

**TCL** 中环

2023

# 2023 Sustainability Report

▶ TCL Zhonghuan Renewable Energy Technology Co., Ltd

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## Management's Statement

### Stepping firmly towards globalization and high-quality development, becoming a respected global renewable energy technology enterprise

2023 has been a year when the global energy industry continues to be transformed into diversified, cleaner and low carbon. Under the global changes and industry trends, TZE always adheres to the business philosophy of "technological innovation, differentiation, and long-distance running" competition, ploughs into the high-tech, asset-heavy, and long-cycle national strategic technology industries, forges long-term competitiveness with a global vision, strives to cross the industry life cycle, and promotes the industry chain's sustainable and high-quality development.

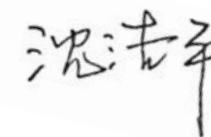
We adhere to the concept of sustainable development, formulate the "SMART" sustainable development strategy to the vision of "becoming a respected global renewable energy technology enterprise", fully integrate ESG concepts into the Company's strategic planning, decision-making and implementation process, promote the construction of global ESG leading benchmarks, and build sustainable competitiveness in line with the globalized business model.

The Company firmly implements the differentiated development strategy and adheres to the concept of intensive, integrated, collaborative and coordinated innovation. We accelerate the transformation of Industry 4.0 manufacturing mode and comprehensively improve the flexible manufacturing management capability and operational productivity with the help of the digital twin's big data intelligent analysis system. We give full play to the advantages of technological innovation in integrating G12 and shingled modules, and form new quality productivity by virtue of the industrialization and application of advanced technology and advanced manufacturing mode, releasing new kinetic energy for development and boosting the high-quality development of the industry.

We pledge to always be environmentally friendly. In the face of the major challenges of global climate change, as a changemaker and leader in the photovoltaic (PV) industry, we adhere to the dual-track drive of "green manufacturing" and "manufacturing green", chase the "carbon peaking and carbon neutrality" strategic goal, continue to create whole-life-cycle green and low-carbon PV products, and actively build a stronger and greener supply chain to help the value chain ecosystem to be carbon-neutral.

We adhere to the cultural core of "people-oriented", actively create an atmosphere of "engineer culture", and build an international organization of teamwork. While pursuing technological excellence and commercial success, we are committed to bringing people back to human values, fully protecting the rights and interests of employees, ensuring that every employee is fully respected and has the opportunity for development, and enhancing the sense of acquisition, happiness and fulfillment of employees.

Looking into the future, TZE will promote the sustainable development strategy with stronger determination, shoulder the responsibility given by the clean energy era, and continuously transform to More Efficiency (higher conversion efficiency), More Efficiency (higher manufacturing efficiency), More Smart (Industry 4.0 customized production line and flexible manufacturing), promote the high-quality, sustainable and revolutionary development of the global green energy industry, and contribute power of PV to the global clean energy transformation.



TCL Zhonghuan Renewable Energy Technology Co., Ltd

General Manager

## Board Statement



The Board of Directors of the Company is committed to continuously improving the environmental, social and governance ("ESG") management system, promoting the balanced development of economy, society and environment, and creating a sustainable and bright future. The Board of Directors is the highest leading, responsible and decision-making body for the Company's ESG and sustainable development affairs, and is fully responsible for the Company's sustainable development strategy and ESG-related disclosures. It has established the Strategy and Sustainable Development Committee, which is mainly responsible for studying and making recommendations on the Company's long-term development strategy, major investment decisions, sustainable development practices and ESG-related matters. Under the Strategy and Sustainable Development Committee, the Sustainable Development Steering Committee has been established as a standing body responsible for the implementation of ESG-related resolutions and ESG risk identification of the Company, the formulation of ESG strategies, objectives and plans, and the supervision of their implementation.

During the Reporting Period, the Board of Directors participated in, evaluated and determined the materiality and priority of ESG issues. Through participation in interviews and questionnaires, meetings, etc., the Board of Directors put forward keys and recommendations on ESG issues that may affect the Company's financial and business development, as well as environmental and social benefits. For details, please refer to the section "Sustainability Governance - Stakeholder Communication" in this report.

The Company has incorporated key ESG risks into enterprise risk management system, and has formulated risk response strategies by identifying and judging the likelihood of occurrence, the degree of impact and the future development trend of key ESG risks. The Audit Committee under the Board of Directors is responsible for overseeing the Company's compliance review, reviewing the Company's risk assessment reports and ensuring that risk management measures are effectively implemented.

During the Reporting Period, the Board of Directors considered and adopted clear and quantifiable ESG strategic objectives, paying close attention to a number of sustainable development topics such as climate change, resource efficiency, employee well-being, sustainable supply chain and corporate governance. The Board of Directors held regular meetings to comprehensively review and assess the progress of the Company's achievement of ESG targets, and thoroughly analyze the room for improvement and potential risks of each indicator, so as to ensure that the Company continuously optimizes its ESG performance while pursuing economic benefits.

We advocate transparent and open ESG disclosure and disclose to the public the Company's environmental, social and governance policies, actions, performance and impacts in a timely, accurate and complete manner in strict accordance with relevant domestic and international regulations and international disclosure frameworks. This report was approved by the Board of Directors on April 25, 2024.



# About TZE

## Company Profile

Founded in 1958, TZE is one of the world's leading manufacturers of PV wafers and a technology leader in the global PV materials industry. The Company adheres to the green ecological concept of dedicating to a world where everyone lives under blue skies and white clouds, and always been adhering to the vision of " Environmental friendliness, Employee support, Social respect and Customer trust". Also, we are committed to promoting innovation-led development and the in-depth integration of Industry 4.0 and intelligent manufacturing. Through industrialization of the advanced technologies and manufacturing methods, we aim to propel the technological upgrades of the PV industry and contribute to high quality, sustainable and revolutionary development.

## Corporate Vision



**Environmental friendliness**



**Employee support**



**Social respect**



**Customer trust**

## Main Business

The Company's main business centers around silicon materials, focusing on the R&D and production of monocrystalline silicon. Starting from monocrystalline silicon, the Company ploughs into the high-tech, asset-heavy, long-cycle national strategic science and technology industry, and develops in the direction of deepening and extending.

Our main products include new energy photovoltaic wafers, photovoltaic cells and modules, other silicon materials and high-efficiency photovoltaic power plant project development and operation. The application areas of the products include integrated circuits, consumer electronics, grid transmission, wind power generation, rail transportation, new energy automobiles, 5G, artificial intelligence, photovoltaic power generation, industrial control and other industries.

TZE is actively promoting the globalization of its various industrial segments, and has set up investment platforms, marketing centers, and production bases at home and abroad, gradually expanding its presence in the United States, Singapore, Malaysia, the Philippines and Mexico.

## Contributing to the Global Net-Zero Transition

As a global leading photovoltaic material and technology solution provider, we produce high-performance silicon wafers, cells and modules, which effectively improve photovoltaic conversion efficiency, reduce the cost of electricity and help popularize the application of clean energy around the world through continuous innovation and technology iteration.

In 2023, shipments of PV materials was approximately **114** GW, up to **68%** year-on-year

Overall market share of silicon wafers was **23.4%**, among which N-type was **36.4%**, remaining the No. 1 in the industry globally

Total renewable electricity generation from self-sustained distributed and centralized power plants **1,073,327.44** MWh



# Sustainability Achievements and Honors

## Economic Performance



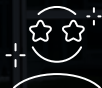
Revenues: **59.15 billion**



Net profit attributable to equity shareholders of the company: **3.42 billion**



Earnings per share: **0.8518 Yuan/share**



Total assets: **125.06 billion**



R&D/Sales Ratio: **4.82%**

## Environmental Performance

- Annual electricity intensity of renewable energy PV products: **32.43 MWh/MW**
- Annual fresh water withdrawal intensity of renewable energy PV products: **57.69 m<sup>3</sup>/MW**
- The number of energy and water conservation projects: **57**
- Percentage of water use from alternative water sources: **54.51%**
- Water recycling rate: **43.68%**
- Zero Waste factories: **7**
- Solid waste utilization rate: **97.14%**
- Environmental protection investment: **333.84 million CNY**
- No major environmental violations



## Social Performance

- Percentage of female director: 56%
- Total staff training hours: 725,066.14 hours
- Employee Engagement Score: 78
- Employee Satisfaction Score: 79
- Percentage of new suppliers completing environmental and social audits: 100%
- Rate of desktop and on-site audits for key high-risk suppliers: 100%





### Company ESG Ratings

Wind's ESG rating of **"A"**

Selected by Shenzhen Stock Exchange as **"Shenzhen Green Low Carbon Index"**

S&P Global CSA rating of **"50"**, leading the global PV industry

MSCI ESG rating of **"BB"**, in the upper middle of the global PV industry

**"B-"** in CDP Climate Change (the Company's first self-response to the CDP questionnaire)



### Company ESG Awards

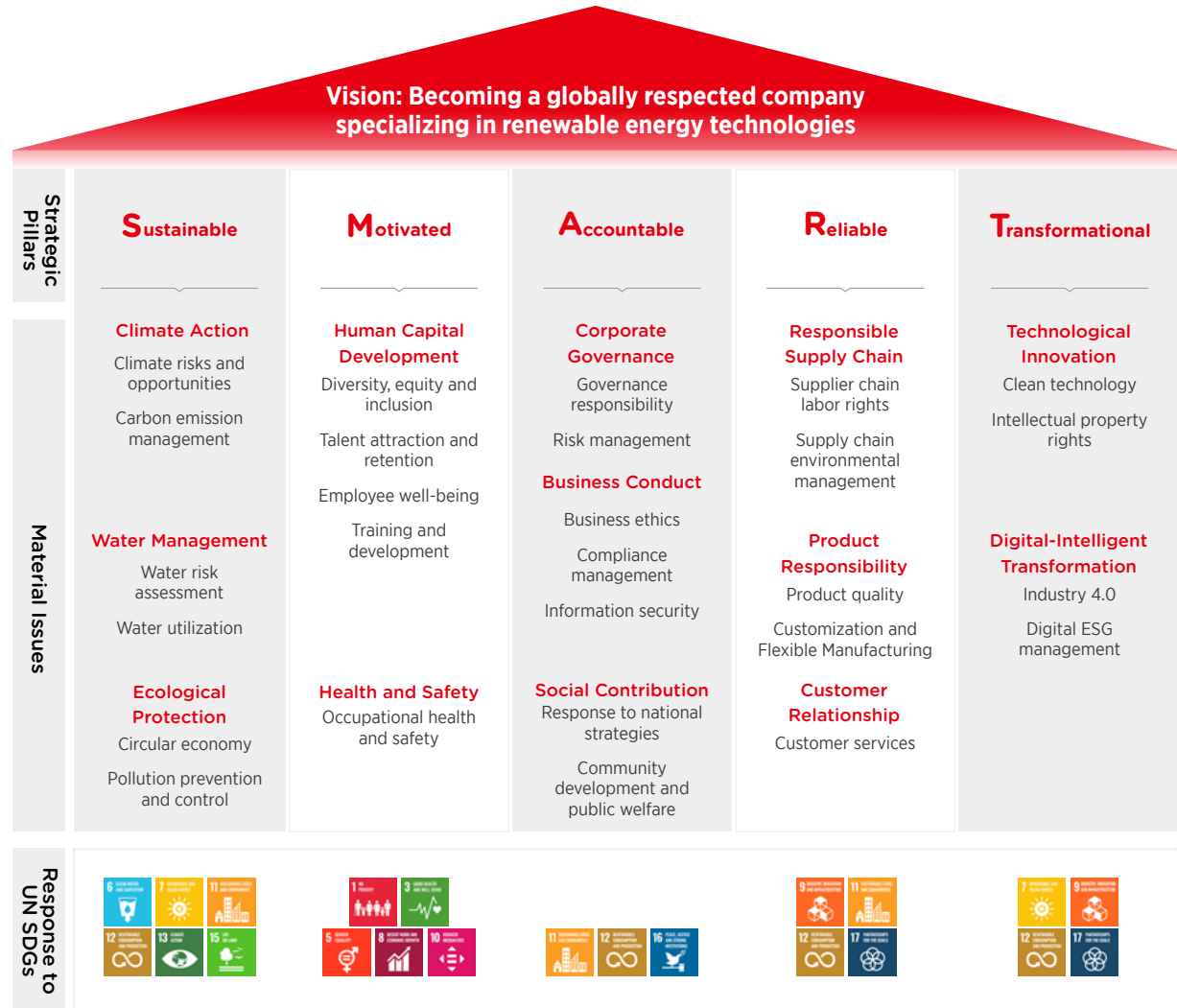
<ul style="list-style-type: none"> <li>2023 China's Best Employer in Innovative Practices</li> </ul>	Forbes China	<ul style="list-style-type: none"> <li>Leading ESG Enterprises in the PV Industry</li> </ul>	Solarbe Awards
<ul style="list-style-type: none"> <li>Best Carbon Neutral Practitioner Within Solar &amp; Energy Storage Industry</li> </ul>	TÜV SÜD	<ul style="list-style-type: none"> <li>Top 100 Pioneers among China's ESG Listed Companies</li> </ul>	CCTV Finance
<ul style="list-style-type: none"> <li>2023 ESG Inspiration Case of the Year</li> </ul>	Forbes China	<ul style="list-style-type: none"> <li>Top 30 Scientific and Technological Innovation Pioneers among China's ESG-Listed Companies</li> </ul>	CCTV Finance
<ul style="list-style-type: none"> <li>2023 Best ESG Practice Case for Public Companies</li> </ul>	China Association for Public Companies	<ul style="list-style-type: none"> <li>Best ESG Information Disclosure Award</li> </ul>	New Fortune

# Sustainable Development Strategy

## Sustainable Development Strategy

Sustainable development plays a core role in TZE's business operation and corporate culture development. We outline a strategic vision of sustainability with renewable energy technology products as our core business.

We have developed the SMART Sustainable Development Strategy with the vision of "becoming a globally respected company specializing in renewable energy technologies". Based on the five strategic pillars of "Sustainable, Motivated, Accountable, Reliable and Transformational", we review and mitigate our economic, environmental and social impacts, optimize our sustainability governance, and seek to integrate sustainability into our business operations.
















## Sustainable Development Medium- and Long-term Goals

In 2023, TZE developed scientific sustainable development goals by 2025 and 2030 by taking into account the stakeholder research results and the Company's medium-and long-term plans in corporate operation and development. In addition to economic performance, these targets place a greater emphasis on developing in an environmental-friendly and socially accountable manner. We will adopt diversified strategies and effective measures to fulfil these targets, so as to achieve the overall sustainable development of the Company.

Vision: Becoming a globally respected company specializing in renewable energy technologies

Strategic Pillars	Sustainable		<b>2025 Goals</b> <ul style="list-style-type: none"> <li>Annual electricity intensity of new energy photovoltaic products decreased by 8% compared to 2023</li> <li>Annual fresh water withdrawal intensity of new energy photovoltaic products decreased by 10% compared with 2023</li> </ul>	<b>2030 Goals</b> <ul style="list-style-type: none"> <li>Annual electricity intensity of new energy photovoltaic products decreased by 15% compared to 2023</li> <li>Annual fresh water intake intensity of new energy photovoltaic products decreased by 20% compared to 2023</li> </ul>	
	Motivated		<b>2025 Goals</b> <ul style="list-style-type: none"> <li>No less than 28% women in management positions</li> <li>Injury rate per million working hours reduced by 5% from 2023</li> </ul>	<b>2030 Goals</b> <ul style="list-style-type: none"> <li>No less than 30% women in management positions</li> <li>Injury rate per million working hours reduced by 8% from 2023</li> </ul>	
	Accountable		<b>2025 Goals</b> <ul style="list-style-type: none"> <li>Maintained 100% coverage of employee business ethics training</li> <li>All company entities have obtained ISO 27001 information security management system certification</li> </ul>	<b>2030 Goals</b> <ul style="list-style-type: none"> <li>Ensure that all entities' compliance management system certifications are within the validity period</li> <li>Maintain 100% coverage of employee business ethics training</li> </ul>	
	Reliable		<b>2025 Goals</b> <ul style="list-style-type: none"> <li>60% on-site audit coverage and 40% desktop audit coverage for key high-risk suppliers</li> <li>Domestic customer satisfaction maintained at over 95%</li> </ul>	<b>2030 Goals</b> <ul style="list-style-type: none"> <li>The system fully complies with ISO 20400 sustainable procurement standard</li> <li>Global customer satisfaction rate maintained at over 95%</li> </ul>	
	Transformational		<b>2025 Goals</b> <ul style="list-style-type: none"> <li>Intellectual property patent cumulative growth of 40% from 2023</li> </ul>	<b>2030 Goals</b> <ul style="list-style-type: none"> <li>Built a Group-wide ESG Digital Intelligence Management Platform</li> </ul>	



**The following corporate policies provide the framework for TZE's sustainability strategy and objectives:**

- TZE Sustainability Policy
- Environmental**
- TZE Environmental Management Policy
- TZE Biodiversity Conservation Policy
- Social**
- TZE Human Rights Policy
- TZE Occupational Health and Safety Policy
- TZE ESG Code of Conduct for Partners
- TZE Conflict Minerals Policy
- Governance**
- TZE Code of Business Ethics
- TZE Articles of Association

Get the Policy  
<https://www.tzeco.com/esg/policy/>

# Sustainability Governance

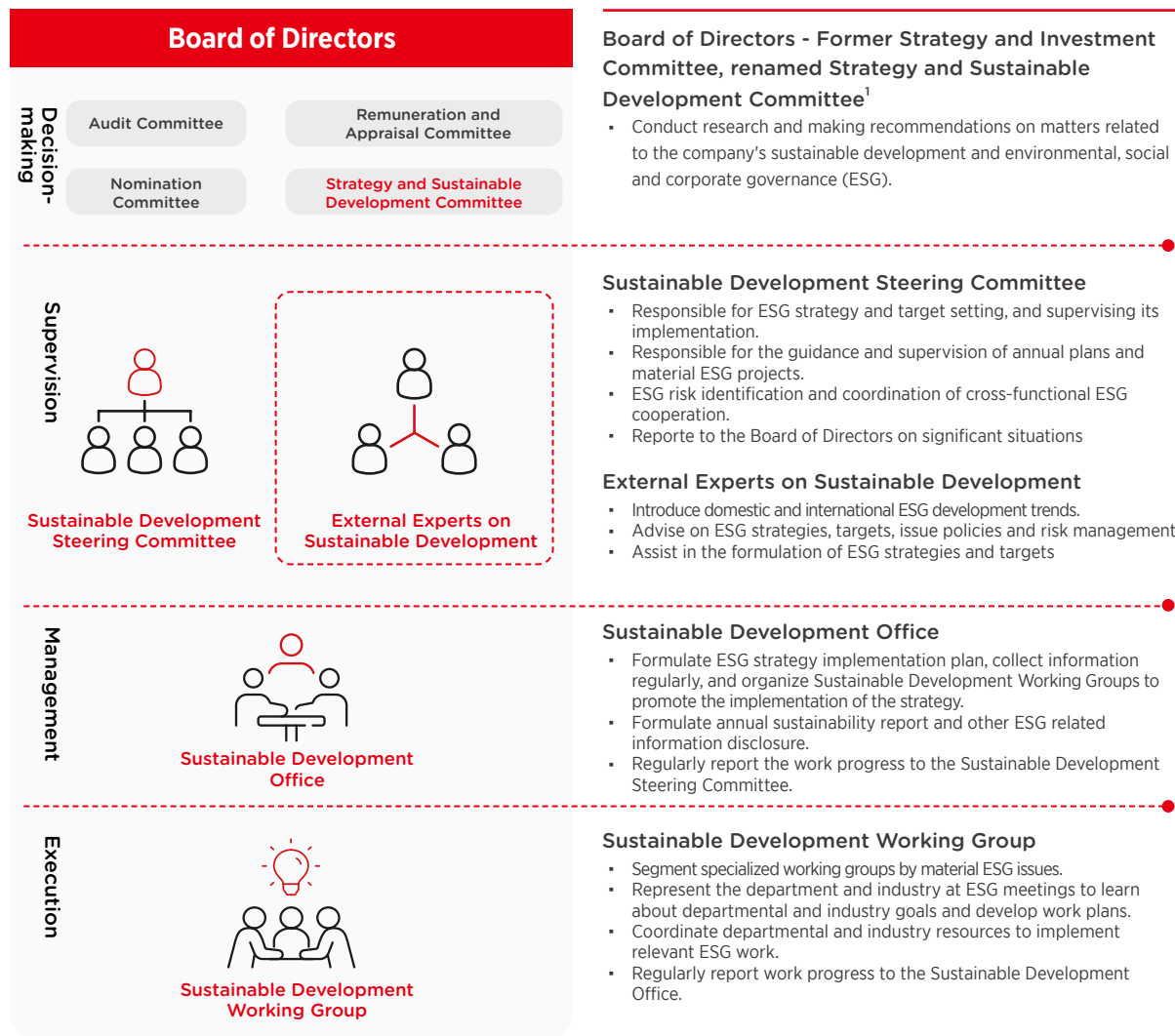
The Company understands the significance of sustainability governance. Therefore, we integrate ESG factors, specify indicators in each aspect, optimize the principle for information disclosure, and carry out ESG-related quantitative management. In doing so, we can ensure the transparent fulfillment of responsibilities and drive the long-term sustainable development.

## Sustainability Governance Structure

The Company has established a four-tier sustainability governance structure of "Decision-making - Supervision - Management - Execution", which integrates the operating management, business segments, and functional departments into the sustainability management system, gives full play to the advantages of each level and function, and creates the effect of governance combining the top-down and bottom-up approaches for the effective implementation of the sustainability strategy.

The Company has built an ESG indicator system covering three major areas, namely environment, society and governance, to improve ESG management and performance, and incorporated ESG performance into the performance appraisal system for executives, which is closely related to key indicators such as water management, work safety, technological innovation, human capital development, corporate and supply chain business ethics, etc., so as to work together to fulfill the social responsibility as a business, the management and the employees.

## TZE's Sustainability Governance Structure and Responsibilities of Each Level



<sup>1</sup> The establishment of specialized committees under the Board of Directors will become effective upon the approval of the Company's " Rules of Procedure of the Board of Directors(Revised in April 2024)" by the shareholder meeting.

## Stakeholder Communication

Stakeholder communication plays a crucial part in the sustainable development of TZE. Owing to the effective communication with multiple stakeholders of investors, customers, employees, suppliers, communities, non-governmental organizations, the media, financial institutions and governments, we are able to gain a deeper understanding of their aspirations and expectations and consider the interests of all parties in decision-making.

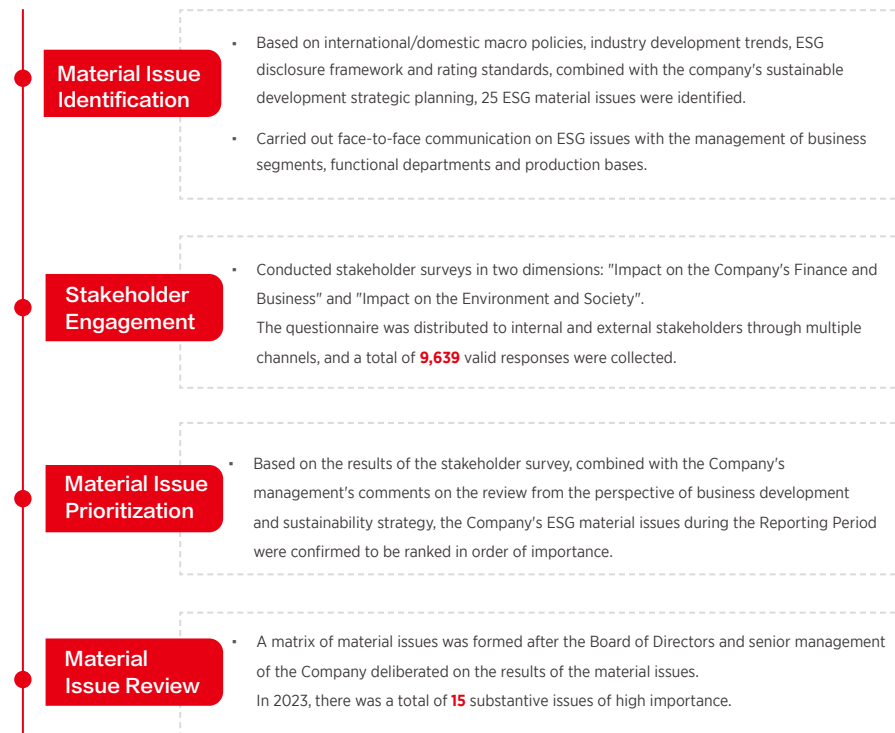
### Key Stakeholders, Issues of Concern and Communication Channels

Key Stakeholders	Employees	Customers	Stakeholders from Industrial Parks	Suppliers	Institutional Investors	Governments and Regulatory Agencies
 <p>Issues of concern</p>	<ul style="list-style-type: none"> <li>Occupational health and safety</li> <li>Information security and privacy protection</li> <li>Product quality management</li> <li>Employees' rights and benefits and their satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>Intellectual property protection</li> <li>Technological and product innovation</li> <li>Product quality management</li> <li>Responsible supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Occupational health and safety</li> <li>Employees' rights and benefits and their satisfaction</li> <li>Information security and privacy protection</li> <li>Intellectual property protection</li> </ul>	<ul style="list-style-type: none"> <li>Intellectual property protection</li> <li>Responsible supply chain</li> <li>Anti-corruption and operational compliance</li> <li>Business ethics</li> </ul>	<ul style="list-style-type: none"> <li>Industry 4.0</li> <li>Technological and product innovation</li> <li>Response to national strategies and support for local communities</li> <li>Intellectual property protection</li> </ul>	<ul style="list-style-type: none"> <li>Energy efficiency and carbon emission management</li> <li>Risk management</li> <li>Corporate governance</li> <li>Intellectual property protection</li> </ul>
 <p>Communication channels</p>	<ul style="list-style-type: none"> <li>Labor union and employees' representative congress</li> <li>Employee symposiums</li> <li>Mailbox of the factory manager</li> <li>Employee satisfaction and engagement survey</li> </ul>	<ul style="list-style-type: none"> <li>Customers satisfaction survey</li> <li>Regular seminars</li> <li>Customer service hotline</li> </ul>	<ul style="list-style-type: none"> <li>Regular communication mechanism with stakeholders from industrial parks</li> <li>Stakeholder training</li> <li>On-site work and research of stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>Regular communication mechanism with suppliers</li> <li>Supplier training</li> <li>On-site research and visits of suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Shareholders' meeting</li> <li>Regular reporting and performance briefing</li> <li>Daily investor communication sessions</li> </ul>	<ul style="list-style-type: none"> <li>Formulation of standards</li> <li>Participation in policy briefing</li> <li>Regular reporting and auditing</li> <li>Government affair platform</li> </ul>

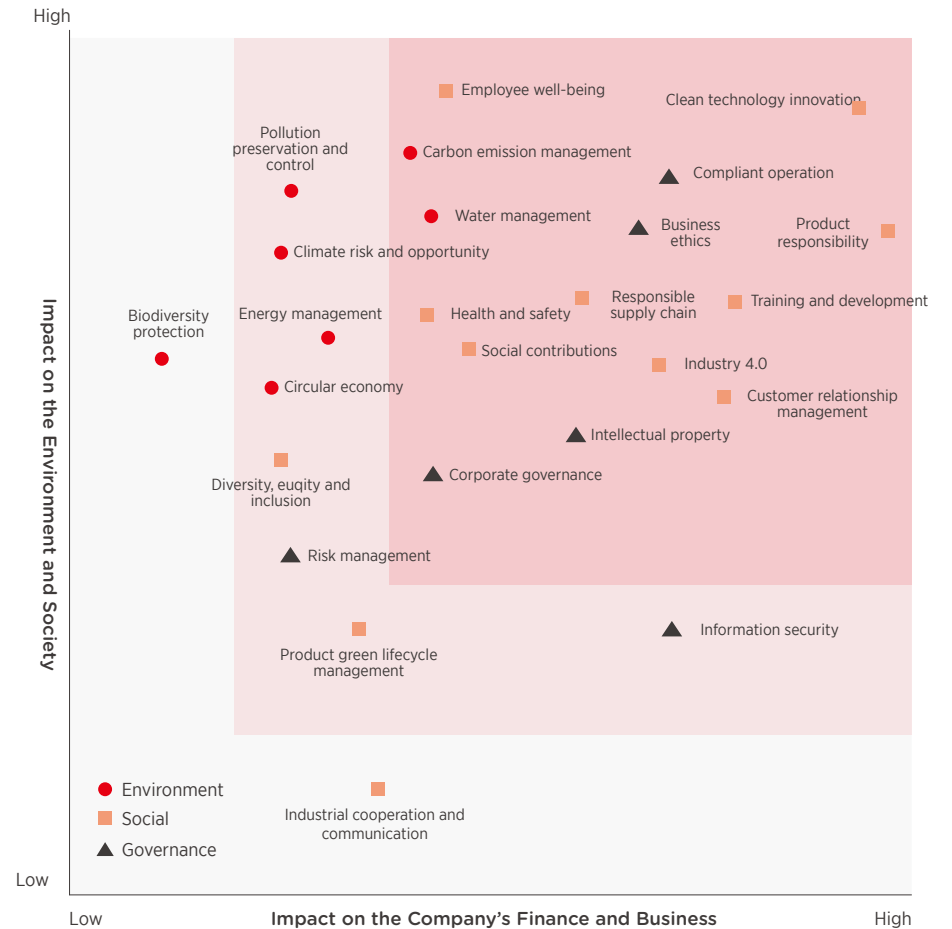
## Materiality Assessment

TZE attaches great importance to the impact of material issues on sustainable development. In 2023, we invited a team of external sustainability experts and consultants to participate in the identification and assessment of ESG material issues to ensure the comprehensiveness and effectiveness of the whole process; and used the results of the stakeholder research and assessment as the scientific basis for the Company to set up its short, medium, and long term targets on sustainable development, so as to effectively strengthen the sustainable development management.

### Process of Identifying and Determining Material Issues



### 2023 Materiality Matrix of TZE



## Material Issues of High Importance

Areas	Issues	Stakeholders Influenced by Management Measures on the Supply Chain					GRI Topics	Achievements in 2023 (detailed in following chapters)
		TZE	Suppliers	Investors	Clients	Communities		
 Environmental	Carbon emission management	●	●	●	●		GRI 305	1.1 Climate Action 1.2 Energy Management
	Water management	●	●				GRI 303	1.3 Water Management
	Clean technology innovation	●	●		●		TZE self-defined topic	5.1 Technological Innovation 5.3 Cooperation for Win-Win Results
 Social	Employee well-being	●					GRI 401/402/405/ 406/407/408/ 409	2.1 Diversity and Inclusion 2.2 Attracting and Retaining Talents 2.3 Employee Training and Development
	Product responsibility	●			●		TZE self-defined topic	4.2 Product Responsibility 4.3 Customer Relationship Management
	Training and development	●				●	GRI 404	2.3 Employee Training and Development
	Responsible supply chain	●	●				GRI 204/308/414	4.1 Responsible Supply Chain
	Social contributions	●	●			●	GRI 413	3.3 Social Contribution
	Health and safety	●	●				GRI 403	2.4 Occupational Health and Safety
	Customer relationship management	●			●		TZE self-defined topic	4.3 Customer Relationship Management
	Industry 4.0	●	●		●		TZE self-defined topic	5.2 Digital Intelligence Transformation
 Governance	Compliant operation	●	●	●	●		GRI 205	3.2 Business Behavior
	Business ethics	●	●	●	●		TZE self-defined topic	3.2 Business Behavior
	Intellectual property	●	●	●	●		TZE self-defined topic	5.1 Technological Innovations
	Corporate governance	●	●	●	●		TZE self-defined topic	3.1 Corporate Governance

# Sustainable Net Zero Commitment for Better Environment

Environmental friendliness is a bottom line of our operations and a key mission in our development. Adhering to the green concept of “dedicating to a world where everyone lives under blue skies and white clouds”, TZE strives to mitigate the negative impact of our business and operation on the ecological environment. By virtue of industry-leading climate strategies, we keep improving our environmental management system, set up environmental targets for carbon emissions, water management and waste treatment, and optimize resource efficiency. We are also committed to green operations by preserving the biological diversity and coexisting with nature.

UN SDGs addressed in this chapter:



## Key Target and Progress

### Carbon Neutrality Commitment of TZE

Achieve carbon peaking no later than **2030** and carbon neutrality no later than **2050** within operational boundaries.

### Progress in 2023

The Company's Scope 1 and 2 GHG emissions is 4,589,337.54 tCO<sub>2</sub>e (location-based), and 4,532,685.65 tCO<sub>2</sub>e (market-based), respectively.

Issue	Indicator	Progress in 2023	2024 Target	2025 Target	2030 Target
Energy management	Annual electricity intensity per unit of renewable energy PV products	32.43 MWh/MW	Decrease by <b>3%</b> over 2023	Decrease by <b>8%</b> over 2023	Decrease by <b>15%</b> over 2023
	Annual electricity intensity per unit of other silicon materials	435.70 MWh/MSI	Decrease by <b>2%</b> over 2023	Decrease by <b>5%</b> over 2023	Decrease by <b>10%</b> over 2023
Water management	Annual freshwater withdrawal intensity per unit of renewable energy PV products	57.69 m/MW	Decrease by <b>5%</b> over 2023	Decrease by <b>10%</b> over 2023	Decrease by <b>20%</b> over 2023
	Annual freshwater withdrawal intensity per unit of other silicon materials	8,028.29 m/MSI	Decrease by <b>3%</b> over 2023	Decrease by <b>5%</b> over 2023	Decrease by <b>15%</b> over 2023

# Climate Action

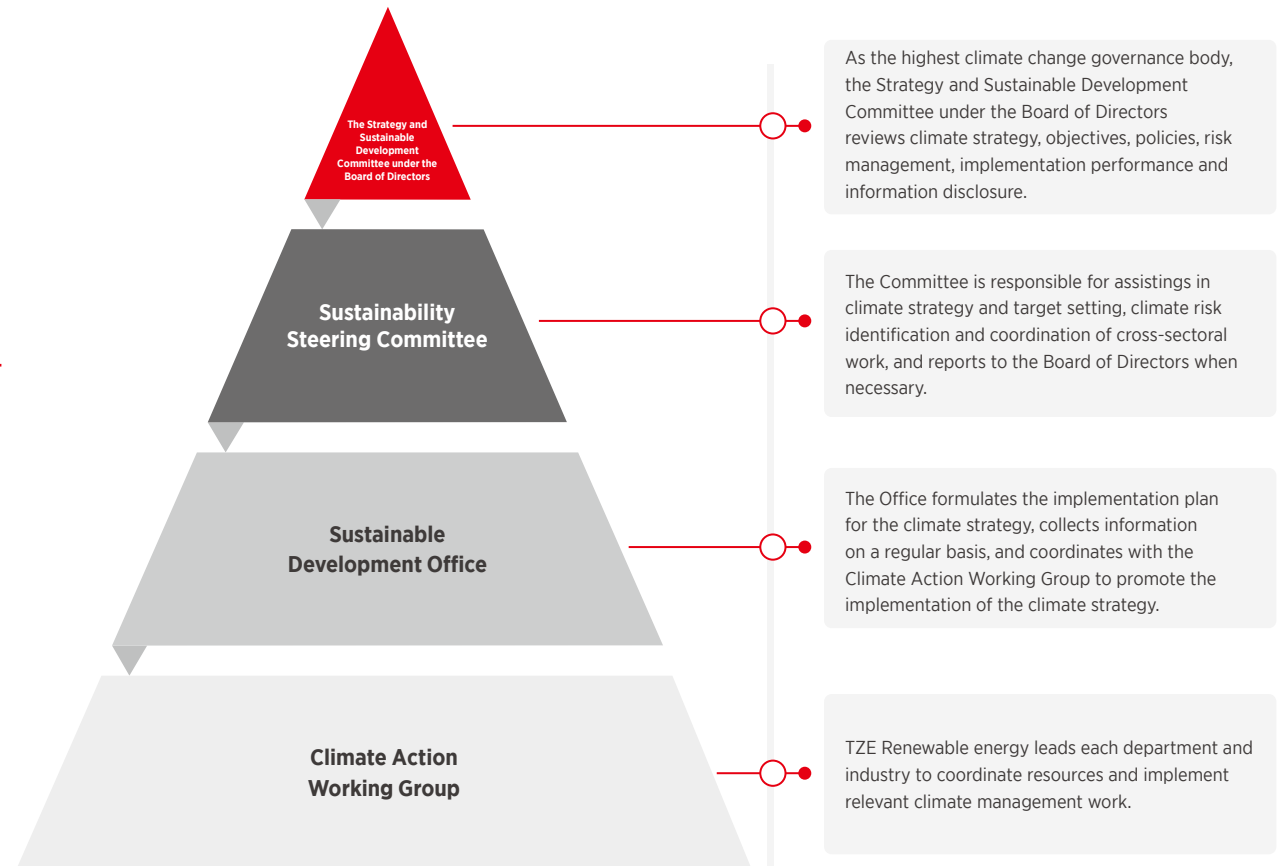
## Our Management Approaches

As an important driver to the world's green energy transformation, TZE is actively engaged in climate action around the four pillars of governance, strategy, risk management, and metrics and targets, and continues to strengthen the Company's climate change resilience and adaptability.

### Climate Change Governance

TZE has set up a four-tier climate governance structure of "decision-making - supervision - management - execution", with the Board of Directors and the Strategy and Sustainable Development Committee under the Board of Directors, as the highest governance body, and clarifying the responsibilities of each tier, so as to effectively integrate climate change issues into the company's corporate governance system and day-to-day production and operation, and to help realize the carbon neutrality commitment.


We have included quantitative indicators and goals related to climate action, such as energy saving and emission reduction, efficiency enhancement and renewable energy use, in the annual performance evaluation of our management and subsidiaries, in order to incentivize and recognize their contributions to climate action.





 Climate Action Strategy

Under the opportunities and challenges of the "carbon peaking and carbon neutrality" goals, TZE, as a global leader in the renewable energy industry, formulates practical and effective strategic paths and implementation plans in a scientific and systematic approach. While injecting strong green power into the society, we pay great attention to carbon reduction in our production, and promote the low-carbonization attributes of the value chain, helping to build a renewable energy-based power supply system and dedicating blue sky and white clouds to mankind.

**TZE's strategies of climate and carbon neutrality revolve around the following three aspects:**

-  **Accelerate to achieve operational carbon neutrality**

  - ▶ By adopting approaches of energy-saving transformation, green transportation, rooftop PV, source-grid-load-storage, self-owned power plant, green power purchase and carbon credit offset, we reduce the use of fossil fuel and increase the proportion of green power, so as to realize operational carbon neutrality.
-  **Create zero-carbon PV products to drive carbon neutrality in value chain**

  - ▶ Through green supply chain upgrading, strengthening the research and development of low-carbon silicon material technology such as granular silicon technology, the use of large-size and thin silicon wafer, and the analysis and management of carbon emission in product life cycle, the Company takes actions in product manufacturing, transportation, sales, use, recycling and other stages, to actively create zero-carbon products and drive a zero-carbon society.
-  **Facilitate the construction of a power system with renewable energy as the main supply and contribute to the green society**

  - ▶ We adhere to the innovation-driven development, expand investment in the PV industry, upgrade the production capacity of PV products, improve the efficiency of our products, lowering the LCOE (Levelized Cost of Energy) of PV products, and improve the life-cycle power generation capacity, so as to push forward the green transformation of the global energy industry.











 Risk Management

We incorporate climate-related risk identification, assessment and management into the overall corporate risk management process, integrating climate-related physical and transition risk assessment and management into project investment, design, development, product and material procurement, and operation. In 2023, we identified and updated the list of potential climate change risks and opportunities that might affect the Company’s business and operations. Furthermore, we systematically analyzed and prioritized the risks and opportunities and formulated detailed measures by leveraging experts’ opinions, policy research and peer benchmarking.

**Matrix of Climate Change Opportunities**

Main Opportunities of Climate Change Identified by TZE		Measures
 Products and services	The “carbon peaking and carbon neutrality” goals give birth to brand-new and low-carbon business models. The Company’s low-carbon products and innovative solutions meet the emerging market demand, thus boosting our business growth.	We increase investment in low-carbon product R&D, promote technological innovation and upgrading, so as to provide customers with diversified, reliable, and efficient low-carbon products and solutions.
 Adaptability	The Company continuously implements technological innovation and upgrading and builds a green and low-carbon ecosystem with suppliers and customers to better adapt to climate changes.	We enhance the efficiency of resource utilization, reduce the operational dependence on the environment, and expand the Company’s revenue sources.
 Resource efficiency	The Company improves the resource efficiency and reduces the operating cost through intelligent manufacturing.	We carry out energy-saving renovation projects in production and operation, promote the construction of intelligent and sustainable factories to further improve the resource efficiency.
 Energy sources	The Company reduces the use of traditional fossil energy, increases the proportion of clean energy use, and reduces the company’s traditional energy costs.	We set targets for renewable electricity utilization, actively promote the construction of green industrial park and roof-top photovoltaic projects, and purchase more green electricity, so as to increase the proportion of renewable energy used in manufacturing and operation.

## Matrix of Climate Change Risks

Main Risks of Climate Change Identified by TZE		Measures
 Physical risks	<b>Acute physical risks</b> Production and operation suspension or production accidents caused by extreme weather events (typhoons, rainstorms, snowstorms, etc.) or natural disasters.	<ul style="list-style-type: none"> <li>We formulate emergency plans for environmental incidents and work safety accidents based on the risk analysis of natural disasters in the location of factories, and regularly conduct emergency drills to improve emergency response capabilities.</li> <li>We prudently select the location of factories based on the resource dependence of each industry to reduce the potential impact of the natural environment on production and operation.</li> <li>We develop the upstream and downstream transportation routes based on the distribution of each industry and improve the mode of product transportation to mitigate the impact of extreme weather on transportation.</li> <li>We manage water resources based on the results of water risk assessment, and reduce the freshwater consumption by water withdrawal diversification, process innovation, wastewater recycling and other means.</li> </ul>
	<b>Chronic physical risks</b> Water shortage and cost increase caused by climate changes (global warming, rising sea level, etc.).	
 Transition risks	<b>Policy and legal risks</b> Increased compliance cost to meet regulatory requirements, or lawsuits and penalties if the Company fails to meet regulatory requirements	
	<b>Technology risks</b> Direct impact of the appearance of new clean energy-related technologies on the Company's business and products.	
	<b>Market risks</b> Since overseas markets have higher requirements on the Company's sustainable development management and GHG emissions management, customers' judgement and decision-making may be affected due to our delayed adjustment of the overseas operational strategies	
	<b>Reputation risks</b> Reduced financing channels due to our late response to the expectation of our stakeholders	

 Metrics and Targets

To effectively support the Company’s climate strategy, we have set up a range of performance indicators to track and evaluate the progress of our actions towards climate.

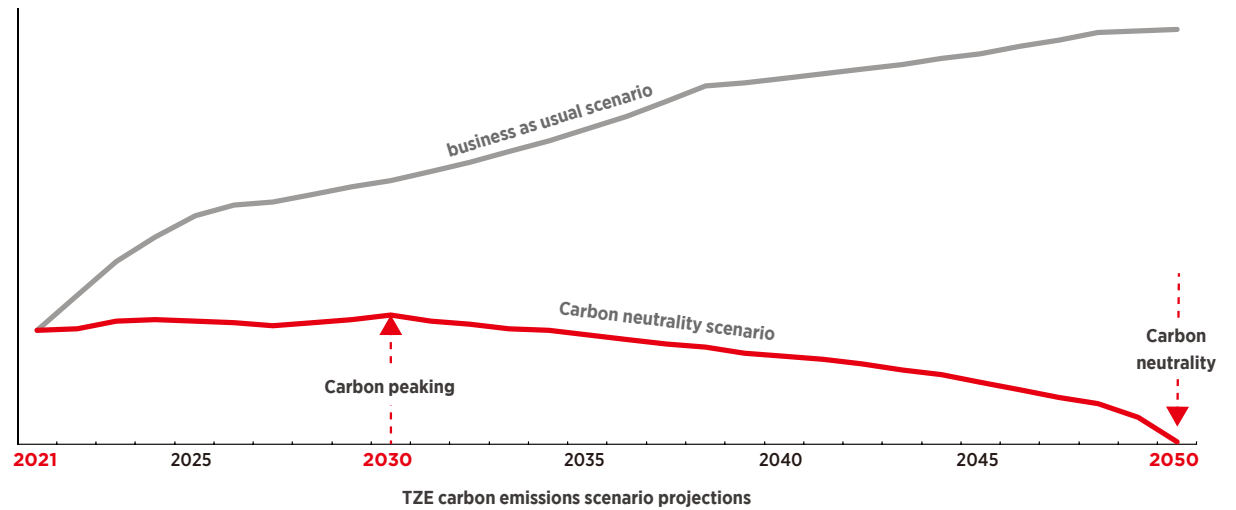
With a focus on GHG emissions and water utilization, we collect, count and calculate the relevant data on a regular basis each year. Meanwhile, we analyze the data by considering the identified climate change risks and opportunities, and then set targets for climate and low-carbon development based on the analysis result.

**Carbon Neutrality Commitment of TZE**

Within the Company’s operational boundaries:

Achieving carbon peaking no later than **2030**.

Achieving carbon neutrality no later than **2050**.



Note: Taking 2021 as the base year, the company proposes carbon emission projections for the “business as usual scenario” and the “carbon neutrality scenario”, considering market demand, production capacity planning, industrial distributions, corporate responsibility requirements, supply chain and national policies.

**Target for Renewable Energy Utilization of TZE**

Achieving **45%** of the electricity used in domestic factories generated from renewable sources by 2030

In terms of water-related risks, the Company has set targets for freshwater withdrawal intensity and water recycling rate during the Reporting Period (Refer to section “1.3. Water Management - Our Management Approaches” for details).

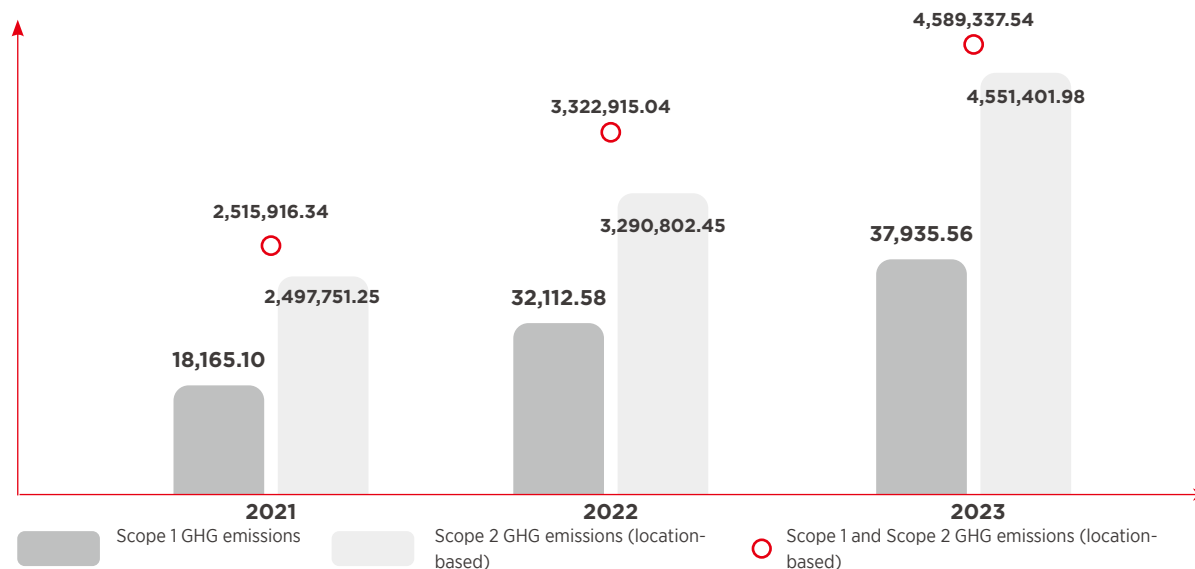
## Greenhouse Gas Management

TZE has been inventorying company-level carbon emissions since 2020 and engages trusted third parties for greenhouse gas verification and disclosure annually.



In 2023, TZE engaged a third-party agency to verify carbon emission disclosures of the Company based on the ISO 14064-1: 2018 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emission and removal, the GHG Protocol: A Corporate Accounting and Reporting Standard, the ISO 14064-3: 2019 Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements, and other standards. Please refer to Appendix for the Greenhouse Gas Validation Verification Statement.

The Company's Scope 1, 2 and 3 GHG emissions is 25,734,598.73 tCO<sub>2</sub>e (location-based), and 25,675,376.53 tCO<sub>2</sub>e (market-based), respectively.

## 2021-2023 Scope 1 & 2 GHG Emissions in Production (tCO<sub>2</sub>e)<sup>1</sup>

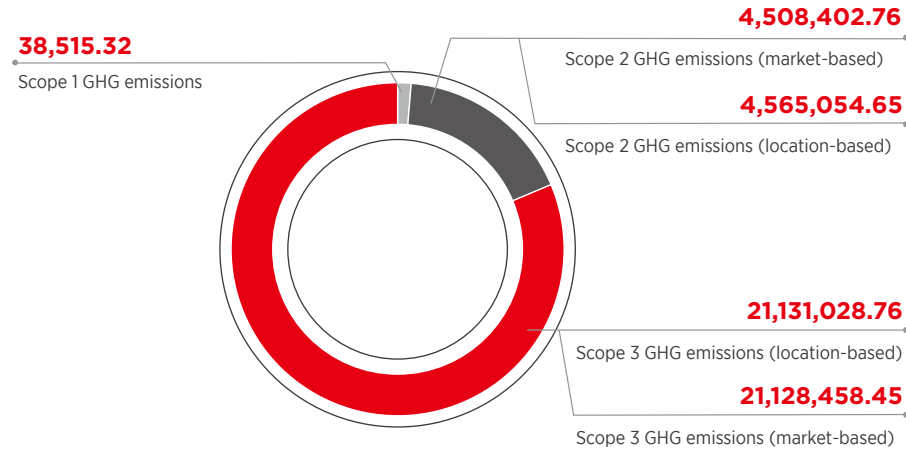


## 2023 GHG Emissions Intensity Performance<sup>2</sup>

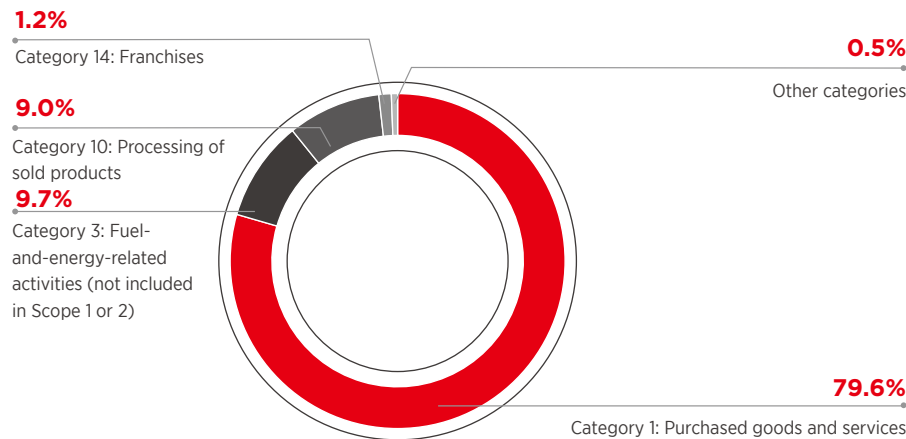
Industry	Indicator	UoM	2023
 Renewable Energy PV Products	Scope 1 and Scope 2 GHG emissions of renewable energy PV products (location-based)	tCO <sub>2</sub> e/MW	18.38
	Scope 1 and Scope 2 GHG emissions of renewable energy PV products (market-based)	tCO <sub>2</sub> e/MW	18.13
 Other Silicon Materials	Scope 1 and Scope 2 GHG emissions of other silicon materials (location-based)	tCO <sub>2</sub> e/ MSI	293.35
	Scope 1 and Scope 2 GHG emissions of other silicon materials (market-based)	tCO <sub>2</sub> e/ MSI	293.35

<sup>1</sup>The Company discloses the Scope 3 GHG emissions data from the 2023 Sustainability Report onwards. We have accounted and verified 15 categories in 2023 Scope 3 emissions, with the top 4 categories together accounting for 99.4% (location-based), and 99.5% (market-based) of Scope 3 emissions. Other categories accounted for only 0.6% (location-based), and 0.5% (market-based) of Scope 3 emissions.

### 2023 GHG Emissions Performance (tCO<sub>2</sub>e)



### 2023 Share of Each Category in TZE Scope 3 GHG Emissions (Market-based)<sup>1</sup>



<sup>1</sup> The Company discloses the Scope 3 GHG emissions data from the 2023 Sustainability Report onwards. We have accounted and verified 15 categories in 2023 Scope 3 emissions, with the top 4 categories together accounting for 99.4% (location-based), and 99.5% (market-based) of Scope 3 emissions. Other categories accounted for only 0.6% (location-based), and 0.5% (market-based) of Scope 3 emissions.

### TZE's headquarter building is certified as a "Carbon Neutral Building"

In order to actively respond to global climate change and help realize the national carbon peak and carbon neutral strategy, we are fully committed to promoting the practice of carbon emission reduction in the whole life cycle of the building, and realizing the balance of building quality improvement, resource saving and environmental protection with high quality.

At the early stage of the design of the headquarter office building, we selected low-carbon building materials, carried out material reduction design and optimized low-carbon structural design in accordance with the requirements of the relevant standards for green and low-carbon buildings. Natural lighting is realized on all sides of the building to build a green light environment. We have also implemented intelligent control of the HVAC system, lighting system, elevators, etc., to improve the efficiency of comprehensive energy utilization. The Company actively explores the development of solar energy and other renewable energy applications, and roofing photovoltaic facilities to provide green energy for the daily operation of the headquarter office building.

In 2024, in accordance with PAS 2060 Specification for the Demonstration of Carbon Neutrality, ISO 14064-1:2018 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emission and Removal and other relevant standards, the Company has verified the GHG emissions generated by the operations of TZE headquarter in 2023, and purchased green certificates and China Certified Emission Reduction (CCER) to offset the GHG generated during the operation, resulting in a total of 1,466.76 tCO<sub>2</sub>e of emissions reduced and realizing carbon neutrality.



Carbon Neutral Certificate for TZE Headquarter Building



Carbon Neutral Certificate Award Ceremony for TZE Headquarter Building

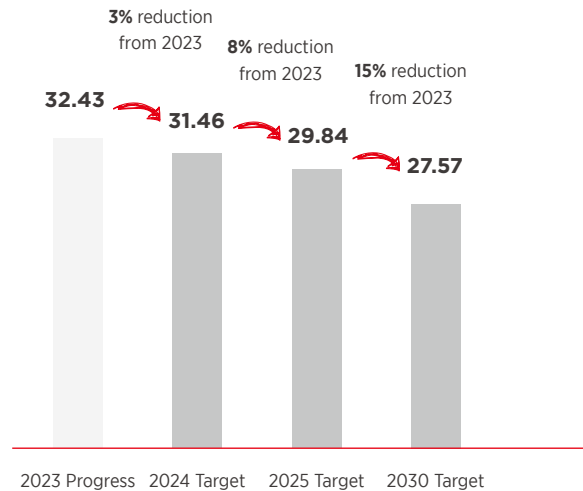
# Energy Management

## Our Management Approaches

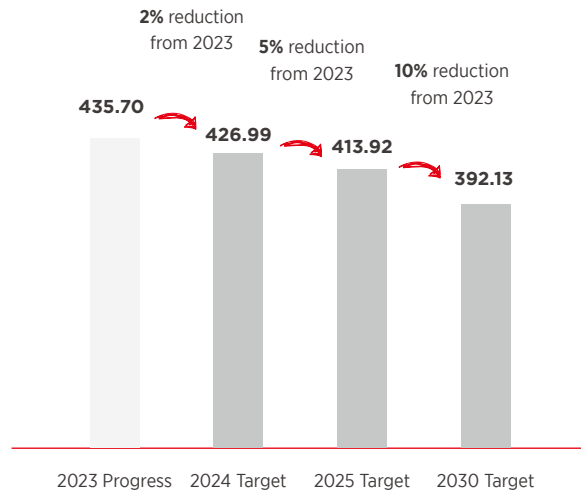
TZE strictly complies with the Energy Conservation Law of the People’s Republic of China, the Regulations on Industrial Energy Conservation and other laws and regulations, and practices the requirements in the Energy Management chapter of the TZE Environmental Management Policy. Moreover, the Company regards above regulations as a guidance to energy conservation and emission reduction in all factories. Meanwhile, the energy management department in each factory is responsible for energy system security, energy consumption data statistics and analysis, energy saving and consumption reduction project implementation, etc., to promote energy management goals comprehensively and efficiently. Among TZE’s factories, **100%** (11 factories) eligible for certification have obtained the ISO 14001 Environmental Management System Certification, and 8 factories have obtained the ISO 50001 Energy Management System Certification.

### Electricity Consumption Reduction Targets

**Renewable Energy PV Products Electricity Consumption Intensity (MWh/MW)**



**Other Silicon Materials Electricity Consumption Intensity (MWh/MSI)**



## Utilizing Renewable Energy

Expanding the use of renewable energy is a key for TZE to optimizing the energy structure and reducing carbon emissions. In an effort to sustain the development, the Company commits to the “100% use of renewable electricity” and sets this commitment as a long-term goal to regulate power use in production and operation. The Company plans to build PV power stations with an estimated capacity of 4GW+ by 2027 for the production bases in Inner Mongolia and Ningxia, and strives to achieve 45% of the electricity used in domestic factories generated from renewable sources by 2030.

We are committed to building green electricity parks. In 2023, the Company has 100% implemented the rooftop PV distributed power generation system in all production bases, with a total annual power generation of 103,354 MWh. At the same time, the Company actively explores renewable power trading channels, with renewable power purchase and consumption amounting to 99,337 MWh. The annual renewable electricity consumption amounted to 202,691 MWh, accounting for 2.54% of the total electricity consumption. The amount of renewable electricity from our own PV power plants participating in environmental rights trading amounted to 41,751.4 MWh.

## 2021-2023 TZE Energy Consumption Performance<sup>1</sup>

Indicator	UoM	2021	2022	2023
Total energy consumption	MWh	- <sup>2</sup>	-	8,188,115.71
Natural gas	m <sup>3</sup>	2,880,687.82	3,867,760.00	5,512,615.72
Steam	tons	-	-	169,015.10
Petrol	Liter	-	-	21,215.95
Diesel	Liter	-	-	73,486.29
Total electricity consumption	MWh	4,414,449.08	5,268,918.42	7,990,386.01
Purchased renewable electricity	MWh	-	-	99,336.98
Purchased non-renewable electricity	MWh	-	5,229,462.76	7,787,694.66 <sup>3</sup>
Electricity generated by rooftop PV system	MWh	-	39,455.66	103,354.38

<sup>1</sup> 2023 TZE energy consumption data covers all production plants.

<sup>2</sup> The Company discloses indicators such as total energy consumption, total gasoline consumption, and total purchased renewable electricity from the 2023 Sustainability Report onwards.

<sup>3</sup> The increase in the total amount of purchased non-renewable electricity in 2023 is mainly due to the increase in demand for electricity as Ningxia Zhonghuan starts full production in 2023.



## Improving the Energy Consumption Efficiency

TZE is committed to improving the energy consumption efficiency and strengthening the energy management capability in factories. The Company has established complete and effective energy policies, energy performance targets and energy management systems in accordance with the requirements of ISO 50001 Energy Management System.

Our factories take active efforts in transforming to more energy-efficient technologies based on the production process of different products. In 2023, the Company and its subsidiaries launched a total of **35** projects for energy conservation and efficiency improvement with an investment of CNY **152** million. These projects are estimated to save 65,450.1 thousand kWh of electricity and 65.9 thousand m<sup>3</sup> of natural gas.

## Energy Management Training

We organise our subsidiaries to carry out energy use analysis, sort out the structure and proportion of energy use in each operational part, and develop energy management action plans every year. In this way, we mobilize all staff to take actions to improve energy conservation, cultivate the concept of thrift and frugality and the good habits of employees, improve energy efficiency, so as to promote the sustainable development of the Company.

### 2023 TZE Energy Conservation and Consumption Reduction Key Achievements

Industry	Measure	Achievement
Ingot	<ul style="list-style-type: none"> <li>Dry pump frequency conversion retrofit</li> <li>Circulating water system functionality improvement</li> </ul>	Electricity saving of 30,489.5 thousand kWh
Wafer	<ul style="list-style-type: none"> <li>HVAC intelligent retrofit</li> <li>Air compressor graded air supply renovation</li> <li>Ice machine heat recovery</li> </ul>	Electricity saving of 30,588.8 thousand kWh
Cell and Module	<ul style="list-style-type: none"> <li>Dryer blast heat process modification</li> <li>Cooling tower free cooling</li> </ul>	Electricity saving of 3,357.0 thousand kWh
Other Silicon Materials	<ul style="list-style-type: none"> <li>Cold source system intelligent retrofit</li> <li>Cold source system energy-saving renovation</li> <li>Air compressor waste heat recovery</li> </ul>	Electricity saving of 1,014.8 thousand kWh Natural gas savings of 65.9 thousand m <sup>3</sup>



Zhonghuan PV Organized Energy Management Training Covering 850 Employees to Strengthen Their Energy Saving Awareness



# Water Management

## Our Management Approaches

In recent years, climate change has triggered drastic changes in the water environment, leading to an increasing frequency of disasters such as floods and droughts. Both internal and external stakeholders are becoming increasingly concerned about water management. At the same time, water is one of the indispensable resources in TZE production process. To proactively address the challenges of water management, following the TZE Environmental Management Policy, TZE has conducted water risk assessments for all factories, taken actions to response to water risk and mitigated the impact of operational processes on water environment. In 2023, the Company's water withdrawals, consumption and discharges from the production and operations had no significant impact on the water resources of the region in which it is located.

The Company continues to optimize the water management governance structure and promote water management from the top down. The CEO of the Company and the Sustainability Steering Committee under the Strategy and Sustainability Committee of the Board of Directors serve as the highest management level of water governance, and they are jointly responsible for promoting the realization of water management strategies and performance. The Company has incorporated water management indicators into our ESG governance structure at all levels. Besides, these indicators are included in the performance assessment of factory managers and department heads, linking the water resource management to the remuneration system. This practice stimulates proactive engagement in water management, thus driving the achievement of water management goals.



2023 Water management key performance

Total water withdrawal **29.36** million m<sup>3</sup>

Total water consumption **9.23** million m<sup>3</sup>

Fresh water withdrawal **23.72** million m<sup>3</sup>

Fresh water consumption **6.49** million m<sup>3</sup>

Additional water savings **11.07** million m<sup>3</sup>

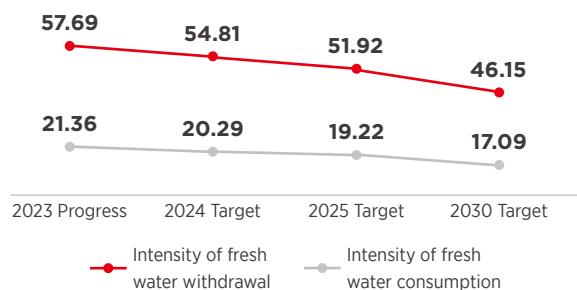
Water recycling **22.77** million m<sup>3</sup>



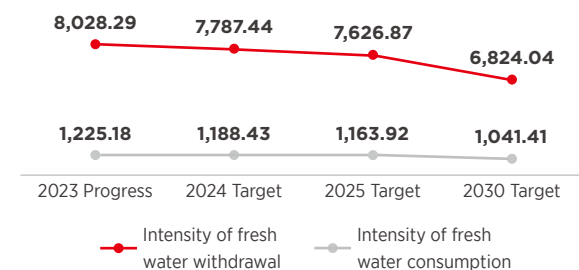
Water Use Reduction Target and Progress

Indicator	2023 Target	2023 Progress	2024 Target	2025 Target	2030 Target
Percentage of water use from alternative water sources <sup>1</sup>	53%	54.51%	56%	59%	70%
Water recycling rate <sup>2</sup>	43%	43.68%	46%	49%	60%

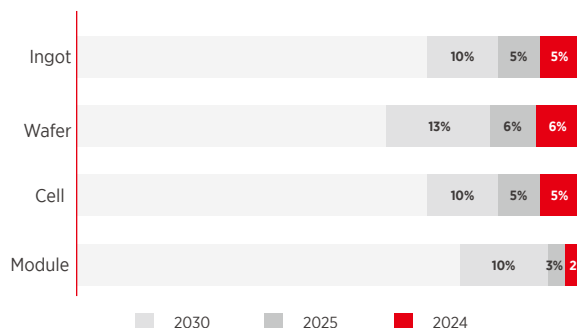
Renewable Energy PV Products Water Use Reduction Target (m<sup>3</sup>/MW)



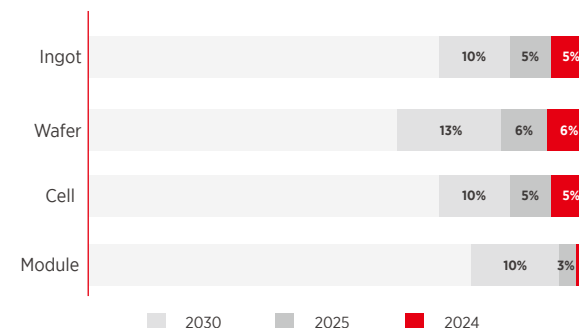
Other Silicon Materials Water Use Reduction Target (m<sup>3</sup>/MSI)



Renewable Energy PV Products Water Withdrawal Intensity Target<sup>3</sup> (by segment)



Renewable Energy PV Products Water Consumption Intensity Target (by segment)



<sup>1</sup>Percentage of water use from alternative water sources = (purchased reclaimed water + rainwater + condensate + water reuse) / (total water withdrawal + water reuse); where total water use = total water withdrawal + water reuse



<sup>2</sup>Water recycling rate = water reuse / (total water withdrawal + water reuse); where total water use = total water withdrawal + water reuse

<sup>3</sup>The annual intensity targets for each industry are based on the new percentage decline in 2023.

## Water Risk Management

To further understand the water source pressure and water consumption risks of all factories, TZE identifies the water risk levels of all factories utilizing the water risk assessment tool developed by the World Resources Institute (WRI)<sup>1</sup>. Tested by the WRI Aqueduct Tool, 5 factories, namely Zhonghuan Crystal, Zhonghuan PV and Inner Mongolia Zhonghuan Advanced in Inner Mongolia Autonomous Region, Ningxia Zhonghuan in Ningxia Hui Autonomous Region, and Huansheng Tianjin in Tianjin operate in areas with extremely high water risk, while the remaining 9 factories are located in high-risk areas. The Company has taken into account the total amount of water used in the plant and the water consumption structure to formulate a water risk management strategy and implement specific measures for water extraction and consumption.

### TZE Water Risk Identification and Response

WRI Overall Water Risk Index	TZE Assessment	TZE Targeted Risk Response and Inputs				
<p><b>Physical Risks – Quality and Frequency</b></p> <ul style="list-style-type: none"> <li>Water Shortage</li> <li>Water depletion</li> <li>Interannual change</li> <li>Seasonal change</li> <li>Declining groundwater levels</li> <li>River flood risk</li> <li>Coastal flood risk</li> <li>Drought</li> </ul> <p><b>Physical Risk – Water Quality</b></p> <ul style="list-style-type: none"> <li>Coastal eutrophication</li> <li>Untreated waters</li> </ul> <p><b>Regulatory and Reputational Risk</b></p> <ul style="list-style-type: none"> <li>Drinking water conditions</li> <li>Sanitation conditions</li> <li>ESG reputational risk assessment</li> </ul>	<p><b>Water Use risk</b></p> <ul style="list-style-type: none"> <li>Water shortage</li> <li>Water depletion</li> </ul> <p><b>Water Quality Risk</b></p> <ul style="list-style-type: none"> <li>Sanitation facilities condition</li> </ul>	<b>Water Risk Handling Measures</b>			<b>Extremely High Risk Areas<sup>2</sup> (5 Factories)</b>	<b>High Risk Areas (9 Factories)</b>
		 Management measures	Evaluation and monitoring	Regularly evaluate water resource risks, enhance water use analysis, identify major water use/water saving points, and develop annual water resource management targets and plans	★★	★★
			Emergency and response	Develop and improve the emergency response mechanism for water environment risk incidents, and carry out emergency response in a scientific and reasonable manner	★★	★★
			Publicity and incentive	Arrange water conservation publicity as well as training and education, improve the awareness of water saving across the Company, set up positive incentive programs for energy saving and consumption reduction, and guide all employees to contribute to water conservation in each business process	★★	★★
		 Technical measures	Increasing alternative water sources	Implement diversified water withdrawal, thus reducing the usage of freshwater	★★★	★★
			Improving water efficiency	Improve the water production rate of pure water preparation and lower the total water withdrawal	★★★	★★★★
			Optimize water saving in process and reduce waste in use	Optimize water saving in process and reduce waste in use	★★	★★
			Increase wastewater reuse and improve water use efficiency	Increase wastewater reuse and improve water use efficiency	★★★	★★★★
		Preventing and controlling water pollution	Optimize the wastewater treatment process and strictly control the drainage index	★★★	★★	
		Improve sewage reuse rate and reduce sewage discharge	Improve sewage reuse rate and reduce sewage discharge	★★★	★★	

<sup>1</sup>In 2023, the Company has adopted the WRI's Water Risk rating in place of the Water Stress rating compared to the previous reporting period. This is due to the fact that a water risk assessment provides a more holistic and forward-looking perspective on water resources management and protection, while a water stress assessment is a foundational step and a prerequisite for conducting a water risk assessment.

<sup>2</sup>Rated by the input level of labor, material, financial and other resources required at extremely high risk and high risk areas, with ★★★ as the highest level.

## Alternative Water Sources

The Company is actively expanding water sources, replacing fresh water intake and reducing the environmental impact of water resources by collecting rainwater and condensate, increasing the volume of outsourced recycled water, and improving the rate of water reuse. In 2023, TZE's fresh water (tap water) withdrawals were 23.72 million m<sup>3</sup>, representing 54.51% of alternative water sources.

### Rainwater and Condensate Water

Rainwater and condensate water are valuable natural water resources that are susceptible to climate and seasonal influences. TZE has organized affiliated factories to analyze the local climate characteristics, build rainwater and condensate water collection and treatment systems, and develop diverse sources for water withdrawal in the process to reduce the consumption of freshwater. In 2023, the consumption of condensate water and rainwater was 119.4 thousand m<sup>3</sup>.

### Reclaimed Water

The three plants, Zhonghuan Crystal, Zhonghuan PV and Inner Mongolia Zhonghuan Advanced, which are located in areas of high water risk, purchase reclaimed water as a substitute for fresh water and introduce it into their manufacturing operations. They consumed 5.53 million m<sup>3</sup> of reclaimed water, accounting for 57.91% of its total water withdrawal. In the future, TZE will coordinate with the government to build reclaimed water systems. As we test and utilize them, we aim to increase reclaimed water usage, reduce our reliance on natural water resources, and mitigate regional water supply impacts.

### Water Reuse

combining the characteristics of the water process, each plant establish a water reuse treatment system respectively, from the pure water preparation process, production wastewater discharge, public and auxiliary wastewater discharge, etc., to increase the amount of internal water reuse, reduce the amount of fresh water intake. In 2023, the amount of reused water was 22.77 million m<sup>3</sup>, with a water reuse rate of 43.68%.

#### 2023 TZE Alternative Water Sources Performance

Condensate water and rainwater **119.4** thousand m<sup>3</sup>

Reclaimed water **5,53** million m<sup>3</sup>

Water reuse **22,77** million m<sup>3</sup>

Total **28,42** million m<sup>3</sup>



Rainwater Harvesting System in factory in Inner Mongolia

## Improving Water Efficiency

The Company is committed to reducing the dependence of products on water resources year by year, and integrating the concept of water conservation into the whole process of production and operation. Thus, efforts are intensified to analyze the proportion of water consumed in each production and operation process, undertake research on water-saving projects, and promote the effective implementation of such projects. By improving the water production rate of pure water preparation, optimizing water conservation in the process, and increasing the amount of water resource reuse, water use efficiency is strengthened. In 2023, water-saving measures were applied to the whole process of production and operation, and **22** new water conservation projects were added, with an investment of **16** million, contributing to a total of **11.08 million m<sup>3</sup>** of water saved.

TZE attaches great importance to the use of ultrapure water, which is only applied in the production of PV cells and other silicon materials. We aim to lower the consumption of freshwater by increasing the investment in projects of wastewater reuse and improving the recycling rate of water resources in the ultrapure water preparation process. In 2023, the consumption of ultrapure water was **4.87 million m<sup>3</sup>**, and the water production rate of ultrapure water of other silicon materials plants reached 84-88%.

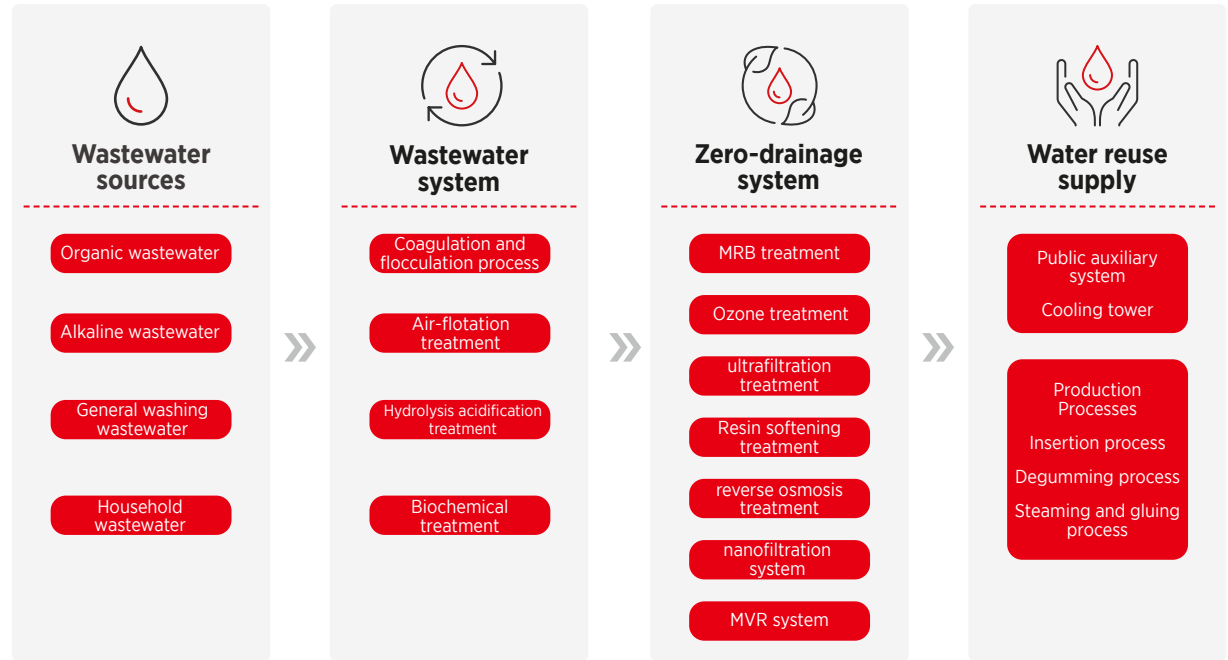
### Water efficiency measures implemented into our production processes

Indicator	Ingot	Wafer	Cell	Module	Other Silicon Material	
<b>Total water savings</b>	6,265.1 thousand m <sup>3</sup>	860.6 thousand m <sup>3</sup>	77.5 thousand m <sup>3</sup>	28.8 thousand m <sup>3</sup>	3,843.9 thousand m <sup>3</sup>	
<b>Water Conservation Measures</b>	<b>Preparation process of pure water and ultrapure water</b>	Reuse of concentrated water in the preparation of pure water	Reuse of concentrated water in the preparation of pure water	Reuse of concentrated water in the preparation of ultrapure water	Not involved	Reuse of concentrated water in the preparation of ultrapure water, sand-containing wastewater
	<b>Water consumption in production</b>	Automatic optimization of the solenoid valve of the flat polishing machine to achieve precise water control.	Sticky plate process from open tap water cooling to closed loop water transformation	Cleaning process end sink drainage water reuse to pure water resistivity low grade process	The space humidification in the welding machine area is changed to precise humidification inside the equipment, reducing the humidification area and saving the humidification water	Cleaning process end sink drainage water reuse to pure water resistivity of low-grade process
	<b>Water consumption of public auxiliary system</b>	Optimization of medium-temperature cooling circulating water piping consolidation for intensive supply	Adoption of recycled water to replace the cleaning water source for filtering devices in the large circulation system	Recycling of condensate from air-conditioning units	Optimized management of cooling tower system dosing and wastewater replacement	Landscape pool circulating water frequency conversion and automatic control modification to optimize the circulating system
	<b>Wastewater reuse</b>	Establish a water island system in the park to treat and reuse particulate wastewater and fluorine-containing wastewater discharged at the production end	Establish a "zero-discharge" wastewater treatment system to reach surface water indicators and reuse	Continuously carry out projects for reuse of phosphorus-containing wastewater	Not involved	Treatment and reuse of acid wastewater, rinsing water, and drainage water from the tail gas processor of the epitaxial process

Various Factories in Inner Mongolia and Tianjin Recognized as “Water-Saving Enterprises”

In recent years, TZE has been assessing internal water management and actively promoting water conservation, resulting in several enterprises being recognized as “water-saving enterprises.” We have established a reclaimed water island in the Inner Mongolia Industrial Park, where some of the treated wastewater is reused for production, domestic, and firefighting purposes. Both the Zhonghuan PV factory and the Zhonghuan Crystal factory in the Inner Mongolia Industrial Park were awarded the title of “Water-Saving Enterprise of Inner Mongolia Autonomous Region” in 2022.

In December 2023, TZE Huanzhi Renewable energy Factory in Tianjin was awarded the title of “Tianjin Water-saving Enterprise” by the Tianjin Water Authority and Tianjin Industrial and Information Technology Bureau for its projects including wastewater reuse systems and advanced wastewater treatment systems.



Huanzhi Renewable Energy Wastewater Reuse System Flow Chart

Water Management Training

In order to comprehensively deal with water resources risks, the Company actively carries out water conservation publicity and training and education activities, mobilizes all employees to actively participate in the Company's water conservation actions, strengthens the awareness of water conservation among all employees, and puts an end to the phenomenon of wasting water resources in the production and living processes. The Company has formulated a positive incentive program for water conservation, encouraging all employees to actively provide feedback on water-saving rationalization suggestions to comprehensively improve water efficiency.

In 2023, the Company organized 32 water conservation training activities, with more than 1,680 participants.



Water Conservation Training

## Preventing and Controlling Water Pollution

TZE has formulated and implemented the Environmental Protection Management Regulations and other institutional documents, and made every effort to do a good job in the whole process of wastewater collection, treatment, reuse and discharge management to enhance the maximum efficiency of water resources. Each factory strictly follows the environmental impact assessment, standardized design, construction and operation of wastewater treatment systems, and sets up wastewater on-line monitoring equipment to monitor the quality of water discharged in real time to ensure that wastewater discharges are in full compliance with the requirements of the territorial environmental protection. All factories also regularly invite a third party to conduct wastewater testing and long-term tracking of wastewater quality to ensure that wastewater discharge meets the standards. In 2023, the Company did not have any incidents of wastewater discharge exceeding the standards and environmental pollution.

To reduce environmental impact, TZE continuously invests in research and development and uses wastewater treatment and reuse technologies to reduce water load in recent years. By establishing a "zero-discharge" wastewater treatment system, Huanzhi Renewable energy, a subsidiary of the Company, treats the wastewater in depth to meet the standard of direct discharge of surface water, so as to reduce the impact of the wastewater on the surrounding environment; at the same time, the factory completed the construction of a wastewater reuse system and put it into operation at the end of July 2023, with a total investment of more than RMB 4.9 million. The wastewater will be collected and reused for the use of cooling water towers and cleaning of workshop inserts after in-depth treatment, and it could be used to replace municipal water, and the cumulative total amount of wastewater reuse amounted to 179,514 m<sup>3</sup>.

## 2021-2023 Wastewater Management Key Performance

Disclosure Item	UoM	2021	2022	2023
Wastewater Discharge	10,000 m <sup>3</sup>	1,122.62	1,433.52	2,013.44
COD emissions	kg	-	1,268,896.00	2,015,983.17
Ammonia nitrogen	kg	-	57,961.54	61,338.16
Suspended solids (SS) emissions	kg	-	728,761.30	442,282.75

## Supply Chain Water Management

In setting water conservation targets for the Company and our supply chain, we not only account for water intake, consumption and discharge in all aspects of our own production and operations, but also encourage our suppliers to improve their water management capabilities.

We encourage our suppliers to improve their water management through various means, including ISO 14001 environmental management system certification, setting water saving targets, carrying out water saving projects, and reducing wastewater discharges, etc. In the process of supplier entry, we investigate and assess their water management performance in production; in the process of the annual suppliers' performance, we incorporate their water management performance into the assessment, and continuously monitor the progress of relevant water saving projects.

In order to promote the implementation of the supply chain water conservation program, the Company has established an effective communication and supply chain water data collection mechanism. The Company is actively promoting the formulation of supply chain water conservation targets, developing a supply chain water conservation program, and focusing on suppliers whose operations are located in areas with extremely high water risk and whose fresh water withdrawal is high. The Company regularly exchanges and discusses with suppliers and jointly evaluates and analyzes the water conservation targets to be set by suppliers to ensure the feasibility of the targets. During the Reporting Period, we actively promoted the establishment of water saving targets by our washing material suppliers and technologically empowered them to carry out a series of water saving measures. For details, please refer to paragraph "4.1 Responsible Supply Chain - Green Supply Chain" of the Report.

# Ecological Protection

## Our Management Approaches

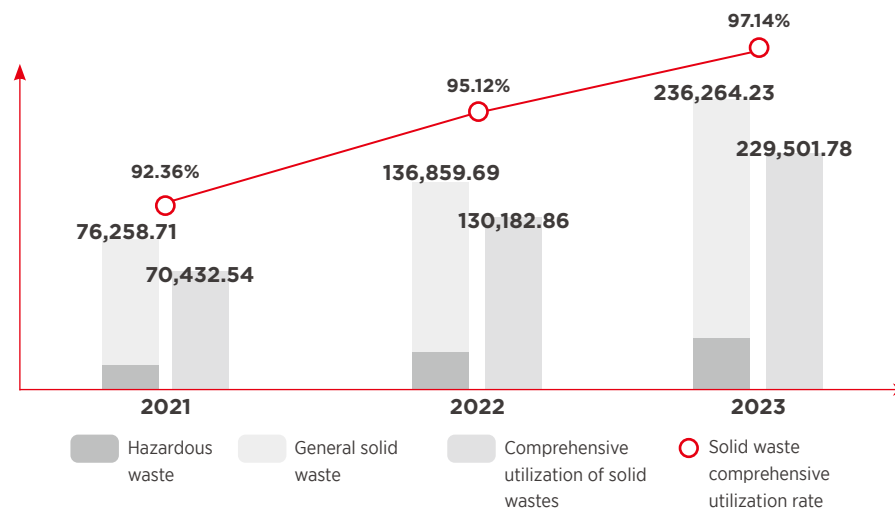
At TZE, we adhere to the “3R (Reduce, Reuse, Recycle)” principle, and actively integrate the concept of circular economy into how we operate. Particularly, TZE promotes the reuse of packaging materials and comprehensive utilization of solid waste, striving to achieve a win-win situation regarding the environmental protection and economic growth. We strictly manage our environmental and ecological footprint, stringently complying with regulations pertaining to emissions of exhaust gas and noise. We also protect biodiversity and leverage our PV technology advantages to facilitate ecological restoration in multiple regions.

As of December 31, 2023, our 8 subsidiaries have been recognized as “Green Factory”, including Zhonghuan PV and Tianjin Zhonghuan Advanced, both of which have been awarded the national “Green Factory”. 7 subsidiaries have been certified as “Zero Waste Factory”. The Company plans to secure “Zero Waste Factory” certification for all factories by 2030.

## Waste Management

TZE strictly complies with relevant laws and regulations such as the Law of the People’s Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes, earnestly implements the requirements of the TZE Environmental Management Policy on waste management, adheres to the principles of industrial waste reduction, recycling and decontamination, and co-ordinates the management of the company’s industrial waste throughout the entire process, so as to minimize the amount of waste generated, fully utilize the resources and standardize the disposal of wastes. We also promise to gradually reduce hazardous substances in our products to zero. At the same time, we are committed to gradually reduce or stop using hazardous substances in our products. The Company also continuously strengthens collaboration with suppliers, partners and other stakeholders to jointly build a waste management model for the whole chain.

## 2021-2023 TZE Solid Waste Performance (tons)



## 2023 TZE Solid Waste Disposal (tons)

Waste category	Comprehensive utilization	Landfill	Incineration	Other disposal methods <sup>1</sup>
Hazardous waste	1,887.67	594.96	974.49	610.60
General solid waste	227,614.11	4,655.33	0	0

<sup>1</sup> Including physical disposal and co-disposal in cement kilns.



### Huanzhi Renewable energy - the First “Zero Waste Factory” in Tianjin

As the first enterprises in Tianjin to establish a “Zero Waste Factory”, Huanzhi Renewable energy has been steadfast in promoting the reduction and recycling of solid waste. By selecting high-quality fine materials, improving processes, enhancing product quality, and prolonging product service life, Huanzhi Renewable energy strived to reduce the generation of solid waste at the source, resulting in a 13.2% decrease in solid waste production per piece of silicon wafer. Moreover, we have jointly carried out a waste high-value reuse practice project with external disposal companies, recycling more than 1,945 tons of silicon mud and doping it to make craft bricks, which can be reused in building construction, effectively improving the comprehensive utilization rate of solid waste to 99.7%.

Huanzhi Renewable energy safeguards the operation of the “Zero Waste Factory” with the support of intelligent and information technology. The entire process is equipped with intelligent equipments. We also use the environmental protection module system to record types, quantities, flow, storage, utilization, disposal, and other information of industrial solid waste, ensuring its traceability.



Our “Zero Waste Factory” - Huanzhi Renewable Energy

## Raw material management

The Company is committed to minimising the negative impacts of the raw materials it uses, actively collaborating with upstream suppliers and other stakeholders to promote the use of recycled, renewable and third-party verified raw materials, while avoiding the procurement of raw materials from biodiversity-important areas through traceability of origin.

In 2023, the proportion of renewable materials used in the packaging of our main products was **97.72%**.

### 2023 Waste and Packaging Material Recycling Key Achievements

Industry	Measure	Achievement
Ingot	Recycle quartz crucible packaging: Adopt customized recyclable packaging for the transportation of quartz crucibles. Return the recyclable packaging boxes to suppliers for reuse after unloading the crucibles in the workshop.	Annual savings of over 24,000 corrugated boxes, upper covers, crucible bottom brackets, and wooden pallets
Wafer	Reuse of sludge: Blend sludge into architectural bricks for reuse in the construction field	Recycling of more than 1,945 tons of sludge for a year
Cell	Improve battery packaging recycling: Cooperate with downstream assembly partners to establish an account for packaging materials recycling to monitor the account of packaging materials, designate a dedicated area for packaging material placement, and conduct packaging materials recycling in a reasonable manner.	The use of cartons decreased by 3.2 pieces per 10,000 pieces and the liners decreased by 4.15 pieces per 10,000 pieces after the implementation of the improvement measures
Module	Improve transfer pattern: Replace wooden pallets with metal pallets, and replace steel frames with aluminum frames	Replacement of wooden pallets with metal pallets saves wood as they are recyclable, saving more than 297,000 wooden pallets
Other Silicon Materials	The disposal of waste chemical packaging containers is changed from incineration treatment to recycling by manufacturers	Disposing a total of 5,503 units of containers in the whole year, realizing the comprehensive utilization of about 71.54 tons of hazardous waste

## Exhaust Gas Management

TZE strictly complies with the Law of the People’s Republic of China on the Prevention and Control of Atmospheric Pollution. The Company pledges in the Environmental Management Policy to achieve up-to-standard discharge and compliance disposal of exhaust gases. According to the Integrated Emission Standard of Air Pollutants, the Emission Standard of Pollutants for the Battery Industry and other laws and regulations, manufacturing processes that generate acidic exhaust gas, alkaline exhaust gas, organic exhaust gas and dust are all equipped with purification equipment. Then, the purified gases are monitored for concentration to ensure that all types of air pollutants meet the requirements of the compliance before discharge.

### 2021-2023 Exhaust Gas Emission Key Performance

Indicator	UoM	2021	2022	2023
Exhaust gas pollutants	tons	- <sup>1</sup>	-	52.26
Nitrogen oxide (NOx)	tons	95.87	30.91	7.50 <sup>2</sup>
Sulphur dioxide (SO2)	tons	0	2.11	0.15
Particulate matter (PM)	tons	-	-	19.17
Volatile organic compounds (VOC)	tons	-	-	16.41
Other exhaust gas pollutant <sup>3</sup>	tons	-	-	9.03

<sup>1</sup>The Company discloses indicators such as total emissions of exhaust gas pollutants, and particulate matter from the 2023 Sustainable Development Report onwards.

<sup>2</sup> Due to third-party handling of material suction in 2023, nitrogen oxides and sulfur dioxide emissions decreased compared to 2022.

<sup>3</sup>Including ammonia, hydrogen chloride and fluoride.

## Noise Prevention and Control

TZE rigorously manages noise generated within the Company’s industrial park in accordance with regulations such as the Emission Standard for Industrial Enterprises Noise at Boundary, to ensure noise meets emission requirements. The Company actively promotes noise control measures, such as giving priority to low-noise equipment and facilities in the procurement process, replacing equipment with those generating less noise, strengthening the point inspection and maintenance of noise protection facilities, and commissioning a qualified third party to carry out noise testing at the plant boundary on a regular basis to ensure that the noise meets the emission standards. During the Reporting Period, the Company did not receive any noise-related complaints.



## Ecological Conservation

### I Biodiversity

The potential negative environmental impacts of production and operational activities are of great concern to the Company. Throughout the entire process of project development, construction, and daily operation, we strictly adhere to environmental and biodiversity protection laws and regulations such as the Environmental Impact Assessment Law of the People's Republic of China. The Company considers ecological and environmental resources as a crucial boundary for project investment. To this end, the Company has formulated the Biodiversity Conservation Policy, which states:

- ▶ TZE is committed to realizing Net Positive Impact (NPI) and supporting the vision proposed in the Kunming Declaration to achieve “harmonious coexistence of humans and nature” by 2050.
- ▶ TZE integrates sustainable development concepts into supply chain management, works with business partners to promote biodiversity conservation and build green supply chains.



The TZE Garden Factory, Where Technology and Nature Live In

### I Supporting Ecological Restoration with PV Power

We actively leverage our expertise in solar technology to assist in ecological restoration in multiple regions, proposing the innovative model of “Solar Power + Ecological Restoration” and implementing applications such as fishery-light complementarity, and solar power for desert control.

#### G12 Imbricated Modules Help Turn Coal Mining Subsidence Areas into “Gold Mines”

Taking advantage of local resources, the first “PV +” base project in the southwestern Shandong coal mining subsidence area - the Huadian Jining Yutai Water-Surface PV Power Generation Project integrates PV power generation, aquaculture, and ecological restoration, exploring a new path for green transition in mining areas.

The G12 efficient imbricated modules covering the water surface do more than provide renewable energy for the local area. They also effectively reduce water evaporation and water temperature, thereby inhibiting algae proliferation and facilitating water purification. This, in turn, promotes the development of local aquaculture and fisheries, and ensures harmonious coexistence of nature and technology.



The Water-Surface PV Power Station - Bringing Solar Power to Local Communities

# Motivated People-Oriented Philosophy for a Shared Future

TZE firmly believes in a “people-oriented” approach that emphasizes unlocking the full potential of employees. We are committed to creating a diverse, inclusive, and safe workplace and operating environment for employees. We strive to provide each employee with competitive compensation and benefits, equal talent training opportunities, and promotion channels. By doing so, we aim to fully tap into employees’ potential and values, and foster mutual growth with them.

UN SDGs addressed in this chapter:



## Key Target and Progress

Issue	Indicator	Progress in 2023	2024 Target	2025 Target	2030 Target
Diversity, equality and inclusiveness	Talent training system	Established training programs for employees at different levels, businesses and departments	Optimize the talent training and development system (including leadership training, training programs designed for employees at all levels, etc.)	Build a talent training and development system for overseas bases	Implement a global talent training and development system
	Average annual training hours per employee	<b>37.2 hours</b>	Increase by <b>5%</b> compared to 2023	Increase by <b>10%</b> compared to 2023	Increase by <b>35%</b> compared to 2023
Employee training and development	Percentage of females in management positions	<b>24.6%</b>	Not less than <b>26%</b>	Not less than <b>28%</b>	Not less than <b>30%</b>
Occupational health and safety	Work-related injuries	Lost time injury rate (per 1,000,000 hours worked) is <b>0.23</b>	Reduce the lost time injury rate (per 1,000,000 hours worked) by <b>3%</b> compared to 2023	Reduce the lost time injury rate (per 1,000,000 hours worked) by <b>5%</b> compared to 2023	Reduce the lost time injury rate (per 1,000,000 hours worked) by <b>8%</b> compared to 2023

## TZE Has Won Several “Best Employer” Awards in the Past Three Years

Forbes China 2023 China’s Best Employer in Innovative Practices for 2023	China Business Report 2023 Excellent Employer Brand
HRoot 2023 Excellent ESG Employer	HRise2023 China’s Forward-Looking Employer
Knx X Awards 2023 - Best Employer Brand	Beisen 2023 China Talent Management Reform Pioneer
36 Kr 2023 Workplace Bonus Employer	Liepin 2023 Extraordinary Employer
51Job 2023 Top Graduate Employers	51Job 2022 Top Graduate Employers 14
Forbes China 2021 Most Sustainable Employer	

# Diversity and Inclusion

## Our Management Approaches

As an international Company, the Company’s business spans multiple countries and regions, thereby nurturing a culturally diverse workforce. Building on this, we aspire to foster a diverse and equal corporate atmosphere. We strive to establish an inclusive culture in our workplaces while enhancing team unity. With the development of international business, we will continue to practice initiatives related to diversity, equality and inclusion.

In accordance with the Employee Handbook, the Code of Business Ethics, the ESG Code of Conduct for Partners, the Company mandates that internal employees and external partners uphold equal rights in recruitment, employment, compensation and welfare, training, promotion, and departure. Any form of targeted discriminatory behavior is completely eliminated. Employees are treated with equality regardless of their races, nationalities, genders, religions, and sexual orientations at TZE, all employees employed sign employment contracts with the Company in accordance with the law. There are no such forms of employment as part-time, temporary, outsourced employees.

We are particularly concerned about the rights and interests of female employees. We have formulated and implemented the Regulations on the Special Protection and Management of Female Employees with reference to the Special Labor Protection of Female Employees. In addition, we have also set goals to increase the proportion of female employees in the total workforce, management, and scientific talents. We focus on value creation, determine posts and compensation based on individual ability, and make equal compensation between male and female employees a diversity goal.

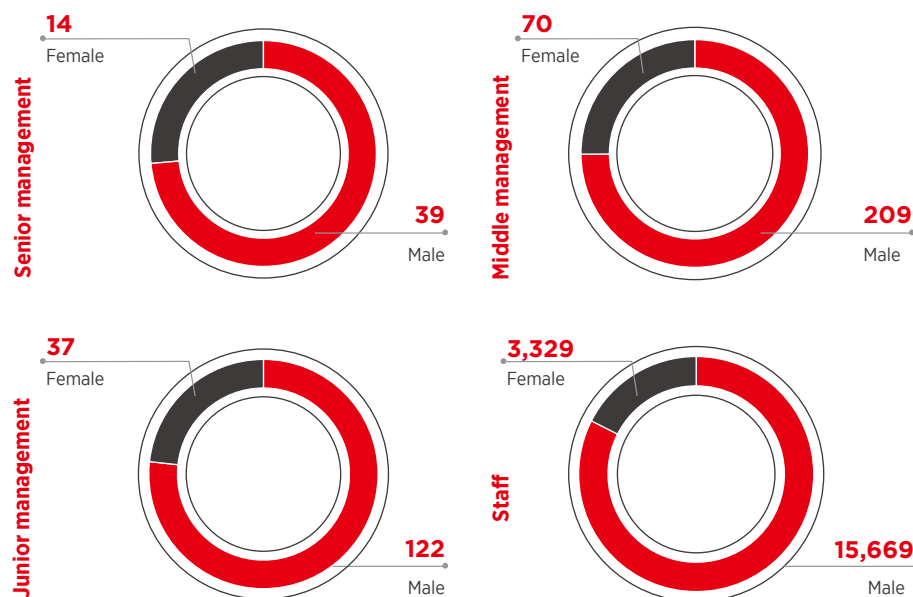
## Embracing Diversity

The Company provides female employees with equal career opportunities and a broad platform for career development. We also demonstrate the “power of female” by appointing female employees as management. In 2023, the proportion of female employees in senior management of the Company was 26.4%. Inner Mongolia and Ningxia are our key business locations and the Company attaches great importance to the local employment. We treat candidates from different ethnic groups equally during recruiting and fully respect multicultural integration to create an inclusive working environment. As of the end of the Reporting Period, TZE employed 1,992 minority employees.

## 2021-2023 TZE Diversity Performance

UoM: person

Disclosure Item	2021	2022	2023	
Total number of employees	13,371	17,390	19,489	
By gender	Male	10,867	14,160	16,039
	Female	2,504	3,230	3,450
By age group	30 and below	6,386	9,499	10,347
	31-50	6,851	7,758	8,990
	50 and above	134	133	152



<sup>1</sup>The Company discloses general employee and management diversity metrics by gender starting with the 2023 Sustainability Report.

## Measures to Improve Diversity

To strengthen employees' understandings of diversity, in 2023, the Company organized 9 multicultural lectures covering topics such as cross-culture, international business etiquette, and overseas employment requirements. At the cross-cultural lecture, we emphasized such topics as the high and low context cultures, power distance, uncertainty avoidance. At the lecture on overseas employment, we emphasized equity, respect, and cultural tolerance to continuously improve the level of employee diversity and further practice the philosophy of diversity in daily work.

### Huanzhi Renewable energy Takes Various Measures to Support Female Scientific and Technological Talents

Huanzhi Renewable energy devotes resources to the development of female engineers. Through a comprehensive engineer development system, female employees are empowered in terms of basic theory, applied technology, and engineering practice. By doing so, Huanzhi Renewable energy gives full play to the strengths of female scientific and technological talents in innovation.

In 2022, Xiaomeng Liu joined Huanzhi Renewable energy as a fresh graduate. After that, she was provided with ample learning opportunities and practices. In specific, she participated in projects such as the optimization of eight yield modules of the quality intelligence analysis system and the design of the one-click agile reporting. In 2022, Xiaomeng Liu won the "Greatest Growth Award" for her outstanding performance, and was appointed as the manager of the AI Big Data Center in 2023.



Huanzhi Renewable Energy "the Most Growing Power Award" Winner Liu Xiaomeng



Women in Technical Positions

## International Empowerment

We are committed to becoming the leading renewable energy technology company in the world. As we keep facilitating international business, we are striving for an international workforce through a wide range of measures to attract international talents, enhance employees' cross-cultural awareness, and promote the internationalization of our workforce. By the end of the Reporting Period, we had employed 10 foreign employees from 4 countries.

The Company organizes internationalization training for employees, which covers equity, opportunity and competition, social identity and sense of equity and other topics. Through the training, we facilitate a profound understanding of multiculture among core groups to empower the Company's international development.

### TZE and the School of International Education of Nankai University Jointly Organized an Exchange Meeting for Foreign Students

Based on the talent needs of the Company's globalization strategy, the Company continuously deepens the international school-enterprise cooperation. We align talent supply with the demand in overseas regions, and make efforts in building up a national talent co-education platform.

In November 2023, TZE and the School of International Education of Nankai University jointly organized an employment exchange meeting for foreign students. During the meeting, all-round and in-depth exchanges were carried out on topics such as the recruitment of foreign students, internship, enhancement of employees' ability, and the construction of collaborative education mechanism. In doing so, we endeavor to nurture talents in accurate response to the demand of the industrial chain.



Multicultural Lectures



International Students Visit TZE Tianjin Industrial Park

# Attracting and Retaining Talents

Employees are the cornerstone for the Company's sustainable development. A high-level talent team is both the pillar for the Company's business development and an important concern of stakeholders. We adhere to the people-oriented employment concept, strictly protect the rights and interests of employees, and introduce outstanding talents from home and abroad. TZE provides competitive compensation and benefits for our employees, promotes sustainable operation together with them, and provides talent guarantee for the globalization of the PV industry.

## Attracting Talents

The Company dynamically adjusts recruitment plan and introduces talents tailored to business development and strategic needs, to expand the talent pool. In addition, based on future business development, we carry out in-depth university-enterprise cooperation projects, to foster talents needed in advance, which effectively supports our long-term development strategy.

Adhering to the employment philosophy of "Everybody has to start somewhere", we continuously carry out "Go Global Program", "Starlight Program" and "Sparkling Program". These programs are designed to attract fresh graduates at home and abroad and foreign graduate students in China, helping to reserve talents for our globalization strategy. During the Reporting Period, TZE recruited 7,022 new employees.

Total cost of staff recruitment: **7.26** million

## Specialized Programs and Measures

### Starlight Program

Adhering to the long-term and forward-looking principle, the Company continuously works on the recruitment, training and reserve of fresh graduates. At present, the Company has established in-depth university-enterprise cooperation with a number of domestic universities, forming a stable and sustainable talent supply chain system. In the spring and autumn campus recruitment of 2023, 600 fresh graduates in total joined the Company.

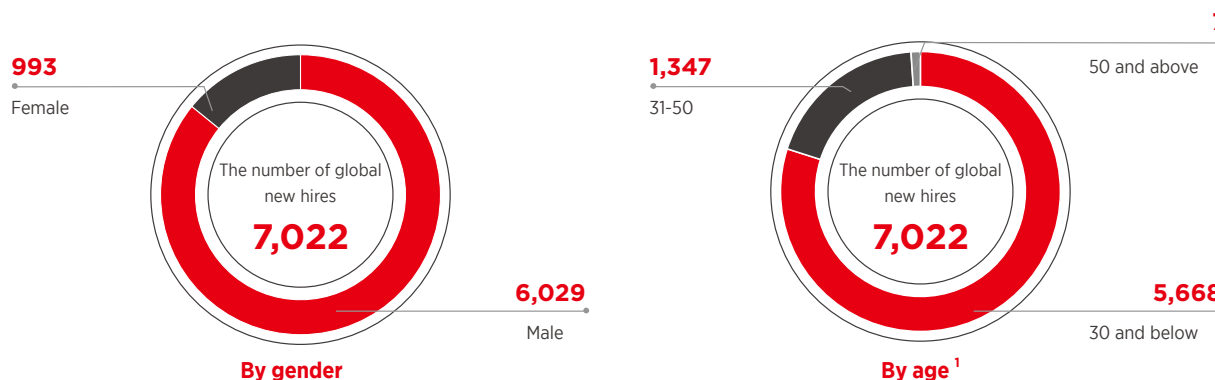
### Sparkling Program

The university-enterprise cooperation project, which deeply combines intern employment of domestic and overseas students with campus recruitment of the Company, helps to achieve stable reserve of talents. We have cooperated with 62 universities across 17 provinces and centrally-administered municipalities. During the Reporting Period, the Company entered into cooperation with over 10 new colleges and universities, and recruited more than 500 interns. All interns had chances to become regular staff of the Company.

### Go Global Program

To reserve talents for the globalization strategy, the GoGlobal Program has been set up to absorb overseas students back to China, foreign students in China, etc., to build a global and sustainable talent supply chain. During the Reporting Period, the Company attracted more than 50 international students.

## 2023 New Hires Key Performance



<sup>1</sup>The Company discloses the number of new hires by age from the 2023 Sustainability Report.

## Protecting Employee Rights

The Company strictly abides by the International Labor Organization Conventions, the Labor Law of the People's Republic of China and other domestic and international conventions, laws and regulations regarding labor and employee rights and interests. We have formulated the Human Rights Policy to ensure that the fundamental human rights of all employees, suppliers and other stakeholders are not violated in our business, production and operation activities. The Company signs labor contracts with employees in accordance with the law, clearly stipulating the rights and obligations of both parties. All employees are required to sign an Employee Commitment Letter, making commitments regarding compliance with laws and regulations, honesty and trustworthiness, observance of confidentiality obligations, integrity, human rights and other aspects.

We respect employees' rights to freedom of association and collective bargaining, establish employee union and sign the Collective Agreement on Remuneration with employee representatives after discussion to effectively safeguard the rights and interests of employees. In 2023, the Collective Agreement signing rate and employee unionization rate was both 100%.

In 2023, TZE passed the Harmonious Enterprise Review of Tianjin Hi-tech District upon the third-party review on labor relations, labor disputes and humanistic care. Over the past three years, the Company had no incidents of discrimination, child labor or forced labor.

## TZE Human Rights Protection



### Prohibition of forced labor

- ▶ The Company adopts a "zero tolerance" policy towards forced labor, ensuring that every employee can enjoy statutory holidays in accordance with national laws and regulations and company policies.
- ▶ We always adhere to the "people-oriented", adopt the "four crews and two shifts" production mode, to ensure that the Company's operation complies with the bottom line and red line.



### Prohibition of child labor

- ▶ The Company has formulated and implemented the Regulations on the Special Protection and Management of Minors with reference to the requirements of the Law on Protection of Minors. The regulation has explicitly prohibited the employment of minors.
- ▶ The Company have explicitly prohibited the hiring of minors under the age of 18 in the Recruitment Management Procedures. To this end, we check and confirm the valid identity of candidates in various ways in the process of employee recruitment, employment approval, registration, etc.



### Respect and guarantee of human rights

- ▶ The Company regularly conducts the risk assessment and comprehensive review regarding human rights and labor rights. The assessment and review focus on violations of human rights/labor rights such as child labor and forced labor, covering working environment, working hours, health and safety, compensation and benefits, employee training and development, etc. We ensure that human rights safeguards cover all employees.
- ▶ In 2023, after a comprehensive human rights assessment, we found that the overall performance in the protection of employee rights and interests was good, but there was still a need to optimize the areas of occupational health and safety, and employee feedback mechanisms, all of which have been formulated with improvement measures.
- ▶ The Company regularly organizes training on human rights to enhance employees' knowledge in this regard as well as their awareness of rights protection.



### Complaints and Reports Handling

- ▶ To protect their rights, employees can report violations through internal audit and grievance reporting channels.
- ▶ The Company will record and respond to complaints within 24 hours upon receipt. Advice on how to cope with the reported problems will be proposed, with relevant parties to be handled based on the severity of the case.



## Employee Benefits and Care

The Company pays close attention to the needs of employees. We provide them with basic pension insurance, basic medical insurance, unemployment insurance, work injury insurance, maternity insurance and housing provident fund in accordance with the law. We also protect their non-pay benefits of annual leave, sick leave, maternity leave, nursing leave, marriage leave, bereavement leave, parental leave and other leaves.

To make employees feel the Company's care and companionship in all aspects, the Company keeps improving various non-monetary benefits. For example, the Company provides all employees with staff canteen that offers three meals a day, reasonable paid holidays, benefits for the Spring Festival, Dragon Boat Festival, Mid-Autumn Festival and other festivals, and allowances for business trips, overtime work, high temperature, cold temperature and other scenarios. With these efforts, we strive to make TZE a warm homeland.

In addition to the benefits above, we offer our care to female employees every year on the Women's Day. We have set up baby care rooms and provided wellness insurance for female employees, thus protecting them against major illnesses. For employees who are pregnant for 5 months or more, the Company conventionally requests them to take maternity leave until childbirth and provides parental leave for parents of infants and young children.

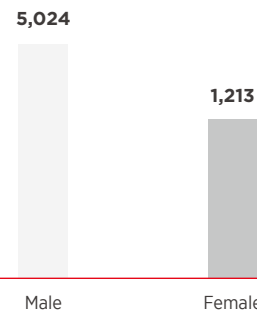
A healthy and energetic working atmosphere is essential to improve employee's productivity and passion. We pay special attention to employees' work stress and mental health, and provide basic emotional counseling services through employee unions, mental health seminars, and regular employee communications, etc. In 2023, the labor union in different regions organized a wide range of high-frequency cultural and sports activities for all employees, attracting more than 19,000 employees.

## 2021-2023 TZE's Social Insurance Coverage Performance

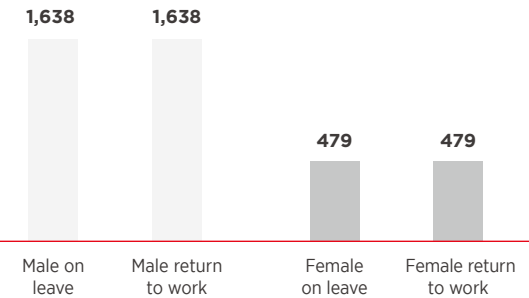
Disclosure Item	2021	2022	2023
Social insurance coverage rate	100%	100%	100%

## 2023 TZE's Parental Leave Performance (person)

Total number of employees that were entitled to parental leave



Total number of employees that returned to work in the Reporting Period after parental leave ended





## Performance Appraisals and Remuneration Incentive

We constantly improve a series of supporting processes and mechanisms for talent retention such as performance appraisal mechanism, to scientifically and comprehensively learn about employee performance. We also provide remuneration with internal fairness and external competitiveness for all employees, to share the fruits of development with employees.

### I Performance Appraisals and Assessment

The Company conducts performance assessment every year, regardless of gender and rank, which is a scientific basis for employees' promotion, training and development, and compensation and ensures the provision of feedbacks for them. By doing so, TZE aims to achieve operation plans, help departments and employees achieve their objectives, and determine the employees' performance through dynamic assessment. In 2023, the performance appraisals and feedback covered 100% of our employees.

Taking the comprehensive consideration of job requirements, indicators of annual employees, evaluation criteria, etc., the Company sets different evaluation dimensions, periods and approaches for employees at different levels and positions.

 <p><b>Management and Core Members</b></p>	Assessment indicator: Cultural values, core competencies, completion of key tasks, etc.
	Assessment period: Semi-annual & annual
	Assessment approach: All-round evaluation; the evaluation and inspections by relevant responsible parties
 <p><b>Staff</b></p>	Assessment indicator: Work execution, learning and growth, teamwork, planning and thinking, etc.
	Assessment period: Quarterly
	Assessment approach: All-round evaluation

### I Remuneration and Incentive

Focusing on value creation, the Company continuously improves the remuneration and incentive policies, and provides all employees with internally fair and externally competitive remuneration through job value assessment, individual ability value evaluation, variable remuneration mechanisms based on performance appraisal and various incentive measures.

We develop and continue to improve a variable performance-based pay mechanism that covers all employees, including non-officer and non-sales staff. In addition to the fixed compensation, employees are also paid with variable pay including monthly performance-based pay, as well as process and annual bonuses. Employee's monthly compensation fluctuates based on performance assessment. Bonuses vary according to the Company's business performance, the performance of the department to which employee belongs, the individual performance and other factors.

We gradually improve the performance management system for senior management through the assessment for the Company's CPI (Common Performance Indicator) and key task evaluation. CPIs for senior management include the Company's sustainable development, innovation, talent attraction and retention, and business ethics. Key tasks include water management, work safety, scientific and technological innovation, key tasks of Industry 4.0, fulfilment in olive-shaped talent construction, corporate and supply chain anti-corruption and business ethics governance. The practice that ESG-related performance indicators are linked with the remuneration for senior management can enhance their attention to corporate ESG governance.

### Various Incentives

<b>Daily prompt incentives</b>	Positive and negative incentives
<b>Differential pay adjustment</b>	Excellent performance/position promotion
<b>Year-end bonus</b>	On an annual basis
<b>Long-term incentives</b>	Employee stock ownership plan is linked to the Company's performance and individual performance. As of the end of 2023, the Company has implemented Employee Equity Programs - 2021 Options & 2021, 2022, 2023 employee stock ownership plan. The incentives cover a wide range of employees, including core management backbone, core technology backbone, marketing business backbone, "craftsman-type" talents and other key talents, etc. Long-term incentives cover thousands person times.
<b>Other honors</b>	Annual excellent organization/staff selection

## Employee Engagement and Satisfaction

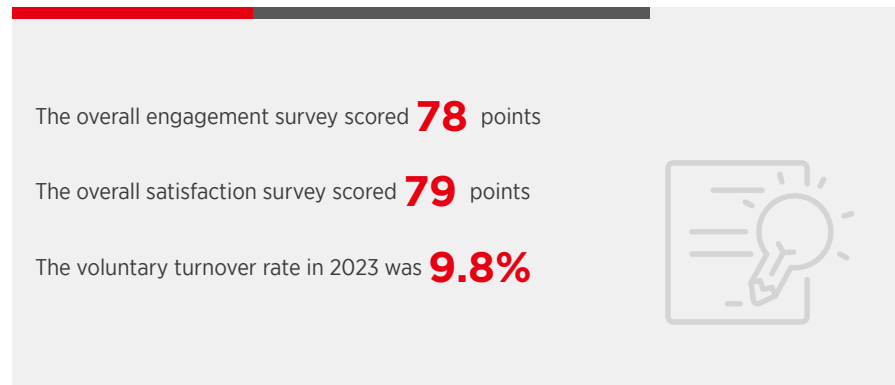
The Company attaches great importance to the key drivers of employee engagement and satisfaction, and conducts regular employee engagement and satisfaction surveys every year. In November 2023, TZE entrusted third parties to conduct a survey on employee engagement and satisfaction, covering 15 dimensions including engagement, satisfaction and happiness index. We sent questionnaires to 20,656 employees via SMS, QR code, and email. We received 19,863 replies, and the overall response rate was 96%. We have formulated improvement plans in response to the findings of the study, and continuously track the progress of the implementation to enhance employee engagement and satisfaction.

Upholding the principle of “people-oriented” development, we are committed to areas such as building the talent pipeline, establishing an olive-shaped organization, improving remuneration and benefit mechanism and employee training system, optimizing employee development channels, and strengthening the employee care. In doing so, we improve the sense of gain and happiness of employees in a comprehensive way, and further reduce the turnover rate.

## Democratic Communication

Effective communication is key to efficient operation. We actively listen to the voices of employees by building a communication bridge with employees. Through a wide range of transparent channels such as employee talks, employee satisfaction surveys, public mailboxes, and suggestion boxes, we learn about their difficulties in work and life. In doing so, we also encourage them to take active part in the Company’s business decisions and cultural construction.

The Company’s SSC (Shared Service Center) are equipped with employee service hotline and mailbox, as well as full-time labor relation coordinators. Employees can share their needs or ideas with SSC via the hotline or email, or through on-site communication. We also set up rationalization channels in every production base to collect employees’ suggestions in respect of working process and operation management. The Company will develop an improvement plan for the feedbacks and keep following up on them.

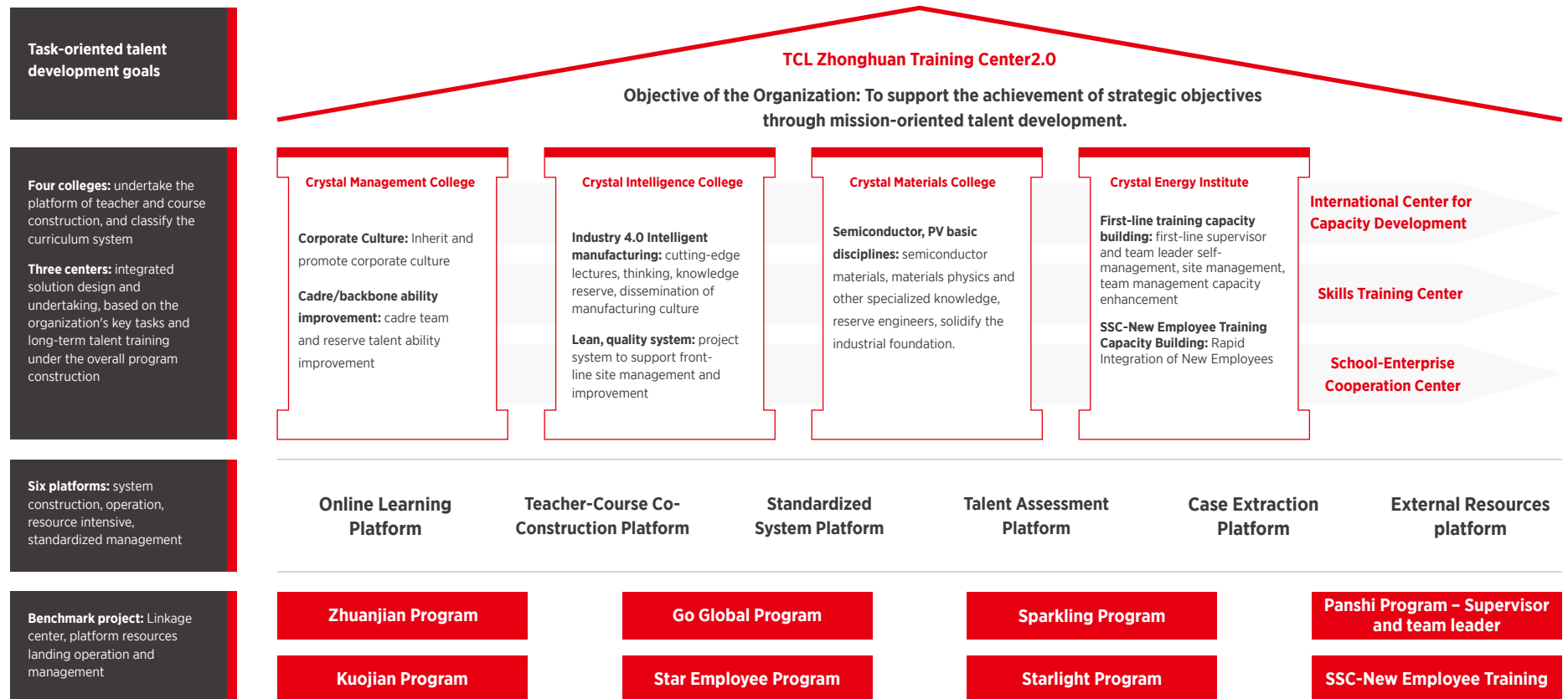


<sup>1</sup>The number of employees is the number of people surveyed as of November 31, 2023.




# Employee Training and Development

## Our Management Approaches

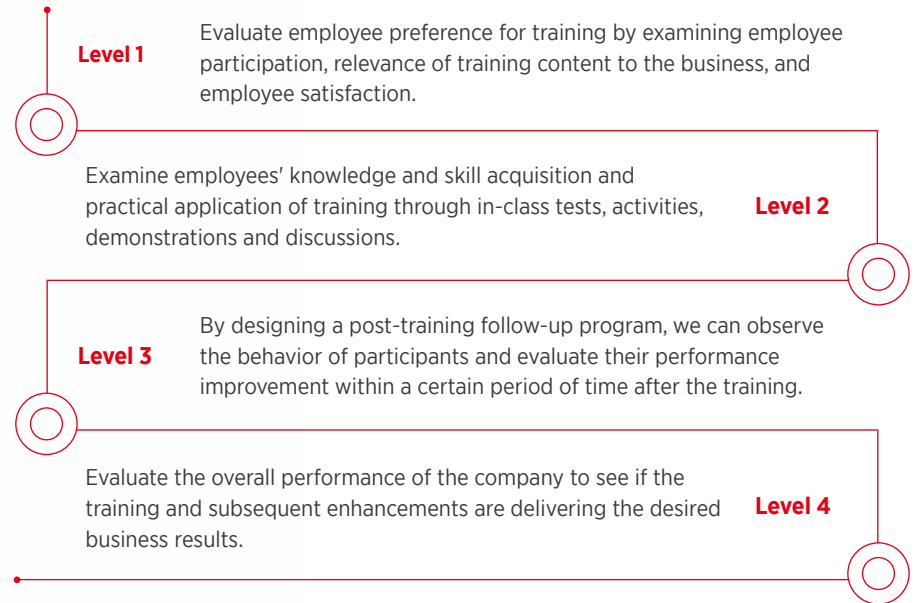
The Company highlights the construction of talent pipeline, by providing various career development channels, and carrying out career development planning covering all employees. In doing so, the Company is committed to creating high-quality international “intelligent manufacturing” talent pipeline with solid theoretical knowledge, strong practical ability and broad international vision, so as to continuously enhance our innovation ability and industry competitiveness.



### Training Principle

 <p><b>Applicable</b></p>	<p>All training should align with the strategic development and business needs. As a result, activities such as the development of any training program, case selection, and training implementation should be based on and applicable to the front-line practices.</p>
 <p><b>Practicable</b></p>	<p>The knowledge or enhanced skills acquired by employees through training can be utilized in practice to improve work efficiency.</p>
 <p><b>Targeted</b></p>	<p>Targeted training with different focuses, contents and approaches is developed for different positions.</p>

### Evaluation of training effectiveness (application of Koch's four-level evaluation model)

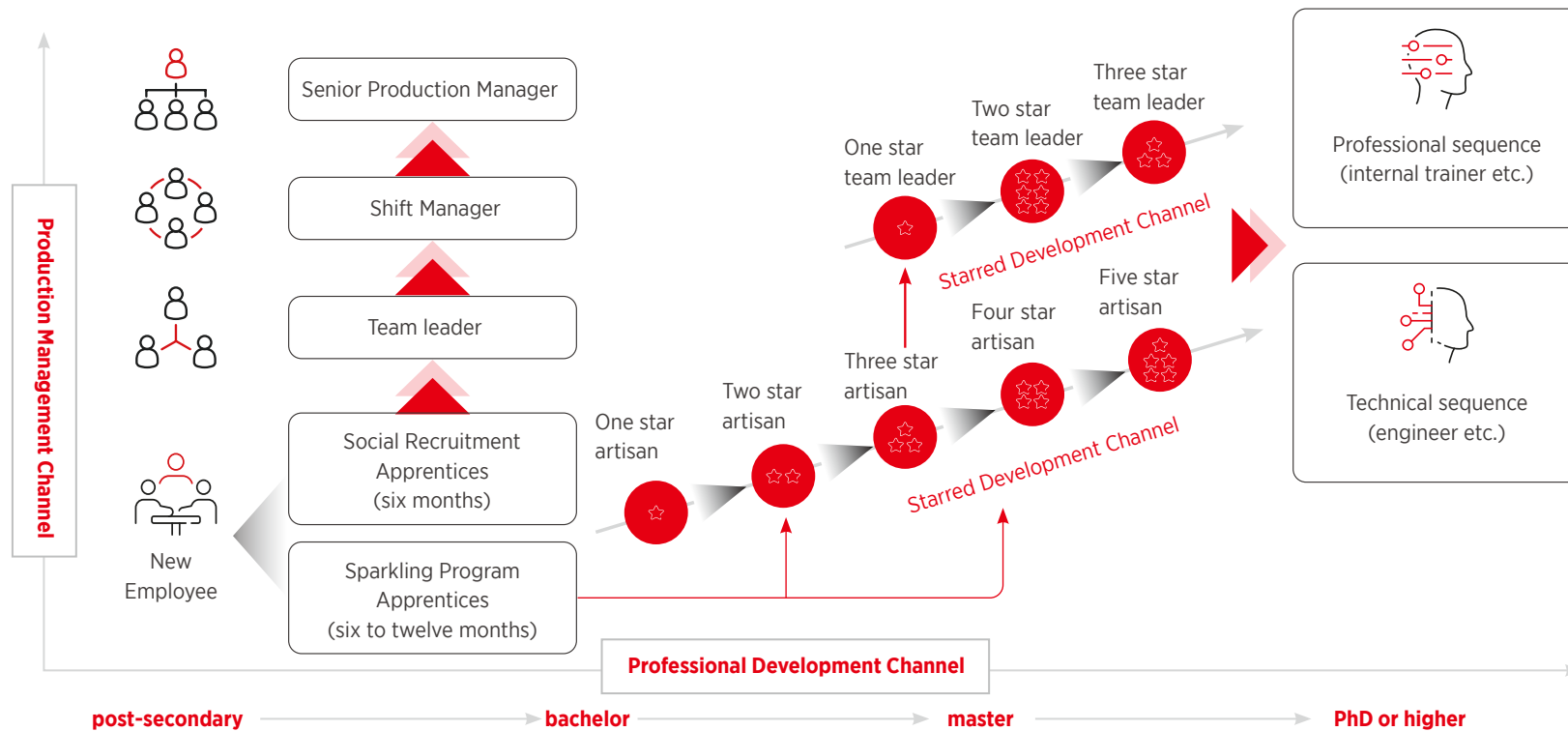


## Supporting Employees' Development

The Company attaches importance to the systematic construction and development of talent echelon. To help employees realize their career development goals, we provide a variety of career development channels, including professional, technical and management sequence. Relying on the regular annual inventory of talent needs in business and functional departments, we clarify the succession plan for key positions and future talent gaps, identify high-potential talents, and design personalized training paths.

In addition, TZE continues to provide incentives for internal hiring and smooth and diversified internal transfer channels to provide career development opportunities for current employees.

### Sparkling Program Star Craftsman Promotion Path



## Tapping into Employees' Potential

To construct an olive-shaped talent structure and a learning organization, we have developed and implemented the Training Management Regulations. With the Zhonghuan Training Center as a carrier, we have built a scientific and efficient staff learning and training system to provide every employee with fair and diversified training courses covering knowledge, skills, management ability and leadership, so as to ensure the development of talent ladder. We are actively expanding internal talent pool by implementing the job rotation system, the mentoring programs and multi-level training programs. These efforts are aimed at exploring the potential of employees at all levels and accelerating their professional growth.

We offer over 3,000+ courses, 1,500+ learning programs and 10,000+ training tests in a wide range of areas including Lean, Quality, Leadership Development, Internationalization and more.

Knowledge courses **1,100+**

Technical courses **110+**

Management and Leadership Courses **470+**

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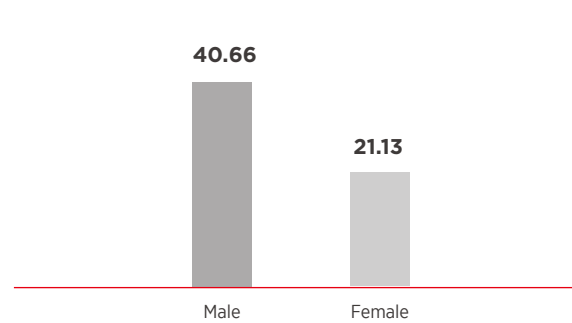
In 2023, training coverage rate is **100%**

Total training hours of employees reach **725,066.14** hours

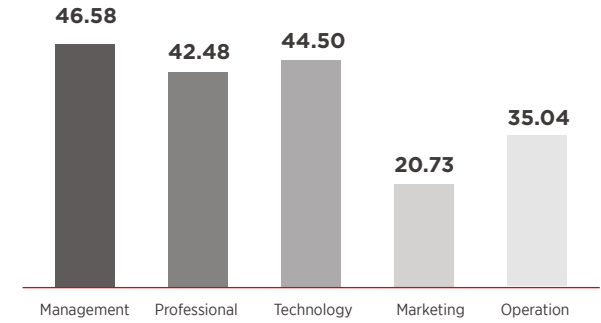
Average training hours per employee is **37.20** hours

Total cost of staff training is RMB **8.02** million

## Average training hours per employee in 2023



## Average training hours per function in 2023



## Zhonghuan Training Center V2.0

In response to the needs of the industry and the Company's development, in 2023, TZE launched Zhonghuan Training Center V2.0, an upgraded online employee learning platform. By upgrading the contents, layout and user interface, we enhance employee engagement on the platform.

Home Page of Zhonghuan Training Center

The screenshot shows the home page of the Zhonghuan Training Center V2.0. At the top, there is a navigation bar with the logo '中环学堂' and various menu items like '首页', '我的学习', '企业知识', '学习社区', '培训中心', '个人发展', '知识空间', '我的课程', '营销中心', '服务中心', and '帮助中心'. Below the navigation bar is a large banner with the text '一书一课' and '在 / 书 / 籍 / 里 / 学 / 习 / 培 / 训'. The main content area features a grid of course cards, each with a title, a thumbnail image, and a star rating. The courses listed include '2023年光伏行业发展洞察与2024年形势展望', '数字化精益生产管理与现场改善', '变革性增长驱动成长体系——工作事务优化', '变革性增长驱动成长体系——团队管理优化', '如何让推行全面质量管理', '全球供应链韧性提升体系——现场改善优化', 'SPC统计过程控制', and '什么叫质量管理'.

## I Internal and External Trainer Cultivation

The Company strives to integrate and apply resources to cultivate better internal trainers. We introduce learning resources through increasing cooperation with external institutions, to provide a fair and all-round learning environment for all employees, and implement the talent training strategy. Regarding internal trainers as a major force for talent cultivation, we have formulated the Regulations on the Management of Internal Trainers, which defines evaluation and progression conditions of junior, middle, senior and international internal trainers. Furthermore, we regularly organize special training for internal trainers to improve their ability, and give priority to providing internal trainers with external training opportunities organized by Zhonghuan Training Center.

To further stimulate the enthusiasm and creativity of internal trainers, we pay them class salary according to their level, teaching effect and teaching hours. They are also given subsidies for course development, teaching, and teaching guiding activities. Considering international business development, the Company encourages foreign employees to join the internal trainer program, and provides subsidies for those who participate in teaching activities.

## I New Employee Cultivation

In terms of new employee training, the Company conducts one-year ability enhancement training for graduates who join the Company every year. Such training includes centralized orientation training, online learning, mentoring, rotation in first-line positions, job practice, experience enrichment and training on vision expansion. Mid-term review as well as final review are conducted during the training to review the growth of talents.

We always pay attention to the school-enterprise innovative talent nurturing, that is, students are instructed by mentors to experience the front-line “engineer-respected culture” of TZE. We carry out school-enterprise cooperation to develop students’ expertise and professionalism so that they can learn and master job skills within a short time and qualify for high-level skill requirements. The first “TZE Mentoring Class” was launched in 2022, and the qualified rate was 84% in 2023.

## The Second “TZE Mentoring Class”: New Highlights of School-Enterprise Cooperation

In May 2023, the opening ceremony of the second “TZE Mentoring Class” was held at the Department of Mechanical and Electrical Engineering of Tianjin Electronic Information College. Adhering to the “people-oriented” and “virtue-based” concept, we contribute our efforts to an in-depth integration of production and education. With the successful experience of the first “TZE Mentoring Class”, we incorporated the “craftsmanship” and “engineer-respected culture” into the teaching process of the second “TZE Mentoring Class”. In addition, we innovated the school-enterprise nurturing mechanism to enhance students’ comprehensive quality and capability to provide enterprises and the society with more outstanding technical and skilled talents and national craftsmen.



The Opening Ceremony of the Second “TZE Mentoring Class”



## I Supporting Further Improvement in Academic Education and Qualification

According to the Training Management Regulations, the Employee Incentive Management System, and the Regulations on Employee In-Service Education Management, TZE encourages employees to improve their academic qualifications. In doing so, their understandings of theoretical and technical knowledge, as well as their skills and job competence will be enhanced, contributing to the common development. Through the first-line star craftsman program, the “Sparkling Program” in cooperation with colleges, and the subsidy program for in-service education and academic qualification promotion, the ability of first-line staff is promoted and transformed to cultivate Industry 4.0 skilled talents. All employees of TZE are entitled to external training as well as incentives and reimbursement for in-service education. The in-service education support covers academic education, professional qualifications and professional skills. In 2023, over 300 employees received allowances for acquiring certificates and higher academic qualifications.

### Degree Enhancement Project of Wafer Business Unit (BU)

We share opportunities of growth with our employees. To build a learning organization, and create a self-improving atmosphere, the Company’s wafer BU carries out various forms of school-enterprise cooperation with many colleges and universities, which is also strongly desired by employees for enhancing degree and professional ability. A scientific and systematic training system has been established to carry out the degree enhancement project, thus achieving sustainable talent training. By the end of the report period, the project had gained fruitful results, with more than 30 employees having their degree advanced. In 2023, there were over 200 new applicants for higher academic qualification, more than 180 of whom passed the entrance exam, with an admission rate of 86%.



Employee In-depth Communication to Improve Professional Skills

## I Management and Leadership Development Training

The Company offers managerial and leadership development courses for all employees, such as key conversations and focused conversations. Meanwhile, special leadership empowerment programs are conducted for professional talents and leaders, such as the Cadre Team “Kuojian Program” and the New Manager’s change in roles training, called “Zhuanjian Program”. To cope with international business, we carry out a series of international talent training such as the Pilot Program to improve the leadership of Chinese and foreign cadres working overseas.

### “Zhuanjian Program”: Specialized Leadership Training for Middle Management

As a leadership training program for middle management, “Zhuanjian Program” aims to enable the managers to deeply understand and internalize the corporate culture and master scientific approaches to strategic planning and execution. Through the program, the managers’ capabilities are fully enhanced in terms of team building, decision-making optimization, leadership in reform, etc. In 2023, we organized a total of 4 training sessions under the program with over 150 participants.



“Zhuanjian Program” Leadership Training Site

# Occupational Health and Safety

## Our Management Approaches

A safe working environment is not only a major concern for employees when they choose a career, but also an important dimension for domestic and overseas partners in evaluating the Company's social responsibility. Adhering to the safety management policy of abiding by laws and regulations, people-oriented, work safety and reducing occupational risks, the Company makes every effort to create a healthy and safe working environment. For this purpose, we have set short-term, medium-term and long-term management objectives regarding work safety. We also include the achievement of such objectives into the performance assessment for the relevant senior management of the Company.

We strictly follow the Work Safety Law of the People's Republic of China, the Law on the Prevention and Control of Occupational Diseases of the People's Republic of China and a series of laws and regulations. We have formulated and implemented Health and Safety Policy, established and improved the occupational health and safety management system covering the whole process of the Company's business and all the employees. The Company carries out the full implementation of work safety informationization, digitization and standardization through the establishment of TZE's work safety information platform, and efficiently implements the work of all the occupational health and safety.

The Company effectively protects the safety of its employees by strengthening the mechanisms of work safety responsibility, safety risk prevention and control, safety training and education, occupational health protection, and emergency management protection. Up to the end of 2023, 100% of 11 factories eligible for certification have obtained ISO 45001 Occupational Health and Safety Management System Certification, 8 factories obtained Level 2 Safety Standardization Certification, and 2 factories obtained Level 3 Safety Standardization Certification.

## 2023 Occupational Health and Safety Performance

The number of work-related injuries

9



The number of particularly serious safety accidents among them

0



The number of major safety accidents among them

0



The number of fatalities as a result of work-related injury

0



The number of working days lost due to work-related injuries

216



Lost time injury rate (per 1,000,000 hours worked)<sup>1</sup>

0.23



Cost of investment in work safety

89.25 million



<sup>1</sup>In 2023, TZE had 9 work-related injuries with total working hours of 19,489\*2,000.ours worked is 0.30 (0.23=9/(19,489\*2,000)\*1,000,000)



## Work Safety Responsibility Mechanism

TZE has established a sound work safety management system, with the Work Safety Committee as the highest leading body in the management of work safety. The Committee, composed of the general manager of the Company and work safety directors of each department and subsidiary, is responsible for organizing and analyzing the domestic, industry and company's work safety situation, studying and dealing with major safety issues, and coordinating and solving outstanding work safety problems.

The Company has formulated the work safety responsibility policy, and established the responsibility system of full coverage. At the beginning of a year, the work safety responsibility letter is signed by all employees at all levels and departments. At the end of the year, assessment is conducted to review the results of work safety target and responsibility system of employees from each subsidiary, each department and each post, and the assessment results are included in performance.

## Safety Risk Control Mechanism

TZE has formulated and implemented internal rules and regulations such as the Regulations on Hierarchical Control of Safety Risks and the Regulations on the Investigation and Management of Hidden Hazards. We implement a dual prevention mechanism to guide subsidiaries in optimizing the identification and control of safety risks, so as to better prevent and control safety risks as a whole.

Every year, the Company formulated and implemented the Annual Hidden Danger Investigation Work Plan. Each subsidiary company issued and executed special hidden danger investigation tasks through TZE's work safety information platform, found hidden danger information upload system, and tracked the closed-loop rectification and implementation. In 2023, we mobilize the enthusiasm of all employees to participate in hidden danger screening activities, reported 1,825 safety hazard items throughout the year, with 1,635 effective safety hazard items. All of them are arranged special personnel to track the rectification, and have been rectified.

## Occupational Health Protection Mechanism

TZE is committed to providing employees with a healthy and safe work environment. To achieve the goal of zero new occupational diseases, the Company has formulated and implemented a series of internal rules and regulations such as the Regulations on Occupational Health and Safety Management and the Regulations on the Management of Labor Protection Equipment. The Company conducts annual inspections on the factories involved in occupational disease factors and takes immediate preventive and corrective actions according to the inspection results. Furthermore, we organize annual health examinations for employees exposed to occupational risk factors, to regularly monitor and prevent occupational diseases and strengthen occupational health management. Once an employee is found to have potential occupational disease, he or she shall be transferred to another position immediately to avoid occupational diseases.

### 2023 Occupational Health Protection Performance

Signing rate of work safety responsibility letter is **100%**

Work safety responsibility system assessment coverage rate is **100%**

Organized more than **1,588** inspections for potential safety hazards

A total of **13,049** safety hazard items have been inspected

**100%** of safety hazard items have been rectified

The percentage of employees having a health examination is **100%**<sup>1</sup>

The percentage of occupational disease accidents is **0**



<sup>1</sup>Coverage is for active employees as of the end of 2023.

## Safety Training Mechanism

The Company develops and implements the Annual Safety Training Schedule every year. Targeted safety training is provided according to levels and positions, covering senior executives, heads of departments, grass-roots managers, full-time and part-time safety managers, front-line employees, etc., to ensure that all employees learn and master safety knowledge and skills in need.

In 2023, the Company completed the annual safety training plan with both online and offline training, and conducted 1,872 safety training activities with a total of 194,110 participants, achieving a 100% coverage rate.



The Scene of "Factory Manager Talks about Safety" Safety Production Training



The Scene of Work Safety Month Knowledge Contest



The Site of Fire Emergency Drill



The Site of Emergency Operation Demonstration

## Emergency Management System

Strictly based on the work safety accident risk assessment and emergency resource investigation, the Company has developed a three-level emergency plan system consists of comprehensive, special and on-site disposal plans. We formulates and implements the Annual Emergency Drill Plan, actively organize full participation, improve the response speed of our employees to safety accidents, and continuously cultivate and strengthen their emergency response capabilities.

In 2023, the Company and our production bases carried out a total of 962 emergency drills.

# Accountable

## Making a Joint Effort to Drive Business for Good

At TZE, being socially responsible means being accountable. We adhere to business conduct and ethical standards, and continually improve our corporate governance. TZE upholds integrity as a core value. Adhering to the rule of law and business ethics, TZE continuously enhances risk management mechanisms and strengthens compliance management, as part of the ongoing efforts to improve corporate governance. We have continued our long-term support for national development strategies, continually increased our social contributions, and collaborated with ecological partners to jointly build a better society.

UN SDGs addressed in this chapter:



### Key Target and Progress

Issue	Indicator	Progress in 2023	2024 Target	2025 Target	2030 Target
Business Ethics	The percentage of employees receiving business ethics training	100%	100%	100%	100%
Information Safety	ISO 27001 Information Security Management System Certification	2 subsidiaries have obtained the ISO 27001 certification	4 new entities with ISO 27001 certification	All company factories with ISO 27001 certified	/

### 2023 Honors and Awards

TZE won the highest rating of Grade A for annual information disclosure by Shenzhen Stock Exchange for two consecutive years

Mr. Shen Haoping, General Manager of TZE, was once again included in Forbes China's Best CEOs list.

# Corporate Governance

TZE continues to optimize the governance structure and management system, strengthen the normative governance capabilities, and create long-term sustainable value for stakeholders.

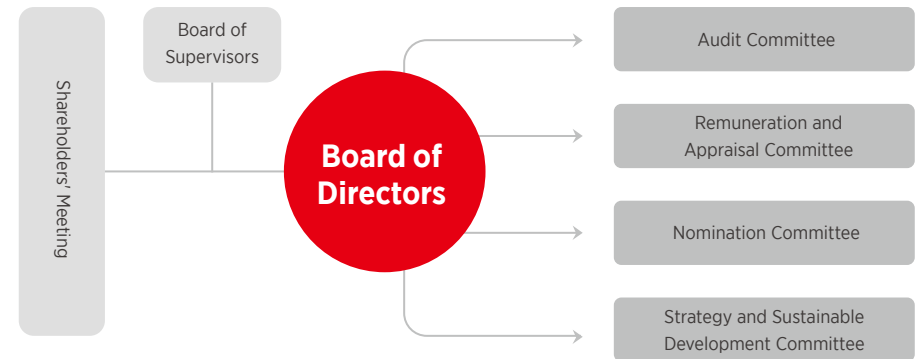
## Corporate Governance Responsibility

We firmly believe that a good governance structure is an important guarantee for the sustainable development of the company. The Company has established and continues to optimize the governance framework, which consists primarily of the Shareholders' meeting, the Board of Supervisors, and the Board of Directors and its Committees, and clarifies governance responsibilities at various levels.

As the highest decision-making body of the Company, shareholders' meeting decides on major matters of operation and management, and protects the rights of shareholders. The Board of Directors and the Board of Supervisors are under shareholders' meeting, with the Board of Directors being responsible for making decision on the daily business of the enterprise and the Board of Supervisors acting as a supervisory body to oversee changes in the Board of Directors and the Management. Shareholders' Meeting, the Board of Directors, the Board of Supervisors and the Management team operate independently and coordinate with each other in accordance with the division of responsibilities and fully perform their duties.

The Board of Directors has set up four specialized committees, including the Strategy and Sustainable Development Committee, the Audit Committee, the Nomination Committee and the Remuneration and Appraisal Committee. Each committee has formulated rules of procedure, with clear powers and responsibilities, and operates independently and effectively.

## Corporate Governance Structure



### I Shareholders' Meeting

The Company values investors' suggestions and voices concerning the Company, and strictly adheres to regulations such as the Rules for the Shareholders' Meeting of Listed Companies and the Rules of Procedure for the Shareholders' Meeting to organize the meetings of shareholders. This practice ensures that all shareholders, especially minority shareholders, have equal duties and fully exercise their rights. During the Reporting Period, the Company held 4 shareholders' meetings and 3 extraordinary shareholders' meetings, deliberating and passing 31 proposals, among which 23 proposals were voted on individually by minority shareholders.



## I Board of Directors

The Company has established the Rules of Procedure of the Board of Directors, the Rules of Procedure of Specialized Committees of the Board of Directors, and the Rules for Independent Directors Work System of Independent Directors. All directors of the Company adhere to these rules, faithfully fulfil their duties, and actively attend the meetings of the Board and carefully deliberate on various proposals. They also provide professional opinions on matters concerning the Company. Adherence to the relevant rules in the performance of its duties can ensure that the Board operates efficiently and compliantly to make legal and science-based decisions. During the Reporting Period, average tenure of directors is 5.7 years, and the Company held a total of 15 board meetings with 100% attendance of directors and 60 motions were passed.

### Diversity

The Company continues to increase and maintain board diversity in terms of gender, cultural background, industry qualifications, and various other aspects. To facilitate the decision-making of senior management with diverse perspectives and insights, the appointment of all board members takes into consideration their individual capabilities and experience, including diverse board management skills and professional fields, diversified regional and industry experience, as well as professional skills in financial and risk management. By the end of 2023, the Company had a total of 5 female board members, accounting for 55.6% of the board.

### Independence

The Board of Directors includes 3 independent directors, with professional skills on accounting, finance and industry. Independent directors provide professional advice for the decision-making and effectively promote the standardized operation of the Board of Directors. The independent directors carry out their work in accordance with the Working system for independent directors, attend the shareholders' meetings, meetings of the Board of Directors and specialized committees in accordance with the law, and express objective and impartial independent opinions.

The board members possessed diverse and balanced knowledge and experience, including but not limited to the PV industry, financial management, risk management, and corporate governance. Board members continue to enhance their professional capabilities to facilitate effective decision-making.

## I The Board of Supervisors

The Board of Supervisors of the Company strictly abides by the relevant laws and regulations such as the Company Law and the Articles of Association, as well as the Rules of Procedure of the Board of Directors. It independently fulfills the duties to protect the rights and interests of shareholders, and conducts effective supervision over and issues independent opinions on the material matters, connected transactions, financial status, performance of directors and senior management.

By the end of the reporting period, the Supervisory Committee of the Company consisted of three supervisors, including one employee supervisor.

### Board of Directors and Board of Supervisors (As of the Reporting Period)

Female board members accounts for **55.6%** of the board

A total of **15** board meetings were held

Attendance rate of directors is **100%**

**60** motions were passed by the board

The number of meetings by the Board of Supervisors is **11**

**42** proposals were approved by the Board of Supervisors



## Risk Management

As a global company, TZE is committed to refining the risk management system and integrating it across all business sectors. We aim to better address and mitigate both internal and external risks that could impact our operations, and enhance organizational resilience, thus contributing to the Company's stable development. The Audit Committee supervises the Company's compliance review, reviews the Company's risk assessment report, and ensures that risk management measures are effectively implemented.

The Company pays attention to empowering directors' risk management ability and enhancing scientific and efficient decision-making. During the reporting period, the directors actively participated in the "Financial Management Special Training Series: Financial Fraud Risk Approach and Response" organized by China Listed Companies, the internal control special training for directors of listed companies in Tianjin Jurisdiction, as well as the compliance management special series of trainings conducted by the Company, to enhance the performance of their duties and optimize the level of corporate governance.

### I Risk Management System

We have established a comprehensive risk management system to timely identify, assess, and address potential risks. This enables us to effectively manage risks, hazards, and unexpected events for stable operations.

We are establishing three lines of defence for systematic risk management that support collaborative management and source management to ensure the effective operation of the risk management mechanism.

01

#### First Line of Defence

- Members: Functional departments and subsidiaries of TZE
- Identify the risks within their business domains and develop risk prevention and control measures and systems.

02

#### Second Line of Defence

- Members: Risk Management Office
- Enhance the risk management system at the Company level and conduct internal controls.

03

#### Third Line of Defence

- Members: Audit Committee
- Conduct internal audit of the effectiveness of risk management.





## Investor Relationship

TZE has always been committed to safeguarding the legitimate rights and interests of shareholders, creditors, and other stakeholders. The Company has formulated and implemented the Investor Relationship Management System, the Information Disclosure Management Measures, the Internal Reporting System for Material Information, etc., to guarantee the exercise of the rights of all shareholders in a fair and equal manner and safeguard the legitimate rights and interests of small and medium-sized investors through continuous improvement of the governance system.

### I Information Disclosure

The Company regards information disclosure as an important element in maintaining good corporate governance and adheres to the principles of truthfulness, accuracy, completeness, timeliness and fairness to continuously improve the quality of information disclosure. During the Reporting Period, the Company issued a total of 224 announcements to all investors, covering significant matters related to the Company's performance, investment and financing, decisions of the board and senior management, and equity incentive plans; completed the preparation and disclosure of 4 regular reports with high quality, and analyzed the company's performance with illustrations through press releases and short videos to enhance market recognition.

### I Investor Communication

The Company is dedicated to actively building a transparent and comprehensive communication platform, proactively understanding market demands, continuously promoting investor relationship management, actively conveying and sharing TZE's business philosophy, achievements and future strategic direction with investors, enhancing investors' understanding and recognition of the Company, and safeguarding investors' rights and interests. The Company practices investor relations maintenance from multiple angles and dimensions and cultivates a good foundation for investor relations by carrying out performance briefing sessions, actively focusing on regular interaction with industry analysts, proactively communicating with important shareholders and potential investors, and enhancing daily exchanges with small and medium-sized investors.

### I Social Media Platform Optimization

The Company continued to strengthen the construction of the Company's publicity platform, further enhancing the readability and dissemination of publicity reports through in-depth excavation of business highlights and video-based publicity; strengthening the up and down linkage mechanism of external publicity work, helping to enhance the influence of the brand; and carrying out the maintenance of the Company's official website in real time to ensure that it meets the requirements of compliance and optimizes the presentation of the content.

During the Reporting Period

Online and Offline Roadshow

More than **240** times

Cumulative investors received

More than **5,000**

Response rate to minority investors via phone and online

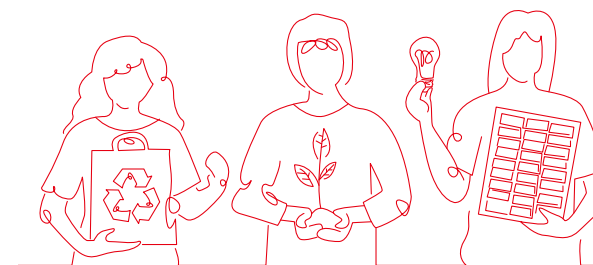
Nearly **100%**

## Tax Transparency

TZE pays all taxes in accordance with the tax laws and regulations of the jurisdictions where it operates, including corporate income tax and other indirect taxes. Tax compliance entails timely and complete tax payments, as well as the disclosure of all relevant facts to tax authorities when necessary. The Company neither tolerates nor encourages any tax evasion or avoidance.

The tax responsibilities are explicitly outlined in the TZE's Code of Business Ethics, and the tax team manages our tax costs and risks under the supervision of the finance department and the Audit Committee.

We regularly report our tax responsibilities in financial documents submitted to the Shenzhen Stock Exchange and other regulatory authorities. In 2023, TZE contributed various taxes totaling 2,303 million.



# Business Behavior

## Our Management Approaches

TZE regards anti-corruption and business ethics as top priorities for corporate compliance management. We strictly abide by national laws and regulations such as the Criminal Law of the People's Republic of China and the Anti-unfair Competition Law of the People's Republic of China. To build stronger internal control mechanisms for anti-corruption and anti-bribery, we strive to improve management structures, implement systems, and conduct training, communication, and regular monitoring. This enables us to operate our business with compliance and integrity. We have formulated the TZE's Code of Business Ethics, outlining the anti-corruption and business ethics standards that all employees of TZE and our subsidiaries must follow. The company issued the "TZE Anti-fraud Six Red Lines" to clearly inform all employees and executives of the specific requirements and boundaries of integrity and require all employees to "not touch the company's red line".

In 2023, we took the ISO 37301 certification as a handhold, benchmarked against international standards, comprehensively sorted out and assessed the Company's compliance management system, further improved the compliance management system and processes, deepened the awareness of compliance throughout the Company, and enhanced the capacity of compliance governance and management, and in March 2024, we obtained the ISO 37301 certification.



TZE Receives ISO 37301 Certification



TZE ISO 37301 Certification

## Anti-corruption

TZE has adopted a "zero tolerance" approach towards corruption. The Company has formulated and publicized internal regulations including the Management Regulation on Combating Commercial Bribes and the TZE's Procurement Code of Conduct. These internal systems standardize the business conduct of all employees of TZE and our subsidiaries in all business activities, including procurement, sales, business negotiations, and engineering project bidding. In 2023, there were no lawsuits related to embezzlement, bribery or money laundering.

To enhance their integrity and self-discipline awareness, we require all employees to sign the Employee Integrity and Self-discipline Commitment, and strictly prohibit them from using their authority for personal gain, accepting bribes, engaging in unethical transactions, misappropriating public funds, or disclosing confidential information. In 2023, 100% of employees of TZE and our subsidiaries signed the Employee Integrity and Self-discipline Commitment.

## Business Ethics Audit

TZE has established an audit, monitoring and control system of "prevention before incidents, management and control during incidents, and supervision after incidents", and in accordance with the requirements of relevant laws and regulations, it conducts rolling business ethics audits on all of the company's businesses to ensure that all operational aspects of the joint stock company and its subsidiaries are covered every two to three years.

Taking into account regulatory requirements and actual business needs, the Company conducts annual internal business ethics audits on key areas such as sales, procurement, inventory, capital, assets, taxes and remuneration, and prompts each department to rectify the problems found and continuously supervise the rectification situation in the future. In 2023, TZE completed 12 special audits, of which 42 non-conformities were found, 42 non-conformities were improved, and no major violations of business ethics were found. The improvement rate of problem points reached 100%.

## Business Ethics Training

The Company has a provision on integrity education and training management in the Management Regulation on Supervision for all directors and employees to carry out targeted integrity publicity and training activities on a regular or irregular basis throughout the Company to create an atmosphere of a clean corporate culture.

We utilize the company's information platform to promote integrity through various forms of training, covering all members from the board of directors to ordinary employees. In 2023, anti-corruption and business ethics training reached 100% employee coverage, totaling 65,751 hours; 9 directors participated in anti-corruption and business ethics training, with 100% director coverage.

Focusing on key business segments, we conducted training on typical cases and real-life drills for employees in specific functions to strengthen employees' awareness of anti-corruption and business ethics risk prevention. In 2023, the Company conducted anti-bribery and anti-fraud case training for employees in key positions, with a total of 2 trainings, covering more than 50 people.

We launched the ESG Code of Conduct for Partners for suppliers, covering business ethics and compliance, and in 2023, 251 suppliers participated online and offline training.

### Performance of Anti-corruption and Business Ethics Training at TZE in 2023

Participants	Participants
Board of Directors	9
Senior management	53
Middle management	279
Junior management	159
Staff	18,998
<b>Total</b>	<b>19,489</b>



On-site Case Study Training Session for Procurement Processes at TZE

## Whistleblowing Mechanism

We have established the Management Regulation on Supervision to standardize the management of all types of complaints and reports. We encourage internal and external parties to report promptly on unethical practices such as bribery, extortion, fraud, and money laundering related to the Company or individuals via a unified reporting email, phone number, and mailing address.

We set up a monitoring and auditing organization dedicated to the management of the reporting phone and e-mail, to ensure that the reporting information is strictly confidential. The Management Regulation on Supervision includes provisions for the protection of whistleblowers, and prohibits any form of suppression, obstruction, retaliation, or victimization of the whistleblower by any company or personnel. Any such actions discovered will result in dismissal, termination of labor contracts, or referral to judicial authorities. In 2023, the Company did not receive any whistleblowing reports.

Whistle-blowing channels in TZE:

Telephone: 022-23789766-8022

Email: jubao@tzeco.com



## Information Security Management

In accordance with the Cybersecurity Law of the People's Republic of China, the Personal Information Protection Law of the People's Republic of China and other national laws and regulations, the Company has developed and implemented the Internet Privacy Protection Policy and the TZE Information Technology Resources, Data Security and Communication System Policy. Also, we have prepared a series of procedural documents, operational guidelines, and record forms to establish comprehensive information security management and customer privacy protection systems. In this way, our data can be managed throughout its life-cycle involving data collection, transmission, use and destruction.

### I Information Security Management Structure

The Company has established a Digital Transformation Committee (“Digital Committee”), which is responsible for formulating overall digital strategy and guiding principles. Under the Digital Committee, the Information Security Technical Group is responsible for implementing the Company's policies and systems on information security, and monitoring information security and privacy management, to ensure compliance in data processing, information sharing, and privacy protection.

### I Information Security Management Initiatives

**Systematic prevention:** The Company conducts monthly internal security checks on information security management system, quarterly system vulnerability scanning and industrial control traffic analysis, half-yearly cybersecurity attack and defense drills, and an annual external audit of the system, to ensure the effectiveness of the system. There were no significant information security incidents throughout 2023.

**Training of all staffs:** In 2023, we cooperated with a professional third-party organization in the field of information security to jointly provide an online information security training for employees on the platform of Zhonghuan Training Center. The training was attended by all employees of the Company to enhance the awareness of information security.

**Privacy protection:** The Company's Network Privacy Protection Policy stipulates all principles and code of conduct that need to be followed for information collection, use, sharing, and transfer. The Policy also clarifies the rights enjoyed by customers, suppliers, employees, and other relevant parties regarding their information, and explains how TZE protects these rights. During the Reporting Period, the Company did not experience any information or privacy leakage.

The Company actively promotes the certification of information security management system and comprehensively improves the systematic and standardized management of information security. As of the end of March 2024, a total of 6 units of TZE and its subsidiaries have obtained ISO 27001 information security management system certification.



# Social Contribution

## Our Management Approaches

In response to the United Nations Sustainable Development Goals and national strategies, TZE focuses on significant social and livelihood issues. We continue to deepen our engagement in key areas such as the Belt and Road Initiative, rural revitalization, and charitable philanthropy, effectively fulfilling our social responsibility, and achieving symbiosis between corporate and social values.

TZE encourages all employees to engage in public benefit activities. We have formulated and implemented internal policies, such as the Regulations on the Management of Social Welfare Donations, which clarifies the major orientations, principles, methods, management and approval procedures of donations. We aim to continuously improve mechanisms related to public welfare operations and explore sustainable creation of social value.

In 2023, we donated CNY **35.37** million through the TCL Public Welfare Foundation, which was mainly used for poverty alleviation, disaster relief, care and support for disadvantaged groups, care and concern for teachers and students in difficulty and left-behind youth groups through the school aid program, and other key areas of public welfare and charitable undertakings.

## PV Solar School

Rural education has always been a concern for TZE. To promote rural education, we establish the “TCL PV Solar School” program. We donate PV rooftop solar power generation systems to schools to provide green and clean electricity to the campus and generate income for the school through power generation. Our aim is to create a sustainable educational assistance model and leverage green technology to support the sustainable development of rural education.

By the end of 2023, we had donated and constructed **20** PV campuses nationwide, with a total installed capacity of **1,218.15** kW. The expected power generation income over **25** years is approximately CNY **13.90** million.

## PVs + Rural Revitalization

TZE actively implements the national policies related to rural revitalization, effectively connects the PV industry with rural revitalization, and actively carries out PV+rural revitalization projects in Inner Mongolia, Hebei, Yunnan, Sichuan and other regions, realizing the combination of rural revitalization and new energy utilization, energy-saving and emission reduction, and making every effort to boost the green sustainable development of the countryside.

By the end of 2023, the Company had helped **9** PV poverty alleviation projects, covering **8,013** poor households without labor capacity.



## Volunteering Activities

TZE is dedicated to becoming a technology company with "warmth", and actively carries out activities such as "Color Run" and "Public Welfare Campus Lecture", encouraging every employee to participate in public welfare activities and green practices. We encourage every employee to participate in public welfare activities and green practices, hoping to gather every tiny power to help the needy and add green to the society.

### TZE Color Run - Running for Sustainability

In 2023, TZE organized a charity color run for sustainability. This green, healthy, and joyful event showed how public welfare activities can help achieve sustainable development goals. By organizing such an activity, we aimed to encourage more individuals to contribute to sustainable development goals. This event attracted a total of 105 participants.



Site Photo of the TZE Color Run Event

### "A Little Starlight Lights Up the Distance" - Charity Activity for the Disabled

In January 2024, TZE carried out the "A Little Starlight Lights Up the Distance" public welfare action at the Tianjin School for the Deaf. At the activity site, volunteers of the company went into the classroom and gave the children a lively and interesting science class on "Photovoltaic Knowledge", and donated photovoltaic cars to the children through the Tianjin Welfare Foundation for the Disabled, encouraging employees to participate in a wide range of public welfare activities and caring for the needy groups.



Charity Activity for the Disabled

# Reliable

## Achieving Excellence in Quality with Flexible Manufacturing

TZE is committed to collaborating with partners to drive long-term value and continuously enhance the environmental and social benefits of our products. We actively build a responsible supply chain that values ecological protection, labor rights, and health and safety, and are dedicated to encouraging all suppliers to operate in a socially and environmentally responsible manner. We prioritize customer demands and utilize flexible manufacturing strategies to provide renewable energy products and solutions that align with global market trends and needs, aiming to enhance the environmental and social benefits of our products.

UN SDGs addressed in this chapter:



### Key Target and Progress

Issue	Indicator	Progress in 2023	2024 Target	2025 Target	2030 Target
Responsible Supply Chain	Supplier ESG Management	Establishment of supplier ESG risk assessment and management mechanism	50% on-site audit coverage and 50% desktop audit coverage of key high-risk suppliers	60% coverage of on-site audits and 40% coverage of desktop audits for key high-risk suppliers	The system is fully compliant with ISO 20400 sustainable procurement standards
			Customer relationship satisfaction rate	93%	The domestic customer satisfaction rate remains 95%

### 2023 Honors and Awards

TZE was awarded "National Service-oriented Manufacturing Demonstration Enterprise" by the Ministry of Industry and Information Technology of the People's Republic of China.

TZE was honored as "Manufacturing Individual Champion" by the Ministry of Industry and Information Technology of the People's Republic of China.

Huansheng PV won the TÜV Rheinland IEC certification for its N-stacked shingled modules.

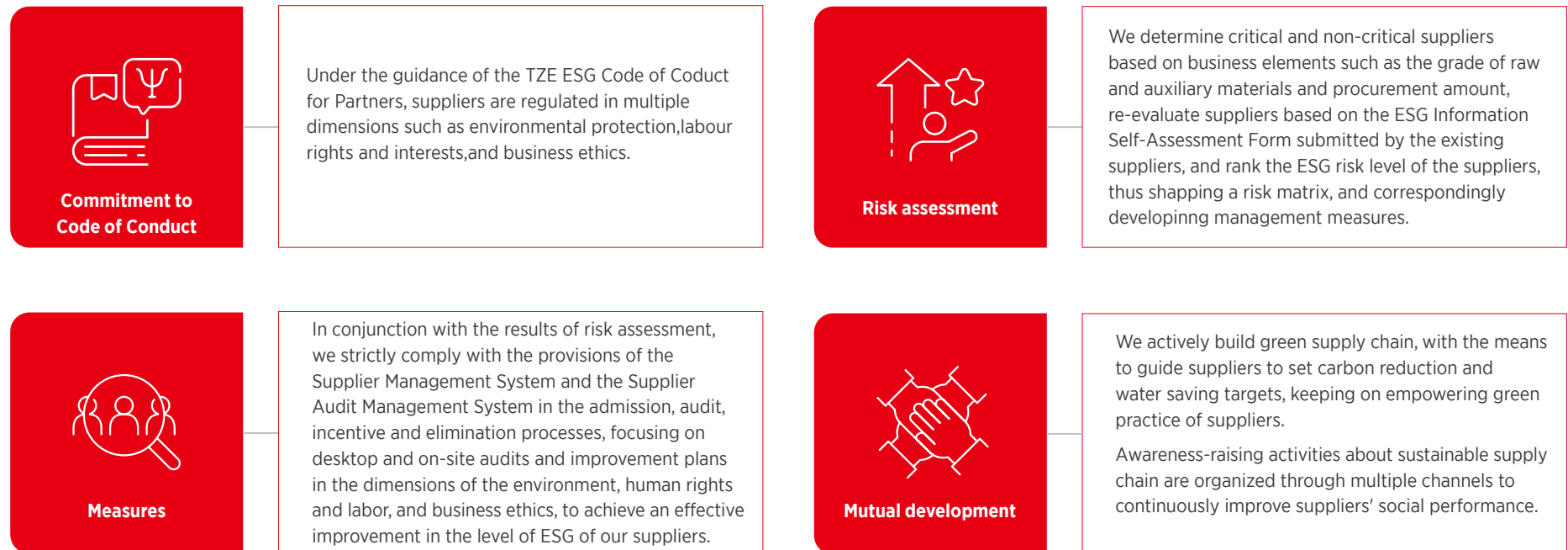
Huansheng Jiangsu and Zhonghuan Crystal obtained the "Leader" certificate of enterprise standard issued by China Electronics Standardization Institute.

# Responsible Supply Chain

## Our Management Approaches

As an innovator and navigator in the global clean energy industry, the Company continues to strengthen the ESG management system of supply chain. We endeavor to build green supply chains, and improve labor protection in the supply chain, in order to minimize environmental and social impacts of the supply chain, and build a sustainable supply chain for the PV industry in joint efforts.

### Supply Chain ESG Management System





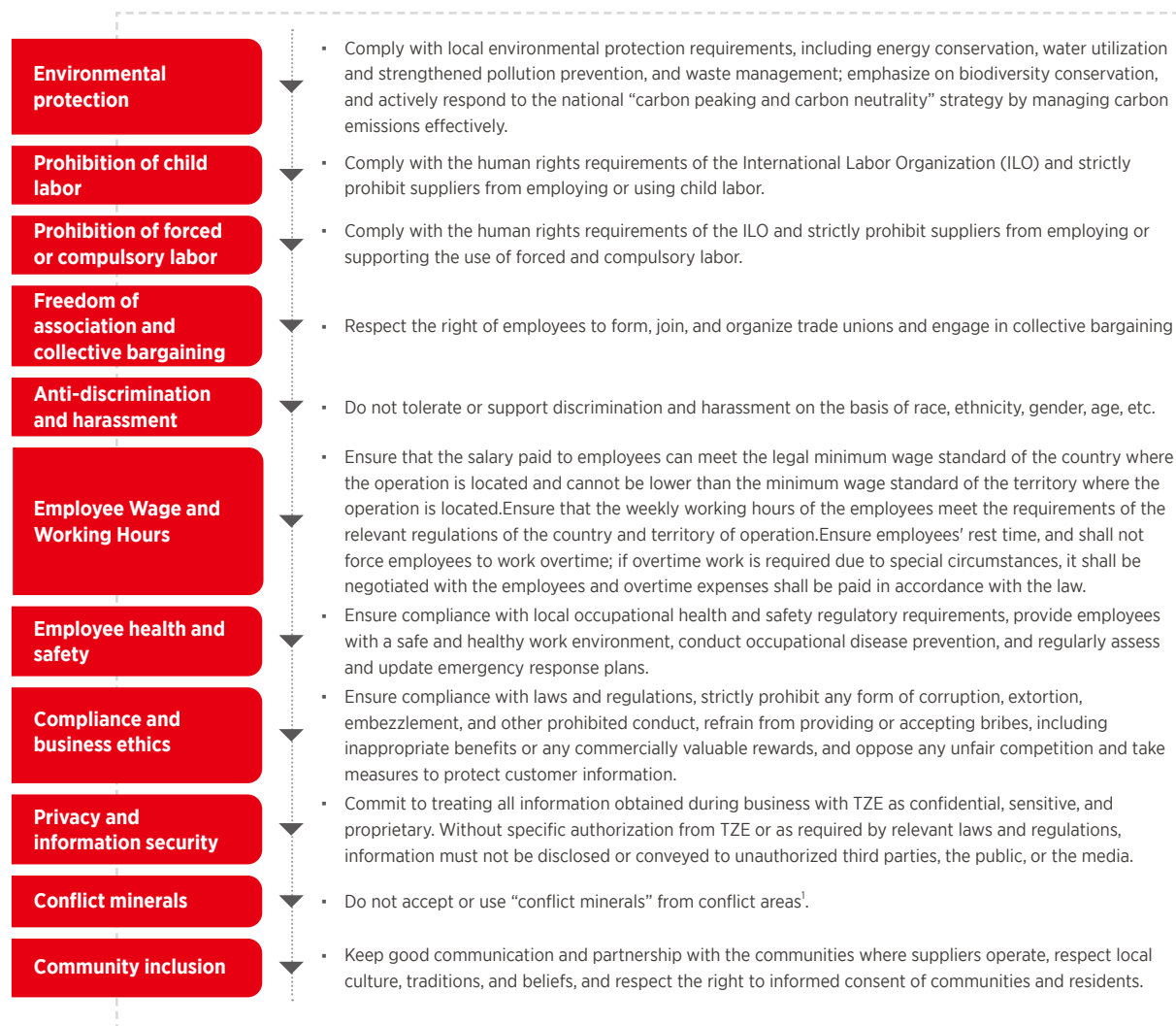
## Commitment to Code of Conduct

The Company has formulated and issued the ESG Code of Conduct for Partners, which requires all suppliers to abide by international and domestic applicable laws and regulations. Besides, suppliers should commit to not employing child labor, slaves, prisoners or any other form of forced labor. In this way, we effectively manage supply chain operations and ESG risks, and help suppliers with sustainable operation.

Since 2022, while signing the business contract, new suppliers have been required to sign the ESG Code of Conduct for Partners. Violation of the ESG Code of Conduct for Partners may result in the termination of its business relationship with TZE. By the end of 2023, the signing rate of existing suppliers had reached 90%. No suppliers were found to have business ceased due to violation of the ESG Code of Conduct for Partners.

In 2023, we reviewed and revised the Supplier Management Regulations, the Procurement Management Regulations and the Supplier Audit Management Regulations, adding management and audit clauses related to green supply chain management, supplier environmental protection and labor human rights.

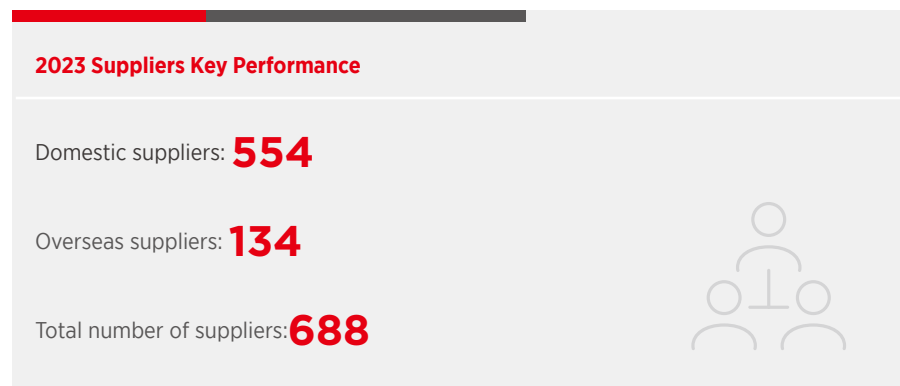
## Key Focus of the ESG Code of Conduct for Partners



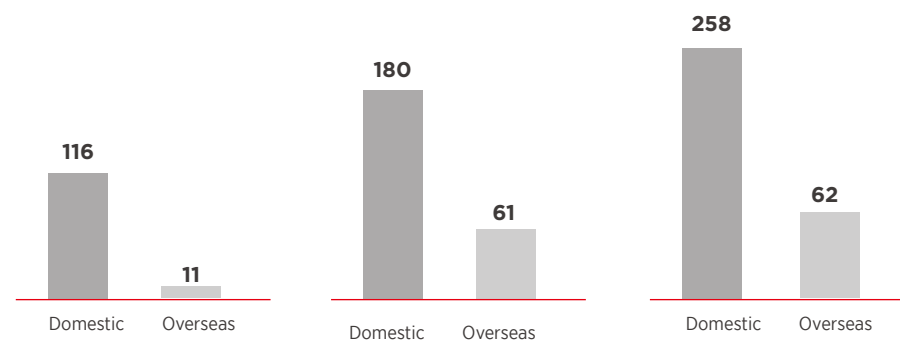
<sup>1</sup> Conflict areas are conflict-affected areas as designated by United Nations Security Council resolutions, conflict-affected and high-risk areas as defined by the European Union, and conflict minerals source areas as defined by the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank). This definition applies to the full report.

## Risk Assessment

We carry out multi-dimensional risk assessment of suppliers, scientifically formulate supplier risk assessment standards, and rank the ESG risk level of suppliers. In this way, we could realize effective supplier risk management by grade, and continue to promote the sustainable development of the supply chain.



### Number of suppliers by grade of raw and auxiliary materials



A: Raw and auxiliary materials that make up the product structure and have a decisive impact on product quality

B: Materials that have an impact on the nature of the product

C: Auxiliary materials that have a general impact on the product, outside of A/B grade

## Risk Assessment Process

We determine critical and non-critical suppliers based on business elements such as the grade of raw and auxiliary materials and procurement amount, re-evaluate suppliers based on the ESG Information Self-Assessment Form (covering environmental standards, social standards, and standards of governance and business ethics, etc.) submitted by the existing suppliers, and rank the ESG risk level of the suppliers, thus shaping a risk matrix, and correspondingly developing management measures by grade.

In 2023, we identified a total of 31 key high-risk suppliers.

## Risk Management by Grade

Based on the results of risk assessment and grading, the Company formulates corresponding management strategies and measures, including requiring suppliers to sign Code of Conduct for Partners, conducting regular audits and tracking the progress of improvement, and carrying out empowerment training, etc., so as to effectively grasp the potential risks of suppliers and ensure the stability and reliability of the supply chain.

## Measures to respond to risks

Management measures	High-risk critical suppliers	High-risk non-critical suppliers	Low-risk critical suppliers	Low-risk non-critical suppliers
Ask the suppliers to sign the ESG Code of Conduct for Partners	√	√	√	√
Ask existing suppliers to fill up and submit the ESG Information Self-Assessment Form	√	√	√	√
Participating in the awareness-raising training on the ESG Code of Conduct for Partners	√	√	√	√
Desktop audit	√	√	√	
On-site audit	√	√		

## Measures to respond to risks

TZE has incorporated ESG into the entire process of supplier admission, audit supervision and exit. We track and rigorously audit our performance on environment, human rights and labor, business ethics and other aspect at all levels of the supply chain. We also conduct documentation and on-site audits and make improvement plans based on the risk analysis matrix to ensure that our partners comply with high quality standards of supply chain. In doing so, joint efforts are made to improve resilience and efficiency throughout the supply chain .

### I Entry

The Company has formulated the Sourcing, New product/New Supplier Management Regulations. Credit review and environmental protection investigation and assessment are applied in the bidding process, to conduct strict qualification examination for all new suppliers. When signing the business contract, suppliers are required to sign the ESG Code of Conduct for Partners. They should also sign the Letter of Commitment for Non-Use of Conflict Minerals if involved in risks of conflict minerals.

New suppliers are screened in terms of environmental and social criteria. We conduct special admission assessment, with focus on key issues such as environmental management, labor and human rights, and business ethics. In 2023, 112 new suppliers were screened against environmental and social criteria, with a 100% coverage rate of new suppliers.

#### Social standards include:

- Child Labor
- Forced or compulsory labor
- Minimum wage
- Discrimination
- Disciplinary behaviors
- Intellectual property rights
- Employee privacy right
- Legitimate requests of different races, beliefs, customs, etc.
- Occupational health and safety

#### Environmental standards include:

- System certifications (ISO 9001 for quality management system, ISO 14001 for environmental management system, ISO 45001 for occupational health and safety management system)
- Environmental data and responsibility disclosure
- GHG emissions accounting
- Energy transition agenda
- Circular economy
- Emissions and waste management compliance
- Renewable energy use
- Conflict minerals
- Hazardous substances use

## I Audit and Improvement

We apply relevant standards and requirements of the ESG Code of Conduct for Partners in ESG evaluation and audit. ESG evaluation results and quality assessment are included into the annual supplier evaluation results.

Based on the results of risk assessment, we develop supplier audit plans that cover product quality, environment, labor and human rights, business ethics and other dimensions. Besides, we organize the Procurement Department, Quality Department, Safety and Environmental Protection Department as well as all business units to jointly carry out special audits. 2 suppliers were found to have ESG management problems in documentation audit and 73 suppliers in on-site audit respectively. In this regard, we timely made plans with the above suppliers to assist them to improve ESG management capabilities, and tracked implementation of improvement plans, with a 100% rate of problem rectification.

### 2023 Suppliers Audit Results

Desktop Audit: **186**

On-site Audit: **84**

Covering **100%** high-risk suppliers



### 2023 Supplier Audit Coverage

Audit Method	High-risk critical suppliers	High-risk non-critical suppliers	Low-risk critical suppliers	Low-risk non-critical suppliers
Desktop audit	52%	70%	41%	16%
On-site audit	48%	30%	20%	/

## I Incentive and Phase-out

As we strive for a resilient, efficient and sustainable supply chain, we consider suppliers' ESG performance in procurement decisions, and incorporate ESG audit results into the annual tender and supplier year-end performance evaluations. For suppliers with better ESG performance, we further increase the procurement share to encourage more suppliers to practice sustainable development. For suppliers with poor ESG performance, we assist them to improve and rectify. If they fail to meet the requirements by the end of rectification period, we will implement the knockout process.

The Company will issue the Purchase Suspension Notice to suppliers that are suspended for procurement over one year, or have quality problems, or fail to meet standards in environmental, labor and other rectification items. If the suppliers are suspended over two years for the above reasons, the Company will issue the Notice of Disqualification of Supply to them, and disqualify them as suppliers.

## I Whistleblowing

If stakeholders find any supplier that violates the ESG Code of Conduct for Partners, they can provide feedback via the following whistleblowing channels. In 2023, the Company received no reports of violations of the ESG Code of Conduct for Partners.



Tel: 022-23789766-8022



E-mail: jubao@tzeco.com



Mailing address: No.10 Hai Tai South Road, Huayuan Industrial Zone (Outer Ring), Tianjin New Technology Industrial Park, Tianjin, China

## I Conflict Minerals Management

Along with the TZE Conflict Minerals Policy, we are committed to not purchasing 100% minerals from conflict areas and to only using non-conflict minerals from reliable or certified sources.

The necessary minerals in the manufacturing process of PV industry products include tungsten, tin, etc. These materials are commonly used in armed conflicts and human rights violations, which are called conflict minerals. TZE minimizes the use of tungsten, tin, etc. in the manufacturing process of products, and actively carries out conflict minerals due diligence in the supply chain. As of the end of the Reporting Period, a total of 36 suppliers are involved in the risk of conflict minerals, and 100% of them have signed the ESG Code of Conduct for Partners and the Commitment on Non-Use of Conflict Minerals; among them, one tin supplier has completed the third-party controversial material traceability certification.

In 2023, 100% of TZE's products did not use any minerals from conflict areas.

### Measures for conflict minerals management

- Establish internal tracking and supplier tracking mechanisms of the Company (including subsidiaries)
- Establish annual audit and control procedures for suppliers with the risk of conflict minerals
- Collate and save the audit information of suppliers with the risk of conflict minerals
- Save the audit information as a proof of law compliance and as evidence of due diligence
- Require suppliers to provide transparent and verifiable information as one of the conditions for conducting business with us



## Supplier Capacity Building

### I Green Supply Chain

TZE adheres to the concept of building a green supply chain, and promotes the construction of localized and regionalized supply chain through the five directions of green management, green production, green packaging, green logistics and green recycling, to help the economic development of the territory and the low-carbon transformation of the industrial chain, and at the same time, to reduce the time and cost of logistics, and to enhance the control over each stage of the supply chain. In 2023, we were awarded the Green Supply Chain Management System Certification. The certificate proves that TZE's green supply chain meets the five-star requirements of GB/T 33835-2017 Green Manufacturing - Green Supply Chain Management Guidelines for Manufacturing Enterprises. Furthermore, with the leading level of intelligent manufacturing and superior green supply chain management system, Huanzhi Renewable energy, a subsidiary of TZE, has been selected as one of the "Green Supply Chain Management Enterprises" in 2023.

### Empowering Suppliers in Green Practice

#### Water management

- The pure and concentrated water from the washing supplier is discharged to the TZE ingot's self-built water island, which is used for cooling tower make-up water after treatment, saving about 150,000 tons of water per year and saving 270,000 RMB per year.

#### Packaging Management

- Ningxia Zhonghuan discusses and promotes with package material suppliers the use of recycled boxes and corrugated paper packaging to create a recycled box system; by the end of the reporting period, a total of more than 24,000 corrugated boxes, upper lids, crucible bottom trays, and wooden pallets had been saved.

#### Logistics transportation

- Ningxia Zhonghuan utilizes an Overhead Material Transportation (OHT) system to transport crucible supplier's products to the production plant without the need for additional packaging.

### TZE Launched a Green Supply Chain Initiative

In May 2023, at the 16th International PV Power Generation and Smart Energy Conference & Exhibition (SNEC), TZE launched the Green Supply Chain Initiative, inviting upstream and downstream partners in the supply chain to jointly promote the concept of green and sustainable development with top-level design, energy-saving and carbon reduction, and in line with international trends, and to promote the green development of the industry.



### I Supplier Training

To ensure that suppliers fully understand and abide by the ESG Code of Conduct for Partners and the Code of Business Ethics, the Company organizes training for suppliers to enhance the awareness of the Code. The training covered topics such as protection of labor and human rights, improvement of working conditions and business ethics, with the aim of raising suppliers' awareness of their social responsibility and ensuring their compliance with our sustainability requirements and international labor standards and other ethical norms. During the Reporting Period, 251 suppliers participated in the training both online and offline.



Supplier ESG Training

## Product Responsibility

### Our Management Approaches

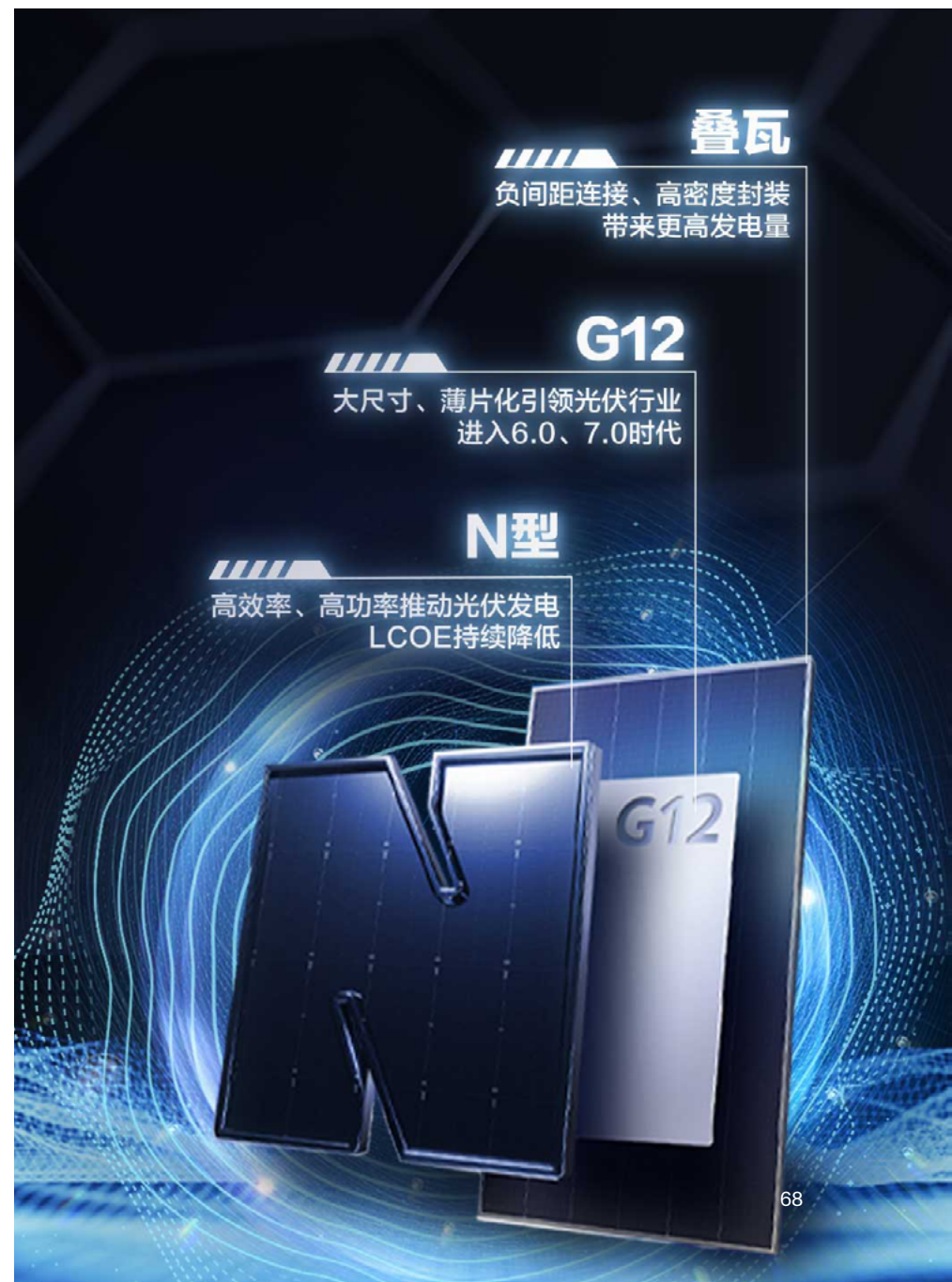
TZE and its subsidiaries attach great importance to product responsibility, firmly implement the strategy of global leadership in PV materials, and continuously improve product quality and flexible manufacturing capabilities. We have implemented the world's leading quality management philosophy, establishing a quality management system throughout the product life cycle of "raw material procurement - process quality - finished product acceptance quality - product recall" in all production bases. Moreover, we have obtained ISO 9001 quality management system certification. In this way, we integrate the quality culture into the product life cycle. Meanwhile, we actively promote flexible manufacturing, striving to meet customers' requirements for different technologies and application scenarios by customization.

With the unique customized service model and product life-cycle management model, the Company was honored as the "National Service-Oriented Manufacturing Demonstration Enterprise" issued by the Ministry of Industry and Information Technology of China in November 2023.

### Flexible Manufacturing

Adhering to the customer-centric concept, we implement customized flexible manufacturing. Based on our Industry 4.0 system, we have developed "Deep Blue" + AI stereotype model, which makes use of digitalization, information and intelligent manufacturing advantages, to strengthen flexible manufacturing capabilities, and achieve free switching between multi-category process formula. Besides, to ensure consistency and yield of product quality, we have established the Quality 4.0 based whole process management system, so as to provide customers with high quality, low cost, and customized products. By the end of 2023, the Company had produced more than 1,000 kinds of full-specification silicon wafer products, leading the development of N-type battery industry.

The Company continues to work on intelligent manufacturing upgrading for production lines, improvement of business collaboration ability, data sharing and expansion, customer fine management, customer stickiness optimization and so on. These initiatives aim to accelerate intelligent manufacturing transformation and technological innovation transformation, shorten product R&D cycle, meet the flexible and customized needs, achieve horizontal and vertical development of the industrial chain, thus ushering in the PV 700W+ era.

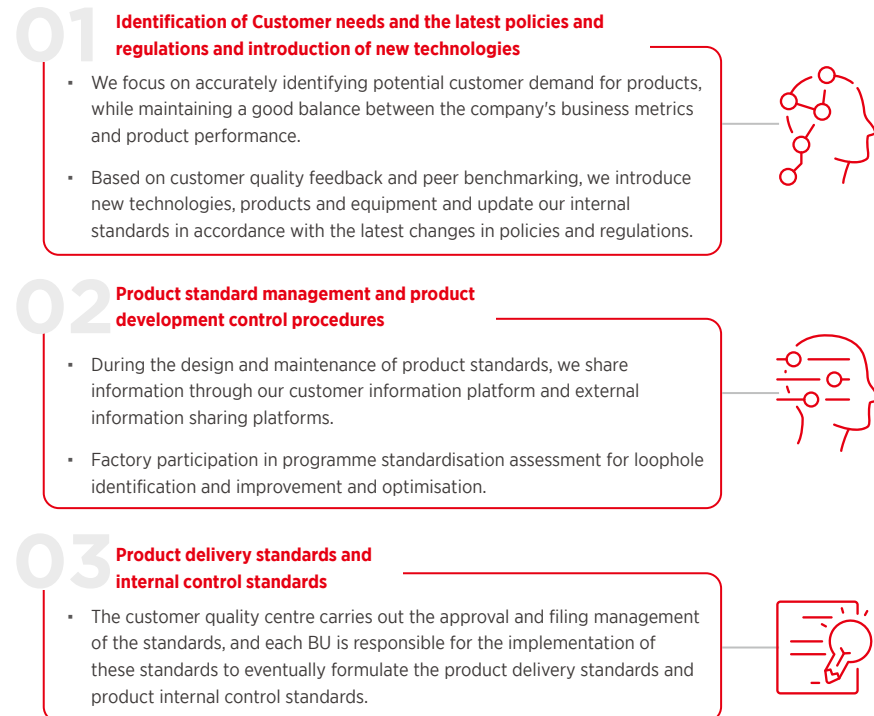


## Quality Management

Quality 4.0 is a comprehensive quality management model driven by big data. The model facilitates lean and intelligent decision-making capabilities based on informationization, intelligence and digital twin technology. Oriented toward customer value, our Quality 4.0 system strives for the best balance between quality and cost. By fully meeting the growing demand of customers for high quality, customization and flexibility, we can continuously enhance our core competitiveness, and realize clients value.

### I Quality Management Process

TZE's product standard management process includes three parts: customization, R&D and design, and delivery control, with technology-driven and strict benchmarking to help manufacture high-quality products.



### I Quality Management Training

The Company conducts training on Six Sigma, QCC, MSA, and 8D for Quality Department employees. We also require all new employees to participate in pre-service quality awareness training and provides 16 quality courses on the online learning platform "Zhonghuan Training Center" for them to learn at any time. In 2023, about 2,536 employees participated in quality management training.

### I Quality Management Performance

Relying on mature technology and advanced manufacturing system, our excellent quality management and high-quality products have been widely recognized at home and abroad. In 2023, we won honors such as "Manufacturing Individual Champion" by the Ministry of Industry and Information Technology of the People's Republic of China, TÜV Rheinland IEC certification and "Leader" certificate of enterprise standard issued by China Electronics Standardization Institute.



# Customer Relationship Management

## Our Management Approaches

Through technological innovation and Industry 4.0 transformation, TZE continuously improves its customized service capability to help customers maximize their value, thereby enhancing customer satisfaction and continuously maintaining good relationships with customers.

## Customer Service and Satisfaction

TZE carries out intensive quality management throughout the product life cycle, aiming to respond to customer demand faster and improve customer service quality, and ultimately improving customer experience.

To handle customer feedback on product and service quality in a timely and standardized manner, the Company has formulated and strictly implemented the Regulations on Complaints Management. The customer service team and the quality management team prioritize and classify quality feedbacks, develop a summary, and deliver it to the plants for reference, so as to keep improving quality.

We recognize the importance of customer satisfaction management, formulate and follow the Regulations on Satisfaction Management, which clarifies the execution standards of customer satisfaction information collection, satisfaction assessment and satisfaction improvement actions for all departments. During the Reporting Period, the Company's customer satisfaction rate reached 93%, remaining at a relatively high level.

## Responsible Marketing

TZE strictly complies with all marketing related laws and regulations such as the Advertising Law of the People's Republic of China and applicable codes of practice, requiring employees to sign the Employee Integrity and Self-discipline Commitment to convey the value of responsible marketing and restrain misconduct.

All of the company's marketing activities are reviewed internally to ensure the legal compliance of marketing practices related to products and services. The company requires upstream and downstream partners to follow the principles of legal compliance, science, rigor and realistic communication, and shall not carry out any false or misleading publicity.

## TZE Customer Service Performance

Number of customer complaints

**687**



Number of complaint responses

**687**



Complaint response rate

**100%**



Customer satisfaction rate

**93%**





# Transformational Digital-Intelligent and Innovation

TZE upholds the “engineer-respected” culture and keeps driving the sustainable and high-quality development of the industry. We insist on innovation-driven development, and continuously increase investment in clean technology R&D to drive global decarbonization with technological innovation. With these efforts, we aim to lead the industrial application of advanced technology and production mode.

UN SDGs addressed in this chapter:



## Key Target and Progress

Issue	Indicator	Progress in 2023	2024 Target	2025 Target	2030 Target
Clean technology innovation	Total number of intellectual properties patents	A total of 1,739 intellectual properties have been owned	Increase by <b>20%</b> over 2023	Increase by <b>40%</b> over 2023	Industry-leading
Digital ESG management	Digital system	The energy management system has been preliminarily applied in advanced factories	Pilot operation of ESG management system in advanced factories	The coverage of ESG management system is 50%	Establish a centralized ESG digital intelligence management platform

## 2023 Honors and Awards

TZE was awarded “High Efficiency PV Technology R&D and Industrialization Innovation Consortium” by Tianjin Science and Technology Administration.

Ningxia Zhonghuan was awarded “National Intelligent Manufacturing Demonstration Factory” by the Ministry of Industry and Information Technology of the People’s Republic of China.

# Technological Innovations

## Our Management Approaches

In order to continuously strengthen the Company's market competitiveness and help the world realize the green energy transformation, TZE has always regarded scientific and technological leadership as an important strategic pillar of the company's development, adhering to the concept of "intensive innovation, integrated innovation, joint innovation and collaborative innovation", and cooperating with upstream and downstream of the industrial chain to provide more environmentally and economically beneficial products and solutions for its customers through continuous technological innovation and product research and development. TZE has 11 high-tech enterprises, 8 provincial and ministerial-level R&D centers, 1 national technology center, 1 national technology innovation demonstration enterprise and 2 provincial and ministerial-level key laboratories.

In 2023, the Company invested 2.848 billion in R&D, with R&D investment accounting for 4.82% of the sales revenue.

## TZE's Performance in Clean Technology Development for 2021-2023

Indicator	UoM	2021	2022	2023
Revenue derived from clean tech activities	10,000 CNY	-	-	5,356,314.14
Revenue derived from clean tech activities to revenue	%	-	-	90.56
R&D expenses	10,000 CNY	185,880.73	292,282.38	212,500.36
R&D expenses to revenue	%	4.5	4.4	3.59
R&D investment	10,000 CNY	257,653.92	377,052.09	284,811.81
R&D/Sales ratio	%	6.27	5.63	4.82

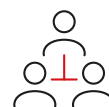
## Innovative Technology Talent System

TZE attaches great importance to the construction of an innovative technology talent system. Specifically, TZE continuously integrates the Company's R&D resources, and uses TZE Research Institute as the Company's R&D innovation center. TZE Research Institute is responsible for overall management of R&D in various business segments, and coordinates industry chain stakeholders and coordinate external industry-academia-research projects. TZE Research Institute consists of PV Materials Sub-Institute and Cells & Modules Sub-Institute, which are responsible for R&D of advanced technology in corresponding fields.

### TZE R&D Team

Total number of R&D employees

**1,423** person



Proportion of R&D employees in total employees

**7.3%**



Number of experts obtained doctoral degree

**3** person



Number of experts obtained master's degree or above

**173** person





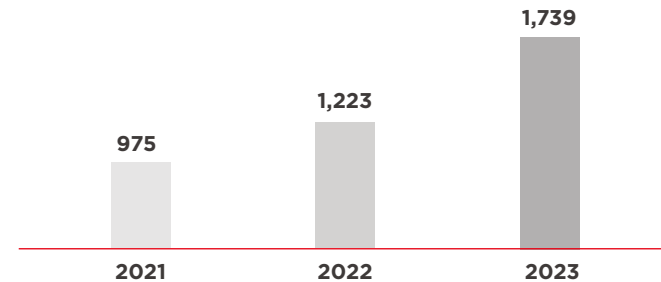
## Intellectual Property Management and Innovation Incentive

In view of product characteristics, the Company has formulated and implemented the Intellectual Property Management System and Patent Management Regulations based on relevant laws and regulations such as the Patent Law of the People's Republic of China and the Specifications for the Administration of Intellectual Property Rights of Enterprises. During the Reporting Period, the Company conducted patent risk assessment through intellectual property research, carried out patent mining and patent portfolio planning, and engaged in patent rights protection to strengthen the Company's innovative achievements.

To enhance the Company's R&D strength and inspire the research vitality of technical personnel, the Company continuously optimizes the funding and incentive mechanisms for R&D. The Company has established and implemented a series of standardized and sound rules and regulations, including the Technology Project Management System, Regulations on Physical and Chemical Center Test Management, and the Regulations on the Management of R&D Expenditure, to safeguard the Company's technological innovation.

The Company actively conducts various intellectual property-related training, including training on technical disclosure form writing, patent mining and patent portfolio planning, risk prevention and control, and international patent application processes. The training aims to systematically enhance the intellectual property awareness and management capabilities of technical personnel and patent engineers, while also improving the Company's ability to apply for international patents and supporting the establishment of a global intellectual property management system.

### 2021-2023 TZE Intellectual Property Performance<sup>1</sup>



<sup>1</sup> The Company continues to optimize data tracking and transparent disclosure of ESG metrics, we discloses the number of patents granted during the reporting period from the 2023 Sustainability Report onwards. The number of patents granted in 2023 is 350.

## Joint Innovation with Supplier

TZE actively collaborates with suppliers to carry out joint innovation projects, and continually improves the compatibility between suppliers and the Company. In this way, TZE endeavors to strengthen the partnership with suppliers in the industrial chain and work with them to iterate and upgrade products and technologies.

### The Company and Suppliers Conduct Joint Innovation Program to Improve Quartz Crucibles

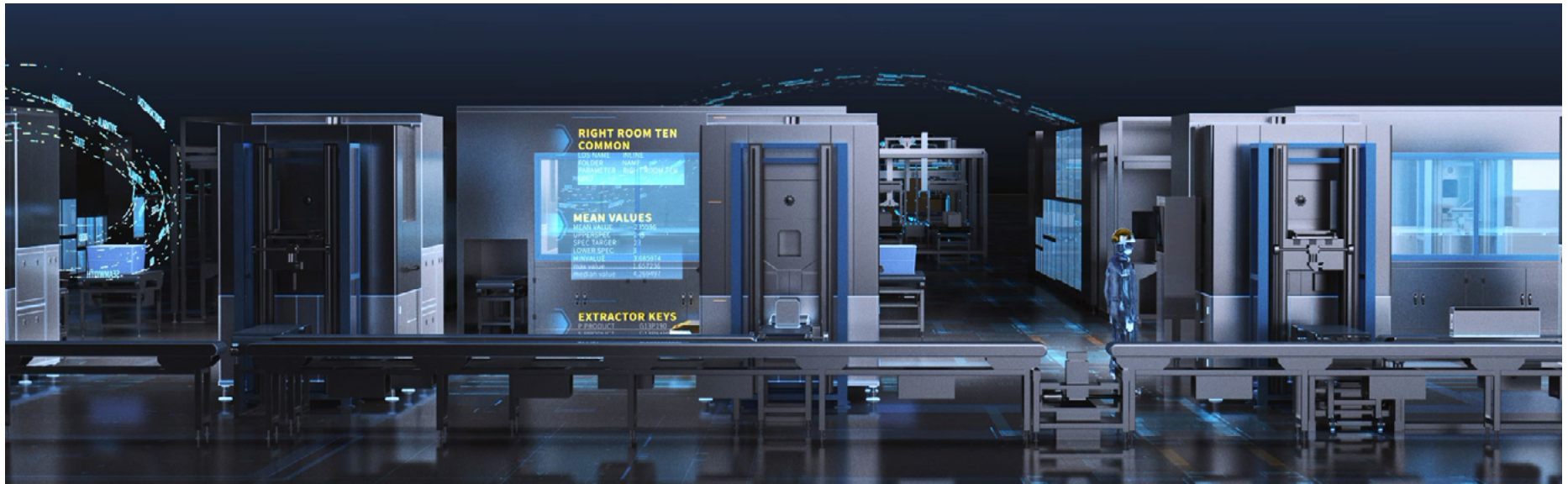
In 2023, TZE conducted a joint innovation project with quartz crucible suppliers and was awarded the first prize of TCL Technology 2022-2023 technological innovation selection. Quartz crucibles are essential auxiliary materials for pulling monocrystalline silicon rods. Through the joint innovation with suppliers, TZE identified the production characteristics required for quartz crucibles, improved the product quality, extended their service life, significantly increased production efficiency, and reduced the cost of monocrystalline silicon rods pulling.

## Industry-University-Research Cooperation

TZE highly values industry-university-research cooperation and collaborates with universities and research institutions such as Tianjin University, Hohai University, Shandong University and South China University of Technology to undertake joint R&D projects, exploring the application of cutting-edge technologies.

### Industry-University-Research Focus: “R&D Demonstration Project for Offshore Floating PV Imbricated Module

In March 2023, TZE, in collaboration with more than ten universities and enterprises such as Hohai University and Tianjin University, developed the R&D Demonstration Project for Offshore Floating PV Imbricated Module. The project aimed to break through the integration technology of offshore floating PV system design and the technology of core electrical and mechanical components suitable for the marine climate, provide an innovative technological path for the development and utilization of offshore PV in the coastal economic belt, and finally complete the joint construction of imbricated modules along with devices of other detection systems and structural systems.



# Digital Intelligence Transformation

## Industry 4.0

The Company adheres to the concept of Industry 4.0 and continues to promote manufacturing transformation. With extensive technology and know-how accumulation, TZE establishes a unique “Deep Blue” + AI model that can be applied to various production processes, makes full use of automatic, digital, and intelligent manufacturing mode to create the smart factory that can collaborate independently and operate efficiently.

The smart factory built based on “Industry 4.0” establishes the intelligent center of autonomous control equipment, information and automation system, liberates workers from repetitive work and enables them to engage in more valuable and creative data iteration work, returning people’s value. At the same time, TZE relies on intelligent manufacturing transformation practice to drive the transformation of organizational talent structure, assists employees to master the skills to adapt to future needs to promote the further upgrade of manufacturing capacity through the improvement of organizational capacity and achieve a positive cycle of continuous iteration.

In 2023, Ningxia Zhonghuan’s PV solar monocrystalline silicon materials intelligent manufacturing demonstration factory was included in the list of “2023 Intelligent Manufacturing Demonstration Factory” jointly announced by the Ministry of Industry and Information Technology, the National Development and Reform Commission, the Ministry of Finance, the State-owned Assets Supervision and Administration Commission of the State Council, and the State Administration for Market Regulation, marking a milestone for TZE in its Industry 4.0 transformation.



The Dark Rate in Ningxia Zhonghuan Factory has Reached 80%

## Digital Transformation

In 2023, the Company formulated and implemented a new round of digital strategies, focusing on advancing “Industry 4.0 + Quality 4.0 + Operation 4.0” around digital operation and intelligent manufacturing. TZE has built an efficient operation management platform integrating multiple digital systems for different operational management fields, connecting each part of supply, production, sales, human resources, finance, and logistics to promote the establishment of digital supply chain and the integration business and finance. In addition, TZE has used business intelligence management decision support platform to integrate data, build models, and generate visual dashboards to support management decision-making.

In terms of ESG digital management, the Company has been running a ESG management system integrating the management of carbon, energy, water, and production safety in several factories. In the future, the Company will gradually promote the digital integration of various material ESG issues and management functions. This is to build a centralized ESG digital management platform to empower the Company’s sustainable development.

In 2023, Zhonghuan Advanced practiced the Company’s strategies and culture, combined with the “Industry 4.0” intelligent manufacturing model, and promoted the construction of the intelligent park, integrating intelligent fire protection, energy management, ESG management, intelligent logistics, etc., to form a digital, informatised and visualised management platform, and realised the all-in-one linkage function for the integration and interaction of the full amount of data.



Zhonghuan Advanced Intelligent Park Platform-ESG Management Module

## Cooperation for Win-Win Results

### Offering Suggestions for the High-Quality Industry Development

The Company takes an active part in seminars organized by governments at various levels, industry alliances and associations, and peer enterprises, carries out joint innovation projects with partners to drive technological breakthroughs and contribute to the high-quality development of the PV industry.

#### TZE was Invited to Attend the Ningxia Clean Energy Industry Development Forum

In July 2023, the 2023 Western Golden Triangle Energy and Ningxia Clean Energy Industry Development Forum was held in Yinchuan, Ningxia. TZE was invited to attend the forum, engaging in in-depth discussions with other participants on new models for clean energy development. The Company presented a theme report titled “Intelligent Manufacturing in the PV Industry Supports Carbon Peaking and Carbon Neutrality Goals”. In the report, TZE shared the Company’s experiences in advancing intelligent manufacturing transformation, promoting Industry 4.0, and contributing to the achievement of Carbon Peaking and Carbon Neutrality Goals.



TZE Attended the Ningxia Clean Energy Industry Development Forum and Delivered a Keynote Speech

### Working Together to Improve Industry Standards

On December 15, 2023, at the 2023 Annual PV Industry Conference, TZE, together with 5 other PV companies as initiators, jointly launched the 700W+ PV Open Innovative Ecological Alliance and discussed and agreed upon the standard design and application of 700W+ PV modules. The 700W+ PV Open Innovative Ecological Alliance will continue to adhere to the “open and win-win” collaboration model, leverage the advantages of the industry chain, and connect core processes such as R&D, manufacturing, and application to build a new system for modern PV industry.

TZE is a member of several trade associations and industrial alliances, such as China PV Industry Association and China Federation of Electronics and Information Industry. We actively fulfill our responsibilities as a leader in the PV industry, including leading or participating in the formulation of 5 national standards, 2 group standards, and multiple industry reports during the Reporting Period. These include:

- Collaborating with the Subcommittee on Materials of the National Standardization Technical Committee for Semiconductor Equipment and Materials, TZE took the lead in drafting national standards such as the Test Method for Excess-Charge-Carrier Recombination Lifetime in Silicon Ingots, Silicon Bricks and Silicon Wafers - Noncontact Eddy-Current Sensor.
- Collaborating with the Tongbiao Zhongyan Standardization Technology Research Institute (Beijing) Co., Ltd., TZE participated in the formulation of group standards such as the General Guidelines for Green Low-Carbon Product Evaluation and General Guidelines for Industrial Zero Carbon Factory Evaluation.
- Engaging in the preparation of the 2022-2023 China PV Industry Annual Report and the 2022-2023 China PV Industry Development Roadmap as an industry expert.

# About the Report

## Introduction of the Report

As a global leading manufacturer of PV materials, supplier of PV cells and modules and provider of intelligent PV solutions, TCL Zhonghuan Renewable Energy Technology Co., Ltd (referred to as “TCL Zhonghuan”, “TZE”, “the Company” or “We”) has always adhered to the sustainable development vision of “becoming a respected global renewable energy technology company”, and focuses on the Company’s sustainability process.

The Report is the eighth sustainability report (i.e., environmental, social and governance report or social responsibility report) released to the public by TZE, providing transparent corporate sustainable development-related information to our stakeholders, including shareholders and investors, customers, government and regulatory agencies, employees, suppliers and partners, communities, non-governmental organizations, media and others. The last report was released in March 2023.

## Reporting Period

This Report is issued on a one-year cycle, consistent with the financial year. The Reporting Period is from January 1, 2023 to December 31, 2023 (referred to as the “Reporting Period”). The Report details TZE’s practices and performance in the economic, environmental, social and governance during the Reporting Period. For consistency, comparability and completeness, the Report refers back to previous years or covers the year 2024 as appropriate.

## Scope of Report

The policies and data mentioned in this report cover the Company and our subsidiaries (see the table below for details), and the scope of the report is consistent with that of our annual report. In 2023, the Company newly acquired Zhonghuan Advanced (Xuzhou) Semiconductor Materials Co., Ltd., and refers to the 2023 Annual Report, the relevant data of Xuzhou Advanced from March 1 to December 31, 2023 after acquisition is included in this Report. When the scope of specific data is not consistent with the scope of the Report, it will be noted in the text.

Full Name of Subsidiaries	Abbreviation
Inner Mongolia Zhonghuan Crystal Material Co., Ltd.	Zhonghuan Crystal
Ningxia Zhonghuan Solar Materials Co., Ltd.	Ningxia Zhonghuan
Tianjin Huanou Semiconductor Material Technology Co., Ltd	Tianjin Huanou
Tianjin Huanzhi Renewable energy Technology Co., Ltd	Huanzhi Renewable energy
Tianjin Huanou Renewable energy Technology Co., Ltd.	Huanou Renewable energy
Inner Mongolia Zhonghuan PV Materials Co., Ltd.	Zhonghuan PV
Wuxi Zhonghuan Applied Materials Co., Ltd.	Zhonghuan Applied Materials
Huansheng PV (Jiangsu) Co., Ltd.	Huansheng PV
Huansheng Renewable energy (Jiangsu) Co., Ltd.	Huansheng Jiangsu
Huansheng Renewable energy (Tianjin) Co., Ltd.	Huansheng Tianjin
Tianjin Zhonghuan Advanced Material Technology Co., Ltd	Tianjin Zhonghuan Advanced
Zhonghuan Advanced Semiconductor Materials Co., Ltd.	Zhonghuan Advanced
Inner Mongolia Zhonghuan Advanced Semiconductor Material Co., Ltd.	Inner Mongolia Zhonghuan Advanced
Zhonghuan Advanced (Xuzhou) Semiconductor Materials Co., Ltd.	Xuzhou Advanced
Tianjin Zhonghuan Renewable energy Co., Ltd.	Zhonghuan Renewable energy
Tianjin Huanou International Silicon Material Co., LTD	Huanou International
Tianjin Huanrui Electronic Technology Co., LTD	Tianjin Huanrui



## Reporting Standards and Guidelines

The Report complies with the requirements of the Guidelines on Social Responsibility of Listed Companies and Main Board Information Disclosure Business Memorandum-No. 1 Document: Matters Related to Disclosure in Periodic Reports issued by the Shenzhen Stock Exchange. In addition, the Report has been formulated with reference to the Global Reporting Initiative (referred to as "GRI") Standards and the Reporting Framework of the Task Force on Climate-Related Financial Disclosure (referred to as "TCFD").

## Data Source

The sources of data and cases in the Report include TZE's internal relevant statistics, public reports, as well as public data from third-party research, verification or interview, governmental department, professional organizations and other public data.

Unless otherwise specified, the currency used in this Report is Chinese Yuan (CNY).

The Board of Directors of the Company guarantees that there are no misrepresentation and misleading statements in this Report.

## Confirmation & Approval

After confirmed by the management, the Report was approved by the Board of Directors on April 25, 2024.

## Access & Response to Report

The Report is published electronically and the Chinese and English versions of the Report can be downloaded from the official website of TZE at <https://en.tzeco.com/esg/>

Your valuable comments or suggestions are important to us. If you have any questions or suggestions regarding the Company's sustainability disclosures and performance, please feel free to contact the Company by the following means:



TCL Zhonghuan Renewable Energy Technology Co., Ltd



TEL:+86-022-23789766-8026



E-mail:tze@tzeco.com





# GRI Content Index

Disclosure Issue	Disclosure item	Chapter Index
2-1	Organizational details	About the Report
2-2	Entities included in the organization's sustainability reporting	About the Report
2-3	Reporting period, frequency and contact point	About the Report
2-4	Restatements of information	About the Report
2-5	External assurance	Independent Verification Statement
<b>Activities and workers</b>		
2-6	Activities, value chain and other business relationships	About TZE
2-7	Employees	Diversity and Inclusion
2-8	Workers who are not employees	Diversity and Inclusion
<b>Governance</b>		
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Disclosure Issue	Disclosure item	Chapter Index
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2-22	Statement on sustainable development strategy	Sustainable Development Strategy
2-23	Policy commitments	Sustainable Development Strategy
2-24	Embedding policy commitments	Sustainable Development Strategy
2-25	Processes to remediate negative impacts	Business Behavior
2-26	Mechanisms for seeking advice and raising concerns	About the Report
2-27	Compliance with laws and regulations	Business Behavior
2-28	Membership associations	Cooperation for Win-Win Results
<b>Stakeholder engagement</b>		
2-29	Approach to stakeholder engagement	Sustainability Governance
2-30	Collective bargaining agreements	Attracting and Retaining Talents
3-1	Process to determine material topics	Sustainability Governance
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<b>GRI 204 Procurement Practices</b>		
3-3	Management of material topics	Responsible Supply Chain
<b>GRI 205 Anti-corruption</b>		
3-3	Management of material topics	Business Behavior


Disclosure Issue	Disclosure item	Chapter Index
205-1	Operations assessed for risks related to corruption	Business Behavior
205-2	Communication and training about anti-corruption policies and procedures	Business Behavior
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<b>GRI 302Energy</b>		
3-3	Management of material topics	Energy Management
302-1	Energy consumption within the organization	Energy Management
302-2	Energy consumption outside of zation	Energy Management
302-3	Energy intensity	Energy Management
302-4	Reduction of energy consumption	Energy Management
302-5	Reductions in energy requirements of products and services	Energy Management
<b>GRI 303 Water and Effluents</b>		
3-3	Management of material topics	Water Management
303-1	Interactions with water as a shared resource	Water Management
303-2	Management of water discharge-related impacts	Water Management
303-3	Water withdrawal	Water Management
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<b>GRI 305Emissions</b>		
3-3	Management of material topics	Climate Action
305-1	Direct (Scope 1) GHG emissions	Climate Action
305-2	Energy indirect (Scope 2) GHG emissions	Climate Action
305-3	Other indirect (Scope 3) GHG emissions	Climate Action
305-4	GHG emissions intensity	Climate Action
305-5	Reduction of GHG emissions	Climate Action
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Ecological Protection

Disclosure Issue	Disclosure item	Chapter Index
<b>GRI 30Waste</b>		
3-3	Management of material topics	Ecological Protection
306-1	Waste generation and significant waste-related impacts	Ecological Protection
306-2	Management of significant waste-related impacts	Ecological Protection
306-3	Waste generated	Ecological Protection
306-4	Waste diverted from disposal	Ecological Protection
306-5	Waste directed to disposal	Ecological Protection
<b>GRI 308 Supplier Environmental Assessment</b>		
3-3	Management of material topics	Responsible Supply Chain
308-1	New suppliers that were screened using environmental criteria	Responsible Supply Chain
308-2	Negative environmental impacts in the supply chain and actions taken	Responsible Supply Chain
<b>GRI 401Employment</b>		
3-3	Management of material topics	Attracting and Retaining Talents
401-1	New employee hires and employee turnover	Employee Training and Development
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Attracting and Retaining Talents
401-3	Parental leave	Attracting and Retaining Talents
<b>GRI 402Labor anagement Relations</b>		
3-3	Management of material topics	Attracting and Retaining Talents
402-1	Minimum notice periods regarding operational changes	Attracting and Retaining Talents

Disclosure Issue	Disclosure item	Chapter Index
<b>GRI 403 Occupational Health and Safety</b>		
3-3	Management of material topics	Occupational Health and Safety
403-1	Occupational health and safety management system	Occupational Health and Safety
403-2	Hazard identification, risk assessment, and incident investigation	Occupational Health and Safety
403-3	Occupational health services	Occupational Health and Safety
403-4	Worker participation, consultation, and communication on occupational health and safety	Occupational Health and Safety
403-5	Worker training on occupational health and safety	Occupational Health and Safety
403-6	Promotion of worker health	Occupational Health and Safety
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Occupational Health and Safety
403-8	Workers covered by an occupational health and safety management system	Occupational Health and Safety
403-9	Work-related injuries	Occupational Health and Safety
403-10	Work-related ill health	Occupational Health and Safety
<b>GRI 404 Training and Education</b>		
3-3	Management of material topics	Employee Training and Development
404-1	Average hours of training per year per employee	Employee Training and Development
404-2	Programs for upgrading employee skills and transition assistance	Employee Training and Development
404-3	Percentage of employees receiving regular performance and career development reviews	Employee Training and Development
<b>GRI 405 Diversity and Equal Opportunity</b>		
3-3	Management of material topics	Diversity and Inclusion

Disclosure Issue	Disclosure item	Chapter Index
405-1	Diversity of governance bodies and employees	Diversity and Inclusion
<b>GRI 406 Non-discrimination</b>		
3-3	Management of material topics	Attracting and Retaining Talents
406-1	Incidents of discrimination and corrective actions taken	Attracting and Retaining Talents
<b>GRI 407 Freedom of Association and collective Bargaining</b>		
3-3	Management of material topics	Diversity and Inclusion
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	None
<b>GRI 408 Child Labor</b>		
3-3	Management of material topics	Attracting and Retaining Talents
408-1	Operations and suppliers at significant risk for incidents of child labor	None
<b>GRI 409 Forced or Compulsory Labor</b>		
3-3	Management of material topics	Attracting and Retaining Talents
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	None
<b>GRI 413 Local Communities</b>		
3-3	Management of material topics	Social Contribution
413-1	Operations with local community engagement, impact assessments, and development	None
413-2	Operations with significant actual and potential negative impacts on local communities	None
<b>GRI 414 Supplier Social Assessment</b>		
3-3	Management of material topics	Responsible Supply Chain
414-1	New suppliers that were screened using social criteria	Responsible Supply Chain
414-2	Negative social impacts in the supply chain and actions taken	Responsible Supply Chain

# Independent Verification Report



## ASSURANCE STATEMENT

**SGS CSTC'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE TCL ZHONGHUAN RENEWABLE ENERGY TECHNOLOGY CO., LTD.'S 2023 SUSTAINABILITY REPORT**

**NATURE OF THE ASSURANCE/VERIFICATION**  
 SGS-CSTC STANDARDS TECHNICAL SERVICES CO., LTD. (hereinafter referred to as SGS) was commissioned by TCL ZHONGHUAN RENEWABLE ENERGY TECHNOLOGY CO., LTD. (hereinafter referred to as TZE) to conduct an independent assurance of the 2023 Sustainability Report Chinese version (hereinafter referred to as the Report).

**INTENDED USERS OF THIS ASSURANCE STATEMENT**  
 This Assurance Statement is provided with the intention of informing all TZE's Stakeholders.

**RESPONSIBILITIES**  
 The information in the Report and its presentation are the responsibility of the board of directors and the management of TZE. SGS has not been involved in the preparation of any of the material included in the Report.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification with the intention to inform all TZE's stakeholders.

**ASSURANCE STANDARDS, TYPE AND LEVEL OF ASSURANCE**  
 The SGS ESG & Sustainability Report Assurance protocols used to conduct assurance are based upon internationally recognised assurance guidance and standards, including:

- The principles of reporting process contained within the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) as:
  - GRI 1: Foundation 2021, for report quality
  - GRI 2: General Disclosure 2021, for organization's reporting practices and other organizational detail
  - GRI 3: Material Topics 2021, for organization's process of determining material topics, its list of material topics and how to manages each topic
- and the guidance on levels of assurance contained within the AA1000 series of standards and ISAE3000.

The assurance of this report has been conducted according to the following Assurance Standards:

Assurance Standard Options	Level of Assurance
SGS ESG & SRA Assurance Protocols (based on GRI Principles and guidance in AA1000)	Moderate

**SCOPE OF ASSURANCE AND REPORTING CRITERIA**  
 The scope of the assurance included evaluation of quality, accuracy and reliability of specified performance information as detailed below and evaluation of adherence to the following reporting criteria:

- GRI Standards 2021 (Reference)

**ASSURANCE METHODOLOGY**  
 The assurance comprised a combination of pre-assurance research, interviews with relevant employees on-site at headquarter, located in No. 10, New Technology Industrial Park, Haitai South Road, Huayuan Industrial Zone (Outer Ring), Tianjin, China, and online review and validation of documentation and records with relevant personnel of TZE's affiliates where relevant.

**LIMITATIONS AND MITIGATION**  
 Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.  
 The data related to carbon emissions in the report was self-accounted by TZE, and the carbon data audit was conducted on the sampling basis during the assurance process, however, the carbon data was verified independently by the 3rd party.  
 Data tracing was conducted at TZE headquarter level, with the original data of all subsidiaries not included.  
 The assurance process only involved interviews with the heads of relevant departments and certain employees at the headquarter, and review of relevant documents. No external stakeholder was involved in this process.

**STATEMENT OF INDEPENDENCE AND COMPETENCE**  
 The SGS Group of companies is the world leader in inspection, testing and verification, operating in multiple countries and providing services including management systems and service certification, quality, environmental, social and ethical auditing and training, environmental, social and sustainability report assurance. SGS affirm our independence from TZE, being free from bias and conflicts of interest with the organisation, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors registered with CCAA registered ISO 9001, ISO 14001, ISO 45001, ISO37001, ISO37301 auditor and SGS recognized CSR/ESG lead auditor with knowledge of GRI, AA1000 etc.

**FINDINGS AND CONCLUSIONS**

**ASSURANCE/VERIFICATION OPINION**  
 On the basis of the methodology described and the verification work performed, the specified performance information included in the scope of assurance is accurate, reliable.

**CONCLUSIONS, FINDINGS AND RECOMMENDATIONS**  
 The assurance team believes that the TCL ZHONGHUAN RENEWABLE ENERGY TECHNOLOGY CO., LTD.'S 2023 SUSTAINABILITY REPORT was prepared with reference to the GRI Standards 2021.

**PRINCIPLES**

**Accuracy**  
 TZE's information in the Report was accurate and included both qualitative and quantitative information on multiple performance indicators for stakeholders.

**Balance**  
 TZE followed the balance principle and truthfully made sustainability disclosures as expected by stakeholders.

**Clarity**  
 TZE was presented in different formats, including text, figures, graphics and pictures, and contained case studies to make it easily understandable for stakeholders.

**Comparability**  
 TZE disclosed performance indicators in 2023, including historical data for some indicators. Such data allows stakeholders to develop an intuitive and comparative understanding of TZE's sustainability performance year by year.

**Completeness**  
 TZE covered the identified material topics and boundaries that reflect significant economic, environmental, and social impacts to enable stakeholders to assess the organization's performance during the reporting period.

**Sustainability Context**  
 TZE presented its sustainability efforts related to economic, environmental, and social aspects and demonstrated its overall performance in the broader sustainability context.

**Timeliness**  
 Assurance showed that the reported data and information was timely and effective within the reporting period. TZE has disclosed its sustainability report since 2017, which indicates the data is kept up-to-date.

**Verifiability**  
 The data and information in the Report can be traced and verified.


**Management Approach**  
 The Report disclosed the management approach of identified material topics.

**General Disclosures**  
 TZE's report disclosed applicable economic, environmental and social performance in accordance with GRI 2: General Disclosure 2021.

**Topic-specific Disclosures**  
 TZE's topic-specific disclosures related to the material topics in economic, environmental, and social areas were made in accordance with GRI Standards 2021.

**Findings and Recommendations**  
 Good practices and recommendations for the sustainability report and management processes were described in the internal management report which has been submitted to TZE's management for continuous improvement.

**Signed:**




**For and on behalf of SGS-CSTC**

**David Xin**  
 Sr. Director – Business Assurance  
 16/F Century Yuhui Mansion, No. 73, Fucheng Road, Beijing, P.R. China

Apr. 19<sup>th</sup> 2024  
[WWW.SGS.COM](http://WWW.SGS.COM)

# Greenhouse Gas Validation Verification Statement



Certificate NO.: YXTC\_2024\_0404

## GHG Validation and Verification Statement

This is to certify that

The GHG statement of TCL Zhonghuan Renewable Energy Technology Co., Ltd., business address No. 12, New Technology Industrial Park, Haitai East Road, Huayuan Industrial Zone (Outer Ring), Tianjin, China has been verified according to the verification criteria and relevant verification procedures and issue the following verification opinions:

- The quantification and reporting of greenhouse gas emission and removal in the GHG statement meet the requirements of ISO 14064-1: 2018, ISO 14064-3: 2019, GHG Protocol.
- The greenhouse gas emissions during the period covered by the organization's GHG statement are as follows:  
ISO 14064-1: 2018:

Category	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6	Total emissions quantified (tCO <sub>2</sub> e)
	Direct greenhouse gas emission (tCO <sub>2</sub> e)	Energy indirect greenhouse gas emissions (tCO <sub>2</sub> e)	Indirect greenhouse gas emissions generated by transport (tCO <sub>2</sub> e)	Emissions from the products used by the organization & indirect greenhouse gas emissions from services (tCO <sub>2</sub> e)	Indirect greenhouse gas emissions related to the organizational use of the products (tCO <sub>2</sub> e)	Greenhouse gas emissions from other sources (tCO <sub>2</sub> e)	
By Market	38515.32	4508402.76	84819.08	16837243.43	1915936.09	2290459.85	25675376.53
By Location	38515.32	4565054.65	84819.08	16837243.43	1915936.09	229030.16	25734598.73

GHG Protocol:

Scope	Scope 1	Scope 2	Scope 3	Total emissions quantified (tCO <sub>2</sub> e)
By Market	38515.32	4508402.76	21128458.45	25675376.53
By Location	38515.32	4565054.65	21131028.76	25734598.73

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3. The verification

Verification criteria: 《Greenhouse gases-Part 3: Specification with guidance for the verification and validation of greenhouse gas statements》ISO 14064-3:2019.

The boundaries of organization: Operating control rights of greenhouse gas emissions by TCL Zhonghuan Renewable Energy Technology Co., Ltd.

Time period covered: From 1st January, 2023 to 31st December, 2023.

Level of assurance: Reasonable assurance level.

4. The grade of reasonable assurance provided by this verification is consistent with the agreed purpose, criteria and scope of the verification. There was no gross mistakes in the organization's GHG statement. There are no restrictions. Others: The data and information which supporting organizational statements are reasonable assumptions, predictions, and/or historical facts.

Official website: [www.lhxtc.com](http://www.lhxtc.com)

Date of issue: 2024.04.01

Signer: 胡胡斌




**Disclaimer:** The audit conclusions in the verification report are entirely based on the information provided by the audited party, and our institution assumes no responsibility for the validity, authenticity, or completeness of these materials. The purpose, criteria, scope and assurance level of the service shall be jointly confirmed and formulated by both parties. As an independent third-party institution, our institution is only responsible for the verification process.

**Independence statement:** This institution does not have any commercial relationship with the audited party or its management personnel. The verification activities of the verifier are independent and impartial, and there are no conflicts of interest.

**Validity Statement:** This certificate can only remain valid within the validity period of administrative license certificates, qualification certificates, mandatory certification certificates, etc., which required by applicable laws and regulations.

**Yuxiang Carbon Testing & Certification (Tianjin) Co., Ltd.**

Address: No. 6975 Asia Road, Tianjin Pilot Free Trade Zone (Dongjiang Comprehensive Bonded Zone), Financial and Trade Center South Zone 1-1-2307(multiple address information exists)

TEL:022-23716251

Page 2 of 2

# TCL 中环

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Email: tze@tzeco.com



TCL中环 | 官方网站

扫码关注



TCL中环 | 视频号

扫码关注



TCL中环 | 微信公众号

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