	24,646	Ton
Ammonia Nitrogen Emissions	0.337	Ton
Total Nitrogen Emissions	0.240	Ton
Total Phosphorus Emissions	0.101	Ton
COD Emissions	8.713	Ton
Waste Gas Emissions from Transportation	1,906.10	g

Waste Management

Indicator	2024	Unit
Total Waste Generated	301.74	Ton
Total Hazardous Waste	4.48	Ton
Total Non-hazardous Waste	297.26	Ton
Waste Generation Intensity	30.18	Ton/GW
Hazardous Waste Intensity	0.45	Ton/GW
Non-hazardous Waste Intensity	29.73	Ton/GW

Appendix 2. Content Index

HKEX ESG Guide Content

Subject Areas, Aspects, General Disclosures and KPIs		Disclosure of Sections
	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air emissions, discharges into water and land, and generation of hazardous and non-hazardous waste. Note: Air emissions include NOx, SOx, and other pollutants regulated under national laws and regulations. Hazardous wastes are those defined by national regulations.	4.1 Responding to Climate Change 4.2 Enhancing Environmental Management 4.3 Implementing Sustainable Operations
Aspect A1: Emissions	KPI A1.1 The types of emissions and respective emissions data.	Appendix 1. ESG KPIs
	KPI A1.2 Direct (Area 1) and energy indirect (Area 2) total GHG emissions (in tonnes) and, where applicable, density (e.g. per unit of production, per facility).	Appendix 1. ESG KPIs
	KPI A1.3 Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	Appendix 1. ESG KPIs
	KPI A1.4 Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	Appendix 1. ESG KPIs
	KPI A1.5 Description of emission target (s) set and steps taken to achieve them.	4.2 Enhancing Environmental Management
	KPI A1.6 Description of how hazardous and non-hazardous wastes are handled, and a description of reduction target (s) set and steps taken to achieve them.	4.3 Implementing Sustainable Operations
Aspect A2: Use of Resources	General Disclosure Policies on the efficient use of resources, including energy, water and other raw materials. Note: Resources may be used in production, in storage, transportation, in buildings, electronic equipment, etc.	4.3 Implementing Sustainable Operations
	KPI A2.1 Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility).	Appendix 1. ESG KPIs
	KPI A2.2 Water consumption in total and intensity (e.g. per unit of production volume, per facility).	Appendix 1. ESG KPIs

Subject Areas, Aspects, General Disclosures and KPIs		Disclosure of Sections
Aspect A2: Use of Resources	KPI A2.3 — Description of energy use efficiency target (s) set and steps taken to achieve them.	4.2 Enhancing Environmental Management 4.3 Implementing Sustainable Operations
	KPI A2.4 — Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target (s) set and steps taken to achieve them.	4.3 Implementing Sustainable Operations
	KPI A2.5 — Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	4.3 Implementing Sustainable Operations
Aspect A3: The Environment and Natural Resources	General Disclosure — Policies on minimising the issuer's significant impacts on the environment and natural resources.	4.2 Enhancing Environmental Management
	KPI A3.1 — 4.4 Commit Green Operation	4.2 Enhancing Environmental Management
Aspect A4: Climate Change	General Disclosure — Policy for identifying and responding to significant climate-related issues that are already likely to have an impact on the issuer.	4.1 Responding to Climate Change
	KPI A4.1 — have had and may have an impact on the issuer, and actions to address them	4.1 Responding to Climate Change
B. Social Aspect B1: Employment	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	3.1 Attracting and Cultivating Talents
	KPI B1.1 — Total workforce by gender, employment type (for example, full- or part- time), age group and geographical region.	Appendix 1. ESG KPIs
	KPI B1.2 — Employee turnover rate by gender, age group and geographical region.	Appendix 1. ESG KPIs
Aspect B2: Health and Safety	General Disclosure Information on: relating to providing a safe working environment and protecting employees from occupational hazards. (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	3.2 Ensuring Employee Health
	KPI B2.1 — Number and rate of work-related fatalities occurred in each of the past three years including the reporting year.	Appendix 1. ESG KPIs
	KPI B2.2 — Lost days due to work injury.	Appendix 1. ESG KPIs
	KPI B2.3 — Description of occupational health and safety measures adopted, and how they are implemented and monitored.	3.2 Ensuring Employee Health

Subject Areas, Aspects, General Disclosures and KPIs		Disclosure of Sections
Aspect B3: Development and Training	General Disclosure Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities. Note: Training refers to vocational training. It may include internal and external courses paid by the employer.	3.1 Attracting and Cultivating Talents
Aspect B3: Development and Training	KPI B3.1 — The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	Appendix 1. ESG KPIs
	KPI B3.2 — The average training hours completed per employee by gender and employee category.	Appendix 1. ESG KPIs
Aspect B4: Labour Standards	General Disclosure Information on: (a) the policies; and (b compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour.	2.4 Following Responsible Procurement 3.1 Attracting and Cultivating Talents
	KPI B4.1 — Description of measures to review employment practices to avoid child and forced labour.	3.1 Attracting and Cultivating Talents
	KPI B4.2 — Description of steps taken to eliminate such practices when discovered.	2.4 Following Responsible Procurement
Aspect B5: Supply Chain Management	General Disclosure Policies on managing environmental and social risks of the supply chain.	2.4 Following Responsible Procurement
	KPI B5.1 — Number of suppliers by geographical region.	Appendix 1. ESG KPIs
	KPI B5.2 — Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, and how they are implemented and monitored.	2.4 Following Responsible Procurement
	KPI B5.3 — Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored.	2.4 Following Responsible Procurement
	KPI B5.4 — Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	2.4 Following Responsible Procurement
Aspect B6: Product Responsibility	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	1.4 Safeguarding Information Security 2.1 Forging Exceptional Standards 2.3 Safeguarding Customer Value

Subject Areas, Aspects, General Disclosures and KPIs		Disclosure of Sections
Aspect B6: Product Responsibility	KPI B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	Appendix 1. ESG KPIs – Social Performance
	KPI B6.2	Number of products and service related complaints received and how they are dealt with.	2.3 Safeguarding Customer Value Appendix 1. ESG KPIs – Social Performance
	KPI B6.3	Description of practices relating to observing and protecting intellectual property rights.	2.2 Innovation-Driven Development
	KPI B6.4	Description of quality assurance process and recall procedures.	2.1 Forging Exceptional Standards
	KPI B6.5	Description of consumer data protection and privacy policies, and how they are implemented and monitored.	1.4 Safeguarding Information Security 2.3 Safeguarding Customer Value
Aspect B7: Anti-corruption	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.		1.3 Practicing Business Ethics
	KPI B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.	1.3 Practicing Business Ethics
	KPI B7.2	Description of preventive measures and whistle-blowing procedures, and how they are implemented and monitored.	1.3 Practicing Business Ethics
	KPI B7.3	Description of anti-corruption training provided to directors and staff.	1.3 Practicing Business Ethics
Aspect B8: Community Investment	General Disclosure Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests.		3.4 Creating a Harmonious Society Jointly
Aspect B8: Community Investment	KPI B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	3.4 Creating a Harmonious Society Jointly
	KPI B8.2	Resources contributed (e.g. money or time) to the focus area.	3.4 Creating a Harmonious Society Jointly Appendix 1. ESG KPIs

GRI Index

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About the Report		GRI 2-2/2-3
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Message from the Director		GRI 2-22
About ZHSHINE		GRI 2-1
Industrial Layout		GRI 2-6
ESG Governance	ESG governance framework	GRI 2-12/2-13/2-14/2-16
	ESG Materiality Analysis	GRI 3-3
	Communication with Stakeholders	GRI 2-29
1. Anchoring in Governance, Advancing through Determined Action	1.1 Improving Corporation Governance	GRI 2-9/2-10/2-11/207-1
	1.2 Strengthen Risk Management and Control	GRI 2-27/403-2
	1.3 Practicing Business Ethics	GRI 2-24/205-1/205-2
	1.4 Safeguarding Information Security	/
2. Prioritizing Quality Standards, Innovating with Ethical Foundations	2.1 Forging Exceptional Standards	GRI 416-1/417-1/418-1
	2.2 Innovation-Driven Development	/
	2.3 Safeguarding Customer Value	GRI 2-29/416-1/416-2/417-1
	2.4 Following Responsible Procurement	GRI 2-6/204-1/205-2/308-1
3. Centering Human Dignity, Flourishing through Value Symbiosis	3.1 Attracting and Cultivating Talents	GRI 2-7/2-19/2-23/2-26/401-2/404-2/406-1/407-1/408-1/409-1
	3.2 Ensuring Employee Health	GRI 2-7/401-2/403-1/403-2/403-3/403-4/403-5/403-6/403-7/403-8/403-10
	3.3 Facilitating Industry Progress	GRI 2-8
	3.4 Creating a Harmonious Society Jointly	GRI203-1/413-1
4. Originating Green Ecology, Collaborating Globally with Integrity	4.1 Responding to Climate Change	GRI 201-2
	4.2 Enhancing Environmental Management	GRI 306-2/404-2
	4.3 Implementing Sustainable Operations	GRI 3-3/301-1/301-2/301-3/302-1/302-3/302-4/302-5/303-3/303-4/303-5/ GRI306-2/306-4/306-5
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Appendix 3. Independent Assurance Statement		GRI 2-5

Appendix 3. Independent Assurance Statement

Independent Assurance Statement

BCC.Inc (hereinafter referred to as BCC) has conducted a Type 1 moderate assurance review of the sustainable development information disclosed in the "2024 Environmental, Social and Governance (ESG) Report (Chinese Edition)" (hereinafter referred to as the Report) of ZNSHINE PV-TECH CO., LTD. (hereinafter referred to as "ZNSHINE" or the "Company.).

Statement No.: BCCESG20250001

Assurance Standards and Guidelines

- AA1000 Assurance Standard
- AA1000 Stakeholder Engagement Standard
- Appendix C2 Environmental, Social and Governance Reporting Code of the Listing Rules of the HKEX

Scope and Content of Assurance

Organization and Business Scope:

ZNSHINE PV-TECH CO., LTD., No. 229 Tongda Avenue, Suqian Economic and Technological Development Zone, Jiangsu Province
Corporate management, as well as its production and sales of photovoltaic modules and equipment

Data and Information Scope:

Data and information of the company in aspects such as environmental performance, social management, governance structure, sustainable development goals, stakeholder engagement, and risk management, etc.

Sources of Disclosed Information

"2024 Environmental, Social and Governance (ESG) Report (Chinese Edition)" of ZNSHINE PV-TECH CO., LTD.

Assurance Methodology

Preliminary research and document review on relevant information priori to the assurance review.
On-site inspection of all supporting documents, data, and other information provided by the reporting organization, and sampling of key contents.
Exclusive interviews with management representatives and sample interviews with employees related to the collection, organization, and reporting of the disclosed information.

Assurance Opinion

The Report prepared by ZNSHINE PV-TECH CO., LTD. objectively reflects its situation and achievements in environmental, social, and governance aspects for the year 2024. Upon review, the data and contents in the report are found to be objective and reliable, with no systematic or material errors identified by BCC.

- Inclusiveness: ZNSHINE PV-TECH CO., LTD. regularly identifies and engages with stakeholders, incorporates the concerns of key stakeholders into important considerations for the company's sustainable development, and the report meets the requirements of inclusiveness. BCC has not found any deviation of the report from the inclusiveness principle of the AA1000 Assurance Standard.
- Materiality: The report addresses various issues and boundaries across ZNSHINE's different businesses, meeting the materiality requirements. BCC did not find any non-compliance with respect to the requirements of the AA1000 Assurance Standard.
- Responsiveness: ZNSHINE's responses to major issues are defined and reflected in the report, which meets the responsiveness requirements of the AA1000 Assurance Standard.

- Impact: The reporting organization has clear procedures to regularly monitor and measure the impact of sustainability efforts, and possess professionals to effectively drive the sustainability agenda. BCC has not identify any situations or issues that have a negative impact on the ecosystems, infrastructure, and residential communities around the entities subordinate to the reporting organization. The reporting organization meets the impact requirements of the AA1000 Assurance Standard.
- Recommendations:
  1.Entrust a third-party institution to verify its greenhouse gas emission data;
  2.Strengthen training on complaint-related channels and knowledge to enhance employees' awareness of complaint mechanisms;
  3.Further reduce energy consumption through cost-saving and efficiency-enhancing measures, as well as improving yield rates, and disclose such efforts in the report.

Limitations and Mitigation Measures

Limitations
BCC has solely confirmed, through interviews and the examination of factual evidence, that each sustainability performance indicator has a clear data source. However, BCC has not conducted verification on such data disclosed in the report.
BCC is unable to issue assurance opinions on claims described in the report, such as opinions, beliefs, inferences, aspirations, expectations, or future intentions. Nevertheless, BCC has conducted assurance and issued assurance opinions on the quantitative and non-quantitative factual evidence and data sources that support the aforementioned viewpoints.

Mitigation Measures
In future assurance work, BCC will, based on the principle of continuous improvement, pay further attention to the improvement and enhancement of the sustainability information disclosure and management practices of the reporting organization.

Statement of Competence and Independence

Established in 1994, BCC Inc. is one of the first independent third-party certification bodies in China, holding accreditation from institutions such as CNAS, UKAS, ANAB, SAAS and others. BCC has accumulated over 30 years of professional experience and practical case studies in the fields of management system certification, product certification, service certification, and sustainable development.
Apart from carrying out this third-party assurance services for ZNSHINE, none of the members of the BCC assurance team have any business or other conflicting interests with ZNSHINE, its directors, senior executives, or department managers. Following BCC's internal impartiality evaluation, we affirm that there are no conflicts of interest present in this assurance.

Responsibilities

The information and contents in the "2024 Environmental, Social and Governance (ESG) Report (Chinese Edition)" of ZNSHINE PV-TECH CO., LTD. are the responsibility of its Board of Directors and ESG Management Committee.
This assurance does not involve non-ESG-related information, subjective judgments or predictive data, non-publicly disclosed information, specific requirements beyond the assurance standards, as well as non-quantitative or difficult-to-verify information, and information and data obtained by the company through third-party institutions, including financial data audited by a third party.

Issued by
BCC.Inc
April 30, 2025

Questionnaire for Feedback

Dear readers,

Thank you for reading the "ZNSHINE PV-TECH CO., LTD 2024 Environmental, Social and Governance (ESG) Report". In order to strengthen the communication and exchange with stakeholders, and further improve the company's ability to fulfill its social responsibility and level of performance, we expect you to fill out the feedback form to provide us with valuable comments and suggestions, and choose any of the following ways to feedback comments to us.

Address: No. 229, Tongda Avenue, Suqian Economic and Technological Development Zone, Suqian City, Jiangsu.
Phone: +86 519 6822 0233
Email: info@znshinesolar.com

1.Which of the following stakeholders do you belong to:

☐ Government ☐ Regulators ☐ Shareholders ☐ Customers ☐ Employees

☐ Suppliers ☐ Partners ☐ Community ☐ Media ☐ Others

2.Your location:

☐ Mainland China

☐ Hong Kong, Macau and Taiwan, China

☐ Overseas

3.Your overall assessment of the report:

☐ Poor ☐ Normal ☐ Good ☐ Very good

4.Your evaluation of ZNSHINE's practices of environmental protection:

☐ Poor ☐ Normal ☐ Good ☐ Very good

5.Your evaluation of ZNSHINE's practices of social responsibility:

☐ Poor ☐ Normal ☐ Good ☐ Very good

6.Your evaluation of ZNSHINE's practices of corporate governance:

☐ Poor ☐ Normal ☐ Good ☐ Very good

7.Whether you believe the information disclosed in this report is accurate:

☐ No ☐ General ☐ Yes

8.Do you think the information disclosed in this report to be complete:

☐ No ☐ General ☐ Yes

9.Do you think the content and layout of this report are clear and easy to understand:

☐ No ☐ General ☐ Yes

10.Do you think this report meets your reading needs:

☐ No ☐ General ☐ Yes

11. Your other comments and suggestions for improving and enhancing ZNSHINE's practice of ESG development philosophy and this report:

_____

_____

_____

Thank you for your attention and support to ZNSHINE!！

正信光电
ZNSHINESOLAR

https://cn.znshinesolar.com