



山高新能源集團有限公司

SHANDONG HI-SPEED NEW ENERGY GROUP LIMITED

(formerly known as Beijing Enterprises Clean Energy Group Limited)

(Incorporated in the Cayman Islands with limited liability)

Stock Code: 01250

Main Track,
New Chapter,
Brand Building,
Long-term Planning,
Sustainable
Development

Environmental, Social and
Governance Report **2022**

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About This Report

This report is a true reflection of Shandong Hi-Speed New Energy Group Limited's active fulfillment of environmental, social and governance responsibilities and its realization of comprehensive, coordinated and sustainable development. Forward-looking descriptions such as business plans and development strategies involved in this report do not constitute the Company's actual commitment to investors. Investors are advised to pay attention to the risks.

The Chinese version shall always prevail in case of any discrepancy or inconsistency between English version and Chinese version.

- **TIME FRAME**

The time frame for the content of this Report is from 1 January 2022 to 31 December 2022, and some parts exceed the above-mentioned time frame.

- **REPORTING SCOPE**

This report focuses on the Group's environmental, social and governance ("ESG") strategies, governance, actions, targets and performance relating to the investment, development, construction, operation and management of its photovoltaic power business, wind power business and clean heat supply business in the People's Republic of China ("China" or "the PRC"). Unless otherwise specified, the businesses covered by the policies, systems, representations and key performance indicator data in this report are consistent with the scope of its financial report.

- **DESCRIPTION OF REFERENCES**

For easy reference and reading, Shandong Hi-Speed New Energy Group Limited is also referred to as "SHNE", "the Company", "we", and, together with its subsidiaries, the "Group" in this report.

ABOUT THIS REPORT

- **DATA SOURCES**

All data is derived from official documents, statistics and financial reports of the Company, as well as the environmental, social and governance data that has been collected, summarized and reviewed by the Company.

- **BASIS OF REPORTING**

This report was prepared in accordance with the Environmental, Social and Governance Reporting Guide (the "Guide"), which is contained in Appendix 27 to the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited (the "Stock Exchange"). In order to fully demonstrate the Group's ESG efforts and achievements during the reporting period to all stakeholders, during the reporting period, this report complied with the mandatory disclosure requirements and the "comply or explain" provisions of the Guide. The Group attaches great importance to Materiality, Quantitative, Balance and Consistency in the process of preparing this report. The Group has applied these reporting principles in accordance with the above-mentioned Guide. The details are as follows:

Materiality principle: In accordance with the relevant principles and requirements of the Stock Exchange's Guide, and combined with the capital market's key concerns on the Company's sustainable development, SHNE communicated with various stakeholders by different means and conducted peer-to-peer benchmarking analysis on the issues disclosed in company's reports to identify and select material ESG issues related to SHNE. The materiality of different material issues has been reviewed and confirmed by the Board of Directors and the management.

Quantitative principle: SHNE has established a standardised management tool for ESG indicators to conduct regular statistics on quantitative key disclosure indicators of the whole "environmental" subject area and part of the "social" subject area included in the ESG Reporting Guide, and has summarised them during the year to prepare this report for external disclosure eventually. The ESG quantitative data is detailed in the sessions of this report.

Balance principle: This report presents SHNE's 2022 ESG performance in an objective and fair manner, avoiding choices, omissions, and presentation formats that may inappropriately affect the decision-making or judgment of readers of this report.

Consistency principle: This report made no major adjustments to the disclosure scope of the ESG reports in previous years, used consistent statistical methods, and further refined some of the disclosure categories in the ESG Reporting Guide. Year-on-year comparison of ESG data is detailed in the sessions of this report.

- **ACCESS TO THE REPORT**

This report is published electronically. The electronic report is available for viewing and downloading on the website of the Group (www.shneg.com.hk) and the website of the Stock Exchange's HKEXnews (www.hkexnews.hk).



Chairman's Statement

The 20th National Congress of the Communist Party of China in 2022 has been successfully held. It outlined a grand blueprint for building a modern socialist country in an all-rounded way and comprehensively promoting the great rejuvenation of the Chinese nation with Chinese-style modernization, blowing the horn of the times for a new journey. President Xi Jinping stated in the meeting that in order to promote green development, we must firmly establish and practise the idea that lucid waters and lush mountains are invaluable assets, and plan our development from the perspective of harmonious coexistence between man and the nature. In the century-long journey

to realize the great rejuvenation and prosperity of the Chinese nation, the Company has always taken "focusing on clean and low-carbon, accelerating energy transformation, and creating an industrial ecosystem" as its own responsibility and duty. In May 2022, the Company successfully introduced Shandong Hi-Speed Holdings Group Limited ("SDHG") (0412.HK), a subsidiary of Shandong High Speed Group Co., Ltd. ("Shandong Hi-Speed Group"), as the controlling shareholder, and changed its name to Shandong Hi-Speed New Energy Group Limited to become a domestic first-class clean energy comprehensive service provider.

Chairman's Statement

We take on the mission bravely and forge ahead. Taking the development of our times as our mission, SHNE adheres to the idea of “lucid waters and lush mountains are invaluable assets”, and makes positive contributions to building a beautiful and clean China. To fulfill the social responsibilities commensurate with the Company's brand and industry status, we actively promote the energy revolution, develop clean energy, and protect clear water and blue sky. We are committed to becoming an integrated new energy operator and service provider, which is fully market-oriented with core competitiveness and sustainable and high-quality development, and consolidating its position as a leading integrated new energy solution provider.

We have strengthened strategic guidance to intensify market development. Under quadrants of the modern energy system planning and renewable energy development planning in the national “14th Five-Year Plan”, we have focused on the direction of technology development of the industry technology. By relying on excellent resources such as think tanks, we have enhanced research on the industry's macro-environment and the Company's competitive strategy so as to formulate a feasible strategic implementation path. Meanwhile, the Company has established a high-quality market development team. Emphasising the importance of outstanding backbone talents for development, it has established a fully market-oriented employment mechanism and an attractive incentive mechanism. It has also integrated resources of the industry to design shareholder-empowered scenarios.

We will optimize the operation mechanism to speed up the building of the compliance system. We will further optimize the investment decision-making system and enhance technical support capabilities to improve the supply chain management. We will also explore the application of information technology so as to continue to improve the quality of power plant operation and maintenance management, carry out in-depth excavation of the power, capacity and regulation value of power station assets to increase the Company's green premium and increase the competitiveness of operation and maintenance management in the managed operation and maintenance market. At the same time, the Company will actively explore the establishment of a working mechanism for the coordinated operation of compliance, internal control, and risk management, adhere to the bottom line of the principle of steady development, and accelerate the construction of a large compliance system.

Times are changing fast, bringing us missions. Shouldering the mission of building a “Beautiful China” in a period of strategic historical opportunity for the national energy revolution and the development of the clean energy industry, SHNE will uphold the entrepreneurial spirit of “be brave to take responsibility and dare to be the first”, adhere to long-termism, goal-orientation, integrity and innovation and collaborative sharing, and leverage the strong shareholder-empowered standardised governance structure and the efficient decision-making mechanism and market-oriented operation and incentive mechanisms. We will go ahead, create new prospects and anchor the main channel to cultivate new driving forces and continue to maintain long-term and stable development.



Statement from the Board

SHNE highly recognises the importance of environment, society and governance to the Company's long-term stable operation and has established effective ESG management and governance mechanisms. As the highest decision-making body for the Group's sustainable development, the Board of Directors (the "Board") of the Company reviews the Company's sustainable development strategies, targets and risks and evaluate the achievement progress of ESG targets to realize a more independent, efficient and professional ESG management of the Board, ensuring the integration of ESG concepts with the Company's policies while exploring a new model of sustainable development that combines ESG with the Company's businesses.

STATEMENT FROM THE BOARD

The Board authorizes the audit committee of the Company (the "Audit Committee") to manage and make decisions on the Group's ESG matters, be responsible for ESG-related matters and established four major categories covering 11 authorised responsibilities. They are: 1) Identify and establish ESG-related risks and opportunities, as well as impacts on businesses; 2) Formulate ESG strategy, approach and prioritise targets, with principles and processes for reaching them, and review relevant progresses made; 3) Integrate ESG into daily operations, in particular the risk management and internal control systems; and 4) Oversee the development and production of the ESG report required by the regulatory body. The ESG Working Group ("Working Group") is established under the Audit Committee. The Working Group is composed of core members from cross-functional departments. It is responsible for collecting and analysing ESG data, monitoring and evaluating the Group's ESG performance, following up and reviewing the progress of the Group's ESG-related targets, ensuring compliance with ESG-related laws and regulations, and assisting in carrying out materiality assessments.

In 2022, the Group has preliminarily identified the risks brought by climate change to the enterprise and has carried out countermeasures for the identified risks. We are aware that climate change brings physical risks to our operations, including supply chain disruption, wind and solar resource volatility, damages made to

energy generating and heat supply facilities by climate disasters, and demand fluctuations in heat supply induced by extreme weather conditions, etc. The likelihood and degree of impact from such risks vary depending on the geographic location of our facilities and the industry characteristics we are in. In the future, the Group will continue to strengthen its ability to manage climate risks and opportunities, assess relevant risks on the basis of preliminary identification, and formulate response plans.

This report discloses in detail the progress and effectiveness of SHNE's ESG work in 2022. It was reviewed and approved by the Board. The Board and all the Directors guarantee that there are no false representations, misleading statements contained in, or material omissions from this report, and accept several and joint responsibilities for the truthfulness, accuracy and completeness of its contents.

About Us

ABOUT THE GROUP

Shandong Hi-Speed New Energy Group Limited, which was jointly established by Shandong Hi-Speed Holdings Group under the State-owned Assets Supervision and Administration Commission (SASAC) of Shandong Provincial People's Government, Beijing Enterprises Water Group under the SASAC of People's Government of Beijing Municipality and CITIC Private Equity Funds, is a state-controlled company listed on the Main Board of the Stock Exchange (01250.HK).

SHNE is mainly engaged in the investment, development, construction, operation and management of photovoltaic power business, wind power business and clean heat supply business. It is one of the leading industrial groups in the domestic clean energy field, and its scale ranks in the forefront of the domestic new energy industry. As of 31 December 2022, the Company had 53 centralised photovoltaic power plants at home and abroad with a total installed capacity of 2,369 megawatts ("MW"); distributed photovoltaic power plants with a total installed capacity of 750 MW; 13 wind power plants with a total installed capacity of 588 MW; provided approximately 40 million square meters of clean heat supply, serving approximately 0.23 million households. It strives to become an engine for green businesses and a new energy flagship enterprise under the Shandong Hi-Speed Group.

While continuing to promote the development of wind and solar resources and clean heat supply business, SHNE has actively expanded its business to the fields of waste recycling and clean utilization, which have a broad market space, focusing on solid waste treatment and renewable energy industries. In recent years, the Company has established Shandong High Speed Renewable Energy Group Limited, a company listed on the A-share Main Board of the Shenzhen Stock Exchange (000803.SZ), mainly engaged in organic waste disposal

and resource utilization. It processes about 4,030 tonnes of kitchen and food waste daily, and exports about 150,000 tonnes of industrial-grade mixed oil annually.

SHNE's largest shareholder, SDHG, is a strategic segment and the only overseas investment, financing and industrial holding platform of Shandong Hi-Speed Group. With the significant advantage of "combination between industry and finance + domestic and overseas coordination", it empowers SHNE in an all-round way by accelerating the high-quality integrated development of infrastructure network and clean energy network. Under the national "Dual Carbon" strategy, Shandong Hi-Speed Group vigorously develops the layout of green and environmental protection industries such as new energy.

Looking forward, SHNE will leverage Shandong Hi-Speed Group's shareholder-empowered standardised governance structure and its efficient decision-making mechanism and market-oriented operation and incentive mechanisms, and unwaveringly regard the development, investment and operation of wind and solar power projects as its core business. At the same time, it will promote the development of urban clean heat supply and resource recycling businesses, and explore the layout of emerging industries such as hydrogen production, energy storage and integrated energy to strive to become an integrated new energy operator and service provider, which is fully market-oriented with core competitiveness and sustainable and high-quality development, consolidating its position as a leading player in the industry.

ABOUT US

Annual Highlighted Performance

In terms of overall business and social responsibility, the Company has won a number of authoritative awards and honors in the industry, and received a number of letters of appreciation for entrusted operation of power plants, reflecting the market's recognition of the Company's cultural values and concepts, as well as its high affirmation of the Company's achievements in aspects such as corporate governance, compliance control, and brand value. During the reporting period, we gained the following key honours and recognitions:



In December 2022, SHNE won the "2022 Sustainable Development Award" from Gelonghui.



In September 2022, 西藏富桦能源科技有限公司 (Tibet Fuhua Energy Technology Company Limited*) of SHNE Group won the honor of "2022 Influential Brand of Photovoltaic Power Plant Operation and Maintenance" (2022年度影响力光伏电站运维品牌) of the 11th "Polaris Cup".

* For identification only



In September 2022, Jinyuan Chaolu Wind Power Plant in Darhan Muminggan United Banner, Baotou, Inner Mongolia was recognised as 2021 National Grade AAAAA Enterprise of Production and Operation Indicators Benchmarking against Wind Power Plants.

In September 2022, Tengfei Wind Power Plant in Zi County, Lingcheng District, Shandong (entrusted operation project) was recognised as 2021 National Grade AAAA Enterprise of Production and Operation Indicators Benchmarking against Wind Power Plants.



In September 2022, Xianghetu Wind Power Plant in Alxa League, Inner Mongolia was recognised as 2021 National Grade AAAA Enterprise of Production and Operation Indicators Benchmarking against Wind Power Plants.

In September 2022, Jianzhong Wind Power Plant in Linxi County, Hebei (entrusted operation project) was recognised as 2021 National Grade AAAA Enterprise of Production and Operation Indicators Benchmarking against Wind Power Plants.





Optimize Corporate Governance and Practise Sustainable Operation

Optimize Corporate Governance and Practise Sustainable Operation

SHNE has always insisted on leading corporate governance with sustainable business philosophy. The Company abides by business ethics and relies on a sound ESG governance structure to carry out stakeholder communication and supply chain management, fulfilling the responsibilities and obligations of the enterprise to the environment and society in the course of development.

1.1 ESG GOVERNANCE AND STRUCTURE

SHNE strictly complies with rules such as the Environmental, Social and Governance Reporting Guide in Appendix 27 to the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited (the "Listing Rules"). It has established and continued to improve the ESG governance structure with the Board as the core, the Audit Committee as the supervisory agency, and the ESG Working Group as the executive agency, to steadily implement ESG governance.

ESG GOVERNANCE STRUCTURE OF SHNE



Optimize Corporate Governance and Practise Sustainable Operation

In the process of implementing ESG-related work, SHNE always regards sustainability as the core value of the Board. To continuously promote the diversity policy of the Board, it widely recruits members of different genders, ages, nationalities, and educational backgrounds to join the Board, who can provide diverse perspectives for the decision-making of the Board. As of the end of the reporting period, the Board of SHNE has 12 members, including 8 executive directors and 4 independent non-executive directors; 2 of the executive directors are females.

In 2022, SHNE and the Company's management signed the Letter of Responsibilities on Operation Targets for the year. The Form of Organizational Performance Targets of the departments for the year was drawn up by splitting and refining the content of the Letter of Responsibilities to ensure that the management strictly performs their duties, contributing to promoting steady corporate development.

SHNE also communicates with stakeholders such as employees, shareholders/investors, government/regulatory agencies, suppliers, customers, users, and neighbourhood communities. It continuously collects and responds to stakeholders through diversified communication channels and comprehensive management measures, and establishes close and friendly cooperative relations with various stakeholders.

STAKEHOLDER INTERACTION AND COMMUNICATION

Stakeholder	Topics of Concern	Communication Channels
 Employees	<ul style="list-style-type: none"> • New energy development and utilization • Staff development and training • Occupational health and safety • Labour rights and welfare 	<ul style="list-style-type: none"> • Face-to-face interviews with employees and suggestion boxes • Staff meetings • Internal training
 Shareholders/ Investors	<ul style="list-style-type: none"> • New energy development and utilization • Environmental management and resource utilization • Guarantee of product and service quality • Business ethics and anti-corruption 	<ul style="list-style-type: none"> • Annual General Meetings/ Investor meetings • Announcements/press release • Project site visits • Corporate website/emails

Optimize Corporate Governance and Practise Sustainable Operation

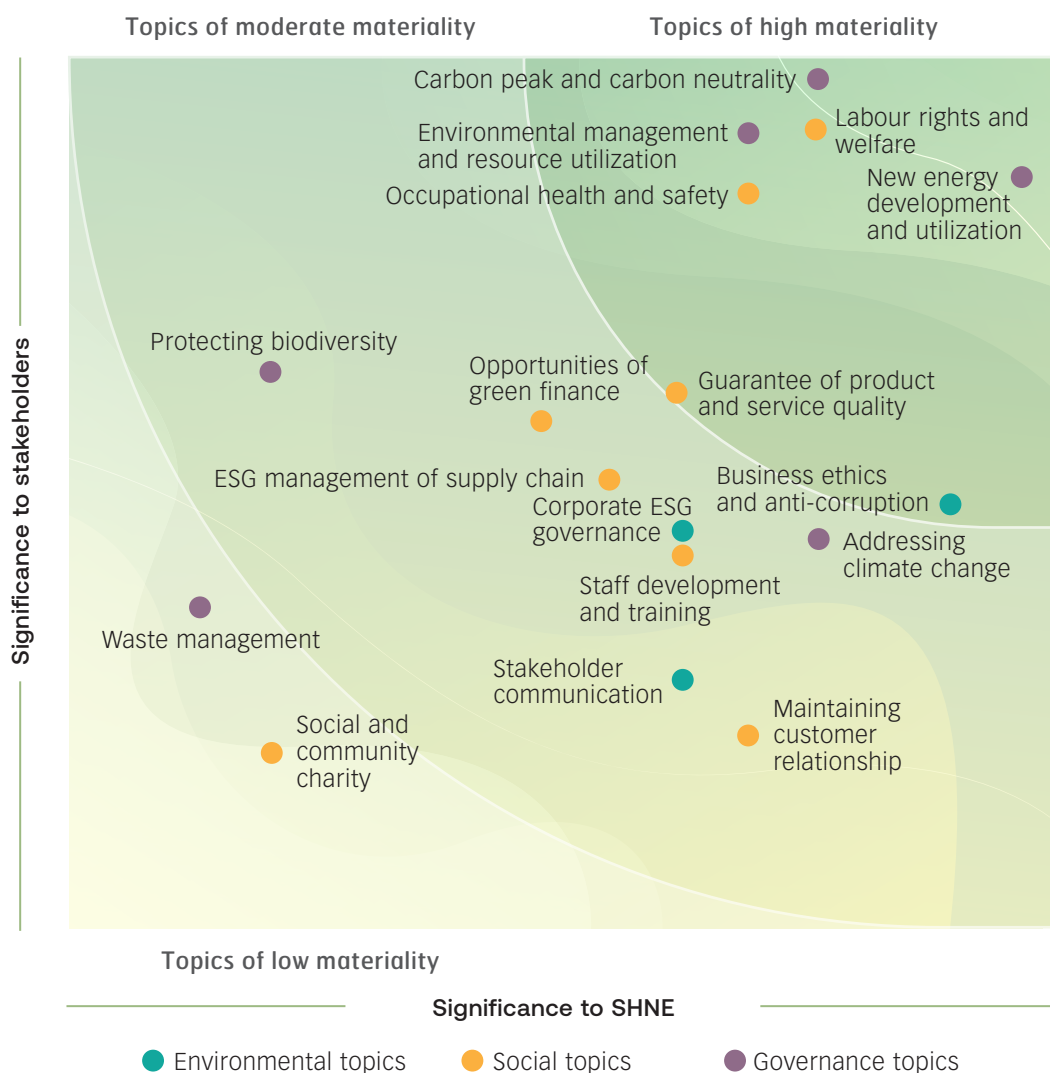
Stakeholder	Topics of Concern	Communication Channels
 <p>Governments/ Regulatory bodies</p>	<ul style="list-style-type: none"> • New energy development and utilization • Carbon peak and carbon neutrality • Environmental management and resource utilization • Guarantee of product and service quality • Labour rights and welfare 	<ul style="list-style-type: none"> • Project inspection and acceptance • Information disclosures • Forums and seminars
 <p>Suppliers</p>	<ul style="list-style-type: none"> • New energy development and utilization • Guarantee of product and service quality • ESG management of supply chain 	<ul style="list-style-type: none"> • Supplier daily management • Supplier visits
 <p>Customers and consumers</p>	<ul style="list-style-type: none"> • Environmental management and resource utilization • Carbon peak and carbon neutrality • Guarantee of product and service quality • Occupational health and safety • Labour rights and welfare • Business ethics and anti-corruption 	<ul style="list-style-type: none"> • Company website • Market surveys • WeChat official accounts/social media • Consumer hotline and complaint telephone line • Questionnaires • Customer visits
 <p>Neighbourhood Communities</p>	<ul style="list-style-type: none"> • Carbon peak and carbon neutrality • Environmental management and resource utilization • Occupational health and safety • Labour rights and welfare 	<ul style="list-style-type: none"> • Assemblies of villager representatives • Face-to-face communication

Optimize Corporate Governance and Practise Sustainable Operation

In 2022, SHNE reorganised and built the system of relationship with the Company’s investors focusing on the business results of this year. It continued to advance the preparation of the ESG report and the connection with the capital market, and deepened the connection with related service organizations such as securities analysts of public utilities and power new energy, media of energy, environmental protection and finance, etc., and demonstrate a good corporate image. During the reporting period, with its market value, SHNE won the “2022 Sustainable Development Award” from Gelonghui.

Meanwhile, the Company comprehensively considers the expectations of all stakeholders, and combines the Company’s development strategies and priorities to screen and formulate a materiality matrix in 2022 to provide direction and guidance for the Company’s future development.

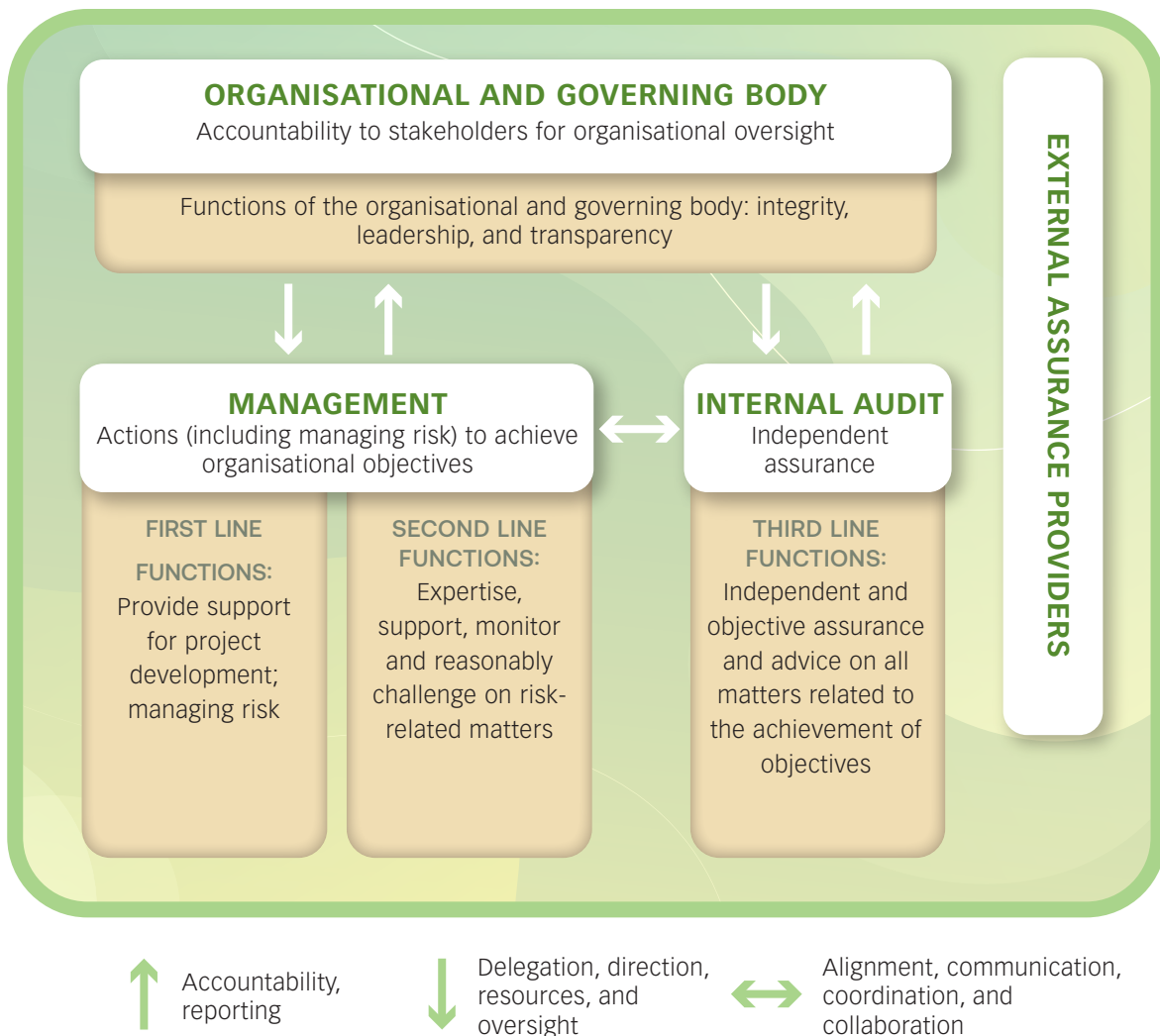
MATERIALITY MATRIX OF SHNE IN 2022



1.2 Strengthening Risk Control

SHNE complies with the requirements of Paragraph D.2 (Risk Management and Internal Control) of Part II of the Corporate Governance Code under Appendix 14 to the Listing Rules, and relies on the "Three-line Model" based risk management framework to establish and continuously improve the internal risk management and internal control system, providing guidance for the enterprise to avoid operation risks and develop steadily.

RISK MANAGEMENT FRAMEWORK OF SHNE



Optimize Corporate Governance and Practise Sustainable Operation

We have established a sound risk management process to clarify initial risk information, identify risks in the operation process, carry out risk assessment, analysis and response steadily, and implement risk management into the entire process of corporate operations to promote sustainability of the Company.

RISK MANAGEMENT PROCESS OF SHNE



Initial risk information collection and identification

- Each functional department and business unit combines the actual business situation to collect risk-related internal and external initial information
- Based on the collected initial risk information, identify the risks existing in the Company's important business activities and business processes, analyze the potential risks, and plan and arrange risk assessment



Risk assessment and analysis

- Based on the Risk Assessment and Internal Control Evaluation Management Measures, collect risk information from five aspects: strategic risk, market risk, financial risk, legal risk, and operational risk
- Based on the risk assessment standards, each business and functional department scores and ranks the listed risks one by one from the two dimensions of the possibility of risk occurrence and the degree of impact after occurrence, and finally generates the risk assessment result



Risk response and management

- For the top ten risks in the assessment ranking, formulate risk management strategies with relevant departments; for general risks, remind all functional departments to monitor risks in actual work to avoid the expansion of risks
- Formulate audit strategies, utilize audit resources, arrange audit plans, and focus on the inspection of high-risk areas during the implementation of internal audit

In 2022, adhering to the working principle of seeking progress in stability consistently, SHNE coordinated the mitigation of existing risks, investment risk management, investment calculation model optimization and internal basic management. It carried out standardized, scientific and rational management of operational risks to achieve cost reduction and efficiency enhancement.

MAJOR RISK MANAGEMENT TASKS OF SHNE IN 2022



Mitigation of existing risks

- Conducted a comprehensive investigation of the Company's existing risks, sorted out and established a risk mitigation list for existing projects



Investment risk management

- Strengthened the risk management and control at each decision-making stage of investment projects such as pre-approval, project approval and investment committee, and gradually built a full life cycle risk management
- Standardised key business management processes such as project investment review, risk tracking and control



Optimising the model to help implement cost reduction and efficiency enhancement

- Optimized the investment calculation model based on upstream market prices, markets, internal operating costs, electricity prices, energy storage investment and other factors



Strengthening internal management and improving basic management work

- Strengthened the management of investment files and established a management tracking account for the whole process of investment projects
- Carried out standardised management work, optimised and updated the content of the sections of the comprehensive risk review report, and established a post-investment management tracking report template
- Organise and collect policy bases for investment decision-making, such as energy storage configuration, electricity price mechanism, and grid connection of distributed photovoltaic projects in various provinces and cities

Following the Basic Standard for Enterprise Internal Control, the Guidelines for the Evaluation of Enterprise Internal Control, the Risk Assessment and Internal Control Evaluation Management Measures, and focusing on the five elements of internal environment, risk assessment, control activities, information and communication, and internal supervision, SHNE also carried out a series of internal audit tasks during the reporting period, including the tasks on economic benefits of operating projects, management of construction in progress, and project management. It regularly evaluated the appropriateness and effectiveness of SHNE's risk and internal control management, and continued to deepen the results of risk management and control.

Optimize Corporate Governance and Practise Sustainable Operation

Case study: Risk survey and investigation for the 300MW wind power project in Dingtao District, Heze City, Shandong Province

The terrain of the wind power project (a potential development project) area in Dingtao District is flat, and most of the site is farmland. There are 222 available locations reserved locally. There are many restrictive risk factors such as high-speed lines, high-voltage lines, high-speed rail, villages, airports, and mining areas in the site area. SHNE screened a total of 62 available locations through preliminary on-site risk investigation for every location one by one, and gave early warning for affected locations to provide technical guarantee for the feasibility of the project.



Risk survey and investigation for the project

1.3 Adherence to business ethics

SHNE strictly abides by the relevant laws and regulations such as the Law of the People's Republic of China Against Unfair Competition, the Civil Code of the People's Republic of China, the Anti-Money Laundering Law of the People's Republic of China, carries out business activities in accordance with laws and regulations, and strictly prevents the occurrence of illegal activities such as bribery, extortion, fraud, money laundering, and monopoly.

In 2022, while strictly implementing the Internal Audit System and the Regulations on Supervision of Audit Handling and Punishment, the Company formulated and continued to optimize systems such as the Legal Case Management System and the Contract Management System. The Company also established an independent supervision and audit work section to further strengthen the management of legal cases and contracts and ensure the compliance of incremental projects, projects under construction and connected transactions. During the reporting period, SHNE had no legal cases regarding corrupt practices brought against the issuer or its employees.

SHNE'S INTERNAL SYSTEM UPDATES AND OPTIMIZATION IN 2022



Legal Case Management System

Standardised the reporting, approval and handling process of legal cases, and promoted the standardization, stylisation and institutionalization of legal case management, so as to effectively control legal risks and safeguard the legal rights and interests of the Company.



Contract Management System

Optimised the work of the contract management system, reduced the review process nodes, improved the efficiency of contract countersignature, and then accurately controlled the actual risks to ensure the fast implementation of the Company's decisions

SHNE has also established and continued to improve the internal whistleblowing system, encouraging employees, shareholders and other stakeholders to report illegal activities within the Company through diversified channels for anti-corruption such as telephone, email, and letters. While recording, accepting, and investigating the reported information, the Company's Audit and Supervision Department will strictly abide by the whistleblower protection policy, actively protect the legal rights and interests of whistleblowers, and strictly handle those involved in the case according to the whistleblowing results and relevant laws and regulations.

On the basis of requiring all employees to sign the Letter of Undertaking of Integrity, SHNE has actively carried out promotion and implementation activities for integrity culture, such as case studies, anti-corruption early warning, and anti-corruption training to continuously improve employees' anti-corruption awareness and create a clean and upright culture in the enterprise working atmosphere. During the reporting period, the Company organised 8 training courses on anti-corruption and prevention of bribery, extortion, and fraud for Directors and all employees, and the cumulative training course time was 20 hours.

Phone No. for whistleblowing : +86 18911450119
+86 13700084623
Email for whistleblowing : jcsjb@shne.net.cn
Address for whistleblowing letter: Audit and
Supervision Department, Shandong Hi-Speed New
Energy Group, 2/F, Poly International Plaza T3,
Wangjing, Chaoyang District, Beijing



Optimize Corporate Governance and Practise Sustainable Operation

Case study: Promotion and implementation of anti-fraud culture

In 2022, SHNE prepared the "Occupational Fraud Risk and Prevention" training materials, which contains contents such as the definition of occupational fraud, the causes and types of occupational fraud, the significance of professional integrity and the ways of avoiding occupational fraud, and introduction of the Group's integrity policy, for employees to study.

Case study: Integrity and self-discipline training meeting

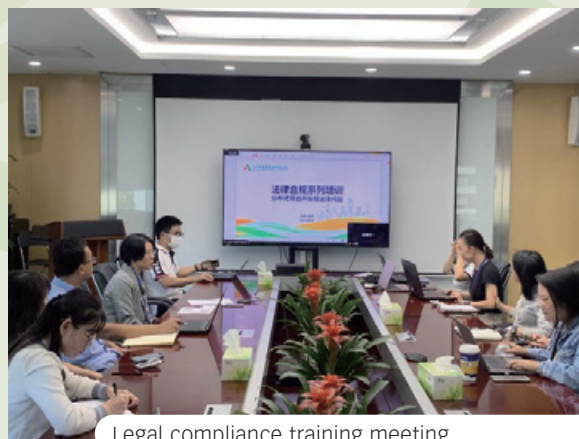
In September 2022, Shandong Hi-Speed Heat Power Company (山高新能源熱力公司), following the internal work arrangement of the "Notice on Holding Theme Activities of Professional Integrity", had the senior management of the company to organise lectures on the theme of "knowing the fear, keeping the fear, and keeping the bottom line" and the Integrity Knowledge Questionnaire Quiz Activity for the headquarters and subsidiaries, thereby further deepening the awareness of integrity.



Integrity and self-discipline training meeting

Case study: Legal compliance training

In 2022, the Company has completed legal trainings such as "Legal Issues in the Development Period of Distributed Photovoltaic Projects" and "Legal Issues in the Land Use of Centralised Photovoltaic Projects (1)", so that the personnel directly related to the businesses could have a more comprehensive and in-depth understanding on the possible legal risks of distributed and terrestrial photovoltaic projects. This has laid the foundation for the subsequent development of related businesses in accordance with laws and regulations.



Legal compliance training meeting

1.4 Intellectual Property and Privacy Protection

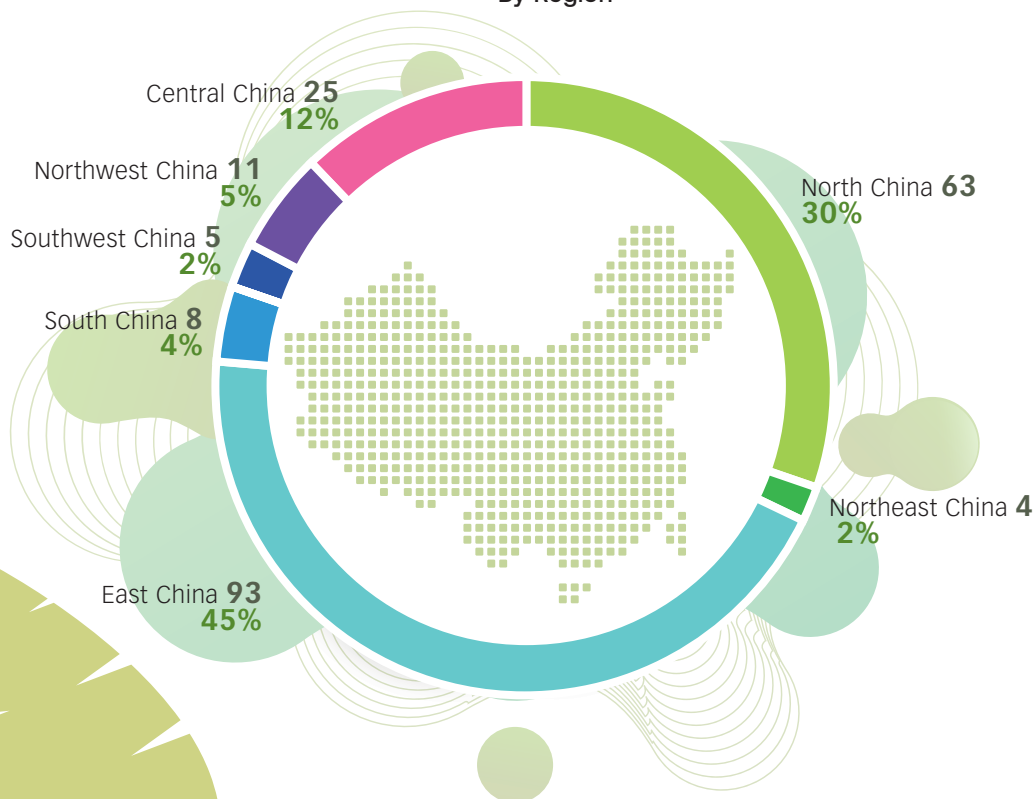
SHNE strictly abides by laws and regulations such as the Law of the People's Republic of China on the Protection of Consumer Rights and Interests and the Personal Information Protection Law of the People's Republic of China, pays attention to customer data and information security and privacy protection, and prevents customer information leakage. SHNE abides by the laws and regulations on intellectual property rights in different regions, including the Patent Law of the People's Republic of China, the Implementation Rules of the Patent Law of the People's Republic of China, the Trademark Law of the People's Republic of China, the Implementation Regulations of the Trademark Law of the People's Republic of China, and the Anti-Unfair Competition Law of the People's Republic of China, etc. During the reporting period, the Company did not have any violations of customer privacy and intellectual property rights.

1.5 Sustainable Management of Supply Chain

SHNE abides by laws and regulations such as the Bidding Law of the People's Republic of China, and carries out the Company's bidding procurement and supplier admission, management, assessment and communication work in compliance, and regards building a high-quality industrial chain as an important prerequisite for the enterprise to provide high-quality products and services and practise sustainable development.

We uphold the principle of openness and transparency, follow the internal system of the Supplier Management Regulations, and combine the actual needs of the Company to carry out supplier admission, management, assessment and communication through channels such as the official account, thereby enhancing the competitive advantage of the product life cycle. We also incorporate business ethics and environmental responsibility into the scope of supplier assessment, giving priority to suppliers with good ESG performance and leading companies in the industry. During the reporting period, SHNE had a total of 209 suppliers of engineering service, equipment and materials, and services, all of which comply with the requirements of Supplier Management Regulations system of the Company.

SHNE'S NUMBER OF SUPPLIERS BY REGION IN 2022
By Region



Optimize Corporate Governance and Practise Sustainable Operation

SHNE'S SUPPLY CHAIN MANAGEMENT PROCESS



Supplier admission

- Clarify the requirements for admission, conduct on-site inspections of suppliers that meet accurate standards, and evaluate their qualifications, performance, capabilities, operation conditions, management systems, financial status and other factors
- Select based on the management and disposal of emissions in each production process of the supplier, and the status of relevant environmental management system certification
- Give priority to enterprises with outstanding performance in safety and environmental protection management
- Require suppliers to have an anti-corruption policy



Supplier management

- Strengthen the supervision of the supplier tendering process, classify and dynamically manage suppliers, and conduct annual performance evaluation
- Actively integrate the concepts of environment and corporate social responsibility into supplier management, including encouraging key suppliers to provide ISO 14001 Environmental Management System Certification and ISO 45001 Occupational Safety Management Certification



Supplier assessment

- Conduct factory inspections, project inspections, personnel inspections, and inspections of cooperation for suppliers based on the dimensions of operation conditions, technology and R&D capabilities, quality system, quality assurance capabilities, production capabilities, safety environment, and after-sales support capabilities
- Regularly carry out contract performance evaluation and operation evaluation
- Evaluate supplier registration in the form of scoring, and punish and dismiss unqualified suppliers

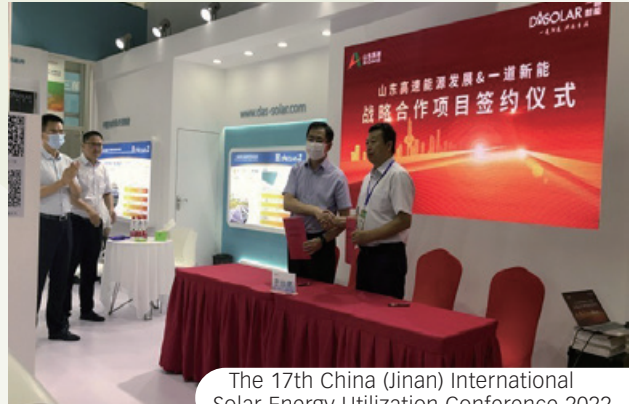
SHNE always hopes to grow together with suppliers. The Company actively carries out cooperation and exchanges with suppliers through telephone, email, WeChat, on-site communication, letters, announcements, etc., and establishes a targeted and stable resource and support platform. In 2022, the Company specially invited bidders to update and explain the advancements of wind power and photovoltaic technology to promote technological progress through exchanges. We also actively participated in relevant industry cooperation, fully conveyed the corporate philosophy and advanced technology of SHNE, and maintained equal and friendly strategic partnerships with suppliers.



Technological exchange with suppliers

Case study: Participating in the 17th China (Jinan) International Solar Energy Utilization Conference 2022

In July 2022, the “17th China (Jinan) International Solar Energy Utilization Conference and China (Shandong) International New Energy Industry Expo 2022”, which was organised by Shandong Solar Energy Industry Association and 山東新丞華展覽有限公司 (Shandong New Chenghua Exhibition Co., Ltd.*), was held in Jinan International Convention & Exhibition Center. SHNE conducted exchanges with a number of peer companies on solar photovoltaic, photothermal, air energy, biomass energy, wind energy, electric energy, energy storage, smart micro-grid, green lighting, hydrogen energy and other energy complementary application modes. and participated in the signing ceremony between Shandong Hi-Speed and DaSolar.



The 17th China (Jinan) International Solar Energy Utilization Conference 2022

* For identification only

Case study: “The 7th Wind Farm Optimal Design and Smart Operation and Maintenance” Seminar

In November 2022, the 7th Wind Farm Optimal Design and Smart Operation and Maintenance” Seminar 2022, organised by the China Electricity Council, was held in Xiamen. SHNE was invited to participate in this seminar. It jointly explored with others the effective methods in optimizing basic design, improving construction quality and reducing operating costs based on the current management status, achievements and existing problems in the design, construction and operation of wind farms, and summarised the successful experiences.



“The 7th Wind Farm Optimal Design and Smart Operation and Maintenance” Seminar



Grasp Green Opportunities and Share Low-Carbon Value



Grasp Green Opportunities and Share Low-Carbon Value

As environmental problems have become increasingly prominent, addressing climate change has become a global consensus. SHNE has systematically established a climate change control system and actively carried out climate change risk identification and response. Under the background of the goals of the international Paris Agreement and the national “3060” Dual Carbon Goals, SHNE has insisted on ensuring clean power supply, fulfilling the promise of power generation quality, and exploring green finance opportunities to demonstrate our ambition and efforts for low-carbon development.

2.1 RESPONDING TO CLIMATE CHANGE

Responding to Climate Change

In 2022, with reference to the framework and recommendations of the Task Force on Climate-related Financial Disclosures, SHNE identified and analyzed the Company’s various physical and transition risks related to climate change, and formulated climate risk management methods and countermeasures.

For extreme weather such as typhoon, and extreme precipitation, heat and cold, SHNE has formulated an emergency management system and emergency plans, detailing the overall emergency management measures and procedures. Meanwhile, the Group carries out climate change risk identification every year. In addition, to combat the risks of flood, typhoon, high temperature and extremely cold weather due to climate change, the Group has formulated special work plans and organised the implementation of control measures, and dynamically implemented personnel and equipment risk prevention and control measures after issuing early warnings. As of the end of December 2022, there were no casualties or equipment damage caused by severe weather. The Group has effectively controlled climate-related risks and ensured stable and safe power and heat supply.




TRANSITION RISKS OF CLIMATE CHANGE

Risk category	Risk description	Response measures
 <p>Policy and legal risks</p>	<ul style="list-style-type: none"> The government’s tightening of land use policies has increased the impact on project development Local governments generally require industries to have local establishment or make local contributions and have higher requirements on the establishment size and quality of the industry 	<ul style="list-style-type: none"> Carry out the key layout of development, and implement “one policy for one place” according to policy trends, and arrange development strategies and plans in a targeted manner according to policy changes




Grasp Green Opportunities and Share Low-Carbon Value

Risk category	Risk description	Response measures
 <p>Technical risks</p>	<ul style="list-style-type: none"> Photovoltaic technology has the characteristics of frequent updates and speedy calculations. If the investment in new technology is not increased, the market competitiveness will decrease. Meanwhile, the accelerated pace of low-carbon transformation within enterprises in the new energy industry has increased the pressure on the Group's green development 	<ul style="list-style-type: none"> In terms of safety technology introduction and research and development, SHNE has improved the application level of high-efficiency, energy-saving and environmental protection technologies and processes, and further reduced the Company's carbon emissions
 <p>Market risks</p>	<ul style="list-style-type: none"> Due to the encouragement of national policy, many central state-owned enterprises have joined the new energy industry, so the number and quality of competitors have increased significantly Photovoltaic components and silicon material prices increase, land rent rises, and the yield of photovoltaic projects falls 	<ul style="list-style-type: none"> Align the development model with the market, and actively address the intense market competition Establish an operational development concept and carry out classified management for different projects. For projects that are difficult for the Company to approve, after ensuring the feasibility of the project, operational development can be considered to expand the Company's revenue channels
 <p>Reputational risks</p>	<ul style="list-style-type: none"> As a new energy company, if the low-carbon transformation is not carried out properly, the Company will bear huge negative pressure from public opinion, which will affect the company's reputation, causing revenue loss and making the Company lose development opportunities 	<ul style="list-style-type: none"> Considering the Company's current situation and strategic requirements, reasonably formulate development and emission reduction goals, actively adapt to market changes in the rapidly changing and developing the new energy market, and achieve the Company's steady and agile development

PHYSICAL RISKS OF CLIMATE CHANGE

Risk category	Risk description	Response measures	
Acute risks	 Typhoon	<ul style="list-style-type: none"> Lead to power outages, damage to equipment and facilities, human casualties, or power supply interruptions, etc. in project sites and may cause breach of contract due to business interruptions and other issues, incurring legal liabilities such as compensation 	<ul style="list-style-type: none"> Formulate emergency response plans for floods and typhoons, improve climate risk emergency management, establish an efficient and effective emergency rescue mechanism for emergency situations, and conduct typhoon drills to ensure employee safety, and minimize property losses of the enterprise
	 Extreme precipitation and flooding	<ul style="list-style-type: none"> Lead to power outages, damage to equipment and facilities, human casualties, or power supply interruptions, etc. in project sites and may cause breach of contract due to business interruptions and other issues, incurring legal liabilities such as compensation 	<ul style="list-style-type: none"> Formulate emergency response plans for floods, and initiate a special emergency plan to carry out corresponding emergency response according to the actual situation Conduct flooding and typhoon drills
	 Extremely hot weather	<ul style="list-style-type: none"> Affect the health and safety of employees, result in damage to equipment and facilities, increasing the temperature control costs and the maintenance costs of gas supply facilities in project sites 	<ul style="list-style-type: none"> Formulate emergency rescue and warning plans for high temperature weather, and conduct high temperature emergency drills to improve the level of employee health and safety protection

Grasp Green Opportunities and Share Low-Carbon Value

Risk category	Risk description	Response measures
Acute risks  Extremely cold weather	<ul style="list-style-type: none"> Affect the health and safety of employees, result in damage to equipment and facilities, increasing the temperature control costs and the maintenance costs of gas supply facilities in project sites 	<ul style="list-style-type: none"> Formulate an emergency response plan for cold and frost weather to ensure that effective measures are taken to prevent, control and mitigate the disaster impact caused by freezing and snowstorms on the safety of personnel, resources and property on site in case of sudden extreme cold weather, so as to ensure the order of production and operation
Chronic risks  Rising sea level	<ul style="list-style-type: none"> Cause damage to existing equipment and facilities in operation. Inland relocation of coastal cities will affect the existing markets 	<ul style="list-style-type: none"> Closely monitor the sea level rise. Enhance efforts in relevant risk prevention and emergency research
Chronic risks  Global warming	<ul style="list-style-type: none"> Increase the risk of heat wave, drought, and fire, and increase the maintenance cost of gas supply facilities 	<ul style="list-style-type: none"> Accelerate the introduction of relevant climate risk prevention and emergency plans Actively explore the research and development and application of new technologies for renewable energy

Case study: Flood and typhoon emergency drill on the project site in Kaiping, Jiangmen, Guangdong

In 2022, the project site in Kaiping, Jiangmen, Guangdong organised a flood and typhoon emergency drill in the Safety Month. This emergency drill activity improved the awareness of precautions for flood and typhoon, and emergency response capabilities of on-site operators to minimise the losses caused by extreme weather.

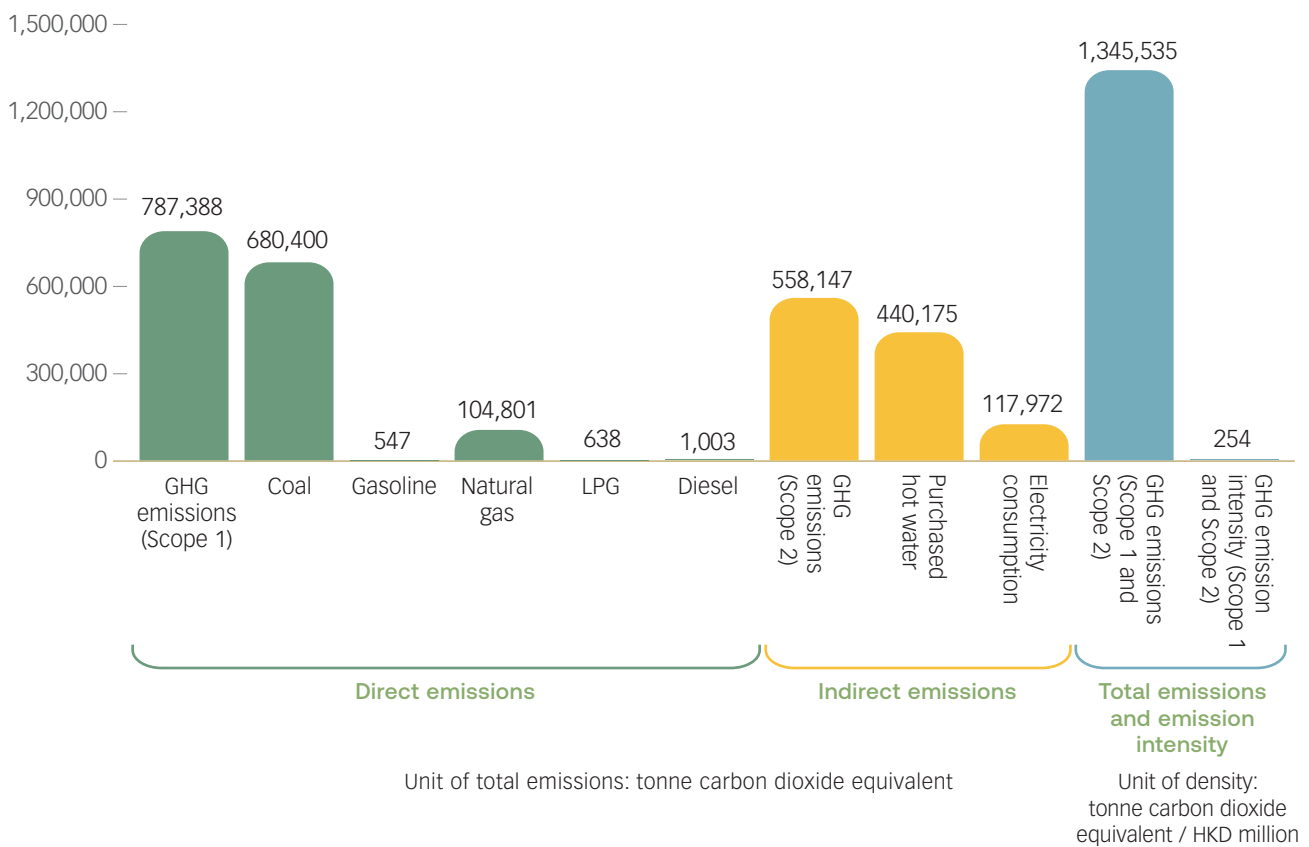


Emergency drill in the project site in Kaiping, Jiangmen, Guangdong

CLIMATE CHANGE ACTION

SHNE's goal aligns with the national goal of carbon neutrality. It chooses to achieve carbon neutrality at the Group's operation level before 2060. The Company has already taken actions in supporting the layout of carbon emission reduction, carbon quotas, and carbon credits to ensure that the Company will achieve the goal of carbon offset and carbon neutrality of the Group in the target year. The Company has actively carried out the inspection of greenhouse gas emissions of the Group, and realized refined management of energy consumption and carbon emissions. In the next step, we will also formulate targeted carbon emission reduction action plans based on the existing emission situation, and continue to promote the reduction of greenhouse gas emissions.

GREENHOUSE GAS EMISSIONS ("GHG") AND ENERGY CONSUMPTION IN 2022



Grasp Green Opportunities and Share Low-Carbon Value

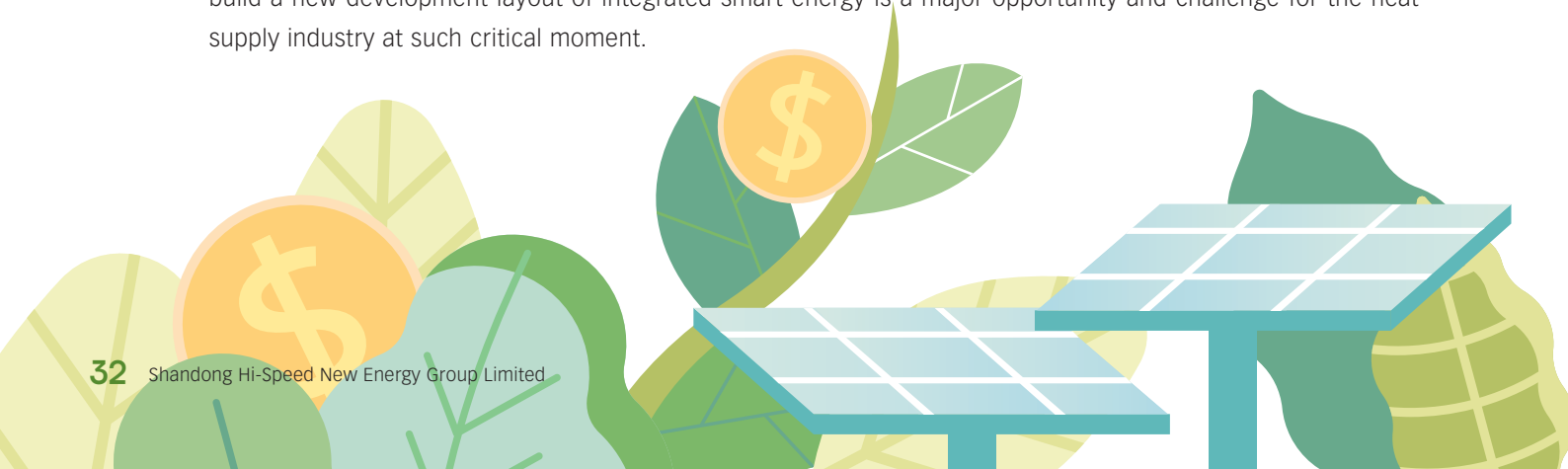
2.2 GREEN FINANCE OPPORTUNITIES

The industry attributes of SHNE contribute to realizing a virtuous circle of investment and financing integration of the Company and Shandong Hi-Speed Group. With the proposal of the Dual Carbon Policy, SHNE's valuation in the capital market will further increase. Shandong Hi-Speed Group's industrial investment is based on investment research, and its business focuses on the sustainability sector, which helps investment research achieve leapfrog progress.

In 2022, seizing the opportunity of green finance for financing, SHNE grasped the policy opportunity of the "renewable energy subsidy loans with confirmed rights", and successfully completed multiple business transactions of loans with confirmed rights. This provided a new idea for the Company to solve the problem of arrears of stock subsidies, broadened new channels for cooperation with various financial institutions, and realized the self-financing of projects. At the same time, the Company actively organised training and learning activities of various green financial innovation products, continuously expanded financing channels, optimized the Company's debt structure, and established mutual trust and cooperation with various financial institutions. With the launch of the domestic carbon market, the Company actively invited professional financial institutions to organise carbon trading market training, and explored various carbon financial products so as to improve the Company's professional capacity in the field of green finance.

For wind and solar energy industry, we have expanded the development of digital finance in the field of clean power generation, which can not only promote the rapid establishment of clean power projects from financing, construction to operation, but can also increase the asset value of green energy, thereby providing more momentum for the global low-carbon energy transition. The world is actively exploring clean energy investment, financing and loan service mechanisms that are more convenient and more in line with its own national conditions, and digital finance will play an important role in it. In September 2022, the Bank of Jiangsu officially opened an online application channel for photovoltaic loan products, giving priority support to distributed photovoltaic power plant projects that adopted the mode of "self-generate, self-use, residual on-grid".

As an important livelihood project, the heat supply industry has formed the characteristics of relatively stable cash flow performance and long-term viability. With the development of urbanization, professional investors favor the market performance of the heat supply industry in the future development of public offering REITs products. Green development has become a new direction of economic and social development. Under the strategic goal of "carbon peak and carbon neutrality", urban heat supply needs to be transformed and upgraded urgently. As the national energy structure enters a period of profound adjustment, finding out how to build a new development layout of integrated smart energy is a major opportunity and challenge for the heat supply industry at such critical moment.



2.3 STABLE CLEAN POWER

Under the background of the "3060" Dual-Carbon goals, the state is vigorously promoting green and low-carbon development. The clean energy sector continues to gain favor from the government and the market. While vigorously developing wind power and photovoltaic businesses, SHNE explores innovative technologies for clean energy, and builds a smart, efficient and refined management system for clean energy to provide customers with high-quality comprehensive clean energy solutions.

Overview of the clean power business

In 2022, SHNE continued to devote efforts in clean energy fields such as photovoltaic power and wind power. With the gradual expansion of business scale and continuous improvement of technical standards, the Company has grown into a leading clean energy company integrating development, construction, operation and maintenance in the field of wind and solar power. As of 31 December 2022, the Group's operating projects included 53 centralised photovoltaic power plants, over 200 distributed photovoltaic power plants, 13 wind power plants.

In 2022, photovoltaic and wind power projects held and/ or managed by SHNE had a total grid-connected power generation of approximately 6.08 million MWh, saving a total of more than 1.8 million tonnes of standard coal and reducing more than 5 million tonnes of carbon dioxide emissions.

CLEAN POWER GENERATION IN 2022

Power type	Distributed photovoltaic power plants MWh (ten thousand)	Centralised photovoltaic power plants MWh (ten thousand)	Wind power plants MWh (ten thousand)
Total power generation	77.79	292.13	238.00
Purchased power	0.69	3.55	0.63
Power connected into the grid	69.53	289.74	237.82

Case study: SHNE's Yangyi Energy Storage Plant

The project is located in Yangyi Village, Gedaxiang, Damxung County, Lhasa City, Tibet Autonomous Region, at an altitude of 4,700 metres. The installed capacity is 4.5 MW/20.7 MWh, the planned power generation in 2022 was 1,200 MWh, the actual power generation was 1,415.4 MWh, and the excess power generation was 215.4 MWh.

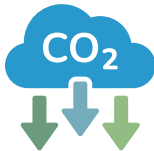



Yangyi Energy Storage Plant

Grasp Green Opportunities and Share Low-Carbon Value

Technological innovation and development

SHNE insists on empowering technology with technological innovation. In 2022, by exploring zero-carbon smart park technology, virtual power plant technology, distributed photovoltaic + big data technology, smart photovoltaic + micro-grid technology, and the development of power forecasting system for photovoltaic power plant and other technologies, we deeply tapped the potential of low-carbonization, intelligence, and high-efficiency in the photovoltaic field, contributing to further promoting the application of green and low-carbon technologies.

Innovative technology	Description of technology application
 <p data-bbox="236 1084 491 1149">Zero-carbon smart park technology</p>	<ul style="list-style-type: none"> Systematically integrate the concept of smart photovoltaic and carbon neutrality in the planning, construction, management and operation of the park, relying on the smart energy carbon management and control system, use precise auditing for planning carbon neutral goal setting and practice path, comprehensively monitor the carbon generation and reduction process with ubiquitous perception, and integrate carbon-neutralization measures such as clean power generation, energy conservation, emission reduction, carbon sequestration and carbon sink with digital means, realize low-carbon industrial development, energy green transformation, facility agglomeration and sharing, and resource circular utilization with an intelligent management platform, realize the self-balancing of carbon emission and absorption in the park, and create a new type of industrial park with deep integration of ecology and life.
 <p data-bbox="228 1554 501 1619">Virtual power plant technology</p>	<ul style="list-style-type: none"> Create a "virtual power plant" operation management platform by using the Internet of Things technology and big data platform framework, assist infrastructure to participate in power spot market transactions through virtual power plant,, realize the aggregation and coordinated control of distributed photovoltaics, energy storage, micro-grids, controllable loads and other facilities, participate in power market and grid operation as a "special power plant", accept grid dispatching instructions, participate in demand side response, and provide grid auxiliary services, and realize functions such as "source-grid-load-storage" power balance and optimized coordinated operation.

Innovative technology	Description of technology application
 <p>Distributed photovoltaic + big data technology</p>	<ul style="list-style-type: none"> Leverage advanced big data processing technology and adopt cloud computing to achieve "visibility, manageability, measurability, controllability and usability " for distributed photovoltaic data, achieve a high degree of informatisation of the distributed photovoltaic operation and maintenance management platform to grasp the real-time data of each power plant more intuitively and dynamically, and realize intelligent comprehensive management such as real-time monitoring of equipment operation, production management and meteorological environment, fault diagnosis, alarm and early warning.
 <p>Smart photovoltaic + micro-grid technology</p>	<ul style="list-style-type: none"> Using Internet technology, combined with micro-grid layered control technology, based on the supply-demand side forecasting model of smart micro-grid system based on big data analysis, build a cloud OS system for cloud interactive services of a multi-energy complementary smart micro-grid system to realize full digital management of personnel, equipment, and ledgers; remote real-time monitoring of system status and data visualization; real-time evaluation of energy efficiency for the core equipment (smart photovoltaic components, energy storage batteries, etc.) of the multi-energy complementary smart microgrid system; based on the mechanism model and field experience, build a multi-energy complementary smart micro-grid system equipped with a health diagnosis system and the functions of coordinated operation control of multi-microgrid cluster and management of energy optimal dispatch.
 <p>Development of power forecasting system for photovoltaic power plant</p>	<ul style="list-style-type: none"> As the data source of power forecasting, the power forecasting system of photovoltaic power plant mainly includes the real-time weather collection subsystem and the power forecasting calculation subsystem. The real-time weather collection subsystem realizes the real-time collection of on-site irradiance value, wind speed, wind direction, temperature, humidity, air pressure and other meteorological elements for the photovoltaic power plant and transmits the real-time collected data to the power forecasting calculation subsystem. SHNE's operating power plants use the power forecasting system of photovoltaic power plants to accurately predict the power generation according to the characteristics of climate and environment, so as to formulate reasonable power generation plans and improve the efficiency of photovoltaic power generation.

Grasp Green Opportunities and Share Low-Carbon Value

Case study: SHNE's integrated smart energy project in Jinan (Gushan) Service Area of the Beijing-Taipei Expressway

Upholding the instructed spirit of the Shandong Provincial Government on advocating energy conservation and emission reduction, improving energy structure, and realizing a low-carbon economy, SHNE further integrates advantageous resources of the expressway, and adopts the core technology of "smart photovoltaic + transport" to create an integrated smart energy project in Gushan service area to accelerate the development of low-carbon transport.

The construction of the project officially started on 15 November 2022, a 1.604 MW distributed photovoltaic system is being built on the roof, slopes and in hotel outdoor corridors and parking areas of the service area. It is equipped with 50 kilowatts ("kW")/100 kilowatt-hours ("kWh") energy storage and integrated energy management and control systems, and reserves interfaces for charging piles and power converter stations. Through the integrated energy management and control system, the power generation, energy storage, charging and converting, and power consumption in the service area are managed to realize the integrated application of "photovoltaic power-storage-charging-converting-control" in the service area, which will improve the utilization rate of clean energy, and promote green and low-carbon development. The carbon emission reduction in the first year of the project will be about 1,627 tonnes, and the carbon emission reduction in 25 years will be about 37,000 tonnes, with an emission reduction rate¹ of 62%. In the future, the market-based green electricity transaction can help the service area achieve the zero-carbon goal.

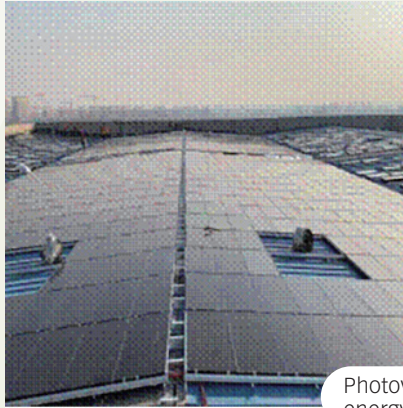


Integrated smart energy project in Jinan (Gushan) Service Area of the Beijing-Taipei Expressway

¹ Emission reduction rate refers to photovoltaic power generation/total power consumption.

Case study: SHNE's provision of integrated smart energy solutions to COFCO

Shenyang Xiangxue, Shenyang Rice Processing, and Dalian Malt were selected as pilot factories for the project for COFCO Grains & Cereals of SHNE. The roofs of existing office buildings, complex buildings, factories and other buildings are used for the construction of solar photovoltaic power generation project, in which the mode of



Photovoltaic power systems of the integrated smart energy project for COFCO Grains & Cereals

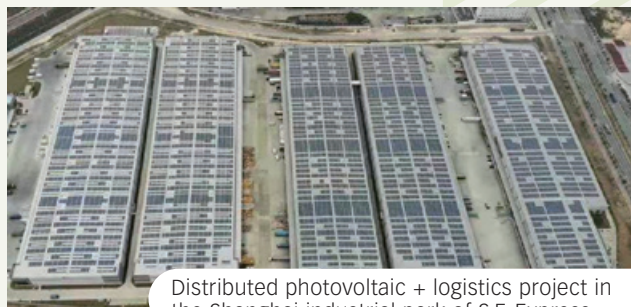
"self-generate, self-use, residual on-grid" is adopted. After the completion of the project construction, a total of 355.06 MWh of electricity can be generated in 25 years, with an average annual power generation of 14,200 MWh, an average annual saving of 5,680 tonnes of standard coal, and an average annual reduction of 11,031 tonnes of carbon dioxide emissions.

The project adopts the "Smart Photovoltaic + Industrial Park" technological innovation model, making full use of cutting-edge technologies such as cloud computing, big data, Internet of Things, and artificial intelligence to provide refined analysis, precise auditing and control of carbon emissions for COFCO companies. Based on the demand side of the park, with the goal of clean, intelligent and efficient energy utilization, the project fully integrates new technologies in the industry to build a series of photovoltaic systems for warehousing, food processing, etc., and connect them with the energy management system of the entire park. The horizontal "multi-energy" complementarity and vertical "source-grid-load-storage-use" whole-process optimization are adopted for unified planning and overall coordination, so as to create a regional smart energy management ecology with user participation, supply-demand interaction, flexible deployment, energy interconnection, information sharing, and open structure, contributing to achieving the goal of zero carbon emission park.

Grasp Green Opportunities and Share Low-Carbon Value

Case study: SHNE assisted S.F. Express in completing the construction of the distributed photovoltaic + logistics project in the Shanghai industrial park.

The distributed photovoltaic project is located in Shanghai, with a construction area of 13,000 square meters and a total constructed capacity of 1.87 MW. It adopts the mode of "self-generate, self-use, residual on-grid". The power generation in the first year will reach 2 million kWh. In 25 years, it will cumulatively save 18,540 tonnes of standard coal and reduce 32,467 tonnes of carbon dioxide emissions.



Distributed photovoltaic + logistics project in the Shanghai industrial park of S.F. Express



According to the production and operation characteristics of the logistics park, when we implemented the distributed smart photovoltaic system, we have reserved interfaces with the electric vehicle charging and swapping system, automated logistics sorting and conveying system, and cold chain automatic control system to achieve a high proportion of clean energy in the park and its efficient utilization. The project uses a smart operation and maintenance management

platform to intuitively understand the comprehensive operation of the power station, including instant operation, fault analysis, and performance analysis. The platform provides one-click fault export and closed-loop fault processing functions to guide and assist operation and maintenance personnel to quickly and accurately discover, analyze, track and solve faults, so as to improve the overall operation and maintenance level of the power station and increase the power generation of the power station.

Sustainable operation

We have actively responded to national policy calls such as the “Opinions on Implementing Accelerating Rural Energy Transformation and Development to Promote Rural Revitalisation”. Through more intensive forms of land use such as agrivoltaics, aquavoltaics and mountain photovoltaics, we have improved the comprehensive utilization efficiency of existing land resources and realized the simultaneous of new energy industry and traditional industries. In 2022, the Group held 3 agrivoltaic projects, 1 aquavoltaic project and 2 mountain photovoltaic projects.

Project name	Project type	Installed capacity
Kaiping photovoltaic project in Jiangmen city, Guangdong province (phase I)	Agrivoltaics	100 MW
Nangong photovoltaic project in Hebei province (phase II)	Agrivoltaics	30 MW
Nangong photovoltaic project in Hebei province (phase III)	Agrivoltaics	30 MW
Kaiping photovoltaic project in Jiangmen city, Guangdong province (phase II)	Aquavoltaics	50 MW
Handan photovoltaic project, Hebei province	Mountain photovoltaics	50 MW
Wuxiang photovoltaic project in Shanxi province	Mountain photovoltaics	100 MW

Case study: SHNE’s mountain photovoltaic project of Tang County

Suotou Power Plant

Tang County Suotou 30MW Centralised Photovoltaic Poverty Alleviation Power Generation Project is a centralized mountain photovoltaic power plant with a capacity of 30MW, which has the advantages of rich sunlight resources and high land utilization rate. In 2022, the planned power generation and the actual power generation of the project were 39,206.4 MWh and 42,025.5 MWh respectively, with 107.19% completion rate and excess power generation of 2,819.1 MWh. While improving its own photovoltaic power generation rate, it helps meet the energy demand of social development.



Mountain photovoltaic project of Tang County Suotou Power Plant



Grasp Green Opportunities and Share Low-Carbon Value

Case study: SHNE's Luduozen aquavoltaic project in Baoying County, Yangzhou City

The terrain of Luduozen 70MW aquavoltaic project in Baoying County, Yangzhou City is dominated by surface water, with 850 mu of usable land. The project adopts sustainable operation measures such as saving energy, water and raw materials to use energy and resources rationally. All its indicators have reached the domestic advanced level. Combined with the characteristics of the local environment, this project is organically combined with high-tech fish farming to form an aquavoltaic development model of "power generation above and fish farming below". After the completion of the project construction, it is estimated that the average annual on-grid power generation will be about 83,000 MWh, reducing about 63,813 tonnes of carbon dioxide per year. The project can realize the integration and intensive development of the ecological industry of fish farming and green power generation, creating better economic, social, and environmental benefits.



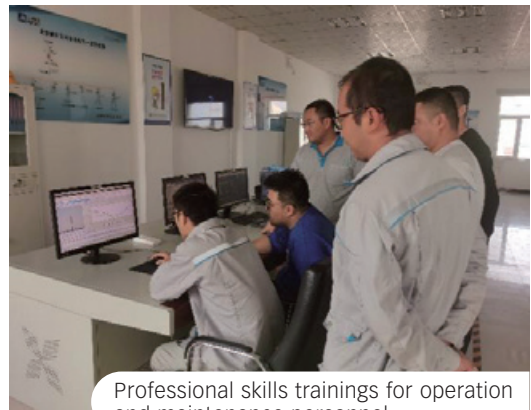
Luduozen aquavoltaic project in Baoying County, Yangzhou City

2.4 POWER QUALITY COMMITMENT

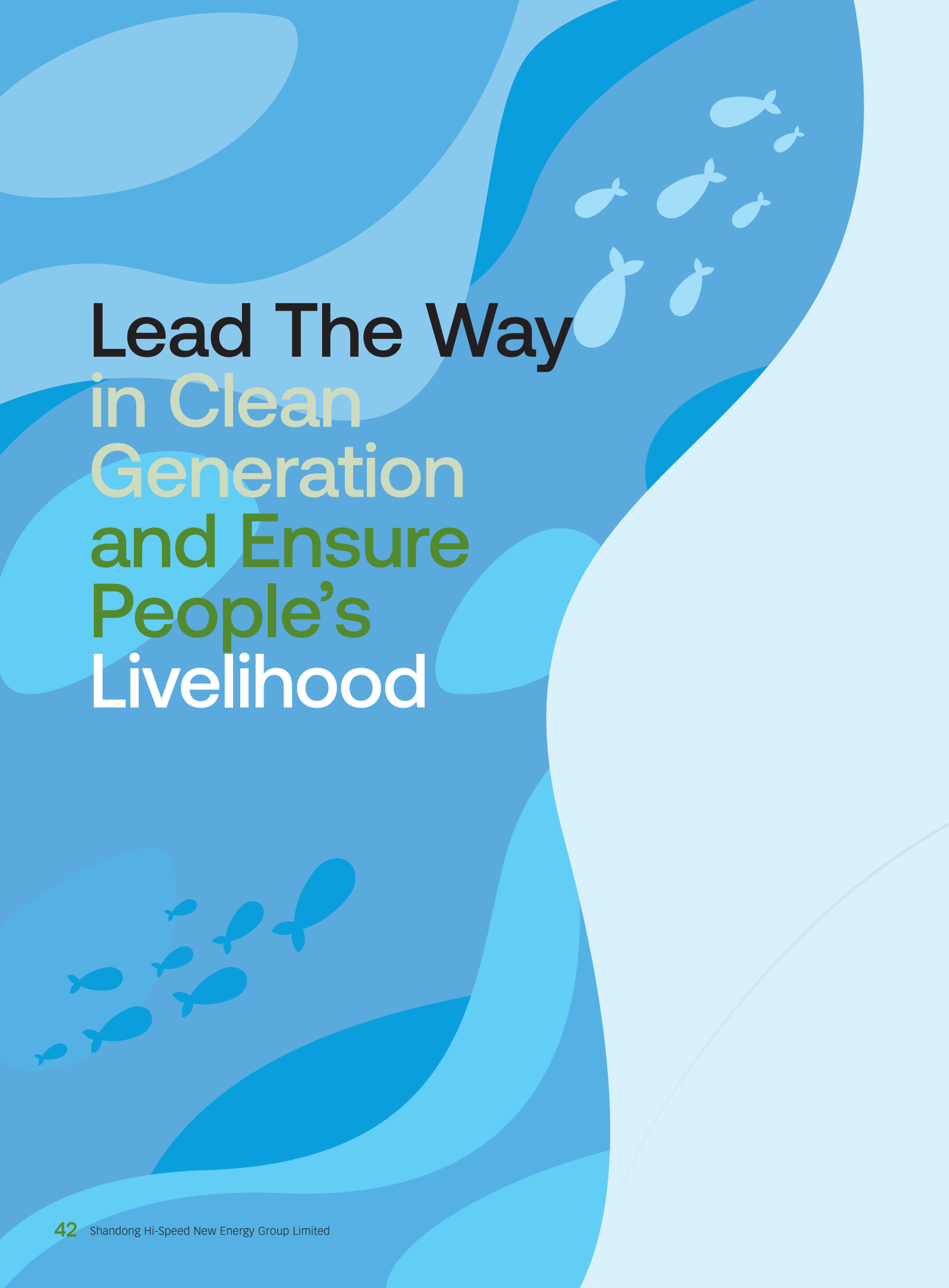
During the period of project construction, in order to continuously improve the project construction quality, enhance the image of safe and civilized construction of the project, and standardize the work behaviour of on-site management, in 2022, SHNE prepared the Construction Project Safety Visual Atlas and Photovoltaic Engineering Quality Process Standardisation Manual and summarised and compiled experience feedback materials. These have consolidated the cornerstone of project construction, continuously strengthened the management and control of project construction process, and optimised the project construction results.

In the operation stage, the Company has strengthened the management and control of the operation process. According to the actual situation of on-site operation, maintenance and production, we have formulated 12 categories of relevant operation and maintenance systems, such as Regulations on Equipment Maintenance Management, Regulations on Equipment Defect Management, Regulations on Station Operation Management and Regulations on Traffic Safety Management. These have improved the operation management system, which has been verified to be effective and well-managed.

In order to improve the professional technical level of operation and maintenance personnel, SHNE regularly organises professional skills trainings for employees. Due to the highly professional characteristics of wind power technology, the Operations Business Unit organised 11 professional technical training sessions for wind turbines, and each region organised 168 professional technical training sessions for electrical equipment based on the high professional requirements for power production, operation and maintenance, and focused on on-site practical training.



Professional skills trainings for operation and maintenance personnel

The background features a vibrant blue color palette with abstract, flowing shapes that suggest waves and underwater currents. Several stylized fish are scattered throughout the scene, swimming in various directions. The overall aesthetic is clean, modern, and aquatic.

Lead The Way in Clean Generation and Ensure People's Livelihood

LEAD THE WAY IN CLEAN GENERATION AND ENSURE PEOPLE'S LIVELIHOOD

On the basis of ensuring its own business development, SHNE implements the concept of energy saving and emission reduction, leads the way in clean generation and ensures people's livelihood by improving the environmental management system, controlling pollutant discharge, protecting biodiversity, improving resource utilization efficiency, and promoting green office.

3.1 IMPROVING ENVIRONMENTAL GOVERNANCE

In order to fully implement the requirements of national and local ecological and environmental protection policies, SHNE has continuously improved the establishment of the environmental management system, carried out full-life cycle environmental impact assessment, protected biodiversity, improved environmental management and ecological protection standards, and strived to build a harmonious environment between man and nature.

The establishment of the environmental management system

Environmental protection management has always been the Company's key management direction. SHNE has strictly abided by laws and regulations (including but not limited to the following external laws and regulations) related to disposal of emissions, environmental management and ecological protection, and followed the Company's internal policies and systems such as the Regulations on Environmental Protection Management and the Measures for Management of Safe and Civilised Project Construction to strictly manage the environmental issues during construction and operation (Please refer to the paragraph "Full life cycle environmental management" for details of specific initiatives). In addition, the Company has actively carried out environmental management system ISO14001 certification, and established the environmental system according to its own operation characteristics. During the reporting period, SHNE did not have any major environmental pollution incidents and violations.

External laws and regulations	Internal policies and systems
Environmental Protection Law of the People's Republic of China	Regulations on Environmental Protection Management
Law of the People's Republic of China on Environmental Impact Assessment	Measures for Management of Safe and Civilised Project Construction
Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution	Green Construction Proposal
Water Pollution Prevention and Control Law of the People's Republic of China	Environmental and Water Quality Protection Proposal
Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes	
Law of the People's Republic of China on the Prevention and Control of Environmental Noise Pollution	

SHNE implements a management mechanism of "supervision at different levels and each taking its own responsibility" and has established a sound environmental management system. In the event of an environmental safety accident, one-vote veto power is exercised, and environmental management is directly linked to salary review based on performance.

LEAD THE WAY IN CLEAN GENERATION AND ENSURE PEOPLE'S LIVELIHOOD

Environmental Management System

The Group's Safety and Quality Committee ("Safety Committee")

Responsible for the decision-making of the Group's environmental protection approach and objectives, review the Group's environmental protection development plan and relevant rules and regulations, review and approve the construction design and implementation plan of key environmental protection governance projects, coordinate to solve major environmental protection problems, and supervise the performance of environmental protection management duties of each unit.

Secretariat of the Group's Security Committee

Responsible for the comprehensive supervision and management of environmental protection work within the Group.

The Group's departments

1. The Chief Executive's Office is responsible for the management of energy conservation and environmental protection in the office area of the Group's headquarters, the identification and evaluation of environmental factors, collecting statistics on the list of important environmental factors, and the formulation of relevant management measures.
2. According to the Company's sub-authorization system, each development department is responsible for the handling of environmental protection-related procedures for projects on wind power, photovoltaic power and energy storage according to their duties.
3. The Engineering Centre is responsible for the supervision and management of the environmental protection of the construction project, and is responsible for the "Three Simultaneities" management of the construction of the environmental protection facilities of the construction project, the environmental protection acceptance of completed projects, and the overall guidance of the environmental management impact assessment.
4. The Group's Operations Business Unit is responsible for the supervision of the environmental protection of operation projects.
5. Other departments of the Group are responsible for the management of environmental protection within the business scope of their own departments.



The Group's unit

Specify the competent department for environmental management, assign environmental management personnel, and clarify relevant management duties. The environmental protection department of each unit is responsible for the specific implementation of its environmental protection responsibilities, and is responsible for the supervision and assessment of environmental protection work such as compliance with emission standard for environmental pollutants and control of total emission amount. Responsible for arranging the submission for approval of environmental impact reports (forms) of construction projects, as well as the supervision and management of the "Three Simultaneous" construction of environmental protection facilities and the environmental protection acceptance of completed projects.



Duties of the Group's Construction Unit

Responsible for supervising the implementation of environmental protection requirements in the stages of project design, construction, production preparation, trial production, and completion acceptance; obtain the environmental impact assessment approval before the project construction, and obtain the approval of the government's environmental protection department before the trial production; responsible for the effective implementation of the "Three Simultaneities" in the construction of environmental protection facilities.



Duties of the Group's operation units

Establish and improve the environmental protection management system for enterprise operation, ensure the effective operation of environmental protection facilities on the project, and ensure that the emission standards comply with the relevant requirements of laws and regulations.

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Full life cycle environmental management

SHNE conducts full-process environmental risk management and control in design, construction, and operation, fully considers the scope and degree of environmental impact, and takes appropriate preventive and countermeasures against various possible environmental risks. In addition to the relevant double prevention and system audit carried out by the group, SHNE has compiled the Hazard Source Identification Table, Unacceptable Hazard Source Identification Table, Environmental Factors Identification Table and Important Environmental Factors Identification Table. It also integrates the efforts of business segments such as office, development, project construction, operation and maintenance management, distributed photovoltaics and heat supply, and each department and unit shall carry out identification work in a scientific, rigorous and objective manner according to the actual situation of the business segment to ensure that the work and business comply with the management and control requirements on territorial hazards and environmental factors.



Project assessment stage

SHNE actively conducts research on the environmental protection plan of the project, analyzes the status quo of the environmental quality of the area where the project is located, and identifies the elements of the ecological environment. We strictly comply with legal standards and relevant requirements of the place of operation, such as the Environmental Protection Law of the People's Republic of China and the Law on Environmental Impact Assessment. We have formulated internal management systems such as the Environmental Factors Identification Table and the Important Environmental Factors Identification Table, conduct comprehensive environmental assessments of the atmospheric environment, water environment, acoustic environment, soil environment, etc., and proposed reasonable environmental protection plans for possible environmental risks.



Project construction stage

On the premise of complying with national and local laws and regulations, SHNE's projects (including photovoltaic power, wind power, energy storage, heat supply, and other construction projects) strictly implement the management of green and environmentally friendly construction during the course of construction through the formulation of the Measures for Management of Safe and Civilised Project Construction, Green Construction Proposal, etc.,

Main measures of green construction



- To use land rationally, temporary roads and partial backfilling are constructed first. The remaining earthwork can be carried out according to the construction layout, and the start time of each unit project is staggered. The soil piling point is set in the site area to reduce the occupation of the land by the earthwork



- Prioritize the use of energy-saving, efficient and environmentally friendly construction equipment and tools recommended by the state and industry
- Reasonably arrange the process to improve the utilization rate and full load rate of various machinery
- Implement electricity metering management, strictly control the electricity consumption during the construction stage, and put up clear energy-saving signs at power switches
- Establish a management system for construction machinery and equipment, and conduct maintenance work in time to keep machinery and equipment in a state of low consumption and high efficiency



- Implement water metering management, strictly control the water consumption in the construction stage, and measure the water consumption of living area and the construction area separately
- Establish a statistical account of water consumption and water saving, and conduct analysis and comparison to improve the water saving rate
- Set up waste water recycling facilities on the construction site to recycle the waste water for reuse



- Select green materials, actively promote new materials and new processes, and promote the rational use of materials to save the consumption of actual construction materials
- Arrange material collection based on quota at the construction site, statistically analyze the actual and budgeted consumption of construction material, and formulate and implement key point control measures in a targeted manner to increase material saving rate
- Establish a list of recyclable and reusable materials on the construction site, formulate and implement recycling management methods for recyclable waste

On the premise of ensuring quality and safety, SHNE saves resources to the greatest extent and reduces the negative impact on the environment. Based on comprehensive monitoring of the environment, the Company accurately identifies environmental risks and takes effective management measures to strictly control dust, noise, waste water, exhaust gas, solid waste and other environmental impact factors to ensure that no serious environmental pollution incidents occur on the construction site. After the completion of the project construction, the corresponding vegetation restoration and greening work will be carried out, and the project will be subject to acceptance by professional institutions of third-party manufacturers and relevant government departments.

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Environmental protection measures during construction



Prevention
and control of
atmospheric
pollution

- Implement closed or isolated measures for the construction area
- Conduct hardening treatment for main roads and greening, gravel paving or solidification treatment for bare sites, and control dust by using sprinklers or soil covering
- Enclosed transport vehicles must be used for earthwork, muck and construction waste transportation, and vehicle washing facilities are set at the entrance and exit of the site
- The use of various types of machinery and vehicles on the construction site must comply with relevant air pollutant emission standards



Noise
management

- The strong noise equipment on the construction site is set on the side far away from the residential area. The construction time is arranged reasonably, and the processes that produce a lot of noise are carried out during the day as much as possible
- Identify the mechanical equipment that may generate noise, try to choose environmentally friendly low-noise vibrators, and take necessary noise reduction, vibration isolation and vibration reduction measures for the mechanical equipment
- Cut off the way of transmission of construction noise, and take greening sound absorption and sound insulation measures on the construction site



Waste water
treatment

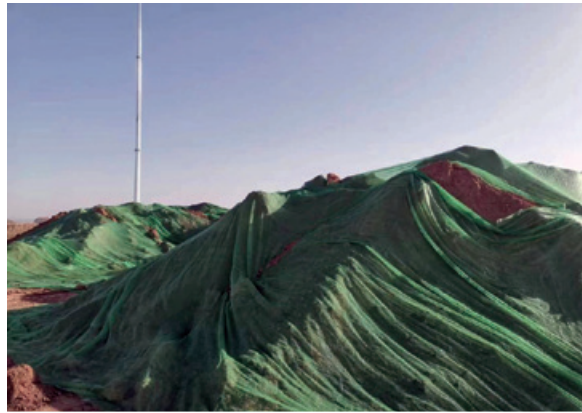
- Drainage ditches shall be set up on the construction site, and the discharge of domestic waste water and production waste water shall be treated according to the relevant waste water discharge standards and discharged after reaching the standard
- Production waste water must be discharged after the sedimentation in the sedimentation tank reaches the discharge standard. Some sites sprinkle sediment water for dust suppression on the construction site or take recycling measures



Waste disposal

- Waste disposal follows the principles of "lightweight", "recycling" and "non-hazardous". Hazardous waste: Prohibit backfilling of hazardous waste. Delineate a special storage area for hazardous waste generated during the construction process, and take anti-seepage measures, and send it to a professional third-party agency for centralised and non-hazardous treatment at last
- Non-hazardous waste: Recycle or reuse the usable construction and domestic waste. For unusable construction and domestic waste, sort and move them to designated locations during construction, and transport them to garbage dumps for disposal on a regular basis

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sprinkling water for dust suppression and applying dust cover

- **Project operation stage**

The Company has established a complete environmental management system during the operation period. Through the formulation of the Regulations on Environmental Protection Management, the environmental protection requirements during the operation period are specified to ensure that the discharge of various pollutants such as waste water, waste gas and solid waste meets the standards. Meanwhile, we have established a supervision and assessment mechanism, strengthened the management of environmental protection objectives for each operation project, and carried out regular environmental protection performance assessments. In the event of an environmental pollution incident, immediate measures shall be taken for proper handling.

Biodiversity Protection

To actively respond to national calls such as the China National Biodiversity Conservation Strategy and Action Plan (2011-2030) and the Opinions on Further Strengthening Biodiversity Protection, SHNE has strictly protected animal habitats throughout project life cycles and actively carried out biodiversity protection work. In order to avoid the construction project's damage to the ecological environment such as bird habitats and important animals and plants, the construction project would submit an environmental impact assessment report to the authority of the project location, and the local Ecology Environment Bureau would approve it based on the project application. New construction models such as agrivoltaics, aquavoltaics and mountain photovoltaics have minimised the impact on the surrounding environment and provided a good habitat for animals and plants, effectively enriching biodiversity.

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Case Study: Guangdong Kaiping Photovoltaic Project Environmental Protection

During the construction of the Guangdong Kaiping Photovoltaic Project, environmental protection work such as vegetation restoration was actively carried out to avoid soil erosion while the power station was being built, and carried out consistent soil and water conservation monitoring work.

Zhanjiang Huarui Keda Geological Survey Technology Co. (「湛江華瑞科達地質勘測技術有限公司」) is engaged quarterly to carry out soil and water conservation monitoring work, mainly to monitor ① the operation of the soil and water conservation measures implemented in the project, including the integrity and completeness of engineering measures, the survival rate and coverage of plant etc.; ② whether there are any major soil and water erosion hazards during the construction process of the project, and whether there are blind areas without soil and water erosion control during the post-construction period of the project; ③ the extent of impact on soil and water erosion caused by the construction of the project on the surrounding areas of the project; and ④ the extent of monitoring of the disturbance area of the project. No serious soil and water erosion hazards have occurred in the project construction area.



Environmental protection of Guangdong Kaiping Photovoltaic Project

Case Study: Yulin Photovoltaic Power Station Ecological Protection Project

The Yuyang Power Station is located in a relatively flat terrain on the southern edge of the Maowusu Desert in a sandy grassland area. At the request of the government, SHNE has planted trees and grass in the photovoltaic area, turning the desert into an oasis, improving the local ecological environment and preventing land desertification. The successful construction of the project has not only promoted the development of modern ecological industries, but also developed clean energy and improved land use standards.



Comparison between deserted land in 2016 and land covered by green vegetation in 2022

3.2 COMPREHENSIVE CONTROL OF EMISSIONS

During its operation, SHNE proactively carried out environmental pollution control and waste discharge management (please refer to section 3.1 Improve Environmental Governance for details of emission management during construction), complying with the relevant laws and regulations on pollutant discharge in the country and the place of operation as well as the company's internal system. In line with the principles of reduction, harmlessness and resourcefulness, we have adopted measures of proper waste disposal, water recycling, upgrading for raising standards of flue gas emission and resourcefulness of domestic waste to reduce the total amount of emissions while ensuring compliance and stability of pollutant emissions.

Clean Power Emission Management

Due to the nature of the business, the photovoltaic and wind power stations rely on natural resources of wind and light to produce electricity, and emit basically no pollutants from the working interface during operation, except for certain waste disposal issues. The Group has compiled internal system documents such as the "Work Plan on Focused Management of Safety Risks of Dangerous Chemicals", "Regulations on Equipment Maintenance and Disposal" and "Regulations on Management of Dangerous Chemicals" to regulate the disposal of waste in the clean power generation business and has also compiled the "2022 Dangerous Chemicals Management Training PPT" to provide timely training to all departments and units, and to raise staff awareness of emission management.

The pollutants generated from the power station's daily production and living are domestic sewage and domestic waste. In terms of the management of domestic discharges, the environmental protection facilities of the power station generally complies of a sewage treatment tank (septic tank). Daily domestic sewage is discharged into the sewage treatment tank and is regularly (generally once every six months) transported by qualified units to the sewage treatment plant for centralized treatment. Domestic waste is collected in bins at the site and regularly transported to the nearby municipal waste disposal station for centralized treatment to prevent environmental pollution, keeping it clean and tidy.



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Clean Heat Supply Emissions Management

As of the end of 2022, SHNE had acquired or invested in heat supply projects in a number of provinces and autonomous regions, including Liaoning, Hebei, Shaanxi, Shanxi, Shandong, Ningxia, Henan, Inner Mongolia and Shanghai, with a heat supply management area of approximately 40 million square meters. The operation of SHNE is on a positive development track with rapid growth in heat supply area, increased business scale leverage and improved operational efficiency.



While the clean heat supply business continues to grow, the Company closely monitors the management of relevant emissions and has formulated internal systems such as the "Environmental Protection Facilities Operation Management System", "Safety and Environmental Protection Incident Management System" and "Environmental Protection Management, Supervision, Inspection and Assessment System System", and carries out pollutant emission management in strict accordance with relevant national standards "Comprehensive Emission Standards for Air Pollutants", "The Emission Standard of Air Pollutants for Boilers" and local standards of the local environmental protection authorities to ensure environmental protection and safe operation.

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Key Emissions Management Initiatives for Clean Heat Supply Business in 2022



Upgrading of boiler to improve flue gas emissions and optimization of processes to achieve emission levels below national standards



Further treatment of furnace sewage to achieve reclaimed water quality for sprinkling and watering to improve utilization



Refurbishment of the heat supply in certain projects to refine management and reduce energy consumption

Case Study: Low- NOx of Gas-fired Boilers at SDHG Greenway (山高綠威公司)

In 2022, SDHG Greenway undertook a low- NOx emission modification of its gas-fired boilers to achieve ultra-low emissions. The original NOx emission concentration of the gas-fired boilers was 60-80 mg/m³. The emission modification was carried out by replacing the full pre-mix surface low nitrogen burner and the boiler flue gas recirculation combustion system. After the modification, the emission concentration was lower than 50 mg/m³, the pollutant emission was reduced by more than 15% and the NOx emission was reduced by approximately 1.04 tonnes.



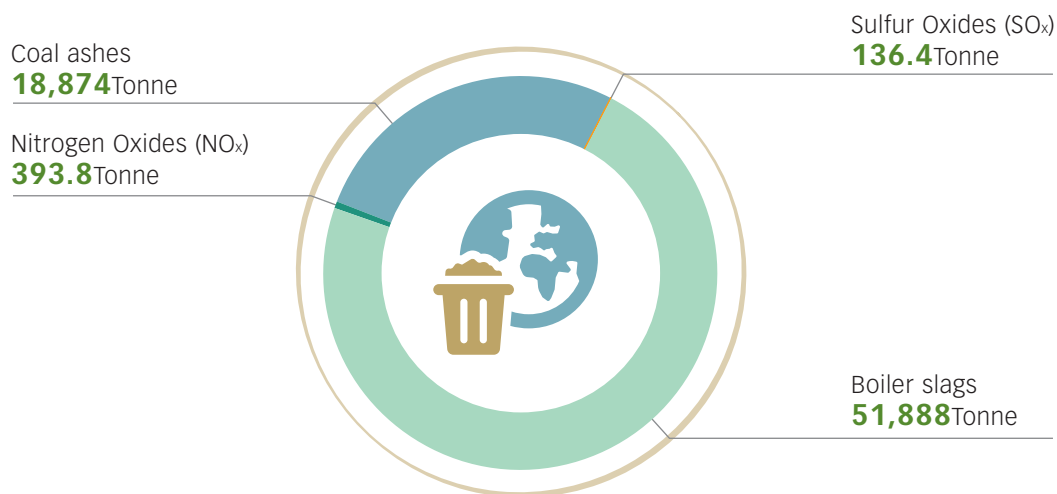
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ENERGY CONSUMPTION OF THE CLEAN HEAT SUPPLY BUSINESS



¹ SHNE the amount of hot water purchased from Jinzhou Company

DISCHARGE OF AIR POLLUTANTS AND NON-HAZARDOUS SOLID WASTES OF CLEAN HEAT SUPPLY BUSINESS



Domestic Waste Resource Utilization

In addition, SHNE has been making continuous efforts to utilize household waste resources in recent years, converting all kitchen waste into non-hazardous waste and Resource Utilization Products.

Case Study: Demonstration of Technology Integration and Utilization of Organic Waste from Domestic Sources into Organic Acid Soil Conditioners

In cooperation with universities and research institutes, SHNE has efficiently transformed kitchen waste into organic acid soil conditioner products. With reference to the Lanzhou New Area comparison trial, after the application of the modified organic acid soil conditioner products, the yield of fresh grass was 1,500-2,000 kg and the plants were 80-120 cm tall; and the yield of fresh grass grown with conventional fertilizer amendments was 800-1,200 kg and the plants were 30-50 cm tall. The use of organic acid soil conditioners can reduce water consumption upto 180 cubic meters per mu, increase biomass by 16.1% – 22.7%, increase seedling survival rate by 62.5% – 80.8%, increase leguminous green manure rhizomes by 20% – 25% and reduce chemical fertilizer usage by 20% – 30%.



Comparison of domestic source organic waste modification trials

Case Study: A Pilot Study on the Use Of Organic Liquids from Processed and Transformed Organic Kitchen Waste for Soil Improvement

Starting from December 2020, SHNE has been conducting soil improvement and soil strength enhancement trials in Datong area, building a pilot demonstration base of organic liquids for soil improvement and soil strength enhancement with a demonstration area of 800 mu. The experiment will be officially completed in December 2022. Through the trial demonstration, 10,000 tonnes of kitchen waste will be reused, being the best amount of organic liquid dosage. The application of organic liquids at the trial site is beneficial to soil improvement and soil strength enhancement, resulting in a decrease in soil pH value, an increase in organic matter content and crop production and yield.



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3.3 EFFICIENT UTILIZATION OF RESOURCES

SHNE is committed to reducing resources and energy consumption, and constructing a green operation model (for details of green construction, please refer to section 3.1 Improving Environmental Governance), digging deep into the potential of energy saving and consumption reduction through efficient use of energy, management of water resources, cultivation of environmental awareness, industry cooperation and green office, and realizing efficient resources management throughout the production process.

Efficient Use of Energy

The main energy-consuming business of SHNE is clean heat supply, accordingly the Company has formulated various systems including the "Regulations on Heat Supply Operation", "Regulations on Evaluation of Heat Supply System", "Regulations on Production Energy Consumption Management" and "Regulations on Technical Improvement", to continuously optimize the management of energy efficiency improvement.

In 2022, SHNE took multiple measures such as optimizing the heat supply information platform, transforming heat exchange stations with variable frequency pumps, recovering excess heat from boiler flue gas and adjusting the hydraulic balance of the dual network to reduce the consumption of fossil energy and promote energy saving and carbon reduction. Meanwhile, we have compiled the "Management Rules for Heat Project Companies Special Award" and set up special awards for production cost savings in respect of clean heat supply saving standards to encourage staffs to save energy and reduce emissions during the operation stage.

In the field of new technology application, the Company actively explores geothermal, water source heat pump and thermal storage technologies to help achieve the "dual carbon" emission reduction plan through the application of new technology products.

Energy Saving Targets

In the clean heat supply area, SHNE has set energy consumption targets including coal, gas, and electricity consumption, for each subsidiary, to achieve a 5%-10% reduction in energy consumption each year from the previous year. As of 31 December 2022, the Company has achieved a 5.44% reduction in overall energy consumption.

Main Measures and Results of Energy Saving and Technical Improvement

The Cao County Company carried out technical improvements to the heat exchange station loop pumps. Frequency conversion was carried out, through on-site surveys and operational data analysis of each heat exchange station, while linking up with the control system to achieve heat supply on demand, with a heat saving rate of over 20%.

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Jinzhou Company and Wenshui Company carried out balancing valve renovation to rectify the problem of uneven flow at the front and rear ends of the dual network, so as to achieve heat and electricity savings.

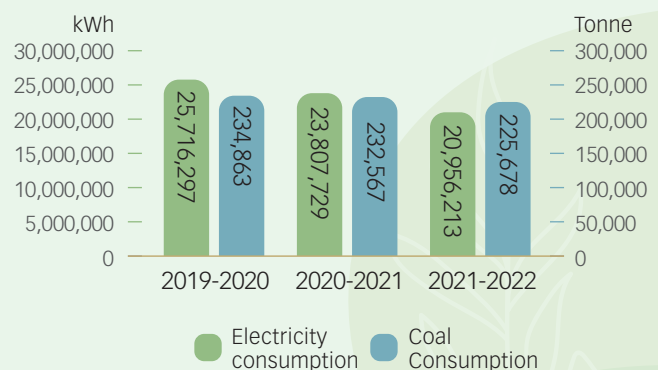
The project utilized excess heat from the chemical plant as a heat source, heating an area of 100,000 square meters and reducing emissions of carbon dioxide by 895.2 tonnes, nitrogen oxides by 14.6 tonnes, sulphur dioxide by 7.3 tonnes and soot by 3.7 tonnes per year.

Case Study: Electrolysis Aluminium Low Temperature Flue Gas Excess Heat Utilization Project of Inner Mongolia Thermal Power Subsidiary

The excess heat utilization project of electrolysis aluminium low-temperature flue gas of Inner Mongolia Thermal Power Subsidiary, after the heat is exchanged from the flue gas heat exchanger, heat enters into the heat supply heat exchanger and heat network water for heat exchange, heat is then supplied to the outside through the first heating station. The amount of excess heat from flue gas recovered in winter was 1 million GJ, with a heating area of 2.5 million square meters, saving 34.12 thousand tonnes of standard coal, reducing carbon dioxide emissions by 86.7 thousand tonnes, reducing soot emissions by 81.2 tonnes, reducing sulphur dioxide emissions by 1,023.6 tonnes and reducing ash emissions by 22.5 thousand tonnes per year.

Case Study: Ewenki Company Heat Supply System Modification

Since 2019, Ewenki Company has adjusted its heat supply system based on outdoor temperature and implemented refined management. Coal and electricity consumption in 2020-2021 heat supply season was 0.98% and 7.42% lower respectively compared to 2019-2020 heat supply season; Coal and electricity consumption in 2021-2022 heat supply season was 2.96% and 11.98% lower respectively compared to 2020-2021 heating season. Coal-fired boiler wastewater is recycled to achieve zero emission.



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Water Resources Management

The Company's main sources of water consumption during its operation include water supply for heat supply pipelines, domestic use and environmental protection. We comply with the "Water Law of the People's Republic of China", "Water Pollution Prevention and Control Law", "Regulation on the Administration of the License for Water Drawing and the Levy of Water Resource Fees" and other water resources management regulations and systems. We improve the utilization of water resources through comprehensive maintenance of the pipeline network, strengthening water discharge audits of customers, implementing energy-saving technology reform, and conduct special water loss control competitions. Meanwhile, we set water consumption targets and conduct water consumption assessment according to the actual situation of each subsidiary to strictly control the consumption of water resources.

Water Saving Targets

In the clean heat supply area, SHNE has set water consumption targets for each of its subsidiaries to reduce 3%-5% water consumption each year compared to the previous year. In 2022, the water consumption of Thermal Power was 44.5 kg/square meter, a reduction of 3.5% compared the previous year.

Case Study: Water Loss Leakage Test Training

In 2022, SHNE engaged with a professional collaborator to conduct training on water loss and leak detection to improve the staff's ability and standard of leak detection. By adopting advanced detection equipment to find and locate leaks in the pipe network, water loss was reduced by approximately 20% year-on-year.

Environmental Awareness Development

SHNE carries out regular environmental protection training for its staffs and organize environmental protection training for all its staffs at least once a year, the training mainly follows the "Water Law", the "Environmental Protection Law", the "Solid Waste Law" and various environmental management systems of the Company. The training covers water conservation, environmental protection laws and regulations, water conservation measures and solid waste/hazardous waste treatment, to raise environmental protection awareness among all its staffs.

Inter Industry Exchange and Cooperation

The Company actively participates in green and low-carbon heat supply seminars and academic conferences, such as the China Clean Heat Supply Industry Summit, Green City and Smart Heat Supply Technology Innovation Conference, Heat Supply Engineering Construction and Efficient Operation Conference and the China Heat Supply Academic Conference, where it shared its latest research results and examples of green and low-carbon technology applications, showcased its green heat supply technology and exchanged the latest technological advances with peers.

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In terms of participation in the development of industry standards, SHNE made positive progress in 2022. It participated in the preparation of the "Technical Regulations for District Heat Supply Hot Water Storage Systems" and "Clean Heat Supply Services", demonstrating the Company's technical strength and leading position in the industry.

Case Study: China Clean Heat Supply Industry Summit



Speech at the China Clean Heat Supply Industry Summit

On 5 August 2022, Mr. Gao Yanjun, Assistant General Manager of a Heat Power Company, attended the 3rd China Clean Heat Supply Industry Summit and gave a presentation on "Application of Auto-Adjustment Control System in Smart Heat Supply".

Case Study: The 9th "Green Club" Salon

On 4 March 2022, the Company participated in the ninth "Green Club" Salon organized by the China Energy and Environmental Service Industry Alliance (EESIA). Relevant persons in charge of enterprises and undertakings engaged in heating and other heat-related industries were invited to the meeting to discuss the energy-saving potential, economic benefits and practical applications of flue gas excess heat recovery and utilization intelligent systems.



The 9th "Green Club" Salon

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Green Office

SHNE adopt various energy-saving methods such as energy-saving renovation, clean energy use and digital office work in its daily office situations to explore the potential of the green office sector and minimize the consumption of resources.



Vehicle Photovoltaic Modification

The electric tricycles are safely driven in by maintenance personnel in the photovoltaic area and converted into solar-powered, making it more efficient to deal with faults, effectively reducing fuel consumption and CO2 emissions from vehicles.

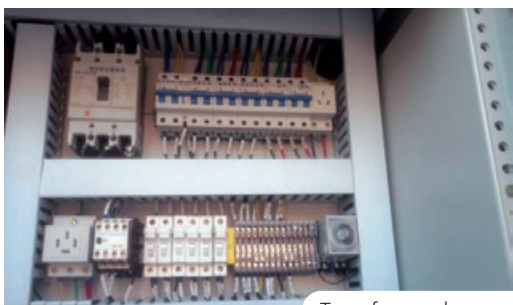


Vehicle photovoltaic modification



Energy Conservation Technology

The power station adds a time relay to the temperature controller of the substation to timely control the operation of the substation according to the temperature, effectively preventing the reduction of power generated caused by false tripping of the substation due to high temperature.



Transformer box



Carport Photovoltaic Modification

The power station uses photovoltaic modules to transform the carport, in addition of providing shade for the vehicles, it also generates electricity to reduce off-grid electricity, achieving a win-win situation for both corporate efficiency and the environmental efficiency. The modified station generates approximately 80 watts of electricity per day.



Carport photovoltaic modification



Energy Conservation Lighting

All lighting switches in the power station complex have been replaced with infrared switches, which control the lighting in a timely manner according to the light sensitivity, effectively reducing energy wastage and lowering the power consumption of the plant. The renovated power station saves approximately 10 watts of domestic electricity per day.



Infrared light switch

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Resources Recycling

The power station utilizes its idle time to repair damaged photovoltaic modules and secondary panels after lightning strikes, promoting conservation and environmental protection, insisting on the good habit of "repairing what can be repaired and using what can be used" and the environmental protection concept of "lucid waters and lush mountains are invaluable assets", minimizing the production of solid waste, increasing efficiency and reducing costs, and protecting the environment.



Photovoltaic modules repair



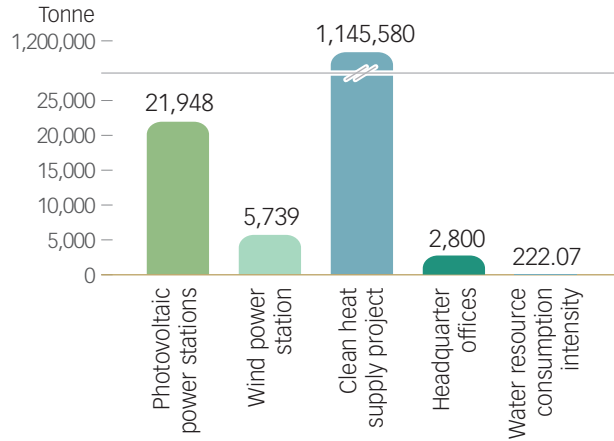
Waste Sorting

Beijing Office Building continues to sort office waste in accordance with Beijing's waste sorting requirements, recycling and carrying out hazardless treatment of printer toner cartridges in recent years.

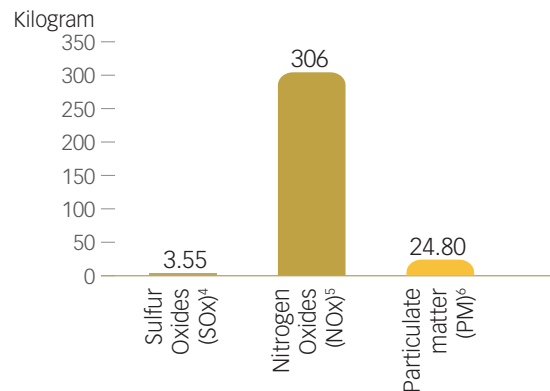
Paperless Office

We have implemented a paperless office, reduced the cost of paper documents, promoted the use of electronic documents in meetings and encourage double-sided printing.

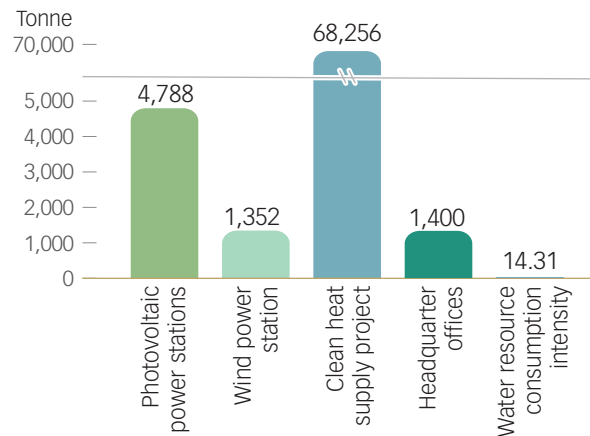
Water Resource Consumption



Vehicle Air Pollutant Emission



Sewage Discharge



⁴ Sulphur oxide emissions from vehicles are calculated twice according to the amount of petrol and diesel consumed the vehicle
⁵ Nitrogen Oxides emissions from vehicles are calculated twice according to the amount of petrol and diesel consumed the vehicle
⁶ Particulate matter (PM) emissions from vehicles are calculated twice according to the amount of petrol and diesel consumed the vehicle

The background features a stylized illustration of a blue whale and a school of smaller blue fish swimming in a light blue, wavy ocean. The whale is positioned in the upper right and lower left, with its tail and dorsal fin visible. The school of fish is located in the lower left quadrant. The overall color palette is various shades of blue.

Demonstrate Corporate Responsibility, Perform Safety Duty

Demonstrate Corporate Responsibility, Perform Safety Duty

SHNE is committed to creating a compliant, stable industry chain, providing safer and greener products and services to its customers, building mutually beneficial partnerships with its suppliers, and building the industrial foundation for realizing its vision of being a "leading green energy ecology builder".

4.1 IMPLEMENT SAFETY RESPONSIBILITIES

SHNE acknowledges that production safety is the basic guarantee for the healthy corporate development. The Company adheres to the laws and regulations such as "Work Safety Law of the People's Republic of China" and "Special Equipment Safety Law of the People's Republic of China", and relies on the organizational structure of production safety led by the Safety Management Committee to set realistic targets for production safety and guard the safety of its employees. During the reporting period, all production safety targets set by SHNE have been achieved and the Company has passed the ISO9001, ISO45001 and ISO14001 3 in 1 certification with a sound management system.

PRODUCTION SAFETY TARGETS AND PROGRESS

Targets	Amount	Target Achieved
Personal fatalities	0	100%
Equipment accidents with direct economic loss of over \$2 million	0	100%
Fire, traffic and electrical accidents	0	100%
Public safety incidents	0	100%
Administration department penalty	0	100%
Safety education training	3,856	100%

In accordance with the principle of "manage safety when managing production, manage safety when managing business" and the internal systems of "The Group's Work Plan for Reporting Major Production Safety Risks", "The Group's Notice of Major Production Safety Risks" and "Group's Weekly Report on the Progress of Major Production Safety Risk Project", the Company has established a grid-based management system that is "horizontal to the edge and vertical to the bottom", which has played an effective role in guiding and promoting the Company's safety and quality environment management.

The Company always attaches importance to safety management, strictly complies with the requirements of various safety systems, and continuously strengthens the safety management system to protect the Company's safe and stable production. The Company had no work-related fatalities in 2022 or in the last three years and 169 work days were lost to work-related injuries in 2022.

Demonstrate Corporate Responsibility, Perform Safety Duty

In 2022, SHNE continued to implement the production safety responsibility system, revising and compiling a total of 26 safety and environmental protection management systems, and sorting out the construction of the safety responsibility system in each unit, clarifying the relationship of responsibility and establishing specialized safety management personnel, so as to achieve layers of safety management force coverage.

We have also established a comprehensive risk source identification and safety hazards management process in accordance with laws and regulations of "The Notice of General Office of the National Development and Reform Commission and the General Office of the National Energy Administration on Further Enhancing Electricity Safety Risk Categorization, Control and Safety Hazards Investigation and Management", as well as internal "Risk Categorization and Control Regulations", to achieve dynamic management of safety hazards at our operation sites.

SHNE RISK IDENTIFICATION AND HAZARD MANAGEMENT PROCESS



Identification and supervision of hazard

- Regularly organize supervision and inspection to the unit and its subordinate enterprises of their hazard identification and risk assessment, and include hazard identification, risk assessment and supervision and management in the annual assessment of each unit's production safety performance



Inspection of safety hazards

- Register accident hazards identified according to the level of accident hazards and establish an accident hazards information file
- Organize rectification of general accident hazards and develop a management plan for major accident hazards
- Adopt relevant safety precautions in the management of accident hazards
- Organize on-site inspection or assessment of major accident hazards after rectification and form an acceptance report



Natural disaster prevention

- Issue timely early warning notices in response to warnings of natural disasters
- In case of natural disasters that may endanger the safety of the company and personnel, take safety measures of evacuating personnel, halting operations and strengthening monitoring, and report to the local people's government and its relevant departments in a timely manner

Demonstrate Corporate Responsibility, Perform Safety Duty

In addition, we have also enhanced our employees' awareness of production safety and hazard response skills through production safety training and emergency drills, and have continued to convey the Company's philosophy of high standards of control over work safety so production safety is deeply rooted in people's minds. As of the end of the reporting period, SHNE had conducted 3,856 training sessions on safety regulations, safety procedures and operating procedures, example cases, two tickets and high-risk operation technology, safety management, traffic and fire prevention, safety responsibility system and safety equipment, and emergency preparation, with a cumulative attendance of over 20,000, representing a 100% training coverage.

Case Study: Production Safety Promotion Training Session

In October 2022, SHNE organized a training session for all units of the Company to promote the safety, quality and environmental management system, explaining and answering questions about the key contents of the system, to ensure that employees know their duties, understand their duties and fulfil their duties, and fully discharge their duties for production safety.

Case Study: Kaiping Photovoltaic Project in Jiangmen City, Guangdong 2022 Fire Emergency Drill

In 2022, SHNE Kaiping Photovoltaic Project in Jiangmen City, Guangdong conducted a fire emergency drill in accordance with the relevant national laws and regulations on emergency management of production safety incidents, aiming to further enhance construction safety, raise awareness of fire prevention among site operators and eliminate and prevent the occurrence of fire accidents.



Fire safety drill

Case Study: Hanbei Town, Wuxiang 100MW Agricultural Photovoltaic Storage Integration Program Fire Drill Plan

A fire drill was held at the Hanbei Town, Wuxiang 100MW Agricultural Photovoltaic Storage Integration Program, to enable the frontline staff of the project to gain an in-depth understanding of the general knowledge of fire emergencies, to build up their awareness of fire safety, to truly grasp the co-ordination process of emergency fire-fighting and ambulance service at the scene of fire incidents, and to have the ability to self-help and rescue and respond to emergency situations, to guide staff to evacuate safely and quickly in an organized and orderly manner, to learn to correctly use fire extinguishers and to master the methods of escape.



Fire drill

Demonstrate Corporate Responsibility, Perform Safety Duty

Case Study: Handan Photovoltaic Project Heat Stroke Exercise

In June 2022, SHNE Handan Photovoltaic Project launched a high temperature heat stroke accident drill, aiming to examine the level of coordinated response and practical ability of the emergency rescue leadership team and emergency rescue personnel, improve the ability of operators to avoid accidents, prevent accidents and resist accidents, and implement accident prevention measures.



Heat accident prevention drill

Case Study: Kaiping Photovoltaic Project in Jiangmen City, Guangdong Flood Prevention Drill



Flood control drill

In June 2022, SHNE launched a flood prevention and flood control emergency drill for the demonstration project of 100 MW agricultural photovoltaic integration utilization in Xiangang Town, Kaiping, aiming to further improve the emergency response capability to floods of the project staff, raise their awareness of disaster prevention and avoidance, minimize losses caused by flooding and safeguard the lives and properties of the staff.

4.2 ATTENTIVE USER SERVICES

SHNE always puts customers first and is committed to promoting the Company's high-quality development with solid product quality and excellent customer service. In accordance with quality-related laws and regulations and the actual situation of the Company, the Company has set up a quality control structure coordinated by the Safety and Quality Control Department and managed by all units in collaboration, and continuously improved the internal "Quality Control Regulations" to effectively regulate the smooth development of the company's quality problem rectification, feedback, assessment and reward and penalty. Due to the characteristics of the Company's electricity and heat supply business, its day-to-day operations do not involve the packaging and transportation of products, nor do they involve the recall of sold or transported products for safety or health reasons.

SHNE QUALITY PROBLEM HANDLING PROCESS



Problem rectification

- Supervise the rectification of non-conformities identified during quality supervision inspections; conduct self-investigations on serious, high-impact problems to avoid the recurrence of similar problems
- In the event of a quality incident that breaches the unit's quality objectives, the unit concerned should report the incident to the Safety and Quality Department within one hour
- The unit is responsible for investigating and handling quality incidents that do not breach the unit's quality objectives. For quality incidents with an economic loss of RMB100,000 or more, the investigation and handling must be reported to the Safety and Quality Control Department for record.



Problem feedback

- Develop an experience feedback system that requires the preparation of corresponding experience feedback material on typical quality problems, analyze the root causes of the problems, and develop and implement corresponding corrective and preventive measures
- Provide feedback on business experience and good practice conclusion from time to time, including but not limited to streamlining processes, cost savings, reducing lead times, innovative technology and other highlights, and form information sharing



Assessment and reward and penalty mechanism

- Dissect the Company's quality objectives according to the business situation, and fully incorporate them into investment, construction, and operation, and formulate the corresponding assessment and reward and penalty system
- Regularly evaluates the quality objectives and core work of each unit and includes the results in the performance assessment

In addition, the Company is actively working with collaborating organizations to jointly develop quality control system for monitoring and reviewing effort, to continuously improve the Company's quality control capabilities. In December 2022, SHNE invited a collaborating organization, Fangyuan Logo, to conduct a review on the quality control of projects under construction and various departments in the Xiangang Town, Kaiping, to verify the planning, implementation, monitoring and performance of the Group's management system. As a result of the review, the relevant certification and audit resolution of SHNE were excellent, and internal quality issues have been effectively controlled on a continuous basis. The Company attaches great importance to customer service, always regards high-quality service as one of the core requirements of corporate operation, and has established a customer complaint response mechanism. In 2022, SHNE did not have any complaints related to customer service.

Demonstrate Corporate Responsibility, Perform Safety Duty

4.3 COMMITMENT TO COMMUNITY CHARITY

SHNE commits to the field of charity. Through a series of activities such as rural poverty alleviation, epidemic relief and voluntary services, we continue to enhance the happiness of community residents and fully demonstrate our humanistic care.

The Company actively integrates its own resources and carries out assistance activities according to the actual situation of the area it operates in, gradually improving the income of local villagers and consolidating the achievements of poverty alleviation, truly achieve "teaching a man to fish".

Case Study: Henan Anyang Power Station Assistance

In 2022, SHNE continued its support activities for the area where the Henan Anyang Power Station is located, regularly providing labour income and improving the education standards of local villagers through road construction, cleaning and weeding. During the reporting period, Henan Anyang Power Station donated a cumulative of RMB60,000 for poverty alleviation.



Henan Anyang Power Station assistance

Meanwhile, the Company is mindful of its corporate social mission and puts its corporate social responsibility into practice. In 2022, in the face of natural disasters and major events such as the exceptionally heavy rainfall and epidemic in Zhengzhou, we responded to the government's call at first notice and actively participated in the disaster relief and anti-epidemic work, insisting on contributing to the safety of the community. During the reporting period, SHNE donated 5,000 masks, 500 thermometers, 50 sets of protective gear, 50 barrels of alcohol, rice, noodles, food and beverages to the affected areas.

Case Study: Ewenki Company Staff Supported Community Epidemic Prevention and Control

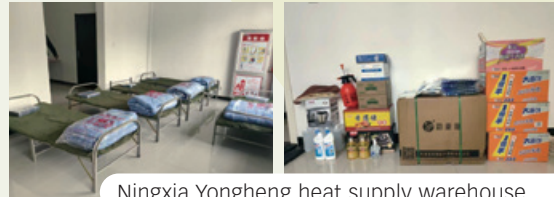


Ewenki Company staff support epidemic prevention and control

In February 2022, the staff of SHNE Ewenki Company actively responded to the government's call and assisted in manning 18 community gate stations, orderly carrying out the registration of outsiders entering the community and residents entering and leaving the community, contributing to the prevention and control of the epidemic in the community.

Case Study: Ningxia Yongheng (寧夏永恆) Move Forward from “Epidemic”, Maintain the Heat and Warmth

During the 2022 epidemic, SHNE Ningxia Yongheng activated the emergency plan in time according to the situation of the local epidemic to protect the supply, and the heat supply system was gradually mapped out through the formation of a heat supply strike team, to repair burst pipes and open valves door-to-door to ensure the heat supply mission is accomplished this winter.

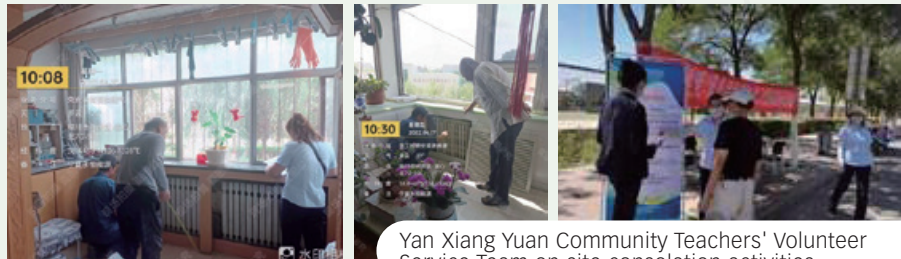


Ningxia Yongheng heat supply warehouse

SHNE also actively listen and respond to the needs of the community by regularly carrying out activities such as rubbish removal, street light repair, safety hazard inspection and delivering essential household items to low-income families in the community, creating a harmonious and warm social atmosphere. We also encourage our staff to actively participate in voluntary activities and realize their value in service. During the reporting period, SHNE invested a total of RMB10.349 million in community building, with 800 employees participating in voluntary services and a total of 200 hours.

Case Study: Yan Xiang Yuan Community Teachers' Volunteer Service Team On Site Consolation Activities

In 2022, Ningxia Yongheng joined hands with the Yan Xiang Yuan Community Teachers' Volunteer Service Team of Yange Lake Community to carry out on-site condolence activities for residents with family difficulties, widows and elderlies. We also provided free inspection and carried out repairs for the safety hazards of electricity, water, gas and heating for the residents, increasing the interaction with the community and the residents, focusing on solving problems for the community residents and demonstrating social responsibility of the Company and its staff.



Yan Xiang Yuan Community Teachers' Volunteer Service Team on site consolation activities



Building Corporate Image, Accompanying the Growth of Employees

Building Corporate Image, Accompanying the Growth of Employees

SHNE practices the people oriented development philosophy, complies with the relevant laws and regulations on labor management, protect the legitimate rights and interests of its employees and provide a smooth and fair employment channel and environment.

5.1 LEGAL AND COMPLIANCE OF EMPLOYMENT

Employment

SHNE adheres to the principle of legal and compliance of employment and strictly abide by the "Labor Law of the People's Republic of China" and "Labor Contract Law of the People's Republic of China" and its implementing regulations in staff employment. We adhere to the recruitment principles of employing according to their strengths, putting performance first and matching jobs with people; open recruitment, fair competition and internal before external recruitment, and establish a combined internal and external recruitment channel. The "Internal Talent Recommendation Management System" was implemented internally, while external recruitment channels mainly include recruitment websites and headhunting services. We insist on an all-round assessment of candidates in terms of morality, ability, experience and job qualification requirements to select quality talents and build up a high standard, high potential and energetic staff team.

Staff Diversity

SHNE eliminated discrimination based on race, creed, gender, age or marital status and have established internal policies to strictly avoid human rights violations such as child labor and forced labor. In the event of violations, such acts will be terminated immediately and dealt with in accordance with the law and the Company requirements. We encourage a diverse and inclusive corporate culture and are committed to continuously optimizing the structure of our workforce to achieve a reasonable distribution of employees by gender, age and profession.

As of 31 December 2022, the Company had a total of 1,953 employees, with a employee turnover of 563 during the year, representing a 22.4% staff turnover rate, which was mainly due to the withdrawal of certain projects of Heat Power Company. Since SDHG took over in May 2022, the Company has been given a new surge of motivation and a new development appearance, with the staff turnover rate remaining at the industry average.

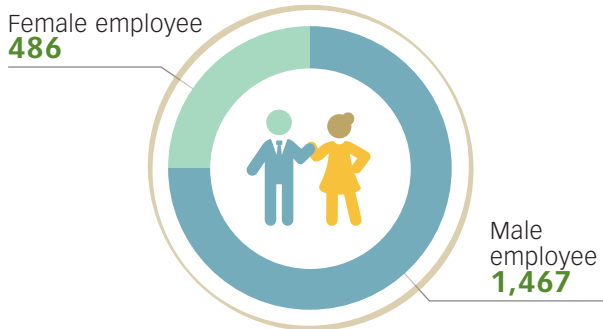


Building Corporate Image, Accompanying the Growth of Employees

SHNE EMPLOYMENT INFORMATION TABLE

TOTAL NUMBER OF EMPLOYEES 1,953

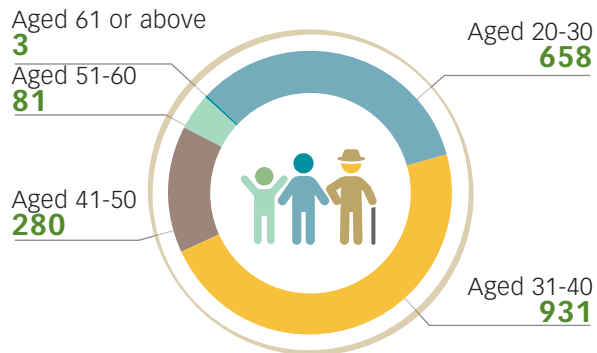
Number of employee by gender



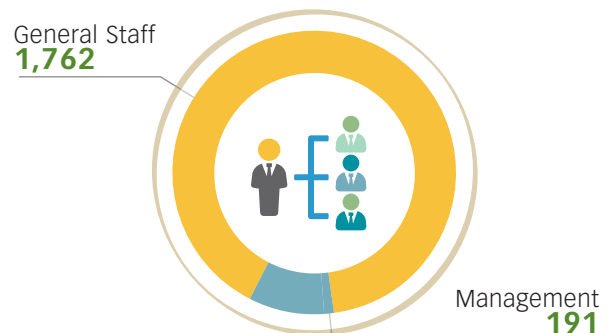
Number of employee by employment type



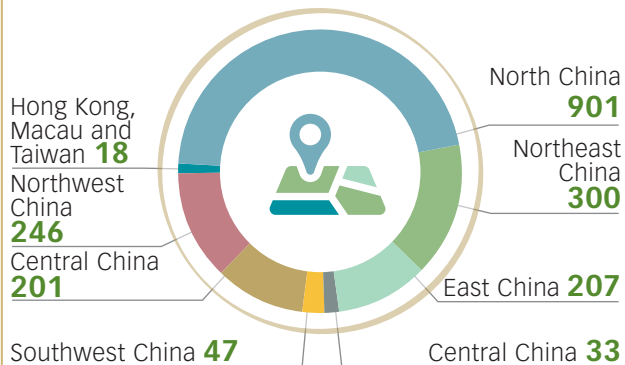
Number of employee by age



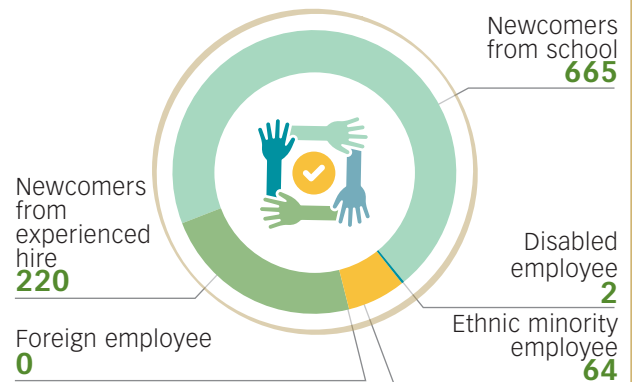
Number of employee by position



Number of employee by geographical region



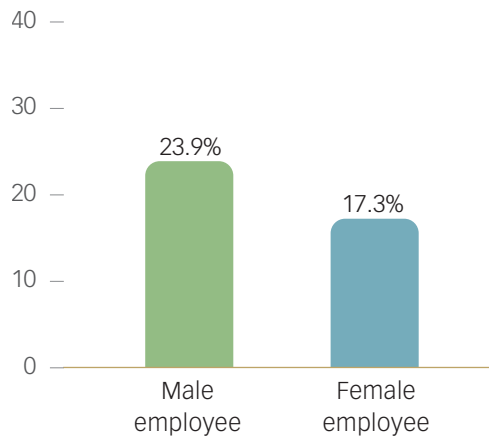
Number of employee by special cases



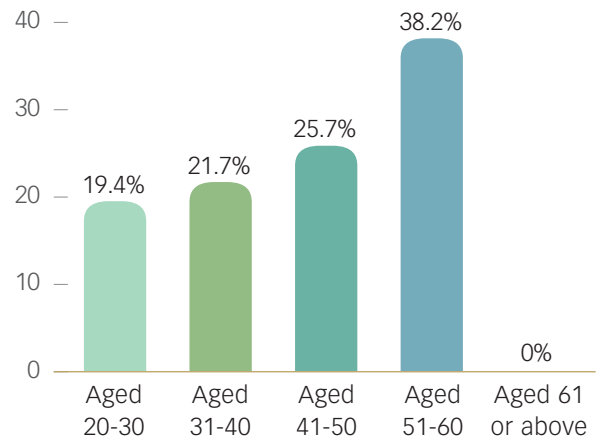
Building Corporate Image, Accompanying the Growth of Employees

NUMBER OF EMPLOYEE TURNOVER 563 EMPLOYEE TURNOVER RATE 22.4%

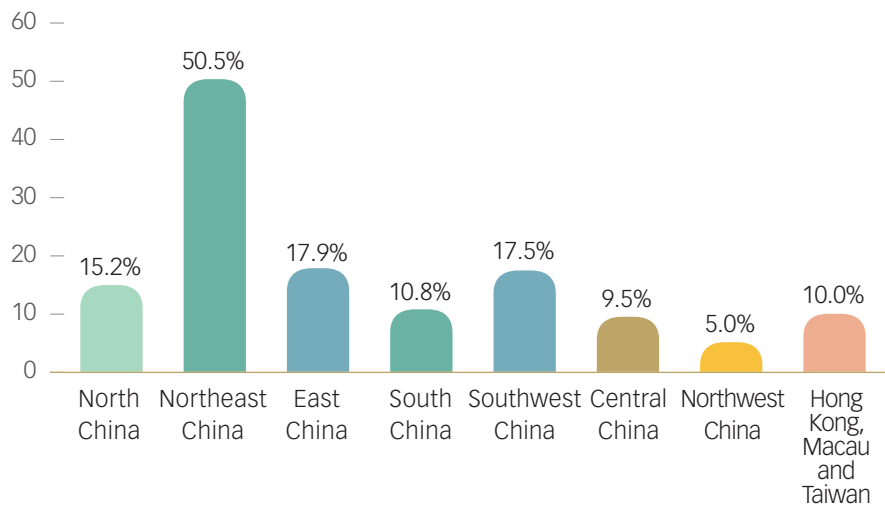
Employee turnover rate by gender



Employee turnover rate by age



Employee turnover rate by geographical region



Building Corporate Image, Accompanying the Growth of Employees

5.2 SAFEGUARDING INTERESTS AND CARE

Basic Rights and Interests

Employees are the backbone of the company's high-quality development. SHNE insists on a people-oriented development philosophy and adopts measures with protective benefits to protect the legitimate rights and interests of employees in a reasonable and compliant manner.

In terms of leave, we strictly comply with the relevant provisions of the "Regulation on Paid Annual Leave for Employees" and have formulated the "Measures for the Administration of Employee Performance Appraisals and Paid Leave", which provides for a five-day work week with working hours from 9:00 to 17:00 in accordance with the law. Statutory holidays, paid annual leave, sick leave, wedding leave, funeral leave, maternity leave, etc. are all implemented in accordance with the requirements of national policies. For holidays, office hours can be arranged according to the actual situation of the site, to ensure the smooth completion of work and also to allow employees to reasonably arrange their own time off.

For welfare benefits, we have adopted the Welfare Allowance System and our head office staff are entitled to commercial insurance, including accident, supplementary medical and life insurance, in addition to the statutory Five Social Insurances and One Housing Fund. In 2022, we rigorously evaluated commercial insurance providers and formulated a commercial insurance plan that takes into account the actual needs of our staffs, with an increase in the scope and level of commercial insurance coverage.

For remuneration, SHNE insists on optimizing its staff remuneration system and providing competitive remuneration packages to its staff. The Company has implemented relevant systems such as the "Regulations on Salary Adjustment Management", "Regional Operation and Maintenance Staff Salary Ranking System" and "Employee Performance Assessment Management Plan". A benchmarking analysis is conducted between the Company's internal remuneration and the external market. The Company's senior management remuneration is a structured remuneration, which is a combination of several components, of which the executive's part of the remuneration is assessed and scored at the end of the year based on the signed target responsibility statement, the remuneration of senior management was managed accordingly. Each senior manager's signed target responsibility statement includes safety and quality production target responsibilities, specifying the relevant requirements and the principles of point deductions. The deduction of points will have a direct impact on senior management performance pay and year-end bonuses. In 2022, SHNE has strengthened its research in close proximity to market conditions, thereby establishing a competitive remuneration incentive system, with specific work and results as follows.

Building Corporate Image, Accompanying the Growth of Employees

Work Content

Actual Result



Engage professional organizations to conduct market research

We will benchmark ourselves against the top companies in our peer group, identify our salary levels in our peer group through quantitative per capita data analysis and complete the 2022 transfer and salary adjustment based on the results of the salary survey and the actual situation of the Company.



Cooperating with external advisory bodies

The optimization of the pay and performance system for headquarter and frontline operations and maintenance was launched. By 2022, we have completed the project demand survey, optimization plan formulation, data matching, kick-off meeting, employee interviews (89 people in total, including 13 senior management, 13 department heads, 31 department corner B and 32 core backbones) and job value assessment preparation, laying a good foundation for the smooth implementation of the project.



Preparation of a dedicated incentive program for Nangong Phase III

Formulate a special plan to motivate the staff of the Engineering Centre to overcome difficulties and actively coordinate internal and external resources to achieve full capacity grid connection of the project at 930, which provided project support for the company's business development while resolving project risks.



Revision of the relevant system

Revised and improved the "Special Incentive for Development", "Special Incentive for over Capacity Operation and Maintenance", "Operation and Maintenance Department, Incentive Plan for Operation and Maintenance Sales Assessment", and drafted the "Administrative Measures for the Chairman's Special Award". The above mentioned plans have been communicated with the relevant departments and the responsible leaders for multiple times, and is intended to be approved alongside the optimization of the company's remuneration system.

Building Corporate Image, Accompanying the Growth of Employees

5.3 FOCUS ON STAFF DEVELOPMENT

In 2022, SHNE revised various basic human resources management systems and established a new "Training Management System" to provide targeted training for different staffs of all ranks, including newcomer induction training, staff professional and skills training, and training for middle and senior leaders.

SHNE provided its management trainees with general office skills and department oriented basic skills training; The Company has also established a "dual mentor system" and a "rotational system" training model, which allows management trainees to get in touch with and absorb as many modules from various departments as possible during their first two-year employment with the company for rapid evolvement and increase professional skills, in turns providing young and potential talents to the Company. In 2022, the training for succession managers has increased simultaneously, mainly for the company's reserve cadres: senior managers and managers, etc. The training covers general competencies such as management skills, communication skills and negotiation skills, in order to reserve excellent talents for the Group's middle and senior leadership and management.

SHNE has formulated the "Staff Promotion Management Methods", and every year, staff who meet the promotion requirements are evaluated and promoted according to the management methods. This is to stimulate the initiative of the staffs and to urge them to make continuous progress and growth. In the year of 2022, nine junior staff (senior managers) were promoted to the middle level (departmental chief assistant); 216 employees in the head office and 161 employees in front-line operations and maintenance were promoted.

In the year of 2022, 100% of SHNE's staffs were received training, with an average of 50 hours of training. We will strengthen the business foundation of our employees, improve their knowledge and skills, and realize their self-worth.

Case Study: Safety Quality Control Department ("Safety and Quality Department ") Conducted Safety Training at Headquarters in 2022

In 2022, safety knowledge training was provided to staff at the headquarters of the Company. Zhang Tianpeng from the Safety and Quality Department gave a lecture on "Safety Production Law", "Heat Prevention and Cooling Training", "Special Equipment Utilization Safety Management Training" and "Training on Safety in Electricity Operation". Through a combination of on-site and online training, staffs learned about safety culture, prevention of electric shock accidents, flood and typhoon prevention and other emergency knowledge, and their safety awareness was further enhanced.



2022 Headquarters safety training

Building Corporate Image, Accompanying the Growth of Employees

Case Study: Heat Sector Held Human Resources Training and Seminar in 2022

On 20 July 2022, SHNE held the second two-day human resources training and exchange session at Ningxia Yongheng Company. The training and exchange involved "Management of Small Units in the Thermal Industry", "How to be a Good Recruiter Around the Business", "Experience Sharing on the Construction of Thermal Control System", "Training on Organizational Performance System", "Prevention and Response to Legal Risks of Labor Employment in Enterprises", "Labor Relations Management Practices" and other related courses. By enhancing the staff's ability to integrate and innovate, professionalize, manage human resources and control risks, the human resources management system is promoted to form a "quality circle" for the development of the human resources sector, creating a "vanguard team" that is mutually supportive, integrated and synergistic.



Human Resources Training and Exchange Session in 2022

Case Study: Thermal Sector Held Training Session on Dual Carbon Targets in 2022



Training session on the dual carbon target in 2022

On 22 January 2022, the Heat Sector launched a training session on the opportunities and challenges of the heat industry under the dual carbon target, mainly on public REITs for infrastructure, the development of heat supply enterprises under the dual carbon target, the road to low-carbon heat supply and the role of biomass in clean heat supply. By enhancing the Company staffs' understanding on national policies, they are inspired to think about the future of the heat industry.

Building Corporate Image, Accompanying the Growth of Employees

Case Study: Legal Compliance Department Launched Legal Compliance Training for Group Staff

On the 22 September 2022 a.m., Tian Feng from the Legal Compliance Department conducted a legal compliance training in a combination of online and offline mode, for employees on the legal issues involved in the development of distributed photovoltaic projects. Staffs from the distributed business department, the Greater Bay Area, the Risk Management Department, the Cost Management Centre, the Corporate Management Department and the Operations Business Department actively participated in the training.

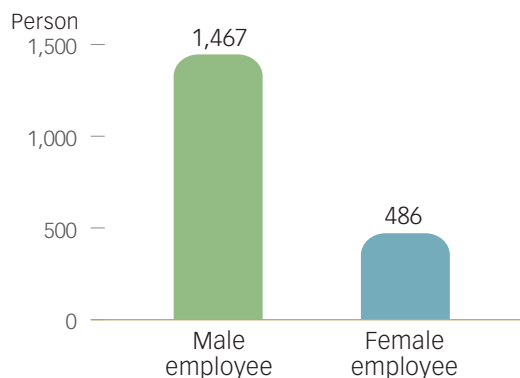


Group staff legal compliance training

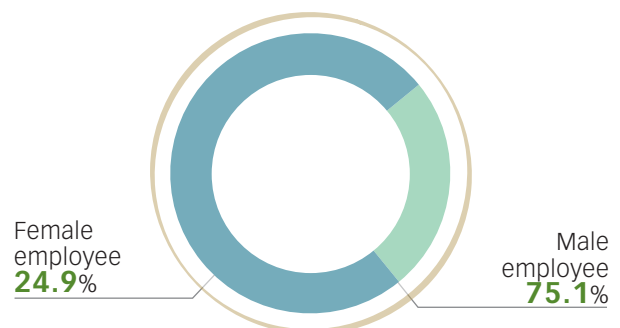
The training mainly covered four aspects, including legal due diligence of roof owners, key points and examples of property rights verification, importance of property investigation and case study sharing, and key points of EMC agreements. The training was in line with the Group's requirement of "strengthening the construction of compliance system and the operation of compliance governance", the training aimed to strengthen the concept of law-abiding operation of the Company's staff and the development of production and operation activities in accordance with the law, and to enable the staff directly related to the business to have a more comprehensive and in-depth understanding of the legal risks that may exist during the development of distributed photovoltaic projects. It also helps to break down departmental communication barriers and enhance the efficiency of cross-departmental collaboration.

STATISTICS ON THE PERCENTAGE OF THE COMPANY EMPLOYEES TRAINED

Number of trained employees by gender



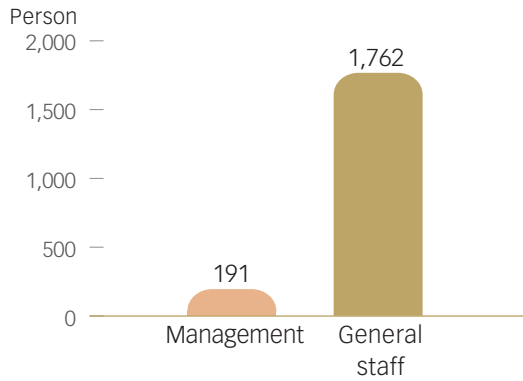
Trained employees percentage by gender



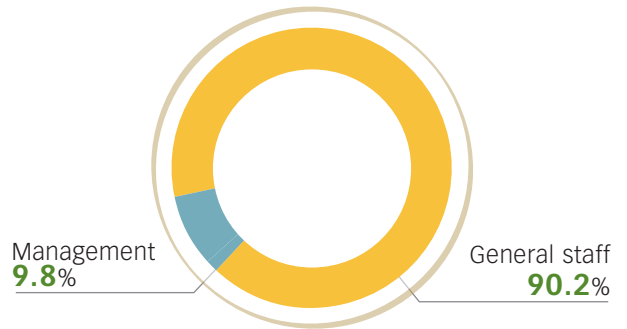
Percentage of the Company's trained employees to the total number of employees 100%

Building Corporate Image, Accompanying the Growth of Employees

Number of trained employees by rank

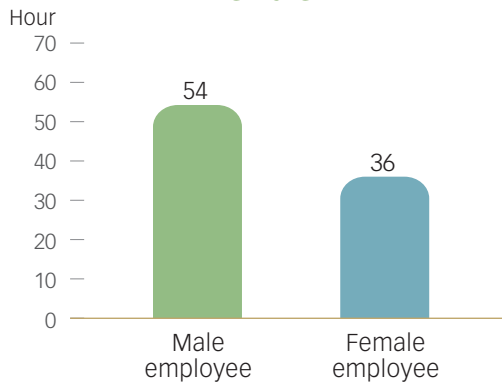


Trained employee percentage by rank

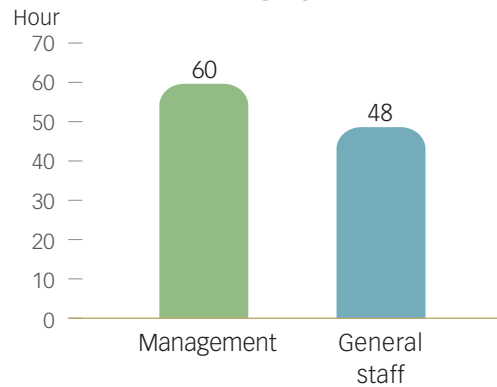


AVERAGE NUMBER OF HOURS OF TRAINING PER THE COMPANY STAFFS 50

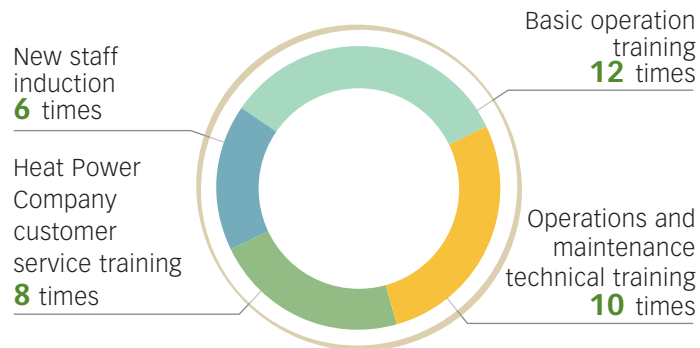
Average number of hours of training by gender



Average number of hours of training by rank



Number of training sessions by type of training 36



Building Corporate Image, Accompanying the Growth of Employees

In 2022, the Company strengthened staff assessment to implement the reward and penalty mechanism and promote the establishment of a fair and equitable employment mechanism, with specific work and results as follows.

Work Content

Specific Results



Strengthening and improving the management of probationary assessment

Using with front-end positions as pilot, assessment indicators were set as quantitative as possible. Newly recruited development staffs signed a “Probationary Performance Assessment Commitment”, and the assessment results were applied to the transition from probationary period to formal employment.



Completion of various appraisal assessments in 2021

Assessment of middle and senior management staff for the year 2021 were completed, and bonuses to 671 junior staff were reviewed and paid. Annual performance pay for the management were settled and the awarding of merit recognition for the year 2021 was completed.



Completion of the transfer and promotion of junior staff in 2022

In the year of 2022, a total of 9 junior staff were promoted to Chief Assistant of the department, and 617 junior staff were transferred to different positions and salaries (196 at the headquarters and 421 at the frontline operation and maintenance). On the one hand, the transfer has boosted confidence and morale, and on the other hand, it has solved to a certain extent the problem of pay pegging between old and new staff. The staff who are responsible for their work, have good performance, had satisfied the leadership and were recognized by the public are given the opportunities they deserve.

Appendix I: Environment Performance Indicators

Key Performance Indicators	Sub-indicators Description	Indicator Unit	2022	
The types of emissions and emissions data.	Air emissions	Nitrogen Oxides(NOx)	Tonne	Clean heat supply: 393.8
			Kilogram	Vehicles: 305.5
		Sulfur Oxides(SOx)	Tonne	Clean heat supply: 136.4
			Kilogram	Vehicles: 3.55
		Particulate matter(PM)	Kilogram	Vehicles: 24.8
	Waste water emission	Total domestic waste water emissions	Tonne	1,400
		Total industrial waste water emissions	Tonne	Clean heat supply waste water: 68,256
		Total photovoltaic power plants waste water emissions	Tonne	4,788
		Total wind power plants waste water emissions	Tonne	1,352
	Total GHG emissions and intensity	Total GHG emissions	Tonne carbon dioxide equivalent (CO ₂ -e)	1,345,535
Total GHG emissions (Scope 1)		Total coal emission	Tonne carbon dioxide equivalent (CO ₂ -e)	680,400
		Total vehicle diesel emissions	Tonne carbon dioxide equivalent (CO ₂ -e)	1,002.52
		Total vehicle gasoline emissions	Tonne carbon dioxide equivalent (CO ₂ -e)	546.62
		Total natural gas emissions	Tonne carbon dioxide equivalent (CO ₂ -e)	104,801
		Total LPG emissions	Tonne carbon dioxide equivalent (CO ₂ -e)	638
		Total GHG emissions (Scope 1) total	Tonne carbon dioxide equivalent (CO ₂ -e)	787,388
Total GHG emissions (Scope 2)		Total purchased hot water emissions	Tonne carbon dioxide equivalent (CO ₂ -e)	440,175
		Total purchased electricity emissions	Tonne carbon dioxide equivalent (CO ₂ -e)	117,972
		Total GHG emissions (Scope 2) total	Tonne carbon dioxide equivalent (CO ₂ -e)	558,147
Carbon dioxide emission intensity	Tonne carbon dioxide equivalent (CO ₂ -e)/Revenue (HKD million)		254.07	

Appendix I: Environment Performance Indicators

Key Performance Indicators	Sub-indicators Description	Indicator Unit	2022		
Total hazardous waste and intensity	Used lead-acid battery	Piece	6		
	Used ink cartridges	Piece	326		
	Used light bulbs/tubes	Piece	997		
Total non-hazardous waste and intensity	Boiler slags	Tonne	51,888		
	Coal ashes	Tonne	18,874		
	General domestic waste	Tonne	229.06		
	Total non-hazardous waste	Tonne	70,991.06		
	Non-hazardous waste intensity	Tonne/Revenue (HKD million)	13.40		
Total direct and indirect energy consumption and intensity	Direct energy	Coal consumption	MWh	2,048,760.00	
		LPG consumption	MWh	2,580.52	
		Natural gas consumption	MWh	524,532.95	
		Diesel consumption	MWh	Clean heat supply project: 96.03	
				Group vehicle: 99.39	
		Gasoline consumption	MWh	Clean heat supply project: 1,005.78	
				Group vehicle: 2,001.51	
		Vehicles diesel consumption in photovoltaic power plants	Litre	8,789.38	
		Vehicles diesel consumption in wind power plants	Litre	1,250.00	
		Vehicles gasoline consumption in photovoltaic power plants	Litre	176,661.29	
		Vehicles gasoline consumption in wind power plants	Litre	43,757.02	
		Total direct energy consumption	MWh	2,579,076.18	
		Total direct energy consumption intensity	MWh/Revenue (HKD million)	486.99	

Appendix I: Environment Performance Indicators

Key Performance Indicators	Sub-indicators Description	Indicator Unit	2022	
Total direct and indirect energy consumption and intensity	Purchased hot water	MWh	Clean heat supply project: 1,980,000	
	Purchased electricity	MWh	Clean heat supply project: 114,820	
	Indirect energy			Office: 171.88
		Photovoltaic power plants purchased electricity	MWh	42,400.00
		Wind power plants purchased electricity	MWh	6,300.00
		Total indirect energy consumption	MWh	2,143,691.88
	Total indirect energy consumption intensity	MWh/Revenue (HKD million)	404.78	
	Consolidated energy consumption	MWh	4,722,768.06	
	Consolidated energy consumption intensity	MWh/Revenue (HKD million)	891.76	
Total water consumption and intensity	Photovoltaic power plants water resources consumption	Tonne	21,948	
	Wind power plants water resources consumption	Tonne	5,739	
	Office water consumption	Tonne	2,800	
	Clean heat supply project water consumption	Tonne	1,145,580	
	Total water resources consumption	Tonne	1,176,067	
	Water resources consumption intensity	Tonne/Revenue (HKD million)	222.07	

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ESG Areas and General Disclosures and KPIs(KPI)			Page Number
Environmental			
A1: Emissions	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste. Note: Air emissions include NOx, SOx, and other pollutants regulated under national laws and regulations. Greenhouse gases include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. Hazardous wastes are those defined by national regulations.	43
A1.1		The types of emissions and respective emissions data.	81-82
A1.2		Total direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	81
A1.3		Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	82
A1.4		Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	82
A1.5		Description of emissions target(s) set and steps taken to achieve them.	31
A1.6		Description of how hazardous and non-hazardous wastes are handled, and a description of reduction target(s) set and steps taken to achieve them.	48

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ESG Areas and General Disclosures and KPIs(KPI)			Page Number
A2 : Use of Resources	General Disclosure	Policies on the efficient use of resources, including energy, water and other raw materials. Note: Resources may be used in production, in storage, transportation, in buildings, electronic equipment, etc.	43
	A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility).	83
	A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility).	83
	A2.3	Description of energy use efficiency target(s) set and steps taken to achieve them	56
	A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target(s) set and steps taken to achieve them.	58
	A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	66
A3 : Environment and Natural Resources	General Disclosure	Policies on minimizing the issuer's significant impacts on the environment and natural resources.	43, 49, 51
	A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	48-55
A4 : Climate Change	General Disclosure	Policies on identification and mitigation of significant climate-related issues which have impacted, and those which may impact, the issuer.	27
	A4.1	Description of the significant climate-related issues which have impacted, and those which may impact, the issuer, and the actions taken to manage them.	27-30

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ESG Areas and General Disclosures and KPIs(KPI)			Page Number
Social			
B1 : Employment	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.	71
	B1.1	Total workforce by gender, employment type (for example, full- or parttime), age group and geographical region.	72
	B1.2	Employee turnover rate by gender, age group and geographical region.	73
B2 : Health and Safety	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards.	63-64
	B2.1	Number and rate of work-related fatalities occurred in each of the past three years including the reporting year.	63
	B2.2	Lost days due to work injury.	63
	B2.3	Description of occupational health and safety measures adopted, and how they are implemented and monitored.	63
B3 : Development and Training	General Disclosure	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities. Note: Training refers to vocational training. It may include internal and external courses paid by the employer.	76
	B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	78
	B3.2	The average training hours completed per employee by gender and employee category.	79

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ESG Areas and General Disclosures and KPIs(KPI)			Page Number
B4 : Labour Standards	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour.	71
	B4.1	Description of measures to review employment practices to avoid child and forced labour.	71
	B4.2	Description of steps taken to eliminate such practices when discovered.	71
B5 : Supply Chain Management	General Disclosure	Policies on managing environmental and social risks of the supply chain.	23
	B5.1	Number of suppliers by geographical region.	23
	B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, and how they are implemented and monitored.	23-24
	B5.3	Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored.	23-24
	B5.4	Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	23-24
B6 : Product Responsibility	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	66-67

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ESG Areas and General Disclosures and KPIs(KPI)			Page Number
	B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	66
	B6.2	Number of products and service related complaints received and how they are dealt with.	67
	B6.3	Description of practices relating to observing and protecting intellectual property rights.	23
	B6.4	Description of quality assurance process and recall procedures.	66-67
	B6.5	Description of consumer data protection and privacy policies, and how they are implemented and monitored.	23
B7: Anti-corruption	General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.	20
	B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.	20
	B7.2	Description of preventive measures and whistle-blowing procedures, and how they are implemented and monitored.	21
	B7.3	Description of anti-corruption training provided to directors and staff.	21-22
B8: Community Investment	General Disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests.	68-69
	B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	68
	B8.2	Resources contributed (e.g. money or time) to the focus area.	68-69



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