



信義光能控股有限公司
XINYI SOLAR HOLDINGS LIMITED

(Incorporated in the Cayman Islands with limited liability)

Stock Code: 00968

**LEADING GREEN
NEW ENERGY**

**XINYI
SOLAR**



2023

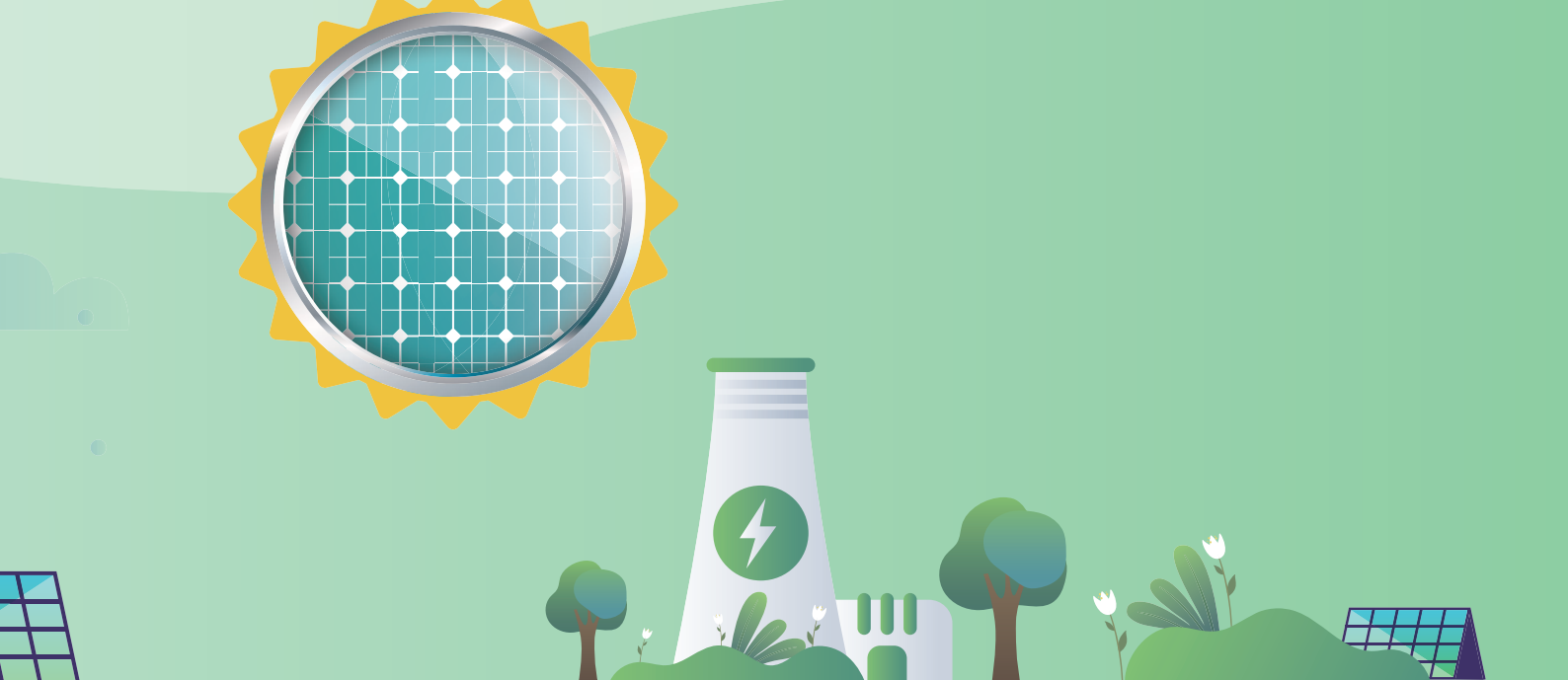
**Environmental, Social
and Governance Report**



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About the Report

OVERVIEW

This Report (the “**Report**”) was prepared in accordance with the Environmental, Social and Governance Reporting Guide (the “**ESG Reporting Guide**”), Appendix C2 to the Rules Governing the Listing of Securities (the “**Listing Rules**”) on the Stock Exchange of Hong Kong Limited (the “**Hong Kong Stock Exchange**”) by Xinyi Solar Holdings Limited (“**Xinyi Solar**” or the “**Company**”) and its subsidiaries (the “**Group**”).

Xinyi Solar reports its environmental, social and governance (“**ESG**”) performance to its key stakeholders annually in a separate report, which is now the eighth year. The content of this year’s report is prepared based on the Group’s ESG strategy, and has fully considered the results of stakeholder engagement and materiality assessment. It comprehensively presents the Group’s actions and achievements in five major areas, namely corporate governance, response to climate change, sustainable operation, value chain and community development, as well as talent management and cultivation, from 1 January to 31 December 2023 (the “**Reporting Year**”). Some contents may be traced back to previous years or extended to 2028 (in terms of corporate sustainable development goals only). This Report should be read in conjunction with the “Corporate Governance Report” in the Company’s 2023 Annual Report. This Report is published in both Chinese and English, and is available for downloading on the website of the Company (www.xinyisolar.com) and the website of the Hong Kong Stock Exchange (www.hkexnews.hk). In case of any discrepancy between different language versions, the Chinese version shall prevail.

REPORTING SCOPE

The Report covered the Company and its wholly-owned and non-wholly-owned subsidiaries located in the Chinese Mainland, Hong Kong, Malaysia and Canada and their core businesses, which include: (i) production and sales of solar glass; (ii) solar farm business. The coverage is the same as the Company’s 2023 Annual Report. The economic and employee-related data included Xinyi Silicon Holdings Limited (“**Xinyi Silicon**”), a non-wholly owned subsidiary held 52% by the Group. However, as of 31 December 2023, the project was still under construction and the resource consumption and waste emissions were very limited. Therefore, the environmental data during the Reporting Year has not covered Xinyi Silicon. Consideration will be given to include the relevant data in future based on the magnitude of the impact of such data on the environmental performance of the Group as a whole.

REPORTING PRINCIPLES

The environmental and social key performance indicators (“**KPIs**”) have been compiled with reference to the Reporting Guidance on Environmental KPIs and the Reporting Guidance on Social KPIs of the Hong Kong Stock Exchange, respectively. We selected the scope of disclosure and collect data based on the principles of materiality, relevancy and applicability via a systematic materiality assessment procedure combining internal and external opinions, and calculated according to the parameters applicable to the Group’s industry and geographical location of operations. Details on the materiality assessment can be referred to the paragraph headed “**Double Materiality Assessment**” in the “Stakeholder Engagement” section of the Report.

The Group’s performance under each of the quantifiable KPIs in the Reporting Guidance on Environmental KPIs and the Reporting Guidance on Social KPIs of the Hong Kong Stock Exchange during the Reporting Year and the comparison against the performance in 2022 are set out in the section headed “**2023 Key Performance Indicators**”. The standards, methods, assumptions and/or references of calculation adopted for the relevant KPIs and the sources of the major conversion parameters have been properly explained.



About the Report

The Report follows the principle of balance and respects objective facts. It provides an unbiased and sufficient disclosure of the Group's performance in ESG aspects. All ESG-related events that should be disclosed and have/potentially have a significant impact on the Group are disclosed in the corresponding sections of this Report.

In the Report, unless otherwise specified, the performance data of all non-wholly-owned subsidiaries are reported on a 100% basis without adjustment based on the proportion of equity of the Company and all monetary amounts are presented in Hong Kong dollars. KPIs in different periods are calculated and disclosed with the same methodology to ensure that the performance during the Reporting Year is comparable to the historical performance. Any changes in the calculation and disclosure methodology have been explained in the relevant disclosure notes.

REPORTING FRAMEWORK

The Report has complied with the mandatory disclosure requirements and the "comply or explain" provision in the ESG Reporting Guide in Appendix C2 to the Listing Rules of the Hong Kong Stock Exchange. Moreover, the Report has also made reference to other international and industry disclosure standards on sustainable development reporting to further enhance the level of disclosure and enrich the content. For example, relevant disclosures have been made with reference to some of the disclosure requirements in the "Sustainability Reporting Guidelines" of the Global Reporting Initiative ("GRI") and the recommendations from the "Sustainability Accounting Standards for the Solar Technology & Project Developers Industry" issued by the Sustainability Accounting Standards Board ("SASB") of the United States. Content index has been disclosed in the Appendix of the Report, which can facilitate readers to find the information they needed.

With regard to the disclosure of identification, response and management of risks and opportunities brought by climate change, the Group has further optimised and improved the level of the Group's disclosure on climate information in the Report by taking into account the recommendations of the Task Force on Climate-related Financial Disclosures ("TCFD") and based on the communications with different key stakeholder groups during the Reporting Year, such as the Hong Kong Stock Exchange, the Carbon Disclosure Project (the "CDP"), the Hong Kong Quality Assurance Agency, Institutional Shareholders, ESG analysts, etc. After fully considering the actual impact of physical risks and transition risks on the Group's core business operation and development during the Reporting Year, the Group re-examined and re-evaluated the major climate risks and opportunities disclosed in 2022 ESG Report and made corresponding adjustments and/or supplements. We have provided a qualitative analysis of the financial impact brought by identified key risks and opportunities of the Group, and conducted quantitative analysis on certain risks and opportunities based on historical data, and disclosed the strategies and actions adopted by the Group. Such disclosure can be found in the section headed "**Resilience to Climate Change**" in the Report.



About the Report

FORWARD-LOOKING STATEMENTS

The Report contains forward-looking statements, which are projections and assumptions based on the current state of the Group's business and the industry and market in which the Group operates, and are not guarantees of future performance. The Group's performance may be affected by market risks, uncertainties and factors beyond the Group's control. Hence, the actual result may differ from the assumptions and related statements made in the Report.

REVIEW AND APPROVAL

The Report has been reviewed by the Sustainable Development Management ("SDM") Committee and was published on 30 April 2024 after the approval by the Board of Directors of the Company (the "Board").

CONTACT AND INQUIRY

The Group attaches great importance to the opinions and feedback of stakeholders, and on this basis, continuously improves the Group's ESG performance and disclosure. If you have any comments and feedback on the Report and the Group's ESG strategy, please feel free to contact the Group through the following means:

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Board Statement

The Board is committed to maintaining a high level of awareness, monitoring and actively promote the Group's sustainable development concept in all aspects of strategic planning, production and operation, value chain and community engagement. The Board will continue to place specific issues such as enhancing business resilience to cope with climate change, adhering to the concept of sustainable development to ensure the restoration of green earth by green business, implementing sustainable talent management, and participating in the sustainable value chain and the construction of community at the core of our sustainability governance, so as to create long-term value for stakeholders.

The Board is the highest governance body of the Group's ESG matters. It implements comprehensive and effective supervision on various ESG management work, including examining, assessing and regularly reviewing our ESG strategies, material ESG-related (including climate-related) opportunities and risks, ESG-related goals and core indicators, overseeing the formulation and implementation of ESG-related internal policies, the work of the Sustainable Development Management Committee, the progress of sustainable development goals, the annual performance of core indicators, ESG information disclosure, etc. The SDM Committee is authorised by the Board to coordinate and manage ESG-related matters, and reports to the Board on a regular basis to ensure that the Board is aware of the Group's progress and performance in ESG and is subject to the supervision of the Board. The SDM Committee was established in 2021. It is directly led by the chief executive officer of the Group, with members including the heads of major divisions. For more relevant disclosure, please refer to the section headed "**Governance for Sustainability**" in the Report.

Founded in the photovoltaic ("PV") industry, as the world's largest solar glass manufacturer and a leading private solar farm operator in China, the Group's business development is of great significance to the global promotion of energy transition and the realisation of carbon neutrality. In its own operation, adhering to the strategy of "Two enhancements and one reduction", the Group actively enhances the solar glass production capacity and installed capacity of solar farms, and effectively reduces the energy consumption and emissions per unit of solar glass production, so as to maximise the positive impact and reduce the negative impact on the society and the environment. In addition, the Group also hopes to convey the concept of "GREEN" to the value chain and community through its own participation and promotion, so as to contribute to the creation of a green and sustainable future. The Group's ESG strategy covers five key areas:

- Governance for Sustainability
- Resilience to Climate Change
- Ecological-friendly and Sustainable Business Model
- Engaging with the Value Chain and Community
- Nurturing talents for long-term development



Board Statement

Feedback and suggestions from different stakeholder groups on the Group's ESG work and disclosure are important to the Group's continuous progress in ESG governance. We attach great importance to the communication with key stakeholder groups. During our daily operations and before the preparation of the ESG Report, we would obtain the opinions of key stakeholders through different channels to help us identify material ESG issues that are closely related to the Group and prioritise those issues. When reviewing the materiality assessment results, the Board would fully consider the changes in the internal and external environment related to the operation and development of the Group's core business, as well as the ESG governance standards and disclosure requirements issued by the Hong Kong Stock Exchange and other international organisations, and regularly review material ESG issues to ensure the monitoring of material ESG issues. The Board would also fully consider the impact of ESG-related risks and opportunities in the process of operation management, strategic planning and decision-making.

Based on the Group's core business nature, business model and impact analysis on the value chain, we have proposed 15 Sustainable Development Goals ("**XSGs**") and long-term action plans, six of which are quantitative goals, mainly related to Goal 13 (Climate Action), Goal 12 (Responsible Consumption and Production) and Goal 7 (Affordable and Clean Energy) in the 17 United Nations' Sustainable Development Goals ("**SDGs**"). All quantitative Sustainable Development Goals are refined into annual targets and implemented after review by the SDM Committee. The progress of relevant goals is tracked on a quarterly basis and supervised by the SDM Committee and the Board. The Board would regularly review the relevant goals with regard to their progress, feedback from stakeholders and changes in the internal and external environment as the basis for the adjustment of existing goals and the setting of new goals. Our current 15 Sustainable Development Goals and long-term action plans fully reflect the Group's ESG strategy in key areas of our focus, and are an effective way to maximise the positive and minimise the negative impacts of the Group's contribution to the SDGs and the value chain based on the current actual operating environment and feasible technologies. For the annual performance of the Group's Sustainable Development Goals and long-term action plans, please refer to the section headed "**Governance for Sustainability**" in the Report.

The Board will make every effort to fulfil its responsibilities and actively promote ESG issues in five key areas to achieve higher standards of governance level and facilitate the achievement of sustainable development enterprises, value chains and society.

Message from our Chairman and CEO

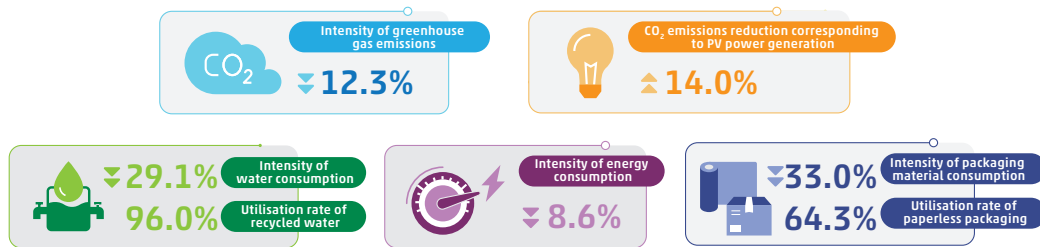
Contribution to the global energy transition and carbon neutrality is the constant pursuit of everyone engaged in the PV industry. As a leader in the solar glass industry, Xinyi Solar has always been at the forefront of the industry in terms of production capacity scale, production efficiency, product research and development and technological innovation, and has firmly committed to the concept of “Green and sustainable development” in our business. The extreme weather events, major public health emergencies, geopolitical events and increased volatility and uncertainty in the global economy in recent years have caused the Board, the management of the Company and its key stakeholders to continuously raise their concerns and thoughts about Xinyi Solar’s operating strategy and business resilience amidst the complex and changing economic, political and natural environment. Moreover, the changes in the industry cycle in recent years have led us to recognise that sustainable development is not about pursuing development alone, but about putting ourselves in the value chain and society, and maximising our positive impact to promote shared development.

Xinyi Solar is rooted in green business. Our development and growth are of great significance to promoting the green and low-carbon transformation of energy. However, we are not complacent with it. Instead, we recognise that we should give full play to our business advantages, industry and social influence, and convey and promote the green concept in our own operation and production to the value chain and society, so that the concept of green and sustainable development could be spread. We work together to create a green earth driven by green energy for the next generation. From “Manufacturing green” to “Green manufacturing”, we put forward the ESG strategy of “Two enhancements and one reduction” in 2020, and are committed to improving the environmental performance of our own business. In 2023, we had no longer been limited to our own business scope and put forward the ESG “GREEN” strategy covering five key areas, focusing on improving business resilience in response to climate change and work together with employees, value chain and society to move towards a sustainable future.



Message from our Chairman and CEO

The Group takes all necessary actions to actively respond to the call of the United Nations Sustainable Development Goals to maximise positive impact and reduce negative impact in areas that are most relevant to the Group’s business and operations and have the greatest value chain impact. The Group first established its 5-year sustainability objectives and long-term action plan in 2019, and regularly reviewed the progress of the objectives and the viability of the plan on an annual basis thereafter to make timely updates and propose new quantitative objectives/action plans in the ESG areas of focus. Despite the complex and volatile external environment in 2023, the Group is optimistic about its progress towards the established sustainability development goals. Since the paperless packaging target (XSG 8) which was first proposed in 2019 and water consumption intensity target (XSG 7) which was proposed in 2022, both have been completed in 2023, the Group has proposed new quantitative goals for packaging material consumption and water consumption intensity: XSG 8 promotes more environmentally friendly product packaging and strives to replace wooden pallets with iron pallets for 92% of products sold in the domestic market by 2028. XSG 7: strives to reduce 28% of water consumption per square metre of solar glass products by 2028 as compared to 2023.



We acknowledge that sustainable business development must be based on principles and must fulfil its basic responsibilities in the areas of human rights, labour, the environment and anti-corruption. Xinyi Solar has been practising the spirit of the United Nations Global Compact (the “**Global Compact**”) with practical actions and officially signed to join the Global Compact on 23 October 2023. We promise that Xinyi Solar will, continue to support the Ten Principles of the Global Compact on human rights, labour, the environment and anti-corruption (the “**Ten Principles**”), and integrate the Ten Principles into the Group’s strategy and policy formulation, cultural construction and promotion as well as daily operations to ensure that Xinyi Solar not only practises and advocates the spirit of the Global Compact in its own operations, but also in the value chain and community engagement.

WE SUPPORT



Message from our Chairman and CEO

The temperatures continuously hitting record highs, acceleration of the disappearance of glaciers and rapid rise of sea levels, frequent extreme weather events and natural disasters are all showing that global climate actions are far behind the goal of achieving carbon neutrality in the middle of this century. PV is the main source of energy for the construction of future energy systems. As a supplier of core components for PV modules, we never dare to relax. Instead, we have taken proactive actions through formulating appropriate strategies and reviewing and optimising them from time to time so as to fulfil our responsibilities as a leading enterprise in terms of production capacity scale, economic efficiency, environmental benefits and corporate governance. We are pleased to see that Xinyi Solar's ESG efforts have been recognised by international and local authorities and have become a driving force for our continuous improvement and progress. Xinyi Solar has been recognised by Corporate Knights, a Canadian media and investment research firm, as one of the "Global 100 Most Sustainable Corporations" for three consecutive years, and ranked first among the global glass manufacturing enterprises for three consecutive years. Xinyi Solar was awarded the "All-Star Status" in the 2023 Asia (ex-Japan) Executive Team Survey organised by Institutional Investor, a leading financial magazine in the World, representing our overall first place in all of the six individual awards, including the "Best Environmental, Social and Corporate Governance", the "Best Investor Relations Company", the "Best Board of Directors", the "Best CEO", the "Best CFO" and the "Best Investor Relations Professional". This is the third consecutive year that Xinyi Solar has won the first place in all the individual awards, for companies in the industrial category (including infrastructure) and the fourth consecutive year that the Group has been recognised as "Most Honoured Company". Xinyi Solar is also a constituent of a number of ESG indices of MSCI ("MSCI"), Hang Seng ("HSI") and FTSE in the UK. Meanwhile, Xinyi Solar has outperformed its peers in a number of international and local sustainability ratings, including CDP, Standard & Poor's (S&P), MSCI, Institutional Shareholder Services group of companies ("ISS"), HSI, etc. In order to continuously improve the level of ESG governance and disclosure to meet the demands of key stakeholders, including customers, shareholders/potential investors, regulators, etc., the Group officially launched the product carbon footprint certification (ISO14067: 2018) at the end of 2023, which is expected to be completed in 2024, and plans to disclose the relevant data of Scope 3 in the 2024 ESG report to improve the disclosure of the Group's carbon data.





Message from our Chairman and CEO

2023 marks the 10th anniversary of the listing of Xinyi Solar on the Main Board of the Hong Kong Stock Exchange. Looking back over the past decade, our solar glass business has continued to grow and develop, and ranked the top in the industry in terms of production capacity, industry influence, technology level and research and development capability. The Group's solar farm business is also maturing and has become a leading player in the industry in the region. This, coupled with the efforts and continuous progress in ESG in recent years, Xinyi Solar has become an economically, socially and environmentally responsible enterprise in terms of its operation, employees, value chain, community and society. We are fortunate to have a group of like-minded partners in this decade-long journey. We would like to express our sincere gratitude to our Board members, employees, business partners, friends from investment community and other key stakeholders for their support and collaboration. We believe that there is a long way to promote the global energy transition, build a livable earth, and achieve sustainable development of enterprises and value chain. We look forward to continuing to work together in the future.

Dr. LEE Yin Yee, S.B.S.

Chairman of the Board

LEE Shing Put, B.B.S.,

Executive director and CEO

30 April 2024

2023 Sustainability Highlights

ENVIRONMENT



Climate Resilience

Increased solar glass production capacity

- Production capacity increased by 6,000 tonnes/day, total daily melting capacity increased to 25,800 tonnes/day, maintained the world's largest market share
- The solar glass sold during the Reporting Year can meet the requirements of 154GW modules. The green electricity generated by these modules per year is equivalent to a reduction of CO₂ emissions of 108 million tonnes

Enhancement of the installed capacity of solar farms

- Newly installed solar farm capacity of 1,049MW, with total installed exceeding 5.9GW
- Annual total electricity generation of the solar farm projects held was 5.04 billion kWh, equivalent to a reduction of CO₂ emissions of 4.15 million tonnes

Reduction of the energy intensity and emission per unit of solar glass production^{Note 1}

- Intensity of energy consumption decreased by 8.6%, XSG 4 (energy consumption intensity target) progress achieved
- Intensity of water consumption decreased by 29.1%, XSG 7 (water consumption intensity target) completed
- Water recycling rate was 96.0%, XSG 6 achieved
- Packaging materials per unit of product decreased by 33.0%, paperless packaging utilisation rate was 64.3%, XSG 8 completed
- Intensity of greenhouse gas emissions decreased by 12.3%, XSG 1 (carbon intensity target) progress achieved
- CO₂ emissions reduction from the power generation of the solar farms held during the Reporting Year increased by 14.0%, XSG 2 (carbon emission reduction target) progress achieved
- Reduction in NO_x, SO₂ and particulates emissions increased by 92.6%, 83.2% and 95.7% respectively

Sustainable Business Model

Employee

- Provide decent, fair and safe working environment for 11,063 employees
- Zero work-related death cases
- Work-related injury rate: 0.71
- Each employee received eight hours of occupational skills and personal skills training, covering 99.6% of full-time employees
- Provided education fund of RMB544,000 for employees' children

Community

- Donated money and materials with a total value of HK\$18.3 million to help rural revitalisation, poverty alleviation, flood control, disaster relief and medical assistance
- Xinyi Hong Kong Volunteer Team participated in eight community volunteer activities during the year to raise funds for social welfare organisations and care for disadvantaged groups
- Wuhu Xinyi Charity Foundation (established with capital contribution from the Group's subsidiaries), disbursed RMB 990,000 to subsidise 181 students to complete their studies
- Nearly 67% solar farms are agricultural-PV and fishery-PV solar farms, which increased the income of local fishermen and farmers



SOCIAL

- Formally signed and joined the UN Global Compact on 23 October 2023 to support its Ten Principles related to human rights, labour, environment and anti-corruption. The Group has not found any material violation of relevant principles during the Reporting Year
- Committed to enhancing the positive impact and reducing the negative impact of the Group in areas related to SDG 7, SDG 8, SDG 9, SDG 12 and SDG 13. During the Reporting Year, all activities related to the Group's production operations and value chain management were consistent with the SDGs
- Strengthened communication with stakeholders, conducted annual materiality assessments and disclosed information on major issues
- Disclosed climate-related information in accordance with the recommendations of TCFD, and enrich core data disclosure with reference to the recommendations of SASB and GRI
- Established a "Three-in-One" standardised corporate management system and obtained certifications of Quality Management System (ISO9001:2015), Environmental Management System (ISO14001:2015) and Occupational Health and Safety Management System (ISO45001:2018)
- Launch of product carbon footprint certification (ISO14067:2018) during the Reporting Year and is expected to be completed in 2024



GOVERNANCE

Note 1: For further details in relation to environmental performance data of solar glass business, please refer to the section headed "2023 Key Performance Indicators"



About Xinyi Solar

Xinyi Solar listed on the Main Board of the Hong Kong Stock Exchange on 12 December 2013 (stock code: 00968.HK). Its production and operation headquarters are located in Wuhu of Anhui Province. The Group specialises in the research and development, manufacturing, sales and after-sales services of solar glass. Major products include ultra-clear patterned solar glass (raw and tempered), anti-reflective coating solar glass and back glass. The Group provides diversified, high-quality and low-carbon solar glass products for major PV module manufacturers in the world, and is the world's largest solar glass manufacturer, accounting for about 30% of the global solar glass market. As of 31 December 2023, the Group had five major solar glass production bases, which are located in Wuhu of Anhui Province, Zhangjiagang of Jiangsu Province, Beihai of Guangxi Province, Tianjin Municipality and Malacca in Malaysia, respectively, with a total daily melting capacity of 25,800 tonnes.

Solar power is the main force in the global energy transition and the realisation of climate goals. Solar glass is an indispensable component of PV modules. Therefore, the promotion of climate action will put forward higher requirements on solar glass, including production capacity, product quality and technological innovation. The Group is determined to adopt aggressive capacity expansion plan and continuously carry out research and development on new production technology and products to meet the evolving needs of customers and other key stakeholders. The Group plans to add 4 new solar glass production lines with a daily capacity of 1,000 tonnes each in Wuhu of Anhui Province in 2024. Meanwhile, in response to the changes in trade policies and the rising geopolitical risks in recent years, the Group actively sought to enhance its overseas supply capacity and plans to add two new solar glass production lines with a daily capacity of 1,200 tonnes each in Malaysia in the first half of 2024. It is expected that by the end of 2024, the total daily melting capacity of the Group's solar glass production lines will reach 32,200 tonnes/day, of which the overseas production capacity will increase by 126% year-on-year to 4,300 tonnes/day.

Adhering to the management philosophy of "Green and sustainable development", the Group has established and continuously improved an eco-friendly and sustainable business model, and unremittingly pursued a greener production method. In the operation of the solar glass business, the Group strictly enforces the "5G" principles of Green Procurement, Green Production, Green Product, Green Packaging and Green Partner in different aspects of production and business operation, so as to improve the overall environmental performance and effectively reduce the emissions caused by the consumption of energy, water and raw materials in the production process. In addition, through continuous investment in research and development, the Group has launched new products to provide the market with low-carbon solar glass products with higher performance that can meet the needs of different PV modules and application scenarios, so as to support the PV industry chain to continuously reduce costs, increase efficiency and enhance competitiveness with practical actions. At the same time, as a leading enterprise in the solar glass segment, the Group actively promotes the green development of the entire life cycle of the PV industry chain through its own efforts and participation in the value chain.



About Xinyi Solar

Based on the current viable technology and cost efficiency consideration, solar glass still needs to rely on fossil energy as the main fuel for production. Therefore, it is still impossible to completely avoid greenhouse gas emissions during the production and operation without achieving a breakthrough in furnace technology or more mature and cost-effective carbon capture technology. In order to further improve the positive impact on the environment, the Group has installed distributed PV power system on the rooftops of solar glass production plants since 2012, so as to reduce the amount of purchased electricity and the indirect greenhouse gas emissions. In 2014, the Group extended its business to the solar farm segment, and directly participated in the process of global energy transition and carbon neutrality by supplying green electricity to the society. As of 31 December 2023, the total installed capacity of the solar farms held by the Group amounted to 5,944 megawatt (“MW”)^{Note 1}, including 5,541 MW utility-scale ground-mounted solar farm projects and 403MW distributed projects, making the Group the largest utility-scale private solar farm owner and operator in China. During the Reporting Year, the Group’s solar farm projects generated a total of approximately 5,036 million kWh of electricity, resulting in 4,150,000 tonnes of CO₂ emission reduction, equivalent to 72.7% of the greenhouse gas emissions from the Group’s solar glass production in the same period.

Following the successful spin-off of Xinyi Energy Holdings Limited (“Xinyi Energy”) (stock code: 03868.HK) in 2019, the Group has continued to engage in the business of development and construction of solar farms, while the business of the operation and management of solar farms is vested in Xinyi Energy, which is 51.6% owned by the Group as at 31 December 2023. The Group has optimised the recycle of capital by adopting the “build-sell-hold via Xinyi Energy” model to achieve continuous growth in installed capacity. In addition, the acquisition of solar farm projects by Xinyi Energy from independent third parties will also help accelerate the increase in the Group’s overall installed capacity. As of 31 December 2023, the Group had 3,695MW solar farm projects held through Xinyi Energy.

The Group’s core value of “Strive for continuous self-improvement and treating the world well” has always been upheld by the Group. Therefore, in addition to pursuing higher economic and environmental benefits in its own business with the spirit of excellence, the Group is always mindful of its corporate responsibility to our employees, the value chain, the society and the earth, develops and optimises strategies in the overall interests of the community and key stakeholders, and to take effective action to bring benefits to a wider range of stakeholder groups in a wider context.

Notes: (1) Includes a 100MW project which is 50% owned by the Group

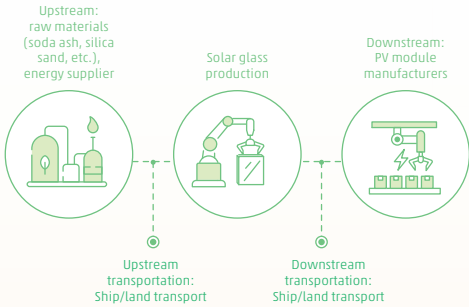
About Xinyi Solar

XYS Business distribution and business model



- Solar glass production base
- Ground-mounted solar farm project

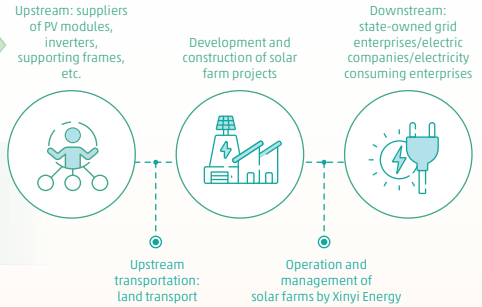
Solar glass business



Understanding module efficiency to facilitate the design of solar farms and the selection of modules

Establishing strategic relationships with module customers to identify end-user needs early and drive new product development

Solar farm business



XYS® Roles and Responsibilities



Global citizen

- responds with practical actions to the United Nations SDGs and the Ten Principles of the Global Compact. We are committed to increasing positive impacts and reducing negative impacts on the five SDGs which are most relevant and influential to the Group:



- Comply with, support and implement the ten basic principles of human rights, labour standards, environment and anti-corruption in all aspects of strategic planning, operational management, business development and business cooperation
- Adopt an aggressive capacity expansion strategy to support global climate action. During the Reporting Year, the Group's capital expenditure was HK\$9,895 million, 100% invested in climate change mitigation activities



Corporate citizen

- Adhering to the core value of "Treating the world well", the Group actively gives back to society by increasing its tax contribution, creating job opportunities and enthusiastically helping the poor and disadvantaged. Meanwhile, we make good use of our business expertise to help communities improve climate resilience, including improving the ecological environment through the construction, development and operation of solar farms, supplying green electricity, and increasing the income of farmers; building distributed PV power generation projects for urban rail systems; and making PV greenhouses and power stations open to public for visit to promote eco-tourism and popularise knowledge about PV power generation
- During the Reporting Year, the Group made income tax contributions of HK\$871 million and charity donations of HK\$18.3 million
- At the end of 2023, the Group held 5.5 GW of ground-mounted solar farm projects, 67% of which were fishery-PV/agricultural-PV complementary, which can increase income and profit for fishermen/farmers

Industry leader



- Always keep in mind the corporate mission and vision, we maintain the leading position in terms of economic efficiency, production technology, product development and environmental benefits advancements, actively promote the sustainable development of its own business, and guide and assist the value chain to achieve efficient, low-carbon and sustainable development through ethical business cooperation
- Establish a sustainable supply chain, pay attention to the climate resilience, environmental and social benefits of the supply chain, and strictly supervise the ESG-related performance of suppliers through effective mechanisms, especially to ensure compliance with the principles related to human rights protection, occupational safety and health, environment, integrity and honest operations
- Through energy saving and consumption reduction in product development and production processes, we focus on product life cycle management and carbon footprint reduction to meet customer demand for green and low-carbon products. During the Reporting Year, the energy consumption intensity, water consumption intensity and greenhouse gas emission intensity of solar glass products decreased by 8.6%, 29.1% and 12.3% respectively

Employer



- Establish and continuously improve employment-related supervision, management and feedback mechanisms to ensure that employment matters are legal and compliant. We follow the principles related to the labour standards of Global Compact, protect the legitimate rights and interests of employees, listen to and respond to employees' demands in a timely manner, and pay attention to occupational safety and health management to provide employees with an equal, diverse, inclusive and safe working environment
- Emphasise talent cultivation and human capital development, formulate appropriate talent reserves and step-wise talent training programmes, attract talents who share the same concept, provide platforms, opportunities and career development paths, and strive to become a trustworthy and caring employer for the growth of our employee
- During the Reporting Year, the Group implemented the "Hundred Talents Scheme" to reserve university talent resources for rapid business development. As at 31 December 2023, the Group had a total of 11,063 employees located in China, Malaysia and Canada

About Xinyi Solar

XYS Sustainable development concept

We support

UN Sustainable Development Goals
SUSTAINABLE DEVELOPMENT GOALS



Ten Principles of the UN Global Compact



Our belief

- Core value** Trust, integrity, passion and people
- Business concept** Green and sustainable development
- Corporate mission** Leading green new energy
- Corporate vision** Creating an outstanding glass company and establishing a world-class brand



Awarded as one of the "TOP 100 Global Most Sustainable Corporate" by Corporate Knights and ranked 1st among the global glass manufacturing enterprises for three consecutive years



Institutional Investor
"2022 Asian Corporate Management Team Rankings" "All-Star Status", "Most Honoured Company" and ranked 1st in "Best Environmental, Social and Corporate Governance", "Best Investor Relations Company", "Best Board of Directors", "Best CEO", "Best CFO" and "Best Investor Relations Specialist" awards in the industrial sector (including infrastructure)



Awarded the "Prime Status" Note 1 in the ISS ESG corporate rankings of 2023



Hong Kong Investor Relations Association "Best Investor Relations Company (3 consecutive years)"



Hang Seng Corporate Sustainability Index Series Member 2023-2024

Hang Seng Index ESG Rating: "A"



CDP Climate Change Questionnaire Rating: "B"
CDP Water Security Questionnaire Rating: "C"



As of 2023, Xinyi Solar received an MSCI ESG Rating of A



S&P 2023 Global Corporate Sustainability Assessment (CSA): 42 points

Index constituents Note 2

- MSCI Global Alternative Energy Index
- MSCI ACWI Sustainable Impact Index
- MSCI World Climate Change Index
- MSCI World Climate Paris Aligned Index
- MSCI ACWI IMI Innovation Select ESG Screened 200 Index
- MSCI ACWI IMI SDG Impact Select Index
- MSCI Emerging Markets Low Carbon Target Index
- MSCI AC Asia Pacific Top ESG Select Index
- MSCI China Select ESG Rating and Trend Leaders Index

Hang Seng ESG 50 Index

- Hang Seng Climate Change 1.5°C Target Index
- Hang Seng Corporate Sustainability Benchmark Index
- Hang Seng Shanghai-Shenzhen-Hong Kong Clean Energy Index
- HSI Low Carbon Index



FTSE4GOOD Emerging Index

- Hang Seng Index
- Hang Seng Composite Index
- Hang Seng Stock Connect
- Hong Kong Composite Index
- MSCI All Country World Index
- MSCI Emerging Markets Index
- MSCI China Index

Non-traded indices

- Carbon Clean 200™
- Global (Asia-Pacific) Business Sustainability Index
- Greater China Business Sustainability Index
- Hong Kong Business Sustainability Index

Notes: (1) For details of Prime Status, please refer to the ISS website: <https://www.issgovernance.com/esg/ratings/corporate-rating/>
(2) Index constituents are based on the latest available review as of the issuance date of this Report
(3) Disclaimer statement: The use by Xinyi Solar of any MSCI ESG RESEARCH LLC or its affiliates ("MSCI") data and the use of MSCI logos, trademarks, service marks or index names herein do not constitute a sponsorship, endorsement, recommendation, or promotion of Xinyi Solar by MSCI. MSCI services and data are the property of MSCI or its information providers, and are provided 'As-is' and without warranty. MSCI names and logos are trademarks or service marks of MSCI.

Stakeholder Engagement

STAKEHOLDERS IDENTIFICATION AND COMMUNICATION

The needs and interests of key stakeholders are an important starting point for the Group to formulate and optimise its sustainable development strategy. The opinions and concerns of key stakeholders are also an important source of motivation for Xinyi Solar to keep moving on the sustainable development path and continuously improving ESG disclosure. Therefore, the Group identifies key stakeholders based on the principle of relevance, influence, degree of dependency and proximity through the “Stakeholders Influence –Dependency Matrix”, and provide a variety of convenient, flexible and reassuring communication channels based on the characteristics and habits of different stakeholder groups to ensure that the Group maintains effective and close communication with key stakeholders. Regular and timely communication helps the Group to actively listen to and refer to their opinions on material ESG issues, ESG governance, actions and measures taken, which is the basis for timely response to their concerns and assessment of the effectiveness of our existing ESG strategies, identification of deficiencies and optimisation and replenishment.

The Group’s definition of key Stakeholders during the Reporting Year is consistent with that in the past and refers to the group of persons that are effectively related to the Group’s major businesses and/or whose actions are/potentially likely to have a significant impact on the achievement of the Company’s objectives and on whom the Group’s business operation and long-term development are/potentially likely to have a significant impact. As the core business nature of the Group did not change during the Reporting Year, the key Stakeholders were still classified into six groups, namely regulators, shareholders/potential investors, employees, suppliers/business partners, customers and communities, same as the previous years.




During the Reporting Year, the Group attached great importance to and strengthened communication with different stakeholder groups, and obtained strategic suggestions on many important ESG issues. For example, in terms of ESG governance, the Group communicated with shareholders, institutional investors and ESG analysts, and officially signed and joined the United Nations Global Compact, and disclosed the progress of the implementation of the Ten Principles. The Group communicated with the Hong Kong Stock Exchange, customers and internal teams on the carbon footprint assessment of solar glass products and scope 3 data collection, calculation and other disclosure preparation, and officially started relevant work during the Reporting Year, and set progress targets for 2024. For climate information disclosure, we communicated with the Hong Kong Stock Exchange, CDP, shareholders, other institutional investors and ESG analysts, and thus further improved climate information disclosure, provided more quantitative data to help stakeholders to evaluate the potential financial impact of climate risks more effectively.



Stakeholder Engagement




The Group has established a long-term communication mechanism, which is set out in the table below, including key stakeholder groups, their key issue of concern, communication channels, and key functions or departments that communicate with them during the Reporting Year.



Key Stakeholders	Functions/departments primarily involved	Major Communication Channels	Issues of concern
 Regulators	External communication personnel, development division	<ul style="list-style-type: none"> • Phone call/meeting • Site visit • Online real-time monitoring system • Compliance report 	<ul style="list-style-type: none"> • Corporate governance and business ethics • Environmental governance and protection • Community participation (charitable activities, donations, support to community building) • Production management and product responsibility • Talent team building and management • Business model (sustainable, flexible) and innovation (including climate risk and opportunity response)
 Shareholders/ Potential Investors	Investor relations department	<ul style="list-style-type: none"> • Annual general meeting • Circular and announcement • Annual/interim financial report • Annual ESG report • Investor conference and roadshow • On-site visit and inspection • Press release/company website/social media platform • Telephone/e-mail inquiry • Instant chat/online communication APPs • Questionnaire and feedback 	<ul style="list-style-type: none"> • Corporate governance and business ethics • Business model (sustainable, flexible) and innovation (including climate risk and opportunity response) • Value chain development (supplier management and customer management) • Environmental governance and protection • Production management and product responsibility
 Employees	Trade union, administrative department	<ul style="list-style-type: none"> • Regular department/group meeting • Performance appraisal • Training and employee activity • Employees' satisfaction survey • Interview/employee opinion box • CEO's mailbox • Questionnaire and feedback • Internal publication 	<ul style="list-style-type: none"> • Environmental governance and protection • Production management and product responsibility • Talent team building and management • Corporate governance and business ethics • Value chain development (supplier management and customer management)

Stakeholder Engagement



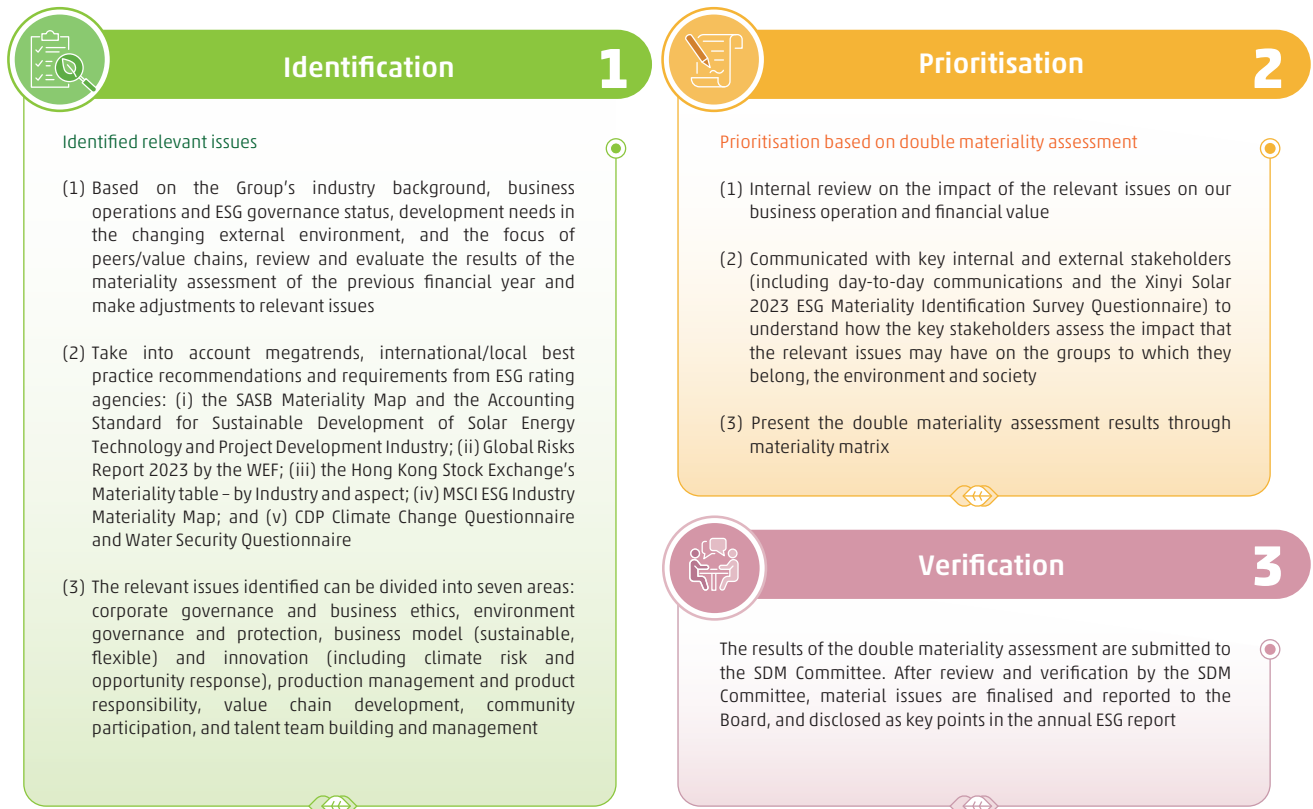
Key Stakeholders	Functions/departments primarily involved	Major Communication Channels	Issues of concern
 <p>Suppliers/ Business Partners</p>	Procurement team	<ul style="list-style-type: none"> • Product procurement/project tendering • Cooperation plan/site visit • Qualification certification and regular review on suppliers • Phone call/e-mail/meeting • Social media platform • Questionnaire and feedback 	<ul style="list-style-type: none"> • Value chain development (supplier management) • Corporate governance and business ethics • Business model (sustainable, flexible) and innovation (including climate risk and opportunity response) • Production management and product responsibility
 <p>Customers</p>	Sales department, quality control department	<ul style="list-style-type: none"> • Site visits • Telephone/interview • Questionnaires and feedback • Publications/other promotional leaflets • News reports/official website • Social media platforms 	<ul style="list-style-type: none"> • Value chain development (Customer Management) • Production management and product responsibility • corporate governance and business ethics • business model (sustainable, flexible) and innovation (including climate risk and opportunity Response) • Environmental governance and protection
 <p>Communities</p>	Engineering department, external communication personnel, trade union	<ul style="list-style-type: none"> • Environmental assessment • Coordination meeting • Charitable activities • Press release/official website • Corporate public account • Phone call/visit 	<ul style="list-style-type: none"> • Community participation (charitable activities, donations, support to community building) • Environmental governance and protection • Business model (Sustainable, flexible) and innovation (including climate risk and opportunity response) • Production management and product responsibility

Stakeholder Engagement

DOUBLE MATERIALITY ASSESSMENT

In order to ensure that the issues covered in the Group’s annual ESG report are in line with the industry/region/internationally recognised best reporting practices, and to keep abreast of the new challenges and opportunities brought by changes in the external environment (economic, social, policy and industry) to the Group’s ESG governance issues, and to fully respond to the concerns and demands of key internal and external stakeholders, the Group strictly follows an internationally recommended standardised process of “identification, prioritisation and verification” for materiality assessment.

During the Reporting Year, the Group adopted the principle of double materiality to identify, assess and verify issues with material impact on the Group’s operation and long-term development, the interests of key stakeholders and the sustainable development of the society in a more comprehensive manner. With reference to the recommendations of the European Commission and the GRI on the double materiality assessment, when measuring the importance of relevant issues, the financial significance and impact significance of relevant issues should be considered at the same time, which is the impact on the Company’s operation, development and financial value, as well as the actual/potential impact on people, environment and society in different cycles.



The double materiality matrix below presents the relative importance of 45 relevant issues in the seven areas of most concern to internal and external stakeholders based on the impact significance (Y-axis) and financial significance (X-axis) of the issues. In particular, the assessment of impact significance takes into account the likelihood of occurrence, the scope of impact and the significance of the impact, with an emphasis on the views of external stakeholders, while the assessment of financial significance takes into account the vulnerability, resilience and continuity of the impact, with a greater emphasis on internal assessment and the views of internal stakeholders.

Stakeholder Engagement

XYS® Double materiality matrix



Corporate governance and business ethics

1. Law-abiding business
2. Anti-corruption and integrity management
3. Anti-unfair competition
4. Business ethics
5. Governance structure
6. Supervision of the Board over ESG matters
7. Board diversity
8. International labour and participation in human rights initiatives
9. Information disclosure and transparency

Environmental governance and protection

10. Energy management
11. Ecological impact and protection of biodiversity
12. Hazardous and non-hazardous waste management
13. Environmental compliance
14. Greenhouse gas emission and management
15. Air pollutants emission and treatment
16. Packaging materials consumption and environmentally friendly packaging
17. Water resources management

Business model (sustainable, flexible) and innovation

18. Physical impact of climate change on business
19. Sustainable development goals
20. Responses to climate risks
21. Business resilience
22. Board's supervision and climate information disclosure
23. Water resources management and responses to risks
24. Research and development investment (low carbon technology)
25. Patent and intellectual property protection

Production management and product responsibility

26. Safety production management
27. Product quality and safety
28. Product life cycle management
29. Product carbon footprint

Value chain development

30. Establishment of sustainable supply chain
31. Procurement efficiency
32. Information security
33. Supply chain management
34. Supply chain risk identification and monitoring
35. Sales and after-sales service management
36. Customer management and complaint handling system

Community participation

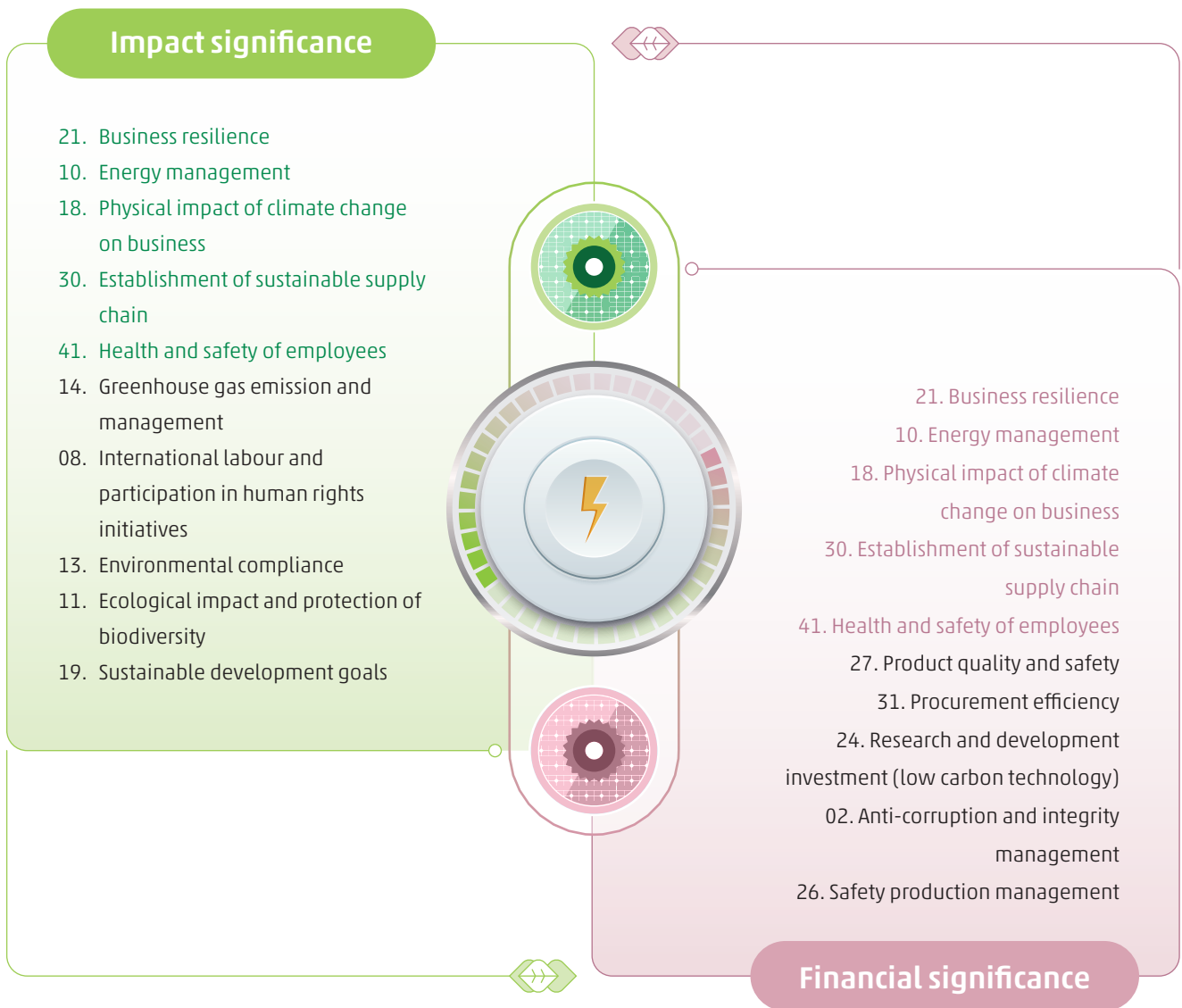
37. Charity work
38. Economic benefits (taxation, employment)
39. Community relations building and maintenance
40. Education and publicity

Talent team building and management

41. Health and safety of employees
42. Employment compliance
43. Training and career development
44. Employee benefits and talent incentives
45. Employee engagement, diversity and inclusion

Stakeholder Engagement

According to the results of the double materiality assessment in the Reporting Year and taking into account the responding to key stakeholders and the requirements of regulators, the SDM Committee finalised 42 issues for disclosure, including 15 highly material issues (such as business resilience, energy management, physical impact of climate change on business, establishment of sustainable supply chain, health and safety of employees), 15 moderately material issues, and 12 general material issues. During the Reporting Year, product carbon footprint was a new issue, and the key stakeholders' attention to business resilience, health and safety of employees, international labour and participation in human rights initiative, research and development investment (low carbon technology), anti-corruption and integrity management has increased significantly. The following diagram shows 15 highly material issues, which are among the top ten issues in terms of financial significance/impact significance, of which five issues are among the top in terms of financial significance and impact significance:



Stakeholder Engagement

The material issues validated by the SDM Committee have been presented to the Board and are addressed in the corresponding sections of this Report, and are set out in the table below for stakeholders' easy retrieval:

Illustration:

Highly material issues

Moderate material issues

General material issues



Material Issues ^{Note 1}	Section reference of this Report
G Governance for Sustainability	
<ul style="list-style-type: none"> Law-abiding business 	Compliance with laws and regulations
<ul style="list-style-type: none"> International labour and participation in human rights initiatives 	Ten Principles of the United Nations Global Compact
<ul style="list-style-type: none"> Sustainable development goals 	United Nations Sustainable Development Goals (SDGs)
<ul style="list-style-type: none"> Governance structure Board's supervision on ESG issues Information disclosure and transparency 	Sustainable Governance Structure
<ul style="list-style-type: none"> Business ethics 	Business Ethics
<ul style="list-style-type: none"> Anti-corruption and integrity management 	
<ul style="list-style-type: none"> Anti-unfair competition 	
R Resilience to Climate Change	
<ul style="list-style-type: none"> Board's supervision and climate information disclosure 	Board's Supervision and Climate Information Disclosure
<ul style="list-style-type: none"> Physical impact of climate change on business 	Climate Risks and Response Actions
<ul style="list-style-type: none"> Responses to climate risks 	
<ul style="list-style-type: none"> Business resilience Research and development investment (low carbon technology) 	Climate Change Resilience and Opportunities

Stakeholder Engagement



Material Issues ^{Note 1}	Section reference of this Report
E Ecological-friendly and Sustainable Business Model	
<ul style="list-style-type: none"> Environmental compliance 	Environmental Compliance
<ul style="list-style-type: none"> Energy management 	Energy Management
<ul style="list-style-type: none"> Water resources management 	Water Resources Management
<ul style="list-style-type: none"> Water resources management and responses to risks 	
<ul style="list-style-type: none"> Greenhouse gas emission and management 	Emission and Treatment of Greenhouse Gas and Other Pollutants
<ul style="list-style-type: none"> Air pollutants emission and treatment 	
<ul style="list-style-type: none"> Hazardous and non-hazardous waste management 	
<ul style="list-style-type: none"> Packaging materials consumption and environmentally friendly packaging 	Green Actions in Non-production Section
<ul style="list-style-type: none"> Product life cycle management 	Product Life Cycle Management
<ul style="list-style-type: none"> Product carbon footprint 	
<ul style="list-style-type: none"> Ecological impact and protection of biodiversity 	Green Actions in Non-production Section Achievement of a Mutually Beneficial Relationship between Solar Farms and The Ecology
E Engaging with the Value Chain and Community	
<ul style="list-style-type: none"> Supply chain management Supply chain risk identification and monitoring 	Sustainable Supply Chain Management
<ul style="list-style-type: none"> Establishment of sustainable supply chain 	Suppliers' Code of Conduct and Sustainability Standards of Product/Service
<ul style="list-style-type: none"> Procurement efficiency 	Global Layout and Enhancing Resilience of Supply Chain
<ul style="list-style-type: none"> Product quality and safety 	Product Quality Assurance and Sales Management Sustainable Products and R&D Innovation
<ul style="list-style-type: none"> Customer management and complaint handling system Sales and after-sales service management 	Product Quality Assurance and Sales Management
<ul style="list-style-type: none"> Information security 	Information Security Management
<ul style="list-style-type: none"> Economic benefits (taxation, employment) Charity work 	Social Welfare and Community Engagement

Stakeholder Engagement



Material Issues ^{Note 1}	Section reference of this Report
N Nurturing Talents for Long-term Development	
<ul style="list-style-type: none"> • Employment compliance 	Employment Compliance
<ul style="list-style-type: none"> • Employee benefits and talent incentives 	Compensation and Benefits Employee Care
<ul style="list-style-type: none"> • Patent and intellectual property protection 	Intellectual property right protection
<ul style="list-style-type: none"> • Safety production management 	Production Safety Management
<ul style="list-style-type: none"> • Health and safety of employees 	Occupational Health Management
<ul style="list-style-type: none"> • Employee Engagement, diversity and inclusion 	Diversity, Inclusion and Equal Opportunities
<ul style="list-style-type: none"> • Training and career development 	Training and Promotion Mechanism

Notes:

(1) The material issues in the table are listed in sequence of their disclosure sections in this Report



Governance for Sustainability

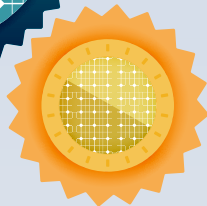
Issues of focus

Sustainable Development Approach (UN Global Compact, SDG)

Sustainable Development Governance Structure

Business Ethics

Xinyi Solar
GREEN strategy



The sustainable development that the Group firmly pursues is development that takes into account social, environmental and economic benefits. It is based on good corporate governance, effective risk management and ethical business operations. Through its unremitting persistence and practice, the Group explores sustainable development paths applicable to core businesses, implements the sustainable development policy in its own business scope, and actively responds to the United Nations' Sustainable Development Goals and the call of the United Nations Global Compact. We aim to promote and support sustainable development of the value chain, society and the world through ethical business practices.



Work and achievement in 2023



Joined the United Nations Global Compact in October 2023



Completed XSG 7 (water consumption intensity target) and XSG 8 (environmentally friendly packaging target) and propose new targets for water consumption intensity and environmentally friendly packaging materials



Performance-based remuneration for senior management was linked to the ESG key performance indicators



Awarded the "Global 100 Most Sustainable Corporations" three times and ranked first among global glass manufacturing companies



Through effective risk assessment and management mechanisms, risks that have a significant impact on the Group's operations and business development had been successfully identified, effectively controlled and reduced by conducting regular internal audits. During the Reporting Year, the Group's risk management and internal control systems were reviewed by the Audit Committee and no material deficiencies were found



During the Reporting Year, the Group's business operations and all business conducts were legal, compliant and ethical, and no material incidents occurred that violated laws, regulations, integrity and honest trading principles.



UN Global Compact related principles

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights

Principle 2: Businesses should make sure that they are not complicit in human rights abuses

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery

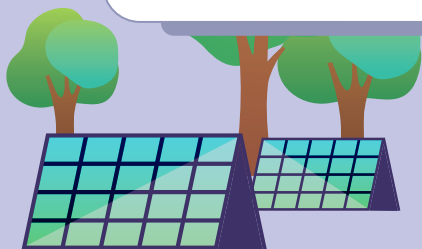


Future action plans and targets

To continuously improve the internal supervision mechanism to ensure the effective implementation of the Group's human rights policy, increase training and publicity to continuously enhance the awareness of employees and other stakeholder groups on the Group's human rights policy, so as to eliminate violations of human rights in its own business scope and business cooperation

To regularly review risk assessment and management mechanisms to ensure their effectiveness and more comprehensive coverage of environmental, social and governance-related risks

To implement good corporate governance practices in daily operations, and use strict and effective supervision mechanisms to restrict and ultimately achieve the goal of eliminating violations of integrity, fairness and honesty in our own operations and value chain cooperation



Governance for Sustainability

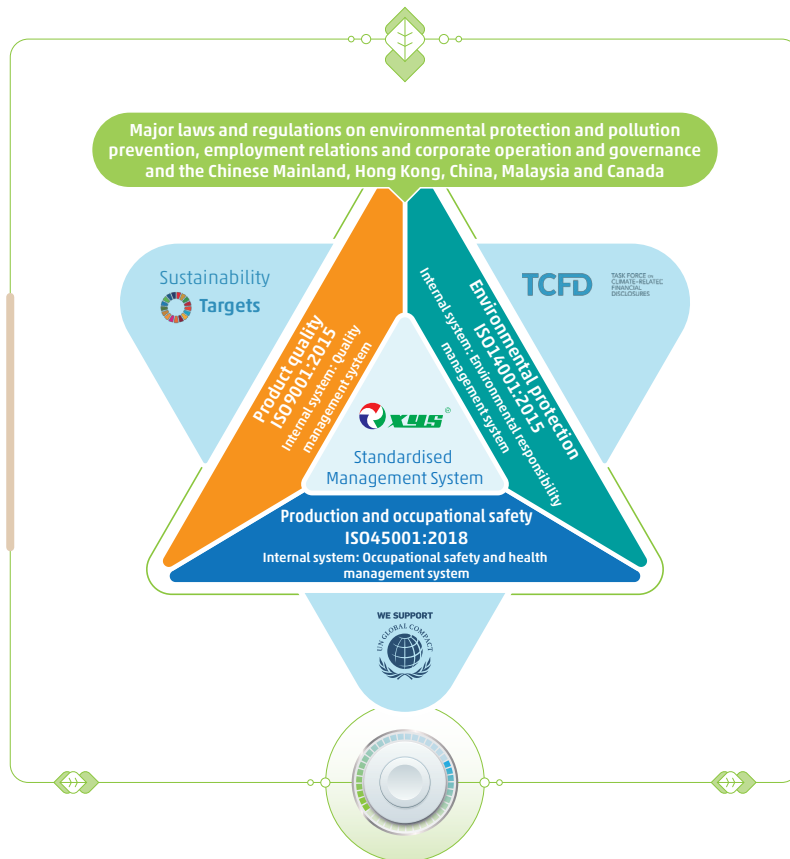
SUSTAINABLE DEVELOPMENT APPROACH

Compliance with laws and regulations

Law-abiding is the foundation of business. The Group strictly abides by the laws and regulations of the countries and regions where it operates, and has established a "Three-in-One" corporate standardised management system in accordance with Quality Management System (ISO9001:2015), Environmental Management System (ISO14001:2015) and Occupational Health and Safety Management System (ISO45001:2018) and obtained relevant certifications to ensure that the Group's management model and monitoring mechanism for product quality and safety, environmental protection and pollution prevention as well as occupational safety and health are in line with international standards.

Xinyi Solar Group's "Integrated Management Manual" has set standardised procedures and standards for production management, product safety and quality supervision, environmental protection and pollution prevention, resource management and efficient utilisation, production safety and occupational health, and has established an effective supervision and feedback mechanism. During the Reporting Year, the Group carried out relevant work in accordance with established standards and internal procedures and was supervised by the Board and/or other dedicated committees to ensure that the Group's business operations were legal and compliant. Appropriate actions were taken to fully protect the rights and interests of key stakeholders such as employees, customers, suppliers and communities.

The Group attaches great importance to fulfilling its corporate social responsibility, and responds with practical actions to the United Nations Sustainable Development Goals and the Ten Principles of the Global Compact. The Group deeply integrates the concept of sustainable development into all aspects of long-term development planning, business operations and business cooperation. At the same time, the Group actively draws on local/international best practices to continuously improve its corporate actions, so that the Group is well-prepared for a sustainable future by identifying, effectively mitigating/avoiding ESG-related risks at an early stage and seising development opportunities.



Governance for Sustainability

The Group has been in compliance with all relevant laws and regulations in China, Malaysia and Canada that have a significant impact on its core business operations and long-term development in material ESG-related areas, covering environmental protection and pollution prevention, employment management (occupational health and safety), corporate operation and governance (business ethics, product quality and safety, information security), and regards this as the basis for corporate operation. The major applicable laws and regulations are set out below. There were no material events relating to the Group's violation of these laws and administrative regulations during the Reporting Year.



Environmental protection and pollution prevention	
Mainland China	Malaysia
<ul style="list-style-type: none"> • Environmental Protection Law of the People's Republic of China • Law of the People's Republic of China on Environmental Impact Assessment • Regulations on Environmental Protection Management of Construction Project • Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution • Law of the People's Republic of China on the Prevention and Control of Water Pollution • Law of the People's Republic of China on the Prevention and Control of Pollution from Environmental Noise • Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste • National Catalogue of Hazardous Wastes (2021 Edition) • Technical Specifications for the Setting of Hazardous Waste Identification Signs • Standard for Pollution Control on Hazardous Waste Storage • Technical Guidelines on Formulating Emergency Emission Reduction Measures of Key Industries for Heavily Polluted Weather Conditions • Comprehensive Treatment Plan for Air Pollution of Industrial Furnace • Emission Standard of Air Pollutants for Glass Industry • Labeling Rules for Automated Pollutants Emission Monitoring Equipment • Catalogue for Guiding Industry Restructuring 	<ul style="list-style-type: none"> • Environmental Quality Act 1974 • Environmental Quality Act 1987 • Environmental Impact Assessment (EIA): Procedure and Requirements in Malaysia (1990) • Environmental Impact Assessment (EIA): Procedure and Requirements in Malaysia (1994)

Governance for Sustainability



Employment management (occupational health and safety)	Corporate operation and governance
<p>Mainland China</p> <ul style="list-style-type: none"> • Labour Law of the People’s Republic of China • Labour Contract Law of the People’s Republic of China • Law of the People’s Republic of China on Work Safety • Emergency Response Law of the People’s Republic of China • Law of the People’s Republic of China on the Prevention and Treatment of Occupational Diseases • Provisions on the Prohibition of Using Child Labour • Special Rules on the Labour Protection of Female Employees • Trade Union Law of the People’s Republic of China 	<p>Mainland China</p> <ul style="list-style-type: none"> • Product Quality Law of the People’s Republic of China • Criminal Law of the People’s Republic of China (on relevant clauses relating to corruption, embezzlement, misappropriation of funds, bribery, etc.) • Data Security Law of the People’s Republic of China • Personal Information Protection Law of the People’s Republic of China • Patent Law of the People’s Republic of China
<p>Hong Kong, China</p> <ul style="list-style-type: none"> • The Employment Ordinance 	<p>Hong Kong, China</p> <ul style="list-style-type: none"> • Prevention of Bribery Ordinance
<p>Malaysia</p> <ul style="list-style-type: none"> • Employment Act 1955 • Occupational Safety and Health Act 1994 • Factory and Machinery Act 1967 	<p>Malaysia</p> <ul style="list-style-type: none"> • Anti-Corruption Commission Act 2009
<p>Canada</p> <ul style="list-style-type: none"> • Canada Labour Code 	

Ten Principles of the United Nations Global Compact

The United Nations Global Compact, based on the Universal Declaration of Human Rights, the International Labour Organisation’s Declaration on Fundamental Principles and Rights at Work, the Rio Declaration and the United Nations Convention Against Corruption, sets out the basic principles that enterprises should abide by in the areas of human rights, labour standards, environment and anti-corruption, and mobilises sustainable development enterprises and stakeholders around the world to jointly create a better future that live up to everyone’s expectations. In October 2023, the Group officially became a signatory of the United Nations Global Compact, promising to support the Ten Principles of the United Nations Global Compact. The Group incorporates relevant principles into the formulation process of corporate strategies, policies and procedures as well as daily operations, and establishes values and corporate culture of integrity, equality and fairness, respect for human rights and eco-friendliness. We share our philosophy with key stakeholder groups through principle-based value chain cooperation and community participation and call on them to practise the spirit of the Global Compact.



Human rights and Labour rights and labour interests

Commitment: The Group respects and upholds various human rights and labour standards listed in the Universal Declaration of Human Rights, the International Labour Organisation's Declaration on Fundamental Principles and Rights at Work and applicable laws in places where we operate

Philosophy: Human rights are the inherent rights of all people, and therefore are the bottom line that cannot be violated in the Group's business operations and all business cooperation. They are rights that the Group is willing and committed to take all feasible measures to protect, respect and support, including but not limited to respecting the dignity and value of all people, defending the right to life, ensuring health and safety, safeguarding equality and justice and freedom

Governance: As the highest governance body of the Group, the Board fulfills its responsibilities to supervise to ensure that the Group operates and develops in a legal and compliant manner. Human rights are the most fundamental goal of ensuring the rule of law. Therefore, under the effective supervision of the Board, the concept of human rights has been conveyed from top to bottom. The Group has also taken effective measures to reduce the possibility of human rights violations in its own business scope and value chain

Actions

- (1) We formulate and implement the "Human Rights Policy" and clearly define the principles for protecting human rights in internal business activities and value chain cooperation, including but not limited to:
 - Human rights protection in recruitment process and employment, anti-discrimination and harassment policies, prohibition of child labour and forced labor, respect for personal privacy, freedom of association and belief, and a complaint handling mechanism has been established. When employees face business ethics issues such as human rights violations, unequal treatment, discrimination and harassment, they can report to the labour union, administrative office, leaders in charge and the Group's Chief Executive Officer through employee opinion box, direct feedback and the CEO's mailbox
 - Standardise and strengthen production safety and occupational health management through the Production Safety Management Policy, Occupational Health Management Policy and Labour Protection Equipment Management Policy to provide safety and health protection for employees. In addition, we provide employees with medical insurance, including physical examination and critical illness insurance
 - Set up systematic and rigorous supplier review and screening procedures and a periodic assessment mechanism, including providing employees with voluntary employment proof, on-site assessments, qualification and system document reviews, etc., and regulate the behaviour of suppliers through the "Supplier Code of Conduct" to ensure that suppliers adhere to the same principles as the Group in terms of human rights protection, protection of labour rights and occupational safety and health
 - In other business cooperation, we also emphasise partners' compliance with laws, regulations and ethics, and prevent business cooperation with partners that violate human rights protection and infringe human rights
- (2) We assess the existing/potential human rights risks in our own business scope and value chain cooperation through internal audit and determine the areas that require focus based on the possibility, potential severity and the Company's influence on relevant risks. During the Reporting Year, no existing/potential material human rights risks were found in the Group's operations and value chain cooperation;
- (3) As a PV company, we have the ability and strive to protect more people's rights to life and health through our business operations and development. We provide highly efficient and low-carbon solar glass to PV module manufacturers and provide green electricity to society through solar farm projects. This has an important positive impact on promoting global energy transition and improving cities' ability to cope with climate risks, and can therefore reduce the damage caused by extreme climate events to people's lives and health. In addition, we have also contributed to anti-epidemic disaster relief, medical security, social security, and poverty alleviation by establishing charitable foundations and participating in charity activities to ensure that more groups can equally enjoy their basic human rights

Plans

- (1) Improve human rights communication and complaint handling mechanisms
- (2) Improve the human rights due diligence process
- (3) Improve employees' and other key stakeholders' understanding of human rights issues and the Group's human rights concepts and policies through increased training

Governance for Sustainability



Environmental protection and environmental risk prevention

Commitment: The Group has established a long-term goal of sustainable development. Therefore, we are determined to fulfil our environmental protection responsibility and strive to create maximum environmental benefits for the society through the development of our main business

Philosophy: Firmly perform the Company's legal obligations related to environmental management and pollution prevention and pursue industry/international best practices, adhere to an eco-friendly and sustainable development model during the process of solar glass production and solar farm development and construction, and take necessary measures to reduce resource consumption and mitigate negative impact on the ecological environment and biodiversity. At the same time, we actively assume the responsibilities of a member of PV industry, contribute to global energy transition and carbon neutrality by increasing solar glass production capacity and power generation of solar farms, and contribute to the realisation of global climate goals and the broader SDGs of United Nations. We proactively take effective measures to actively face climate change and other environmental risks, and establish and continuously improve business resilience

Governance: As the supreme governing body of the Group, the Board fulfills its responsibilities to overseeing matters relating to environmental management, pollution prevention and environmental risk management. The SDM Committee, led by the Chief Executive Officer, is authorised by the Board and is the supreme co-ordinating body for environmental-related matters. It is responsible for formulating strategies, annual and long-term action plans to ensure that environmental and climate factors are fully considered in the Group's business operations and business cooperation. We implement environmental concepts to promote the Group to achieve its established sustainable development goals and effectively respond to environmental and climate risks. The annual risk management report includes environmental and climate risk management and effectiveness evaluation. The relevant risks are evaluated, reviewed and audited by the internal audit team and is submitted to the Audit Committee for discussion and review

Actions

- (1) Rooted in the PV industry, 100% of the Group's capital expenditure was invested in the PV industry to achieve the global goal of carbon neutrality. In 2023, 99.5% of the Group's revenue was from the PV industry, and the proportion of PV revenue will continue to increase in the future. During the Reporting Year, the solar glass sold by the Group could supply 154GW of PV modules worldwide, and the resulting annual power generation could have reduced carbon dioxide emission by approximately 108 million tonnes. The electricity generated by the solar farm projects held by the Group in 2023 can meet the green electricity demand of 2,100,000 households, representing a reduction of 4,150,000 tonnes of carbon dioxide emissions
- (2) We reduce carbon emissions throughout the life cycle of solar glass products through "green procurement", "green production" and "green packaging". At the same time, through continuous R & D investment on highly efficient and low-carbon products and low-carbon/decarbonisation furnace technology, we provide more highly efficient and lower carbon new solar glass products for global PV module companies
- (3) We adhere to the concept of "not sacrificing the ecological environment and not destroying the ecological balance" for development and construction of solar farm projects, and operate and manage with the concept of "coexisting with society and environment". As of the end of 2023, 100% of the solar farm projects held by the Group are environmentally friendly, among which 67% are fishery-PV and agriculture-PV complementary projects that can create higher environmental and social benefits
- (4) Through climate scenario analysis, tracking and assessment of physical and transition risk parameters, we identify climate risks and opportunities, formulate and continuously improve action plans to reduce and avoid the impact of climate risks on finance and business, and seize climate opportunities by continuously increasing solar glass production capacity and grid-connected scale of solar farms

Plans

- (1) Complete the carbon footprint assessment of solar glass products in 2024 to enable the Group to clarify its future carbon reduction direction and set more scientific carbon targets
- (2) Continuously improve the assessment and analysis of climate and other environmental risks so that the Group can formulate more effective action plans
- (3) Formulate annual action plans and goals, and implement energy saving and consumption reduction measures to achieve the Group's established five-year sustainable development goals



Governance for Sustainability



Anti-corruption

Commitment: The Group strictly complies with laws and regulations, adheres to the principle of integrity in all business activities and resolutely oppose any form of corruption

Philosophy: The Group attaches great importance to business ethics, firmly believes that integrity is no small matter, and resolutely adopts a "zero tolerance" attitude towards bribery and corruption, and practises the attitude of "rejecting commercial bribery, not accepting bribes and not bribing" in all aspects of daily operations. At the same time, suppliers and other business partners are required to strictly adhere to the same principles of integrity and law-abiding, and jointly create a transparent, fair and equitable business environment

Governance: The Internal Control Center is the dedicated department for integrity management of the Group. Directly led by the Chief Executive Officer, it independently carries out integrity publicity and training, daily supervision of employees' integrity behaviour as well as acceptance, investigation and handling of integrity complaints in accordance with the Xinyi Group Integrity Management System. All integrity-related work is reported directly to the Chief Executive Officer by the Internal Control Center

Actions

- (1) Establish and continuously improve the integrity management system, formulate and refine employee integrity regulations to clarify the codes and behavioural norms that employees should abide by in daily work and business activities, and adopt effective supervision mechanisms (internal audits, irregular interviews, working group stations, integrity inspections, etc.) and a strict reward and punishment system (cash rewards, integrity performance, etc.) to ensure that the Group's own operations and employees strictly adhere to the bottom line of integrity
- (2) Issue the "Notification Letter on Integrity Management, Mutual Benefit and Win-Win" to suppliers and other business partners, specifying the 14 integrity violation acts that the Group will firmly prohibit in business cooperation, and requiring all suppliers to sign integrity agreements and comply with the Supplier Code of Conduct, undertaking to strictly abide by laws and regulations in business transactions and prohibiting any form of bribery
- (3) Provide multiple channels such as letters, emails and telephone calls, and call on and encourage employees, business partners and people from all walks of life to feedback and report any dishonest behaviour related to the Group
- (4) Provide integrity training to employees. All new employees are required to receive integrity training to ensure that they understand the Group's integrity system and culture. Every year, the Internal Control Center organises integrity training for employees in key departments and positions to continuously deepen their understanding
- (5) During the Reporting Year, there were no legal proceedings concluded against the Group or its employees in relation to corrupt practices and there were no confirmed incidents of termination or non-renewal of contracts with business partners due to corrupt practices

Plans

- (1) Continue to improve the supervision, feedback and reporting, reward and punishment mechanisms, better regulate the behaviour of employees and suppliers, ensure that anti-corruption principles are implemented in the Group's business scope and all business cooperation, and eliminate behaviour of violating integrity principles in its own operations and value chain cooperation
- (2) Improve the coverage of integrity training internally and along the value chain, aiming to make more stakeholder groups understand the anti-corruption principles of the United Nations Global Compact, and call on more groups to take joint actions to support and practise relevant principles

For more information about the Group's processes and policies that are committed to promoting relevant principles in the areas of labour standards, environment and anti-corruption, as well as its efforts to reduce/prevent the negative impact in related areas of the Group's business operations and value chain cooperation, please refer to the sections/issues "**Nurturing Talents for Long-term Development**", "**Ecological-friendly and Sustainable Business Model**", "**Resilience to Climate Change**" and "**Business Ethics**".



Governance for Sustainability

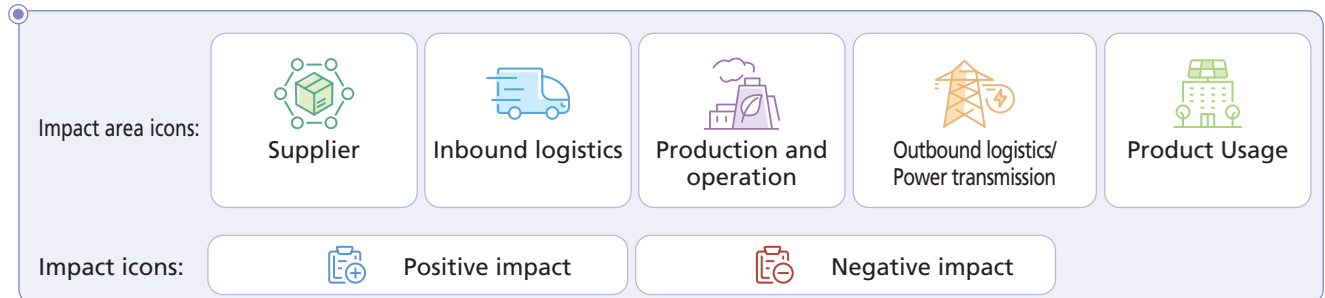
UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS (SDGs)

As the world's leading producer of solar glass, we work with the PV industry chain to reduce costs and increase efficiency, making PV power generation more cost effective and enabling large-scale application in a wider region around the world, thus ensuring that more people have access to affordable, reliable, sustainable and modern energy. In addition, we actively participate in actions to promote global energy transition and carbon neutrality, build climate resilience and respond to climate change by investing in utility-scale solar farm projects. We hold the largest number of utility-scale solar farm projects among private enterprises in China. The PV power generation process does not involve the consumption of energy and water, and even taking into account the power consumption in the operation and maintenance process, the carbon emission intensity is less than 1% of that of traditional coal-fired power generation. Therefore, by providing society with green electricity, non-renewable resources (such as fossil energy), water resources, atmospheric environment, water environment, ecological environment and ecological diversity are protected to a great extent. In addition to investing more in renewable energy and expanding the scale of its core business, the Group is also committed to responding to the call of the United Nations Sustainable Development Goals in its operation and production process, taking all feasible measures to perform responsible consumption and production, reducing the carbon footprint of the full life cycle of solar glass products and other negative impacts on the environment, while providing decent work for employees and promoting local economic growth.

We conduct SDGs impact analysis on the value chain every year to evaluate the impact of our operations and development on the realisation of different Sustainable Development Goals, and take active actions to maximise the positive impact and minimise the negative impact based on the relevant evaluation results. We not only strictly implement sustainable development principles in our own operations, but also share our sustainable development philosophy with key stakeholder groups through principle-based value chain cooperation and community participation, so as to call on them to take collective actions to support the broader United Nations Sustainable Development Goals.

According to the SDGs impact analysis of the value chain during the Reporting Year and based on MSCI's recommendations, the Group has selected five SDGs which are closely related to its business operations and value chain and on which the Group can make an impact. Ranked according to the scope of its impact on the Group's value chain and the Group's influence on relevant SDGs, the order is "Combat Climate Change" (SDG 13), "Responsible Consumption and Production" (SDG 12), "Affordable and Clean Energy" (SDG 7), "Decent Work and Economic Growth" (SDG 8) and "Industry, Innovation and Infrastructure" (SDG 9).

SDGs Influence Impact Analysis and Actions of Xinyi Solar Value Chain



Take urgent action to combat climate change and its impacts

Impact Areas



Potential impact:

- Increases investment in solar farm projects to provide green electricity to the society, replace coal power and mitigate climate change
- Provides efficient, low-carbon and diversified solar glass products to help reduce costs and increase efficiency of PV power generation, promote the global application of PV power generation, and become the main source of new installations, thereby reducing greenhouse gas emissions of the power system

The production of solar glass requires the consumption of raw materials such as soda ash and silica sand, fossil energy (natural gas) and electricity. Some raw materials and fossil energy will generate greenhouse gas emissions during the production and consumption stage

Solar glass business involves the transportation of raw materials to factories (inbound logistics) and finished products to PV module manufacturers (outbound logistics), which generates greenhouse gas emissions mainly through sea and land transportation

Actions taken/2023 Achievements:

- Reduce the greenhouse gas emission intensity of transportation by increasing the use of waterways for transporting raw materials and reducing the use of land transportation
- Actively adopt energy saving and consumption reduction measures to reduce greenhouse gas emissions in the production process. During the Reporting Year, greenhouse gas emissions per square metre of finished solar glass products decreased by 12.3% year-on-year
- During the Reporting Year, the solar glass sold could supply 154GW modules, and the green electricity generated by these modules each year can bring about 108,000,000 tonnes of carbon dioxide emission reduction for the planet
- As at the end of 2023, the Group held more than 5.9GW of solar farm projects. During the Reporting Year, the PV power generation exceeded 5.04 billion kWh, which can meet the annual electricity demand of nearly 2,100,000 households

Governance for Sustainability





Ensuring sustainable consumption and production patterns


Impact Areas



Potential impact:

- 

Adhere to the procurement principles of ethical and sustainable development. By signing the "Supplier Code of Conduct", "Green Procurement Agreement", "Conflict Minerals Procurement Agreement" and agreements related to safety production, environmental protection and integrity, together with periodic assessments, we ensure that the suppliers' own operations and products are in line with the Group's sustainable development principles, and at the same time encourage suppliers to carry out supply chain management under the same principles
- 

Increase the use of waterway transportation and reduce the use of land transportation to reduce the greenhouse gas emission intensity during the transportation of raw materials and products, so as to reduce the negative impact of logistics and transportation on the ecological environment
- 

Adhere to the "green manufacturing" model in the production of solar glass. By improving production efficiency and strengthening the recycling of resources (such as increasing the water recycling rate and adopting environmentally friendly packaging, etc.), it reduces the consumption of energy, water and packaging materials per unit of finished product, so as to ensure the efficient use of resources and reduce the negative impact of emissions on the ecological environment during the production process

Actions taken/2023 Achievements:

- During the Reporting Year, the Group purchased from 3,136 suppliers, which have been managed and strictly assessed in accordance with the established systems and procedures to ensure that their operations comply with the Group's "Supplier Code of Conduct" and that the products and services provided comply with the requirements of sustainable procurement. During the Reporting Year, the Group's supplier management was in line with the principles of ethical and sustainable development. The Group did not face any supply chain issues that had a significant negative impact on the environment and society, and did not find any supplier that provided products or services to the Group during the Reporting Year having a significant actual and potential negative impact or violations in business ethics, environmental protection, safety production, etc.
- During the Reporting Year, the energy consumption intensity, water consumption intensity and packaging material usage intensity per square metre of the Group's solar glass products decreased by 8.6%, 29.1% and 33.0% year-on-year, respectively.
- During the Reporting Year, the efficiency of denitrification, desulfurisation and dust removal in the Group's solar glass production process was increased to 92.6%, 83.2% and 95.7%





Ensure access to affordable, reliable, sustainable and modern energy for all


Impact Areas



Potential impact:

 Solar glass is the core component of PV modules, so the cost reduction and efficiency improvement of solar glass is an indispensable part to make PV power generation more competitive. Through continuous research and development and increase of solar glass production capacity, we provide PV module manufacturers with diversified solar glass products with both cost competitiveness and high quality, so as to promote the cost reduction and efficiency improvement of PV power generation, so that PV power generation can become a modern energy source that is economical, affordable and accessible to more people in more regions, and thus promote PV power generation to become the main source of power generation

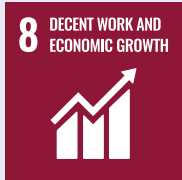
 Increase investment in solar farm projects, and continuously improve the power generation efficiency of solar farm projects through continuous optimisation of operation technology, so as to deliver more green electricity to the community, continuously improve energy efficiency and increase the proportion of renewable energy in the global energy structure

 Based on technical feasibility, the main production fuel for solar glass production is still fossil energy (natural gas)

Actions taken/2023 Achievements:

- During the Reporting Year, the Group added 6,000 tonnes/day of solar glass production capacity, and the annual production of solar glass can be for usage in 154GW modules. The average selling price of solar glass decreased by 11% during the Reporting Year, which helped to reduce the cost of solar glass per watt of modules, thereby reducing the construction cost of solar farm projects
- Research and development promotes the production efficiency improvement and cost reduction of thin glass, and the cost reduction and efficiency improvement of thin glass makes double-sided modules more economical and widely used, and the power generation of double-sided modules can increase 10-15% compared with traditional single-sided modules
- During the Reporting Year, 1,094MW of solar farm projects were added, which is expected to provide 1,129 million kWh of green electricity per year
- Use residual heat power generation and distributed PV power generation to replace part of the purchased electricity demand in the solar glass production process, thereby increasing the proportion of renewable energy consumed in the solar glass production process

Governance for Sustainability






Promote sustainable, inclusive and sustainable economic growth, full and productive employment and decent work for all

Impact Areas



Potential impact:

-  Through stable operation and expansion of the scale of our main business, we continue to improve the economic benefits of the Company, create more jobs, and promote sufficient and productive employment for local people of relevant age group. At the same time, we adhere to the principles related to human rights and labour standards in the United Nations Global Compact when handling matters related to employment and talent management to ensure a safe, healthy, equal, fair and inclusive employment environment for employees
-  The Group focuses on the PV industry, with 100% of the main business revenue from the PV industry and 100% of the capital expenditure invested in the PV industry, so the tax contribution to the local area was also 100% from the green business. In addition, promoting the wide application of PV power generation is an important measure to achieve sustainable economic growth and decoupling economic growth from environmental degradation
-  The Group regulates the behaviour of suppliers and clarifies the requirements for relevant principles of human rights and labour standards through the "Supplier Code of Conduct", so as to ensure that suppliers actively respond to and promote the achievement of SDG 8

Actions taken/2023 Achievements:

- By continuously improving the talent management system, including strengthening the supervision of the Board, the Management Committee and other dedicated committees, introducing/optimising the internal system, and taking effective incentive measures to ensure the safety and health of employees, equal and fair treatment without discrimination and competitive remuneration. As at the end of 2023, the Group had a total of 11,063 full-time employees. Expenses of employees increased by approximately 9% year-on-year, and the turnover rate of employees decreased by 2.0 percentage points year-on-year
- Adhering to the principle of sustainable development for supply chain management, the Group has established and continuously improved the supplier management system. The selection of new suppliers and regular assessment of qualified suppliers are strictly implemented in accordance with the established standard process. During the Reporting Year, the Group purchased from a total of 3,136 suppliers, all of which were qualified suppliers that met the Group's supplier development and management practices and met the standards in periodic assessments



Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

Impact Areas



Potential impact:

-  Design, develop and construct solar farm projects on the basis of full awareness and assessment of climate risks to enhance its ability to resist natural risks such as wind resistance and flood resistance, so as to ensure stable and sufficient green electricity supply to meet the community's demand
-  Actively apply for new solar glass projects in different regions and obtain new production line indicators through hearings held in various provinces. As a leading enterprise in the solar glass industry, we continue to lead the industry in terms of scale production, economic benefits, environmental benefits and technological innovation, and promote local sustainable industrial development and tax growth from green industries by placing solar glass production capacity in different regions
-  As the only enterprise in the solar glass industry with its own design and research institute, we continuously achieves breakthroughs in the design of solar glass production lines, furnace design and product research and development through continuous investment in research and development, and improves the efficiency of use of resources by improving the scale of furnace, the degree of automation of production lines, the thinning and diversification of products, so as to promote the production of solar glass to be lower-carbon and cleaner


Actions taken/2023 Achievements:

- During the Reporting Year, regional climate factors and extreme climate change in recent years were incorporated into the site selection and design of solar farm projects, which further improved the project's ability to resist natural risks and ensured the stable supply of green electricity to local communities while preventing and reducing losses caused by natural disasters. The power loss of solar farm projects due to natural disasters decreased year-on-year
- During the Reporting Year, the Group added new solar glass production lines in Wuhu of Anhui Province and Zhangjiagang, and successfully obtained new solar glass production line indicators in Qujing of Yunnan Province and Shangrao of Jiangxi Province. Nearly HK\$500 million income tax contribution was from the Group's solar glass business in 2023
- During the Reporting Year, thin glass products became the mainstream products, accounting for more than 60%, which effectively helped PV modules improve power generation efficiency. The Group's research and development expenses in 2023 exceeded HK\$760 million, which were mainly used to support the efficient and low-carbon production of solar glass and the research and development of low-carbon products



Governance for Sustainability

Xinyi Solar Sustainable Development Goals (XSG)



As a member of the PV industry, the Group has been sparing no effort to promote the global application of PV power generation to gradually reduce the proportion of traditional energy power generation, so as to promote the green and low-carbon transition of global energy, and support the climate actions and achievement of related sustainable development goals. At the same time, in terms of production operation and value chain cooperation, we have also further enhanced the positive impact in other influential SDGs areas by formulating and actively practising quantitative sustainable development goals and sustainable development principles, and avoided/reduced the negative impact as much as possible to support the achievement of relevant SDGs. Based on the results of the SDGs Impact Analysis of the value chain, the Group has proposed corresponding corporate sustainable development goals, including five-year quantifiable goals and long-term action goals. The green packaging target proposed in 2019 was on track for completion in 2023 and therefore the Group proposed a new green packaging sustainability target during the Reporting Year. The targets relating to the water intensity of finished solar glass products and the greenhouse gas emission intensity (excluding the effect of changes in product mix) were completed ahead of schedule in 2023, and therefore the water intensity target has been updated. Other sustainable development goals also made impressive progress in 2023:

	Xinyi Solar Sustainable Development Goals (XSG)	Progress in 2023
	<p>XSG 1: Intensity of greenhouse gas emission of solar glass products in 2027 ↓ 15% <small>Note 1</small>, Excluding the impact of differences in the proportion of thin glass output in different years ↓ 7.0% <small>Note 2</small></p>	<ul style="list-style-type: none"> Greenhouse gas emissions per unit of product of the Group decreased by 12.3% year-on-year Excluding the impact of differences in the proportion of thin glass output in different years, the Group's greenhouse gas emissions per unit of product during the Reporting Year decreased by 8.9% year-on-year
	<p>XSG 2: Increase investment in renewable energy and strive to reduce carbon dioxide emissions corresponding to the annual power generation of the solar farm projects held by the Group in 2027 ↑ 50% <small>Note 1</small></p>	<ul style="list-style-type: none"> The new grid-connected capacity reached a record high of 1,094MW, and the annual carbon dioxide emissions reduction increased by 14.0% as compared with 2022
	<p>XSG 3: Supporting most countries around the world to achieve carbon neutrality by 2050 by increasing solar glass production capacity and scale of solar farm projects</p>	<ul style="list-style-type: none"> The Group added 6,000 tonnes/day of solar glass production capacity, and the effective annual melting capacity increased by 45.9%. Limited by the current production technology of solar glass furnaces, fossil fuels are still needed for the production, therefore, net zero emission can yet be achieved in the production of solar glass. However, the greenhouse gas emission of a single piece of solar glass used in the 182 series 590W monofacial module is only 13.5KG and the green electricity generated by the module will result in approximately 14.5 tonnes^{Note 3} of CO₂ emissions reduction over a 25-year life cycle. Therefore, solar glass production has a positive contribution to global energy transition and climate change mitigation and that the difference in carbon emissions reduction from power generation and carbon emissions from production will further increase as modules become more efficient. In 2023, the greenhouse gas emission generated from solar glass production accounted for only 0.09% (2022: 0.11%) of the CO₂ emissions reduction brought by the power generation of the PV module throughout its full life cycle The Group's solar farm projects generated 5.04 billion kWh of electricity, equivalent to a reduction of CO₂ emissions of approximately 4.15 million tonnes the CO₂ emission reduction from the annual power generation of the Group's solar farms projects was equivalent to 72.7% of the CO₂ emissions from solar glass production in the same period

Governance for Sustainability

Xinyi Solar Sustainable Development Goals (XSG)		Progress in 2023
 <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	<p>XSG 4: Strive to reduce energy consumption per square metre of finished solar glass product by 2027 ↓ 13% ^{Note 1}</p>	<ul style="list-style-type: none"> The intensity of energy consumption reduced by 8.6% year-on-year
	<p>XSG 5: Adopt strict standards to regulate and manage the emissions of exhaust gas, and strive to surpass national standards</p>	<ul style="list-style-type: none"> The emission intensity indicators for the major air pollutants (SO₂, NO_x and smoke and dust) during the Reporting Year were all better than national and local standards of the countries where we operate Desulphurisation efficiency, denitrification efficiency and dust removal efficiency increased to 83.2%, 92.6% and 95.7%, respectively
	<p>XSG 6: Obtaining and use water resources in a responsible and sustainable manner to further improve the utilisation rate of recycled water and strive to achieve zero waste except normal evaporation and sedimentation tank loss</p>	<ul style="list-style-type: none"> The utilisation rate of recycled water increased by 1.4 percentage points year-on-year to 96.0%
	<p>XSG 7: Strive to reduce water consumption per square metre of finished solar glass products by 2027 ↓ 10% ^{Note 1} (the updated target is that strives to reduce water consumption per square metre of solar glass products by 2028 as compared to 2023)</p>	<ul style="list-style-type: none"> The intensity of water consumption decreased by 29.1% year-on-year
	<p>XSG 8: Promote more environmentally friendly product packaging and strive to adopt paperless packaging for 50% of our products by 2023 (the updated target is that by 2028, 92% of domestically sold products will use iron pallets instead of wooden pallets)</p>	<ul style="list-style-type: none"> The utilisation rate of paperless packaging increased by 18.2 percentage points to 64.3% Packaging consumption per square metre of finished solar glass product decreased by 33.0% year-on-year
	<p>XSG 9: Conduct procurement in a responsible and sustainable manner and regulate supplier behaviour through quality, environmental protection and safety protocols</p>	<ul style="list-style-type: none"> Purchased from a total of 3,136 suppliers, 100% of which were qualified suppliers that comply with the Group's supplier development and management practices and met the standards in periodic assessment
	<p>NEW</p> <p>XSG 10: Reduce the non-hazardous waste and improve the recycling rate and processing efficiency of non-hazardous waste to reduce environmental pollution and ecological damage. The target is to reduce glass powder per square metre of finished solar glass products by 35% by 2028 as compared to 2023</p>	<ul style="list-style-type: none"> Develop a waste management plan to improve employees' environmental awareness, and apply new technologies and equipment for waste treatment. During the Reporting Year, the recycling and reuse rate of waste mineral oil, waste ink and desulfurisation and denitrification by-products increased
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p>	<p>XSG 11: Protect the health and safety of employees with an ultimate goal of zero harm</p>	<ul style="list-style-type: none"> Work-related injury rate was 0.71 Lost workdays ratio reduced to 21.1 No work-related death cases
	<p>XSG 12: Promote the development of mutual prosperity for the community and make positive contributions to the economy, environment and public welfare</p>	<ul style="list-style-type: none"> Generate direct economic value of HK\$26.8 billion Contributed economic value of HK\$24.11 billion to community and upstream value chain, including charitable donations of HK\$18.3 million

Governance for Sustainability

Xinyi Solar Sustainable Development Goals (XSG)		Progress in 2023
 <p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p>XSG 13: Protect local natural resources and biodiversity while developing and building solar farms, and insist on building environmentally friendly solar farms</p>	<ul style="list-style-type: none"> Among the 975MW utility-scale solar farm projects newly added, all of them were developed and constructed in an environmentally friendly manner and 80% were fishery-PV/agricultural-PV complementary solar farms, achieving mutual prosperity for ecology, society and economy
 <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	<p>NEW</p> <p>XSG 14: Promote the optimisation and upgrading of solar glass production technology and products through continuous research and development investment, so as to help PV power generation to achieve cost reduction and efficiency improvement, and promote local sustainable industrial development through the launch of more efficient and environmentally friendly solar glass production lines to increase the contribution of green industries to local taxation</p>	<ul style="list-style-type: none"> During the Reporting Year, six new 1,000 tonnes/day solar glass production lines were added, and the tax contribution of solar glass business was nearly HK\$5 billion.
	<p>NEW</p> <p>XSG 15: Select, design and develop solar farm projects with full consideration of the impact of climate factors to enhance the project's climate risk resilience, so as to ensure a more stable supply of green electricity to meet the demand of the community</p>	<ul style="list-style-type: none"> During the Reporting Year, the loss of electricity due to natural risk factors accounted for less than 0.01% of the total power generation

Notes:

- (1) Compared to the base year (2022)
- (2) If the below method is used (so as to eliminate the impact caused by the different proportion of thin glass production output in different years), the target is to achieve a close to 7.0% reduction in greenhouse gas emissions per unit of product by 2027 (* As the penetration rate of 2.0mm products exceeds expectations, the relevant targets have been completed in 2023)
 - i) Calendering process: Use the actual product output (in tonnage) to calculate the greenhouse gas emissions per tonne of output, and then multiply it by the tonnage/area conversion factor in the base year to get the greenhouse gas emissions per square metre of output
 - ii) Deep processing: Use the actual product output (in square metre) to calculate the greenhouse gas emissions per square metre of output
- (3) Assuming annual effective utilisation hour of 1,189 hours

Governance for Sustainability

SUSTAINABLE DEVELOPMENT GOVERNANCE STRUCTURE

CORPORATE GOVERNANCE

The Company has adopted the Corporate Governance Code (“CG Code”) as set out in Appendix C1 of the Listing Rules of the Hong Kong Stock Exchange during the Reporting Year. The Company’s 2023 Corporate Governance Report has been published in the Company’s 2023 Annual Report. It is recommended to be read in conjunction with the contents of this section.

Philosophy

The Group upholds the “STRC” (Systematic, Transparent, Reliable and Considerate) concept in corporate governance, strictly complies with the CG Code as set out in Appendix C1 of the Listing Rules, and actively refers to and adopts the local/international best practices recommended by the Hong Kong Stock Exchange for continuous improvement in governance.

Systematic

- With legal basis
- Adopt an international standardised management system
- Improve internal risk control and monitoring system

Transparent

- Strengthen efforts in anti-corruption and improve transparency in governance
- Well-established internal control policy
- Robust external supervision

- Stringent quality control
- Long-lasting customer relationship
- Emphasis on information security and intellectual property right protection

- Responsible procurement
- Suppliers supervision
- Guarantee stable supply

Reliable

Considerate

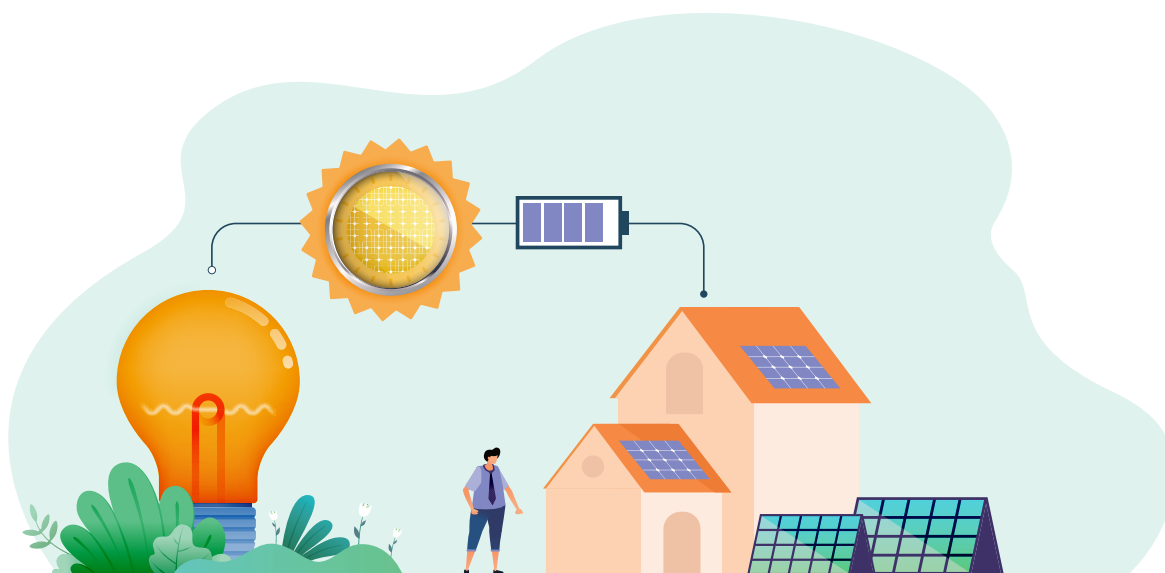


Governance for Sustainability

Composition of the Board

The Board of the Company comprises four executive directors, two non-executive directors and three independent non-executive directors, with the independent non-executive directors accounting for one-third of the Board membership. We agree that a diversified board of directors can accommodate and make full use of a wide range of skills, experience, background and professional knowledge, which can help companies improve their governance capabilities and make governance decisions more insightful and reasonable. Therefore, the Company has adopted a board diversity policy, details of which are posted on the Company's website. The nomination committee bases its selection of directors on a range of diversity principles, including but not limited to gender, age, cultural and educational background, ethnicity, professional experience, skills, knowledge and tenure of service, and the final decision is based on the professional merits of the candidates and the contributions they can provide to the Board. In terms of gender diversity of the Board, the Company strictly follows the requirement of "a single gender board of directors of an issuer will not be accepted" in respect of gender diversity under the Listing Rules, and appointed a female independent non-executive director in 2022. The proportion of female directors during the Reporting Year was 11.1%.

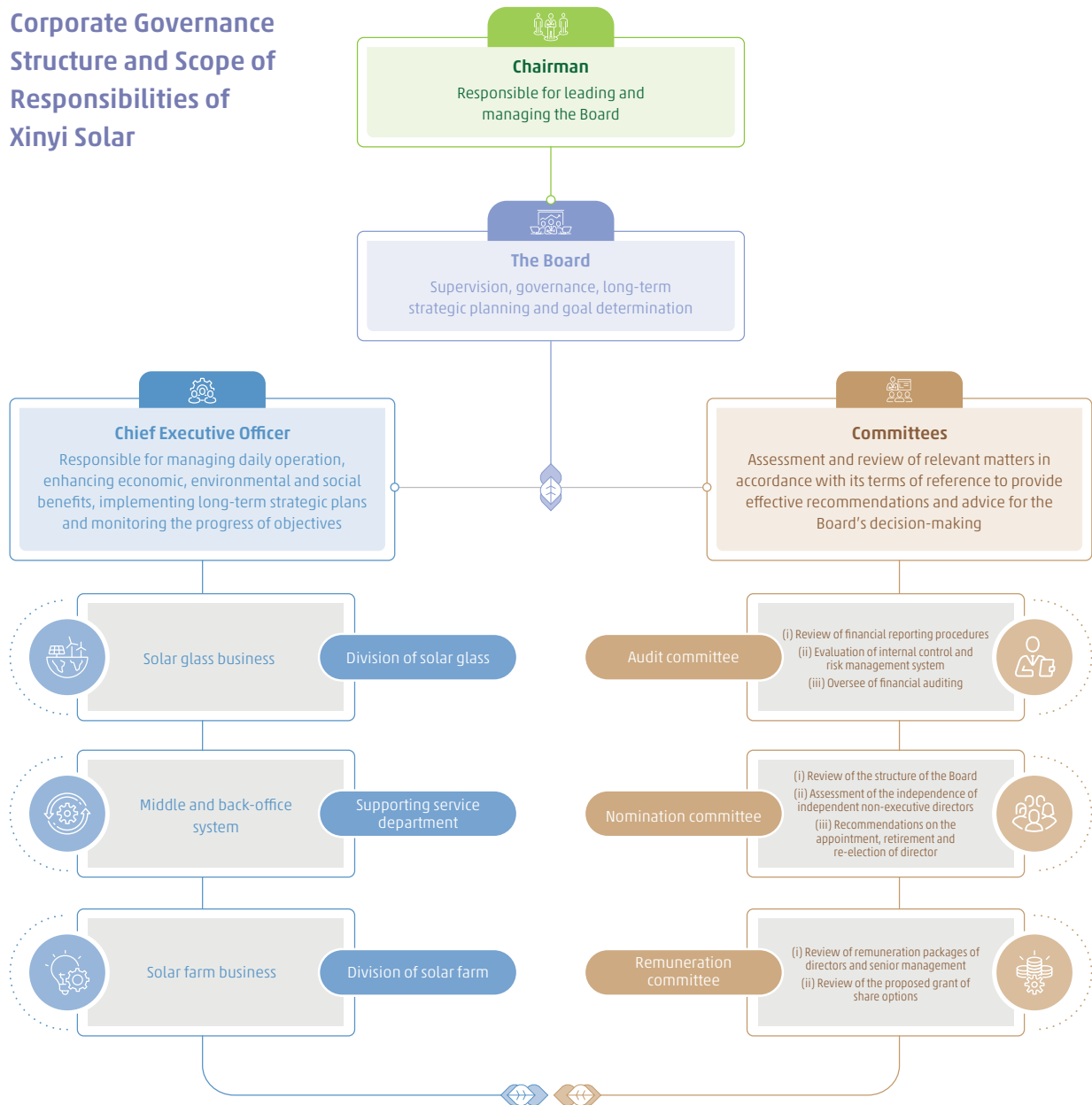
The Group complies with the provisions of the Rule C2.1 of the CG Code by distinguishing the division of responsibilities between the chairman and the chief executive officer and are performed by different directors. During the Reporting Year, Dr. LEE Yin Yee, S.B.S. is the chairman of the Group and Mr. LEE Yau Ching is the chief executive officer of the Group. The chairman, is responsible for managing and leading the Board to ensure that the Group maintains strong and effective corporate governance practices and procedures. The chief executive officer is responsible for daily management and operation of the Group's business, including closely monitoring the Group's operating and financial results with the assistance of other members of the Board and other senior management, taking necessary actions to enhance operational efficiency, and formulating future business plans and strategies for the approval by the Board.



Governance for Sustainability

The Group's corporate governance structure and scope of duties have not been adjusted during the Reporting Year:

Corporate Governance Structure and Scope of Responsibilities of Xinyi Solar



Governance for Sustainability

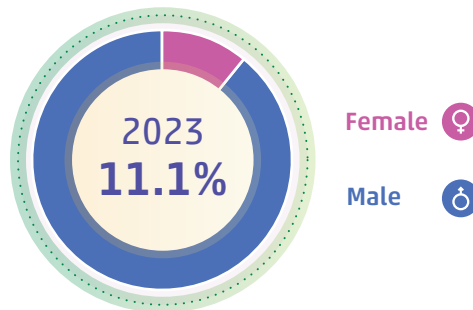
Board Diversity

The Group recognises that a diversified board of directors is conducive to achieving balanced and sustainable development of the Group, which can help to achieve established strategic goals and ensure that the Group maintains its leading industry position. Members of the Board have industry and/or professional backgrounds that are critical to the development of the Company's core business, ranging from solar glass manufacturing and sales, solar farm development and construction, mergers and acquisitions, finance, law, digital technology to compliance and corporate governance, and have an international perspective.

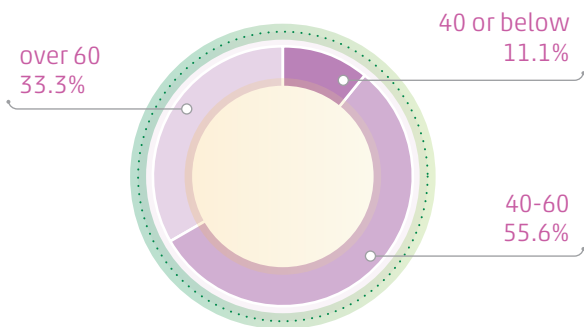
The Company has complied with the requirements of Rules 3.10 and 3.10A of the Listing Rules, including the appointment of at least three independent non-executive directors, one of whom has appropriate professional qualifications or accounting or related financial management expertise, and all independent non-executive directors hold at least one-third of the seats on the Board.

The Company has complied with the requirements of Rule 13.92 of the Listing Rules. The Board is diverse in terms of a number of factors including but not limited to gender, age, culture and educational background or professional experience, and not all Board members are of a single gender.

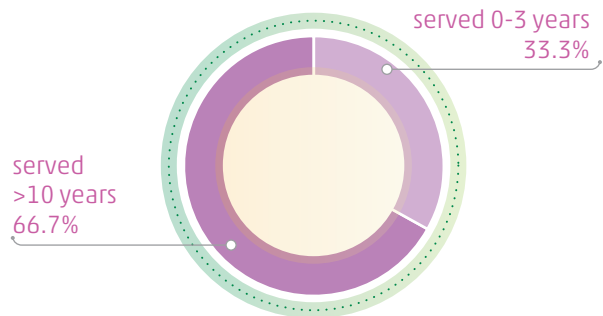
Gender distribution of directors



Age distribution of directors



Tenure of independent non-executive directors



Governance for Sustainability

In compliance with the recommendation of the Hong Kong Stock Exchange, the Group has regularly reviewed the implementation of the Board Diversity Policy. The Nomination Committee would also discuss and review the Board's diversity policy and objectives in a timely manner and make recommendations to the Board. The board diversity matrix below provides a clearer picture of the Group's implementation of board diversity during the Reporting Year:



	LEE Yin Yee	TUNG Ching Sai	LEE Shing Put	LEE Yau Ching	LI Man Yin	CHU Charn Fai	LO Wan Sing, Vincent	KAN E-ting, Martin	LEONG Chong Peng
	Chairman and Non-Executive Director (Note 6)	Vice Chairman and Non-Executive Director	Vice Chairman And Executive Director (Note 7)	Executive Director	Executive Director	Executive Director (Note 8)	Independent Non-Executive Director	Independent Non-Executive Director	Independent Non-Executive Director
<i>Audit Committee</i>							<i>Member</i>	<i>Member</i>	<i>Chairman</i>
<i>Remuneration Committee</i>	<i>Member</i>	<i>Member</i>					<i>Chairman</i>	<i>Member</i>	<i>Member</i>
<i>Nomination Committee</i>	<i>Chairman</i>	<i>Member</i>					<i>Member</i>	<i>Member</i>	<i>Member</i>
Governance Guidelines Criteria									
Independence							○	○	○
Senior management experience ^{Note 1}	○	○	○	○	○	○	○	○	○
Industry experience ^{Note 2}	○	○	○	○	○	○			
Audit experience						○			○
Board experience ^{Note 3}	○	○	○	○			○		○
Other public company board member	○	○	○	○			○		
Other public company CEO		○							
Experience and Skills									
Industry experience - Solar Glass									
- Manufacturing and supply	○	○			○	○			
- Marketing and sales				○					
Industry experience - Solar Farm									
- Construction and development			○	○	○				
- Mergers and acquisitions			○	○		○			
International exposure ^{Note 4}								○	○
Financial expertise ^{Note 5}						○			○
Legal expertise								○	
Digital and technology			○					○	
Compliance and corporate governance	○	○	○	○	○	○	○	○	○
Demographic Background									
Board tenure (year)	12	12	10	12	10	<1	10	10	1
Age (as of 31 December 2023)	71	58	46	48	68	54	76	40	49
Gender									
- Male	○	○	○	○	○	○	○	○	
- Female									○



Governance for Sustainability

Notes:

1. Experience as president, chief executive officer or in similar senior management positions
2. Experience in industrial manufacturing, glass manufacturing, solar PV, power generation, transportation or basic materials industries
3. Prior or current service on other listed company boards
4. Seniority in a global enterprise or significant experience in international markets
5. Expertise in accounting, auditing, tax or investments
6. Re-designated from executive director to non-executive director on 31 July 2023
7. Re-designated from non-executive director to executive director on 31 July 2023
8. Appointed as executive director on 2 June 2023

Appointment and Re-election of Directors

The nomination committee (comprising five members, including three independent non-executive directors) has been established under the Board of the Company. The primary duties of the nomination committee are to review the structure, size and diversity (including the skills, knowledge and experience) of the Board on a regular basis, assess the independence of independent non-executive directors of the Company and make recommendations to the Board on the appointment, retirement and re-election of directors. The procedures for shareholders to nominate candidates for election as directors of the Company have been disclosed on the Company's website.

In compliance with Rule B.2.2 of the CG Code, all directors of the Group would retire by rotation every three years, and the retiring directors, being eligible, would offer themselves for election at the annual general meeting.

During the Reporting Year, Mr. LEE Shing Put, B.B.S. was re-designated as an executive director, Dr. LEE Yin Yee, S.B.S. was re-designated as a non-executive director, and Mr. Chu Charn Fai was appointed as an executive director.

Independence of Independent Directors

The independence of the independent non-executive directors is confirmed annually in accordance with the established procedures and Rule 3.13 of the Listing Rules. All the independent non-executive directors of the Company are not involved in the daily management of the Group's business, have no business dealings with the Group or any connection with other directors, substantial shareholders and chief executive officer of the Company, and do not hold, directly or indirectly, any issued shares of the Group as well as any share options granted by the Company.

During the Reporting Year, the nomination committee has also made recommendations to the Board on the independence of independent non-executive directors. The Company believes that all independent non-executive directors have complied with the independence guidelines set out in Rule 3.13 of the Listing Rules.



Governance for Sustainability

Control of Connected Transactions

The Group's major connected transactions and continuing connected transactions during the Reporting Year were disclosed in the Report of the Directors in the 2023 Annual Report. Pursuant to Rule 14A.53 of the Listing Rules, the Group has set annual caps for these continuing connected transactions and has entered into written agreements governing the conduct of these transactions.

These continuing connected transactions have been submitted to the Board for approval before they were carried out. In the course of voting on the resolutions, the directors that might have conflicts of interest were required to abstain from voting on the relevant resolutions. To ensure that these continuing connected transactions are executed in accordance with the agreements entered into and in compliance with the annual caps, the Group has adopted, but not limited to, the following internal control measures:

- annual review and sample inspection conducted by the internal audit team to ensure that the transactions are conducted in accordance with the agreed pricing basis and internal control requirements;
- annual review conducted by the independent non-executive directors and reported to the Board; and
- the issuance of an opinion letter by the auditor in respect of the continuing connected transactions in accordance with Rule 14A.56 of the Listing Rules.

All independent non-executive directors of the Company have reviewed the continuing connected transactions during the Reporting Year and confirmed that these transactions were conducted in accordance with the relevant agreements governed by them, the terms of which are fair and reasonable and in the interests of the shareholders of the Company as a whole. The auditor has also issued an unqualified letter of opinion on the results and conclusion of continuing connected transactions disclosed by the Group in the annual report in accordance with Rule 14A.56 of the Listing Rules.

Determination of Directors' Remuneration

The remuneration committee (comprising five members, including three independent non-executive directors, and is chaired by an independent non-executive director) has been established under the Board of the Company, which is primarily responsible for reviewing the remuneration packages of directors and senior management and making recommendations on share options scheme to the Board.

The remuneration of the Group's executive directors is determined on the basis of their experience, responsibilities, workload and time contributed to the Group. In accordance with the agreements entered into with the directors, the remuneration comprises directors' fees, annual salaries, discretionary bonuses, allowances and benefits in kind (including housing allowances and share options, if any) and contributions to pension schemes. Discretionary bonuses are determined based on the Group's operating results, individual performance (including but not limited to the key business performance of their responsible scopes and the core indicators of other areas in relation to the long-term development of the Company, such as environmental, social, etc.) and comparable market data for each financial year within the executive directors' tenure, and are capped at a maximum of 5% of the Group's total net profit for such financial year.

The Group has a share option scheme. Except for an executive director, Mr. CHU Charn Fai, who is not a substantial shareholder or a person connected with the substantial shareholders, none of the directors has been granted any share options of the Company.

Governance for Sustainability

The remuneration of the Group's non-executive directors and independent non-executive directors are determined in accordance with the duties and responsibilities of these directors and independent non-executive directors respectively and their agreements with the Company. Pursuant to the relevant agreements, they only received director's fees paid by the Group, received no other non-cash benefits, and were not granted any share options by the Company.

Dr. LEE Yin Yee, S.B.S., the chairman of the Board and a non-executive director of the Group, and Tan Sri Datuk TUNG Ching Sai J.P., a non-executive director, waived their annual director's fee of HK\$550,000 in total during the Reporting Year. Details of the remuneration, benefits and interests of each of the directors during the Reporting Year are set out in Note 9 to the consolidated financial statements in the Company's 2023 Annual Report.

Internal Control and Risk Management

The audit committee (comprising three independent non-executive directors) is established under the Board of the Company, which is primarily responsible for reviewing the financial reporting process, assessing the independence and performance of the external auditor, overseeing the audit process of the Group, and conducting regular reviews and making recommendations to the Board on continuing connected transactions, compliance procedures, internal control and risk management systems in a timely manner.

A risk-based approach is adopted to ensure that a methodical coverage of the Group's operations and resources are focused on high-risk areas. The Group has set up an internal audit team, which is responsible for evaluating the Group's risk management and internal control systems and review the major operations of the Group every year. The review covers all material controls, including financial, operational (including climate response and environmental protection related) and compliance controls. The internal audit team has conducted a review and internal audit on the risk control of the solar glass and solar farm businesses in 2023. The review results and recommendations have been submitted to the audit committee in the form of a written report for discussion and review. Risks, opportunities and actions taken by the Group related to climate change were separately disclosed in the "**Resilience to Climate Change**" section of this Report. The internal audit team will take follow-up actions to ensure that the previously identified results are properly addressed.

Based on the results of internal control review for the year ended 31 December 2023 and the assessment of the results by the audit committee, no material deficiencies have been discovered in the risk management and internal control systems.



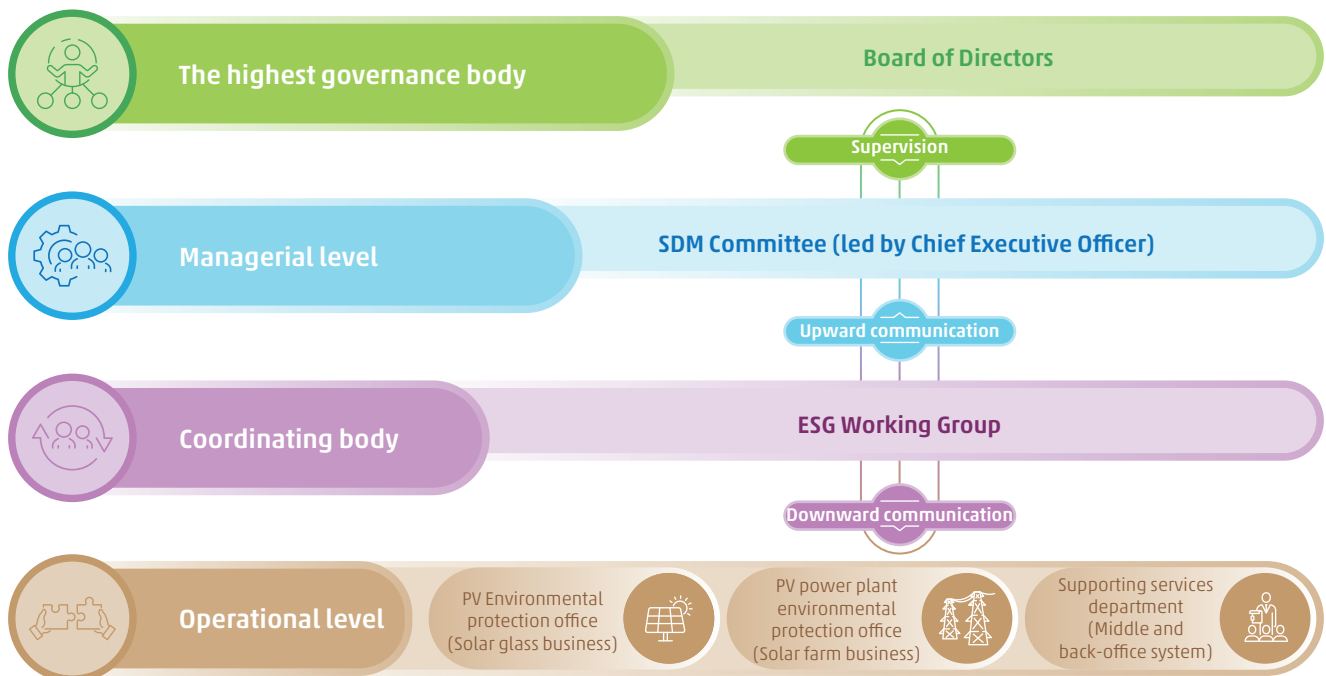
Governance for Sustainability

Sustainable Development Governance Structure

The Group has established its own sustainable development governance structure based on the internal and external development environment, ESG governance status and long-term goals, the requirements of regulatory authorities, systems and laws, and actively refers to industry and international best practices for improvement to ensure that the Group's established sustainable development approach and various important sustainable development issues are included in the Company's agenda and are effectively supervised to ensure their implementation.

As the highest governance body of the Group's sustainable development matters, the Board implements comprehensive supervision on the performance of management responsibilities in various aspects of environmental, social and corporate governance, so as to ensure the top-down transmission of sustainable development strategies and concepts and implement them in business decisions at all levels. The Group's sustainable development governance structure has not been adjusted during the Reporting Year. As the co-ordinating body at the daily management level, the SDM Committee manages various practices in environmental, social and climate-related areas under the authorisation and supervision of the Board and leads the implementation of sustainable development goals.

Sustainable Development Governance Structure of Xinyi Solar





Governance for Sustainability

During the Reporting Year, the Board attached great importance to the monitoring of ESG matters. The Board is mainly responsible for formulating, regularly reviewing and optimising the Group's sustainable development strategy, monitoring the SDM Committee and ensuring its effective operation through effective monitoring mechanisms, regularly reviewing the internal ESG risk assessment and control mechanisms and their effectiveness, monitoring the assessment of key opportunities and risks, corporate actions and effectiveness, reviewing the core ESG policies and internal rules and monitoring their implementation, and reviewing the corporate sustainability objectives and progress, establishing material sustainable development issues and ensuring their implementation and full compliance and disclosure.

The SDM Committee is directly led by the Chief Executive Officer. Other members include heads of relevant divisions and key functional departments. It is authorised by the Board to direct, manage and supervise various ESG-related matters at the operational level, mainly including: (1) ensuring that the Group fully considers ESG factors in strategy formulation and business operations, not only does it need to evaluate its impact (financial and reputational) on the medium and long-term development of the Company, but also fully considers the impact on key stakeholder groups, nature and society, and formulates and optimises action plans and goals accordingly; (2) implementing effective management of ESG risks, especially climate, safety, integrity, environmental protection and human rights-related risks, regularly review relevant risks according to the established mechanism and evaluate the effectiveness of response actions; (3) ensuring that the Group's sustainable development philosophy and sustainable development goals are implemented to all systems and functional departments at all levels. In terms of key ESG matters, such as environmental protection, occupational safety and health, integrity, climate risk management, etc., specific and feasible work plans are formulated, goals related to the annual performance appraisal of middle and senior management personnel, employees of key departments/positions are set, and mechanisms are established to regularly evaluate the effectiveness of work plans and the progress of goals; (4) guiding and reviewing the work of the ESG working group, such as participating in the materiality assessments, reviewing quarterly and annual data on core ESG indicators and reviewing ESG reports. The SDM Committee is required to regularly report to the Board on key ESG risks and opportunities related to the Group's development, as well as the corresponding strategies and actions taken, ESG core indicators and ESG reports.

The daily management of ESG-related areas follows the established governance practices to ensure that the Group's sustainable development philosophy is fully implemented in core business operations and value chain management. The ESG working group is the coordinating body under the SDM Committee. Its main tasks include: (1) collect, consolidate and report quarterly/annual performance of ESG core indicators to the SDM Committee; (2) keep abreast of the latest regulations and guidelines on ESG governance and information disclosure by attending training courses and update the SDM Committee in a timely manner to ensure that the SDM Committee can improve the relevant processes/governance structure as soon as possible to meet the regulatory requirements; (3) report to the SDM Committee on the requests of key stakeholders and assist in materiality assessment; (4) prepare ESG reports; (5) understand, collect and provide feedback and suggestions from/to the execution departments to assist the SDM Committee in evaluating the progress of ESG work and the effectiveness of ESG risk management and internal control system.



Governance for Sustainability

The execution department of the Group's ESG work is the environmental protection office under the solar glass and solar farm businesses, with a dedicated position of environmental protection officer to ensure that all environmental protection indicators in the daily business operation meet or even exceed national or local standards. The supporting service departments serve as a bridge between the Group and its employees, the community and society, maintaining communication with stakeholder groups and reflecting their opinions in a timely manner.

In order to raise the awareness and importance of environmental and social benefits among our management team and employees, we have taken the initiative to place the maximisation of environmental and social benefits as equally important as economic benefits. The Group has included ESG-related elements, including production safety, environmental protection performance and compliance, occupational safety and health and integrity when setting annual performance indicators for management personnel and relevant departments and staff. ESG-related indicators account for more than 50% of the annual key performance indicators (KPI) of middle and senior management personnel, and 64% of the annual KPI of some key senior management. Among them, the indicators related to the Group's established climate action goals and energy saving and consumption reduction goals account for more than 50%, the indicators related to supply chain and talent management account for more than 30%, and the remaining indicators are those related to the integrity management performance of other sustainable development goals, their own integrity behaviour and responsible areas. Through the linkage with the annual performance appraisal, middle and senior management personnel are encouraged to pay close attention to daily ESG affairs and strive to achieve higher performance goals, thereby promoting the achievement of the Group's annual and long-term sustainable development goals.

BUSINESS ETHICS

A fair, legal and ethical business environment is the foundation for sustainable development of all businesses. It is also an important cornerstone for enterprises to build their reputation, enhance customer and staff loyalty, improve productivity and supply chain management efficiency, and achieve long-term development. Therefore, over the years, the Group has strictly complied with the "Criminal Law of the People's Republic of China", the "Anti-Money Laundering Law of the People's Republic of China", the "Anti-Unfair Competition Law of the People's Republic of China", the "Anti-Monopoly Law of the People's Republic of China", the "Interim Provisions on the Banning Commercial Bribery", the "Prevention of Bribery Ordinance of Hong Kong", the "Anti-Corruption Commission Act" of Malaysia and its amendments, the "Competition Act 2010" of Malaysia and other laws and regulations related to the prevention of bribery, fraud, money laundering and unfair competition in China and other countries and locations where it operates. The Group is also committed to maintaining a high standard of business ethics and corporate governance level by adhering to ethical business practices in its own business scope and the constraints on suppliers and partners in the "Supplier Code of Conduct", the "Supplier Integrity Agreement" and the "Notification Letter on Integrity Management, Mutual Benefit and Win-Win", and actively participate in building and maintaining of a fair and honest business environment.



Governance for Sustainability

Anti-corruption

Integrity is the red line as well as the bottom line. The Group strictly complies with the applicable anti-corruption and bribery laws of the locations where it operates, adheres to the principle of “zero tolerance” for any form of corruption, and practises the attitude of “rejecting commercial bribery, not accepting bribes and not bribing” in all aspects of daily operations.

Since 2018, Xinyi Group has carried out integrity actions, and strictly regulates the relevant behaviours of all employees of the Group by formulating, improving and implementing the Xinyi Group Integrity Management System (the “**Integrity Management System**”). The Internal Control Center is a dedicated department for the Group’s integrity management and is under direct leadership of the Chief Executive Officer. It adheres to the working policy of “prevention first and supplemented by investigation and handling” and independently carries out integrity publicity and training, daily supervision of employees’ integrity behaviour, acceptance, investigation and handling of integrity complaints in accordance with the Xinyi Group Integrity Management System.

Integrity and law-abiding, self-restraint and honest practice are our requirements for every employee. The Group explicitly and clearly put forward the code of business ethics that employees should abide by when dealing with the Group’s business affairs, and the corruption or irregularities that should not be committed in the “Ten Integrity Regulations for Xinyi Employees”. The Group strictly requires employees to refrain from taking advantage of their positions to solicit and accept bribes or improper benefits from cooperative business units and individuals, and prohibits employees from bribing or providing improper benefits to business partners, partners’ agents and public officials. In order to encourage employees to refuse commercial bribery, the Group implements a reward system, in which the employee will be awarded all or part of the bribe amount, inform praised in the “Integrity Xinyi” WeChat official account, included in the talent pool and given priority in promotion, salary increase, appraisal and title evaluation. In addition, in order to prevent directors, senior management personnel and personnel in other important positions from taking advantage of their powers or positions to seek personal interests with enterprise resources or to commit acts that violate the Group’s principles of fairness and justice in business cooperation and employment management, the Group requires them to declare conflicts of interest annually in accordance with the Conflict of Interest Management System, so as to identify potential conflicts of interest, prevent personnel management risks and protect the interests of the Company, shareholders and employees.





Governance for Sustainability

The Group has established an effective supervision mechanism and a strict reward and punishment system to strengthen the regulation of employees, suppliers and other business partners to prevent corruption and improper behaviors. The Internal Control Center carries out daily supervision by reviewing vouchers and data, conducting irregular interviews with key departments and personnel, and regularly arrange working teams to production sites and conducts on-site integrity inspections of various production sites to strengthen supervision.

During the Reporting Year, the Internal Control Centre launched the annual integrity work in accordance with the provisions of the Integrity Management System and the practical needs. The key functional departments such as procurement, sales and finance has been investigated and interviewed in strict accordance with the prescribed proportion of number of employees, and at the same time, the potential integrity risks and hidden dangers of key businesses and key projects have been investigated through in-depth research on the front-line work. The investigations did not reveal any serious integrity-related breaches of local laws and regulations that would have a material impact on the Group.

The Group also encourages employees, business partners and members of the public to report any corrupt behaviors related to the Group through various channels, such as letters, emails and telephone calls. After accepting the reporting materials, a two-person team composed of the Internal Control Center specialists will conduct the initial audit, and a panel of commissioners will be set up according to the initial audit results to conduct the case review, and the review will be strictly implemented in accordance with the Measures for the Investigation and Handling of Integrity Incidents. The investigation and handling shall be completed within 30 days (with maximum of no more than 60 days) after the case is accepted, and the Internal Control Center shall establish an independent file for storage. For employees who violate the Group's internal integrity system or are suspected of committing duty crimes, the Internal Control Center will notify the Company employees and the public of the specific handling results by email and "Integrity Xinyi" WeChat official account within 30 days after the case is closed.

The Group implements the Whistleblower Protection and Reward System, encourages suppliers, other business partners and employees to participate in the Group's integrity operation monitoring system and actively report irregularities such as corruption and duty crimes, and fully protects the rights and interests of whistleblowers through strict procedures and effective measures. The Internal Control Center is a dedicated department engaged in integrity investigation and reports directly to the CEO, which safeguards the independence of its work from the structure perspective. In addition, the Internal Control Center follows the principle of confidentiality, and has strict control systems and procedures for the acceptance and investigation of integrity reports, so as to ensure that the privacy information and reporting materials of whistleblowers and reported persons are kept strictly confidential. The Group encourages internal mutual supervision, and regards integrity performance as the key indicator and bonus item for managerial staff's administrative assessment, which accounts for no less than 15%.

Governance for Sustainability

The Group attaches great importance to integrity publicity and integrity training, provides integrity training for all new employees, and requires employees in key departments and key positions to participate in the annual integrity training. During the Reporting Year, the Internal Control Centre conducted integrity publicity and training for employees in key departments and positions during the on-site inspection of each industrial park, and arranged a total of 33 integrity training sessions. A total of 508 employees in key positions participated in the training, and the coverage rate of key departments and positions was 100%. The integrity training is mainly based on the Company's integrity-related rules and regulations, and takes typical case analysis as the starting point, covering legal provisions, corporate integrity culture, common behaviours violating integrity systems, integrity management system and reporting procedures, etc. Employees participating in the training are required to submit reports sharing their reflections on the training and pass written examination.

"Trust" is the core value that the Group adheres to. Integrity is the foundation of an enterprise and an important principle in maintaining market order. Therefore, we have also clarified our principles of honesty and integrity in the upstream and downstream of the value chain through the "Notification Letter on Integrity Management, Mutual Benefit and Win-Win". We uphold the highest business ethics and resolutely eliminate dishonest transactions. In order to ensure that the behaviours of suppliers meet our expectations, the Group has established the "Supplier Code of Conduct", which applies to all suppliers to prevent conflicts of interest and corruption. The Group requires all suppliers to sign integrity agreements and undertake to strictly abide by laws and regulations in business transactions and prohibiting any form of bribery, and at the same time proactively monitor and report illegal and undisciplined practices in the course of cooperation between the two parties.

If a supplier violates the integrity agreement and/or a breach of trust in business cooperation, it will be included in the Group's untrustworthy list. The Group will immediately stop the business cooperation and prohibit it from participating in the Group's tendering, procurement and business cooperation within a set period of time. After the set period of time, such supplier can be included once again in the cooperation list after re-evaluation. If such partners were included into the untrustworthy list for the second time, they will be permanently disqualified from cooperation. During the Reporting Year, one supplier was included in the untrustworthy list since September 2023 due to violation of the requirements of the Dishonest List Management System and was announced in the system and published on the "Integrity Xinyi" public account, and was not eligible for the Group's tendering, procurement and business cooperation for two years.

The Group also encourages all suppliers to prevent their own bribery and corruption a standard higher than that required by laws and regulations, and work with the Group to create an honest and fair business environment.

During the Reporting Year, there were no concluded legal cases regarding corrupt practices brought against the Group or its employees, nor were there any other confirmed incidents of termination or non-renewal of contracts with business partners due to corrupt practices except the above-mentioned incident.



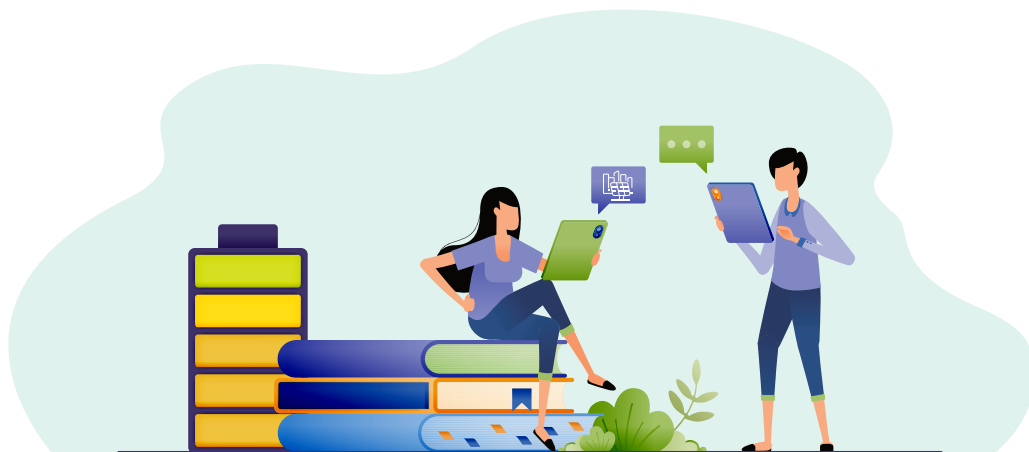
Governance for Sustainability

Anti-unfair competition

The Group complied with the relevant provisions of the "Anti-unfair Competition Law of the People's Republic of China", the "Competition Act 2010" of Malaysia and the Group's code of business ethics, followed the principles of voluntariness, equality, fairness and integrity, consciously safeguarded the order of competition in the market, and strictly prohibited all forms of unfair competition in its business activities. The Group has adopted effective internal monitoring and preventive measures to ensure the regulation of business conduct and is subject to the supervision of national and local governments. The Group is not aware of any legal proceedings against the Group in relation to anti-competition or anti-trust practices during the Reporting Year.

In addition to regulating its own business practices to ensure legal compliance and ethical principles, the Group also provides clear guidelines and expectations for suppliers through the "Notification Letter on Integrity Management, Mutual Benefit and Win-Win" and the "Supplier Integrity Agreement". In the "Notification Letter on Integrity Management, Mutual Benefit and Win-Win", the Group stated that it will resolutely resist all acts of counterfeiting, adulteration, false publicity, infringement of trade secrets, low-price dumping, commercial defamation and other improper means that affect fair cooperation and seek improper benefits in the process of tendering, procurement and contract execution. All suppliers are required to sign a reply letter, indicating that they agree with that the Group has a "zero tolerance" attitude towards unfair competition and all dishonest business operations. All suppliers involved in violations of the principle of good faith trading will not only have to face a full refund of the purchase price and bear compensation and other corresponding legal responsibilities, but will also be included in the Group's untrustworthy list and lose their eligibility to participate in the Group's tendering, procurement and business cooperation within a designated period.

During the Reporting Year, there was no confirmed incidents of termination or non-renewal of contracts with suppliers due to violation of the principle of good faith trading.



Resilience to Climate Change

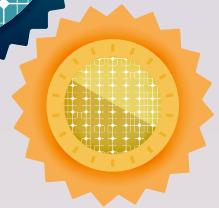
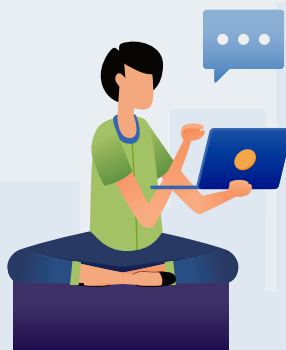
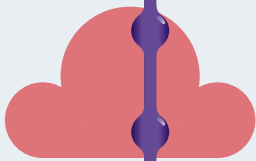
Issues of focus

Climate Risks and Response Actions

Board Supervision

Climate Change Resilience and Opportunities

Xinyi Solar
GREEN strategy



2023 was the warmest year on record for the planet. Frequent extreme climate events have made us understand that climate change is profoundly affecting society, enterprises and all individuals. The urgency of global climate actions and the far behind expected progress of carbon reduction have posed challenges to the sustainable development of humanity, enterprises and society. In the face of the challenges brought by climate change, the Group has established and continuously improved its governance structure, risk assessment and management mechanism to promptly identify and take effective actions to actively respond to the challenges, so as to enhance the resilience of its core business, reduce and avoid the significant impact of climate change on its business and long-term development. At the same time, the Group invested 100% of its capital expenditure in the sustainable development business that promotes the global carbon neutrality process in order to fully grasp the climate opportunities.



Work and achievements in 2023



The intensity of greenhouse gas emission of solar glass products decreased by 12.3% as compared with the base year (2022)



The corresponding carbon dioxide emissions reduction from the annual power generation of the solar farm projects held by the Group increased by 14.0% as compared with the base year



During the Reporting Year, the solar glass supplied by the Group can meet the global demand for 154 GW modules, and the annual power generation of these modules can reduce 108 million tonnes of carbon dioxide emissions for the planet, playing a positive role in promoting the global carbon neutrality process

The reduction in carbon dioxide emissions resulting from the generation of electricity from the Group's solar farm projects is equivalent to 72.7% of the greenhouse gas emissions generated from the production process of solar glass. Compared with enterprises which only engage in solar glass business, the Group's greenhouse gas emissions per unit of output are significantly lower than that of peers



During the Reporting Year, capital expenditure was HK\$9,895 million, which was 100% invested in the PV industry that has a positive impact on global carbon neutrality



UN Global Compact related principles

Principle 7: Businesses should support a precautionary approach to environmental challenges



Future action plans and targets

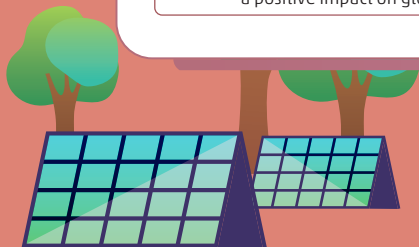
To continuously improve climate policies and enhance the Board's supervision of climate issues to ensure that climate-related issues are incorporated into key governance, risk management and strategic decision-making processes

To consider appropriately increasing the weighting of climate-related goals and indicators in the middle to senior management KPI assessment to motivate them to take more effective actions to achieve the Group's established climate goals and strategies

XSG 1: Strive to reduce greenhouse gas emissions intensity of solar glass products by 15% by 2027 (Compared with 2022, the same below)

XSG 2: Strive for a 50% increase in the corresponding carbon dioxide emissions reduction from the annual power generation by the Group's solar farm projects by 2027

XSG 3: Support most countries around the world to achieve carbon neutrality by increasing solar glass production capacity and the scale of solar farm projects





Resilience to Climate Change

BOARD SUPERVISION AND CLIMATE INFORMATION DISCLOSURE

Governance Structure

In recent years, the frequency of extreme weather events and the deepening of climate risk awareness have continued to increase the Board's attention to climate-related risk governance. As one of the key issues in sustainable development governance, the Group's governance on climate-related risks and opportunities is in the same structure as sustainable development governance. The Board, as the highest governing body, is responsible for formulating, regularly reviewing and optimising the Group's long-term climate strategies and climate policies, establishing internal mechanisms for climate management, and overseeing the management of climate-related affairs by the SDM Committee to ensure that the Group's climate strategies are fully implemented in business decisions at all levels.

The SDM Committee, under the supervision of the Board, guides and coordinates various business departments to gradually implement the Group's long-term climate strategies by formulating, regularly reviewing and updating the five-year climate goals, and at the same time, by formulating appropriate action plans and regularly reviewing and improving to ensure the implementation of the Group's climate policies in daily operations. The SDM Committee also oversees the established climate goals and the progress of climate actions, including setting annual goals and supervising the detailed implementation at all levels, evaluating their reasonableness based on the progress of the five-year climate goals and the effectiveness of climate actions, and updating climate goals and optimising action plans in a timely manner. In order to enable middle and senior management personnel to attach importance to climate-related management matters, earnestly implement the Group's climate actions and strive for better performance in climate goals, the Group has improved the proportion of indicators related to the climate actions and targets in the annual key performance indicator (KPI) assessment of middle and senior management personnel, among which, the proportion of climate-related indicators in the annual KPI assessment of core business systems and key department heads closely related to the Group's long-term climate strategies exceeds 30%. For important matters such as climate-related risk management, climate goals and the progress of climate actions that have a substantial impact on the Group's long-term climate strategies, the SDM Committee reports to the Board from time to time to ensure that the Board is fully aware of the risks and opportunities that may have a potential impact on the Group's sustainable development, so as to achieve effective climate governance, avoid risks and seize opportunities.

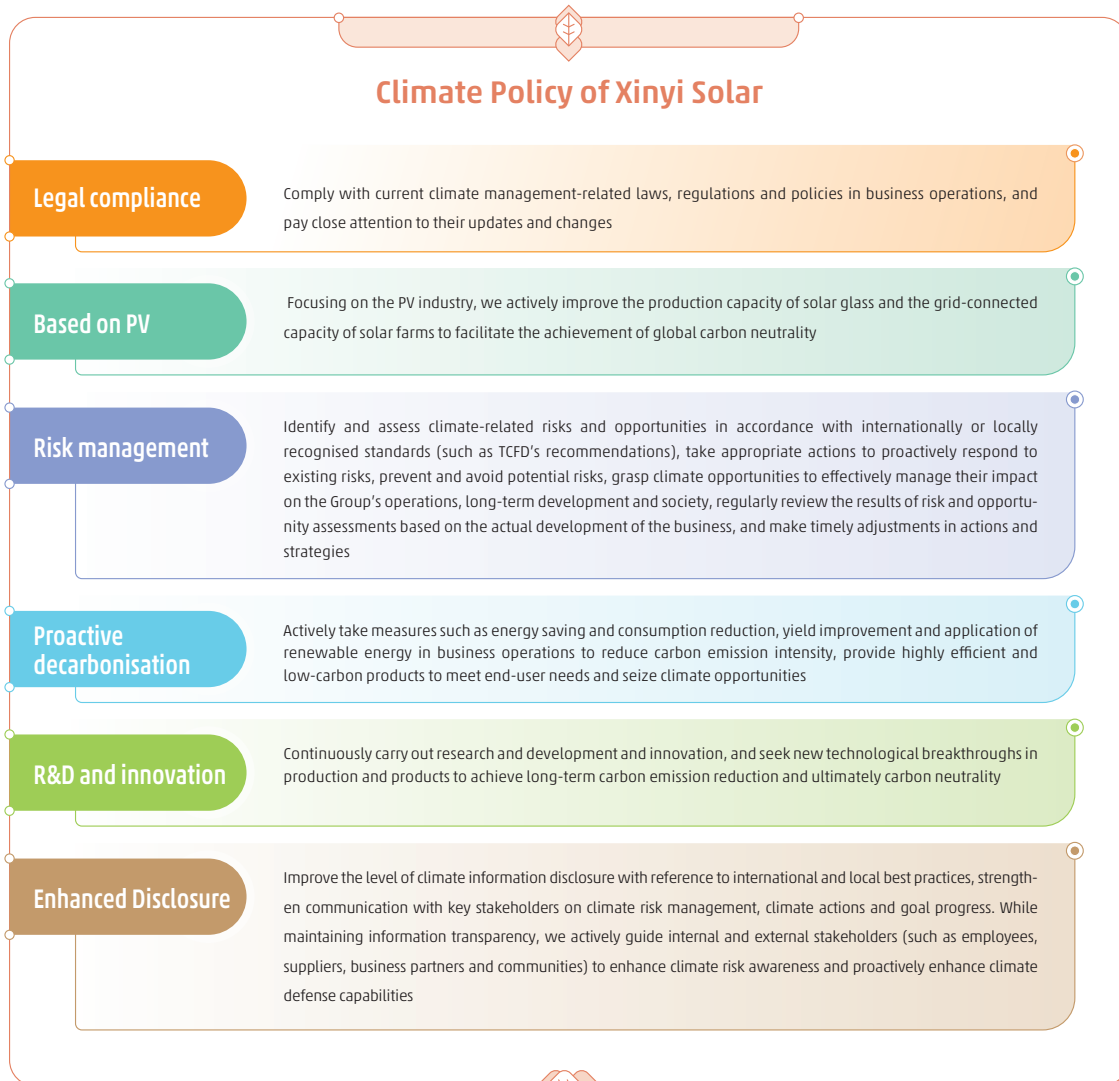
The ESG working group, which is part of the SDM Committee, assists the SDM Committee in promoting climate risk management. Its functions mainly include providing regular updates to the SDM Committee on the progress of climate actions, climate goals and the latest changes in the identified physical and transition risk parameters, coordinating the implementation of climate actions, and providing statistics for the progress of climate actions and goals. As climate change and risk management are increasingly concerned by different countries, international organisations, industry bodies and corporate entities around the world, and climate management-related laws and regulations, policies, regulatory bodies and industry standards are constantly updated and strengthened, the ESG working group is also responsible for consolidating relevant resources, including the latest laws, regulations and policies as well as updated requirements of international and industry best practices for the reference of the SDM Committee and the Board to continuously improve professional knowledge and skills related to climate risk management and information disclosure.

Resilience to Climate Change

The Group's internal audit team would submit an annual risk management and internal control report, which includes environmental and climate-related risk assessment and management to the Audit Committee every year. During the Reporting Year, the review results of the internal control and the Audit Committee's assessment to the results did not reveal significant deficiencies in the climate-related risk management and internal control systems.

Climate Policy

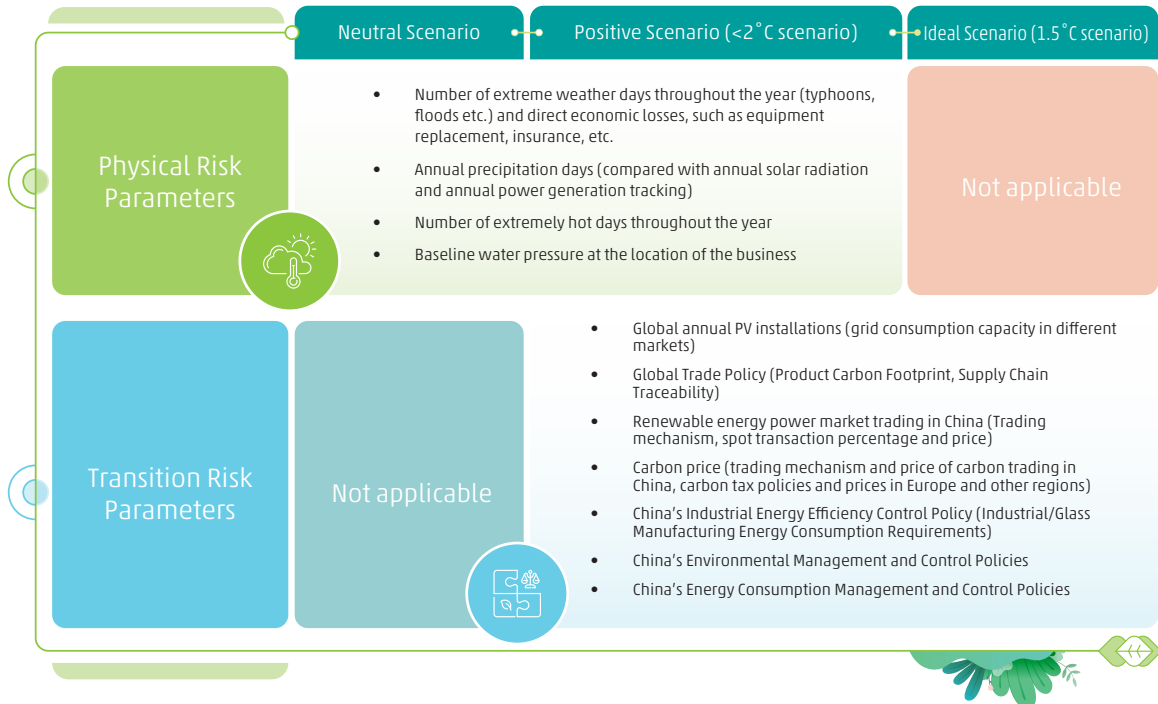
In the face of climate change, the Group adheres to a precautionary attitude and is committed to managing climate-related physical and transition risks based on the PV industry. The Group actively grasps the opportunities of PV explosive growth brought by climate change and global energy transition and fully supports global carbon neutrality. We also encourage suppliers and other business partners to formulate and implement their own climate policies with reference to the Group's climate policies where applicable so as to actively respond to climate change and carry out risk management, and comprehensively improve the climate resilience of the industrial chain.



Resilience to Climate Change

Climate scenarios and key parameters

As there was no change in the main business during the Reporting Year, the internal scenarios disclosed by the Group in the 2021 ESG Report were confirmed after internal assessment, which are still applicable to the analysis and assessment of the Group's climate risks and opportunities, as well as corporate strategy flexibility. The Group developed internal scenarios based on the climate scenarios publicly available by the "Net Zero by 2050: A Roadmap for the Global Energy Sector" issued by the International Energy Agency ("IEA"), the IPCC Sixth Assessment Report Working Group I Report, and the Network of Central Banks and Supervisors for Greening the Financial System. The different impacts of physical risks and transition risks on the Group's production and operation, business layout and long-term development under three different climate scenarios: neutral scenario, positive scenario (below 2°C scenario), and ideal scenario (1.5°C scenario). Specific assumptions about the internal scenarios can be found on pages 42 to 47 of the 2021 ESG Report. Based on the main assumptions of the physical environment, socio-economic environment and energy environment under different scenarios, the Group expected that the probability of occurrence and impact of physical risks will decrease from neutral scenario to positive scenario and to ideal scenario, while the probability of occurrence and impact of transition risks will increase. Therefore, the Group identified relevant physical risk parameters in neutral and positive scenarios and identified relevant transition risk parameters in positive and ideal scenarios, and ranked them from high to low according to the probability of occurrence and impact:





Resilience to Climate Change

CLIMATE RISKS AND RESPONSE ACTIONS

Based on neutral scenario, that is, based on the changes expected in the physical, socio-economic and energy environment under the currently announced climate policies, the Group identifies climate risks that have a high probability of occurrence and have an impact on the Group's business and/or finance through a qualitative assessment based on historical data analysis, taking into account the combination of four aspects: likelihood, impact, adaptability, and resilience. The forecast of transition risks, especially in terms of probability of occurrence and impact, has made reference to the changes in the socio-economic environment and energy environment from positive scenario to ideal scenario. The identified climate risks that have or may potentially have actual impacts on the Group's business and/or finance have been disclosed in this Report. The Group has also taken corresponding countermeasures and actions, and has fully considered the resilience of response strategies under different climate scenarios. The financial impact section is mainly on qualitative in nature, with some quantitative indicators provided in the form of case studies in conjunction with historical data.

Physical risks

Physical risks caused damages to the Group's solar power generation equipment, affected the safety and health of employees or disrupted the delivery of services/products during the historical period of operation. During the past operation period, the physical risks that had a significant impact on the Group were mainly extreme weather and climate events such as typhoons, floods, heavy rainfall and thunderstorms, as well as long-term climate changes such as rising temperatures (increased extremely hot weather) and changes in precipitation patterns (increased rainy weather). The Group's production bases are located in the PRC (Wuhu of Anhui Province, Zhangjiagang of Jiangsu Province, Beihai of Guangxi Autonomous Region, Tianjin Municipality) and Malacca of Malaysia, neither of which is located in areas with high/extremely high baseline water pressure. In addition, 96% of the water used for solar glass production can be met by recycled water and more than 79% of fresh water comes from natural water sources. The Group has achieved efficient water resources management and is still optimising it. Therefore, solar glass production has low dependence on fresh water (especially municipal water supply). The solar farm business is even less dependent on water resources because the PV power generation process does not require the consumption of water resources. It only consumes a very small amount of water resources during the operation and maintenance process and for employees' daily use. Therefore, the Group has not encountered or expected to have a significant business and financial impact due to sea level rise and water resource stress.

According to the assumption of the physical environment under the neutral scenario, the global warming will reach 2°C by 2060, the frequency of extreme high temperature weather is several times to tens of times the present, and the intensity of extreme precipitation is significantly increased. Affected by climate change, the frequency and intensity of extreme weather and climate events will increase significantly, which is expected to have a more significant impact on the Group. The key impacts of physical risk on the Group's core businesses are summarised as follows:

Resilience to Climate Change



Risk Level: Acute Physical Risk

Specific Climate Risks

Increased frequency and intensity of extreme weather events such as typhoons, floods (caused by extreme precipitation), thunderstorms and rainstorms

Impact and Probability of Occurrence

Impact: Medium to high

Probability of occurrence: Medium to high

* The degree of impact and probability of occurrence decline from neutral scenario to positive scenario and to ideal scenario

Potential Business Impacts

Solar Farm Business:

- 1) Potential damage to PV modules leading to failure of solar farms or affecting power generation efficiency
- 2) Increasing operation and maintenance risks and affecting the safety and health of employees
- 3) Possible impact on the progress of project development and construction

Solar Glass Business:

- 1) Potential damage to production facilities and equipment and possible impact on production, raw materials and finished product warehousing.
- 2) Possible impact on logistics, affecting the supply of raw materials and product delivery
- 3) Possible impact on project construction progress

Possible Financial Effects

Solar Farm Business:

- 1) Impairment of assets due to early retirement of equipment
- 2) Increase in operating costs due to equipment failure
- 3) Decrease in revenue due to the impact of power generation efficiency
- 4) Increased capital expenditure, and the scale and timing of grid connection of new solar farm projects may also affect the revenue performance for the year



Case studies

In 2023, the value of electricity lost due to extreme weather and climate events such as typhoons, thunderstorms and rainstorms was approximately HK\$207,000. In the most frequent year of extreme weather and climate events in the past five years, the loss of electricity power generation due to natural disasters was approximately HK\$11,280,000 in that year

Resilience to Climate Change

Solar Glass Business:

- 1) Damage or scrapping of facilities and equipment leads to asset impairment, which may affect production and thus order delivery/current revenue performance
- 2) Increased production costs and capital expenditures due to damage of raw materials, finished products and/or equipment
- 3) Increased transportation costs
- 4) Increased capital expenditure and disruption to capacity expansion may also affect revenue performance for the year

Case studies

In previous years of operation, it was not common that extreme weather and climate events would have a significant impact on the production, transportation and project construction of solar glass. Most of the time, solar glass production and plant construction are virtually unaffected by extreme weather. During the historical operation period, in very few years, heavy rainstorms and typhoons caused the destruction of raw materials, products and supporting equipment in stock, which affected production and product delivery for a short period of time. In the year most severely affected by extreme weather over the past 10 years, the loss of solar glass production due to extreme weather was approximately RMB 2.4 million

Climate Action

- Comprehensive assessment of the probability of occurrence and impact of climate risks with reference to historical data, full consideration of extreme weather risks in the design of solar farm projects, and adoption of PV modules and auxiliary materials with higher protection performance to improve the ability of solar farms to cope with extreme weather conditions
- Centralised 24-hour remote monitoring through the electronic monitoring platform to effectively identify abnormal conditions for timely handling and reduce economic losses
- According to the requirements of the Disaster Prevention and Treatment Plan of the Solar Glass Factory, conduct regular inspections and eliminate safety hazards susceptible to extreme weather, take comprehensive disaster prevention measures in advance to ensure personnel safety, pay close attention to weather conditions, and establish and improve standardised emergency procedures to quickly resume work and production after disasters to minimise disaster losses
- Control the inventory level of raw materials through the centralised procurement centre, rationalise procurement arrangements to ensure sufficient inventory of raw materials to protect against short-term extreme weather factors. In 2023, the Group's inbound and outbound logistics were not hindered by extreme weather conditions
- Improve the comprehensive transportation capacity of water and land transportation
- Improve the safety awareness of construction personnel to implement safe construction technical specifications and operating procedures through training, and strengthen construction quality, safety risk control and emergency response under extreme weather conditions. In 2023, the Group did not have any workplace accident caused by extreme weather conditions

Resilience to Climate Change



Risk Level: Long-term Physical Risks

Specific Climate Risks

- Changes in precipitation patterns (increase in rainfall)
- Increase in average temperature (increase in frequency of extreme high temperature weather)

Impact and Probability of Occurrence

Impact: Low

Probability: Medium to high

- * The degree of impact and probability of occurrence decline from neutral scenario to positive scenario and to ideal scenario

Potential Business Impacts

- Continuous rainy weather will lead to lower power generation during the period
- Under high temperature, workshop/outdoor working hours need to be controlled, and operation in high temperature environment may adversely affect the working efficiency and health of employees

Possible Financial Effects

- Decrease in revenue



Case studies

China's average precipitation in 2023 is nearly 4% less than normal years, which is the second lowest year since 2012. Even in provinces such as Guangdong and Guangxi, which have more precipitation than normal years, the increased precipitation is mainly due to extreme weather such as typhoons and heavy rainstorms. Therefore, during the Reporting Year, the power generation of the Group's solar farm projects was not significantly affected by changes in precipitation patterns. During the past five years, in 2020, the impact of changes in precipitation patterns on the power generation of the Group's solar farm projects was more pronounced. During that year, the average annual precipitation in Anhui Province was 40% higher than that of a normal year, which was the second highest in history. At that time, the Group's installed capacity of power stations in Anhui Province accounted for more than 48%. The excessively long rainy season resulted in a year-on-year decrease in the Group's power generation from comparable power stations by more than 20%

- Increase in costs (e.g. increase in electricity cost due to the use of air-conditioning and environmental protection equipment, increase in water cost due to high temperature resulting from water evaporation, and increase in labour cost due to flexible scheduling, provision of protective equipment and drugs, high temperature subsidies, etc.)



Resilience to Climate Change

Climate Action

- Accumulate historical data for site selection of new solar farms through horizontal comparison of power generation performance of different solar farm projects in different regions
- Improve the power generation efficiency of solar farms through efficient operation and maintenance to partially offset the impact of persistent rainy weather. In 2023, the completion rate of electricity generation target of the Group's grid-connected solar farm projects in operation exceeded 100%, which represents efficient operation and maintenance to effectively offset the negative impact of weather and the annual degradation rate of components on electricity generation during the Reporting Year
- Formulate heatstroke prevention and cooling measures for high-temperature weather, including adjusting operation arrangements, controlling operation hours, and providing heatstroke prevention and cooling supplies and drugs to ensure the health of employees. In 2023, the Group had no work-related accidents due to high temperature

Transition Risks

The Group's core business is in line with the global energy transition trend, which has a positive impact on achieving the goal of carbon neutrality, mitigating global climate change and enhancing the climate resilience of communities. Therefore, in the neutral scenario, the transition risk does not have a negative impact on the Group's core business operation and development. Even in the positive scenario (below 2 °C scenario) and the ideal scenario (1.5 °C scenario), the Group does not need to face business transformation risks and pressure. On the contrary, in order to realise the global energy structure under ideal scenarios and achieve carbon neutrality, the demand for the Group's core products, solar glass and PV power generation, is expected to increase significantly.

The production of solar glass still inevitably produces greenhouse gas emissions due to the consumption of energy and raw materials, and the Group's existing and future solar glass production capacity is still concentrated in China. However, because the PV industry is a strategic emerging industry strongly supported by national policies and the Group's energy consumption, greenhouse gas emissions and other environmental performance are far better than those of its peers; therefore, even under an ideal scenario, the Group's production and operations may be subject to higher environmental efficiency requirements, but this will not affect the sustainable development and core competitiveness of the Group.

The Group assesses the challenges that the transformation trends in policy, laws and regulations, technology, market and reputation may bring to the development of the Group's core business and identifies potential major risks based on positive scenario and ideal scenario. For the potential risks identified, the Group has adopted effective preventive/mitigation measures:

Resilience to Climate Change



Risk Level: Policies, Laws and Regulations

Specific Climate Risks

Carbon Emissions Trading (Carbon Price Increase)

Trend of Influence Change and Impact Cycle

Trend of influence change: Increase

Impact cycle: Medium to long term

- * No impact under the neutral scenario, with the expected impact and probability of occurrence escalating from the positive scenario to the ideal scenario

Potential Business Impacts

- Currently, only the power industry in China is included in the national carbon trading market. In addition, among the 8 local carbon trading pilot markets, the Group only has 500 tonnes of production lines in Tianjin. However, as of the end of 2023, Tianjin production base did not need to participate in the local carbon trading market. The industry of solar glass is expected to be included in China's national carbon trading market in the foreseeable future. However, provided that the Group's carbon intensity remains at the leading level in the industry and the annual decline is not less than 2%, the inclusion in the carbon trading market would not have a substantial impact on the business



Case studies

Production bases, which accounted for approximately 67.4% of the Group's total production capacity, have submitted corporate greenhouse gas emission reports for the previous year during the Reporting Year. It is expected that regulatory authorities are preparing for the future inclusion of the solar glass manufacturing industry in China's national carbon trading market. During the Reporting Year, the carbon intensity of the Group's solar glass products (in tonnes) decreased by 8.9% year-on-year, which was much higher than the requirement of carbon intensity reduction for carbon emission trading. Therefore, according to China's current quota mechanism, there was no need to purchase additional carbon emission quota

- Under the ideal scenario, the IEA expects that China's carbon cost may rise to USD 200/tonne by 2050 (In 2023, the average trading price of China's carbon emission quota has risen to approximately RMB 68.1/tonne compared with 2022, and the year-end closing price has increased 44% to RMB79.4/tonne year-on-year, but it is still far lower than the IEA's forecast), therefore, based on the assumption of future increase in carbon emissions compliance costs, the Group must take more active measures to ensure that the annual carbon intensity decline is not less than 2% or achieve decarbonisation production through the research and development on furnace technology



Resilience to Climate Change

Possible Financial Effects

- No substantial financial impact is expected under the current regime
- Under the ideal scenario, an increase in the requirement for carbon intensity of products or a change in the free carbon emission quota mechanism may lead to an increase in research and development costs, capital expenditures (technological transformation to low-carbon/decarbonisation furnaces) or an increase in production costs (carbon emission compliance costs) if the decarbonisation production of furnace is not successful

Case studies

If the solar glass industry is included in China's national carbon trading market and assumes that the free carbon emission quota is cancelled, it is estimated that the carbon emission compliance costs for the Group will increase by RMB 360 million, taking into account the carbon emission of the Group's production bases in China and the average trading price of carbon emission quota in China in 2023

Prevention/Mitigation Measures

- The Group has set up a carbon management team in 2021 to improve the Group's carbon emission management and collect the Group's carbon emission data for the purpose of setting a science-based carbon reduction target (SBTi) in the future. The Group has also launched product carbon footprint certification (ISO14067:2018) in 2023. Under third-party verification, it will be clearer about the Group's current product carbon emission intensity, as well as the feasible carbon reduction ways in Scope 1, Scope 2 and Scope 3 in the future
- Improve production efficiency and yield rate, and reduce unit carbon emissions. In 2023, the carbon intensity of solar glass products decreased by 12.3% year-on-year in terms of square metres and 8.9% year-on-year in terms of tonnes, far exceeding the reduction requirement in carbon intensity in the carbon trading market
- Set a five-year quantitative goal to reduce the carbon emission intensity of solar glass products (15% reduction by 2027 from base year 2022), and set up an effective incentive mechanism for this goal to motivate employees from the technical team to the management to strive for better carbon intensity performance
- Explore the feasibility of low-carbon/decarbonisation furnace technology (such as the use of hydrogen) and increase research and development efforts

Resilience to Climate Change



Risk Level: Policies, Laws and Regulations

Specific Climate Risks

Strengthen energy efficiency and environmental protection control

Trend of Influence Change and Impact Cycle

Trend of influence change: Increase

Impact cycle: Medium to long term

* Expected impact and probability of occurrence escalating from neutral scenario to positive scenario and to ideal scenario

Potential Business Impacts

- China implements a dual control system for energy consumption, requiring each province to reduce energy consumption per unit of GDP during the "14th Five-Year Plan" period. As solar glass is a high energy-consuming industry, the addition of solar glass production capacity is restricted by the energy consumption quotas of different provinces
- China has further strengthened its control over the production capacity of the solar glass industry. The Ministry of Industry and Information Technology and the National Development and Reform Commission issued the "Relevant Notice on Further Improving the Risk Early Warning of Photovoltaic Rolled Glass Production Capacity" in May 2023, requiring the strict implementation of the production capacity early warning risk mechanism. All new solar glass projects are not only required to be arranged through the provincial Industry and Information Technology Department expert hearings to ensure that they are advanced in terms of economic, technological and environmental indicators, and also required to be recognised as "low risk". Therefore, the process time related to the administrative approval of new solar glass production capacity will be lengthened and the difficulty will be further increased
- The National Development and Reform Commission issued the "Benchmark and Standard Energy Efficiency Levels in Key Industries" notice in 2023, which determined the energy efficiency benchmark levels and standard levels for 25 key areas (including flat glass), and required that for planned and under-construction projects, benchmarking levels should be implemented to promote the improvement of energy efficiency levels and strive to fully reach the benchmarking levels. For existing projects, enterprises are encouraged to strengthen the application of green and low-carbon process technology and equipment, driving the entire industry to increase energy-saving and carbon-reducing transformation efforts, and improving the overall energy efficiency level
- The Ministry of Ecology and Environment and the departments of ecology and environment of various provinces and cities where we operate have introduced more stringent standards and adopted more stringent regulatory measures on air pollutant emissions, automatic monitoring and management of key pollutant-discharging enterprises, and hazardous waste management. Therefore, not only will environmental protection emission indicators restrict applications for new production capacity, but annual emission limits and more standardised and stringent regulatory systems will also require solar glass manufacturers to invest more resources in enhancing pollutant control and waste management to reduce pollutants and waste produced

Resilience to Climate Change

Possible Financial Effects

- Increase in capital expenditure (environmental protection equipment, etc.)

Case studies

By strengthening management and adding new backup environmental protection equipment, we ensure the stable operation of environmental protection equipment and monitoring equipment. At the same time, we continue to optimise the production process to ensure that the pollutant emission data of each industrial park of the Group is in compliance with national and local standards. During the Reporting Year, capital expenditures of approximately HK\$130 million was incurred for the acquisition of environmental protection equipment at various production sites.

The Ministry of Industry and Information Technology and the National Development and Reform Commission have proposed that the energy efficiency of key industries will be comprehensively improved by 2025, and the value-added energy consumption of industrial units above designated size will drop by 13.5% compared with 2020. The Group's energy efficiency level is at the leading level in the solar glass industry, and in the past five years, the energy consumption per unit of finished products (calculated in square metres) has dropped by more than 32%. Accordingly, any increase in energy efficiency requirements by the regulatory authorities of proposed, under-construction and existing projects will not have a negative impact on the Group's business operations and development. Whilst the Group may incur research and development expenses and capital expenditure as a result of the need to adopt energy saving and consumption reduction measures, the amount involved is relatively small based on the relevant expenditures in the past 10 years. On the contrary, stricter energy efficiency requirements are expected to significantly enhance the Group's competitiveness in acquiring new solar glass projects

- Increased uncertainties in capacity expansion plans and longer ramp-up cycles may affect the expected revenue performance

Case studies

Based on the average market price and product mix in 2023 and assuming that new production capacity cannot be added as scheduled due to energy consumption/emission quota restrictions, every reduction in the launch of a 1,000-tonne production line will reduce the Group's annual revenue by approximately HK\$1 billion

- Increase in costs (such as operation of environmental protection equipment, increase in market price of electricity and raw materials)

Prevention/Mitigation Measures

- The Group has experience in overseas production capacity expansion and will not subject to policy control in China in the long run. It has planned to add two production lines of 1,200 tonnes/day each in Malaysia, which are expected to commence production in the first half of 2024
- The Group's performance in energy efficiency and environmental protection has maintained at industry-leading level, and the intensity indicators have decreased year on year. Therefore, the Group has advantages over its peers when competing for quotas of new production capacity. It can also maintain its advantages through applying continuous energy saving and emission reduction measures in the future
- The reserve capacity is sufficient, and the reserve capacity available for future expansion exceeds 15,000 tonnes/day

Resilience to Climate Change



Risk Level: Technology

Specific Climate Risks

Transforming to lower emission technology

Trend of Influence Change and Impact Cycle

Trend of influence change: Increase

Impact cycle: Medium to long term

- * No impact under the neutral scenario, with the expected impact and probability of occurrence escalating from the positive scenario to the ideal scenario

Potential Business Impacts

- Under the ideal scenario, carbon dioxide emissions generated in the global energy-related and industrial processes will decrease by 40% in the next 10 years. Therefore, it may require the current high-energy consumption industries to reduce carbon emissions as soon as possible by increasing research and development investment
- At present, the production technology of solar glass furnaces still quite relies on fossil fuels. Therefore, if the policy becomes stricter, the Group may need to increase investment in research and development and change the production technology to achieve decarbonisation production. Based on the current price of hydrogen, the supply and stability of low-carbon hydrogen fuels (such as green hydrogen) and the consideration of production safety, hydrogen is still not suitable as the main fuel for commercial production of solar glass

Possible Financial Effects

- Increase in research and development costs
- Increase in capital expenditure (e.g. replacement of existing production lines/equipment with new furnaces/equipment)
- Impairment of assets (early elimination of existing production lines/equipment)

Prevention/Mitigation Measures

- The Group is the only enterprise in the solar glass industry with its own research institute, and is the industry leader in both technology and new product research and development. Therefore, even if the transformation to lower-carbon technology is needed in an ideal scenario, the risk will be lower than that of its peers, and it is more likely to achieve technological breakthroughs ahead of its peers

Resilience to Climate Change



Risk Level: Market

Specific Climate Risks

Full life cycle carbon emission management of PV products (EU carbon tariff, low-carbon PV modules)

Trend of Influence Change and Impact Cycle

Trend of influence change: Increase

Impact cycle: Short, medium and long term

* Expected impact and probability of occurrence escalating from neutral scenario to positive scenario and to ideal scenario

Potential Business Impacts

- The European Union has commenced trial implementation of the Carbon Border Adjustment Mechanism (“**CBAM**”) in October 2023 and it is expected to be officially implemented in 2026. During the trial implementation phase, only CBAM related information is required to be reported and it is not required to purchase CBAM certificates. Upon the official levy in 2026, importers will be required to purchase CBAM certificates, and the price of CBAM certificates is expected to refer to the average auction price of EU ETS quotas. Although the regulatory scope of the CBAM transition period is mainly limited to the six high-carbon emission industries, it is expected to cover all industries and sectors covered by the EU ETS in 2030. The United States also plans to introduce the Clean Competition Act (“**CCA**”) in 2024, and the glass industry will be subject to levy. With the implementation of carbon tariffs in Europe and the United States, it is expected that more regions will follow and put forward similar policy
- The French Energy Regulation Commission updated the “Tendering Regulations Relating to the Construction and Operation of Solar Power Facilities” (AO PPE2 PV Sol) in April 2023, proposing new requirements for the simplified carbon assessment (ECS) of PV modules. Requirements for carbon footprint of products are becoming increasingly stringent, requiring mandatory ECS assessment for all PV projects exceeding 100kWp. Carbon footprint certification report issued by a professional organisation is also required. In the Asian market, the Korean government has taken the lead in proposing a carbon certification system for PV modules. It is believed that other Asian countries will also gradually put forward corresponding requirements in the future

Possible Financial Effects

- Increasing costs (in case of reducing carbon footprint, it will be more likely to tend to use green electricity, driving up the price of green electricity; carbon cost of exporting products will be increased after the PV industry is incorporated into the EU's carbon tariff mechanism; product carbon footprint certification costs)

Case studies

Based on the carbon price expectations of developed economies in 2030 under an ideal scenario, if CBAM fully implements paid quotas, based on the greenhouse gas emissions per tonne of the Group's solar glass products in 2023, the carbon cost may be as high as RMB 650/tonne. Since the CCA levy is based on the excess of the relative carbon emission intensity (i.e. baseline) of domestic products in the United States, and there is no solar glass production line in the United States, according to the current circumstances, only the ISO14067 verification certificate should be provided. It is not expected to have a material financial impact

- Increase research and development costs (low-carbon/decarbonisation furnace technology, low-carbon products)



Resilience to Climate Change

Prevention/Mitigation Measures

- By continuously reducing the unit energy consumption and electricity consumption, improving yield rate, increasing the proportion of distributed PV power generation and residual heat power generation in the total electricity consumption of solar glass production, and selecting more low-carbon raw materials/energy where applicable, the carbon intensity per unit of product was effectively reduced. Given that the Group's carbon emission intensity is far below the industry average, if module manufacturers raise the carbon intensity requirement for solar glass products in the future, it will further enhance the competitiveness of the Group's products

Case studies

Based on the French carbon footprint requirement for low-carbon PV modules (less than 550 kg CO₂/kW) and the carbon intensity performance of the Group's solar glass products in 2023, the carbon emission from solar glass production only accounts for 4% and 8% of the carbon footprint of PV modules in single and double-glass modules, respectively. Therefore, solar glass is not the main source of the carbon footprint of PV modules

- The Group has also gradually expanded its production to provinces with a cleaner power and energy structure. For example, it plans to expand production in Yunnan Province, where more than 80% of the local electricity supply comes from renewable energy, which is helpful for product carbon footprint certification. In addition, soda ash is one of the main raw materials. The supply of natural soda ash on the market has also increased compared with previous years. The energy consumption and carbon emissions of the natural soda ash production process are much lower than those of synthetic soda ash. Therefore, the use of natural soda ash is also a feasible way to further reduce the carbon footprint of solar glass products in the future
- During the past operating period, the Group was well ahead of its peers in furnace technology and low-carbon product research and development, and was the only enterprise in the industry with its own research institute. Therefore, it is expected that the Group will continue to maintain its technological and product research and development advantages in the future

Resilience to Climate Change



Risk Level: Market

Specific Climate Risks

Consumption issues of renewable energy in the process of low-carbon transformation of China's power system

Trend of Influence Change and Impact Cycle

Trend of influence change: Increase

Impact cycle: Short to medium term

* Expected impact and probability of occurrence escalating from neutral scenario to positive scenario and to ideal scenario

Potential Business Impacts

- Stimulated by China's active promotion of the dual-carbon target and the sharp decline in module prices, China's new grid-connected PV installations reached 216 GW in 2023, nearly the sum of the past four years. Due to the large amount of renewable energy projects connected to the grid, some areas experienced more serious consumption problem than previous years
- Increasing energy storage and power grid upgrades are effective measures to improve the power grid's capacity to consume renewable energy, but they still take time to implement. Therefore, in the short term, if the red line requirements for renewable energy consumption are maintained, the capacity of power grids in various regions may, to a certain extent, affect the arrangement of construction quotas for new solar farm projects in various places, thus making it more difficult for the Group to obtain relevant quotas
- As the proportion of renewable energy in power supply increases, China has gradually formed a renewable energy power market trading mechanism with three parallel mechanisms: green power trading, green certificate trading and carbon market trading, thereby guiding the gradual change of renewable energy from a fully guaranteed procurement mechanism to a market-oriented mechanism. In the early stages of the transformation, as the trading mechanism still needs to be improved, companies may face uncertainty about the amount of on-grid electricity and on-grid electricity prices when complying with local policies and grid requirements

Possible Financial Effects

- Decrease in revenue (due to the grid consumption capacity, the reduction in the new grid-connected capacity of solar farm projects, the uncertainties brought by the market-oriented electricity trading mechanism on the on-grid electricity and electricity price)



Case studies

Since the Group has paid much attention to the electricity demand and supply situation in the project location when it first developed the solar farm project, and the Group's solar farm projects are mainly located in Class II and III resource areas with strong electricity demand. Therefore, during the Reporting Year, most of the Group's solar farms have not been affected by power curtailments, and the power loss caused by power curtailments only accounted for approximately 1% of the total power generation for the year. In the short term, the relevant impact may increase, but in the long term, with the transformation and upgrading of the grid and the application of energy storage, the consumption problem is expected to be effectively resolved

- Increase in costs (energy storage costs, purchased electricity costs, labour costs)
- Increase in research and development costs (PV power forecasting system)
- Increase in capital expenditure (increase in energy storage ratio)

Resilience to Climate Change

Prevention/Mitigation Measures

- When investing in new solar farm projects, looking for areas with strong local demand for electricity and high power consumption industries to fundamentally provide better protection for the future consumption of solar farm projects, as well as the supply and demand and price of electricity when participating in the market-based electricity trading
- The Group has its own development and construction team, so it does not need to outsource EPC work, and thus it can effectively control the development and construction costs of solar farm projects. If compared with the publicly available data in 2023, the Group's development and construction cost per watt is more than 30% lower than the industry's average EPS winning bid price. Therefore, in the face of similar policy changes, such as market sale of electricity and increase in energy storage, the Group's solar farm projects have certain advantages in depreciation and labour compared with other projects over the same period of time
- Considering the increase in the proportion of market-based electricity trading in the future, the Group has actively set up a talent team to develop and improve the PV power forecasting system during the Reporting Year, laying the foundation for securing more reasonable return for the project when participating in the electricity spot market trading in the future



Risk Level: Reputation

Specific Climate Risks

Trade disputes (PV supply chain traceability)

Trend of Influence Change and Impact Cycle

Trend of influence change: Increase

Impact cycle: Short to medium term

* Expected impact and probability of occurrence escalating from neutral scenario to positive scenario and to ideal scenario

Potential Business Impacts

- Climate change drives the global enthusiasm for investment in renewable energy. Countries have also strengthened the protection of local enterprises, with an aim to promote the development of local solar manufacturing industry. As the production capacity located in China or owned by Chinese manufacturers has already accounted for approximately 99% of the global solar glass production capacity, there will be no actual impact on the operation.
- With the continuous advancement of PV supply chain traceability, the demand for solar glass in overseas regions will be greatly increased. As at the end of 2023, the solar glass production capacity in overseas regions only accounted for approximately 6% of the total global solar glass production capacity. Therefore, the supply and demand of solar glass products in overseas regions is expected to be more favorable than that in China for a period of time in the future, which has a positive impact on the prices and profit margins of overseas products. By the end of 2023, the Group accounted for approximately 30% of the global non-China production capacity. It is expected that by the end of 2024, the Group will account for apparently 43% of the global non-China production capacity through the addition of two new production lines of 1,200 tonnes/day in 2024



Resilience to Climate Change

Possible Financial Effects

- Increase in selling expenses (e.g. imposing trade tariffs)

Case studies

Effective avoidance of trade tariffs for individual countries/regions by flexibly arranging different production bases to supply products overseas. During the Reporting Year, the Group incurred no additional tariff expenses

- Increase in capital expenditure (accelerate overseas production expansion)
- Increase revenue and overseas product profit margin

Preventive/mitigation measures

- As approximately 99% of the global solar glass production capacity is located in China or is under Chinese manufacturers' control, even with the imposition of trade tariffs, it would not be fully borne by solar glass manufacturers and there is a high probability that it will be passed on to customers. In addition, the Group has overseas production bases and actively adopts overseas capacity expansion strategies, which can effectively diversify the risks and reduce the impact of trade disputes. At the same time, the increasing uncertainty in the trading environment will significantly increase customers' demand for non-China product supply, thereby further enhancing the competitiveness of the Group's overseas production bases. If trade disputes and supply chain traceability continue, the Group expects its overseas sales of solar glass to maintain a premium and better profit performance than the domestic market for a period of time in the future



Resilience to Climate Change

CLIMATE CHANGE RESILIENCE AND OPPORTUNITIES

The World Meteorological Organisation's latest "Global Climate Report 2023" shows that 2023 was the warmest year on record, with a number of climate change indicators including the average near-surface and the sea surface temperature, the Antarctic sea ice extent and the sea level rise, all hitting record highs, and the changes are accelerating. Hot waves, floods, drought, wildfires and more powerful tropical cyclones have made millions of people face the climate crisis, resulting in economic losses of up to billions of US dollars. Fossil fuel use increased significantly in 2023 as severe droughts hindered hydropower generation in several countries, but fortunately, the massive growth in renewable energy deployment, led by PV power generation, has largely inhibited the growth rate of carbon dioxide emissions. Therefore, despite the record-high carbon dioxide emissions last year, energy-related emissions only increased by 1.1% year-on-year. In view of this, accelerating the global energy transition, investing more in renewable energy, and promoting the transformation of the entire economic system towards low-carbon development is a matter of urgency, and clearly a commitment and action that are several times stronger than ever.

In 2023, the IEA released the "Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach", which revised the net-zero pathway proposed in its 2021 report. Firstly, it raised the importance of low-carbon technologies that has been commercialised for mass production, particularly solar PV and battery chemistry technologies, in achieving the net-zero goal in 2050. On the other hand, it made downward revisions to the share of emission reductions from technologies under development and the share of new wind power contributions. Secondly, the IEA believes that due to the substantial increase in global solar PV and battery manufacturing capabilities, the amount of carbon reductions that they can contribute will increase significantly between now and 2030, and it is expected that solar PV power generation and electric vehicles will contribute one-third of the emission reductions by 2030.

Benefiting from the significant improvement in efficiency and significant cost reduction brought by technological development, solar PV has become the most important growth pole for renewable energy. The IEA pointed out that the global newly installed capacity of renewable energy increased significantly by 50% in 2023, of which the PV installed capacity increased significantly by 85% year-on-year, and the newly installed capacity in China recorded a year-on-year increase of 147% to 216 GW. The IEA further predicts that renewable energy will see the largest growth period in the next five years, with solar PV and wind energy accounting for 95% of the new capacity, surpassing coal to become the largest power source in early 2025. Due to the significant decrease in costs, the investment returns of solar farm projects are extremely attractive, especially the centralised and global distributed solar farms in emerging countries are expected to become an important new points of growth for PV installations. In addition, the mature PV markets, including China, Europe, the United States and India, are also expected to continuously increase the scale of PV installations to achieve the established carbon targets and meet the local electricity demand in a cleaner and lower-carbon manner.



Resilience to Climate Change

In view of the expected growth of global PV demand and the tightening control of solar glass production capacity in China, we believe that the next 3-5 years will continue to be a critical period for the Group to actively deploy and increase its solar glass production capacity and market share in both domestic and overseas markets. Since 2020, the Group has adopted a proactive expansion strategy to increase the total daily melting capacity from 7,800 tonnes at the end of 2019 to 25,800 tonnes at the end of 2023, representing a CAGR of around 35%. In 2024, the Group plans to add six new solar glass production lines with a total daily melting capacity of 6,400 tonnes in China and Malaysia, and the total daily melting capacity is expected to increase to 32,200 tonnes by the end of 2024. In addition, as the capacity expansion of China's high energy consumption industry is expected to face restrictions in the medium and long term, the Group has actively participated in hearings in many provinces since 2022 to reserve solar glass capacity resources, and has also actively sought opportunities to further increase overseas production capacity. Currently, in addition to the newly added production capacity in 2024, the Group still has nearly 9,000 tonnes/day of domestic and overseas production capacity that can be released in 2025 or beyond.

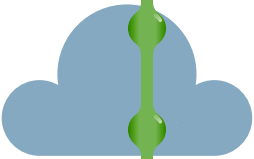
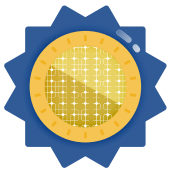
Growing global demand for PV has undoubtedly expanded the room for growth of solar glass. The Group has also taken the initiative to increase investment in research and development to continuously maintain its leading edge in terms of product performance, environmental performance (energy consumption, carbon emissions, water consumption, packaging material consumption, etc.) and product diversification. This will not only enable the Group to maintain a reasonable gross profit margin in the long term and consolidate the strategic cooperative relationship with customers, but also enable the Group to cope with China's energy consumption control, tightening of production capacity, increasing uncertainty in global trading policies, traceability investigations of PV supply chain, and the carbon footprint certification of PV products, and thereby secure a greater market share in the medium and long term.

PV power generation is not only the key to achieving global energy transition, but also an important part of mitigating climate change, reducing the negative impact of extreme climate events on people's health and lives in the long term, and building a more climate-resilient energy system to enhance the resilience of community climate change. Therefore, the Group will also enhance its operation and maintenance management capabilities, develop PV power forecasting system, and establish a professional team to better cope with the uncertainties in the construction of new types of grids and in the initial implementation of green electricity market trading mechanism, as well as the impact on the volume and price of the on-grid electricity, so as to capitalise on the double growth in both scale and efficiency brought by the increase in the end-market demand for green electricity in the long run.

Ecological-friendly and Sustainable Business Model

Issues of focus	Environmental Compliance	Green Manufacturing (solar Glass)	Life Cycle Management
	Carbon Footprint	Mutual Benefit with the Ecology (Solar Farms)	

Xinyi Solar
GREEN strategy



By upholding the corporate mission of "leading green new energy", Xinyi Solar focused its work on the PV industry for more than a decade, and is now the world's largest solar glass manufacturer and China's largest private utility-scale solar farm developer and owner. On the basis of promoting global carbon neutrality through supplying solar glass with high quality and stable green electricity, the Group also spares no effort on minimising the effect to the environment and the consumption of resources during the production and operation process, including but not limited to the energy-saving and emission minimisation during the production process of solar glass, thus minimising the carbon footprint of products, and achieving the whole life cycle of green development. The Group also insists on building environmentally friendly solar farms, to reduce the impact of the development and construction process to the ecosystem, to better protect the biodiversity and to create greater social, environmental and economic benefit for the local community through responsible operation of green power.



Work and achievements in 2023



Green revenue percentage 99.5%



Addition of 6 solar glass production lines with total daily melting capacity of 6,000 tonnes/day, effective production capacity enhanced by 45.9%, intensity of energy consumption decreased by 8.6% year-on-year



Water consumption intensity of solar glass products decreased by 29.1% year-on-year



Paperless packaging utilisation rate enhanced by 18.2 percentage points to 64.3%, packaging materials consumption intensity decreased by 33.0% year-on-year



1,094MW of solar farm projects newly added, 100% compiling the development principle of mutual benefitting with the ecology, approximately 80% of newly-added utility-scale projects are agricultural-PV complementary/fishery-PV complementary projects, with an estimated annual supply of green electricity of 1,129GWh



During the Reporting Year, there was no confirmed violations or complaints related to environmental protection that have a material impact on the Group



The carbon footprint certification (ISO 14067:2018), of solar glass products was officially commenced at the end of 2023, and is expected to be completed by the end of 2024



UN Global Compact related principles

Principle 8: Business should undertake initiatives to promote greater environmental responsibility

Principle 9: Businesses should encourage the development and diffusion of environmentally friendly technologies



Future action plans and targets

XSG 4: Strive to reduce energy consumption intensity of solar glass product by 15% by 2027 as compared to 2022

XSG 5: Adopt strict standards to regulate and manage the emission of exhaust gas, and strive to surpass national standards

XSG 6: Obtain and use water resources in a responsible and sustainable manner to further improve the utilisation rate of recycled water and strive to achieve zero waste except normal evaporation and sedimentation tank loss

XSG 7: Strive to reduce water consumption per square metre of finished solar glass products by 28% by 2028 as compared to 2023

XSG 8: Strive to use iron pallets to replace wooden pallets for 92% of domestic sales products by 2028

XSG 10: Strive to reduce the production volume of glass powder per square metre of finished solar glass product by 35% by 2028 as compared to 2023

XSG 13: Protect local natural resources and biodiversity while developing and building solar farms, and insist on building environmentally friendly solar farms

Ecological-friendly and Sustainable Business Model

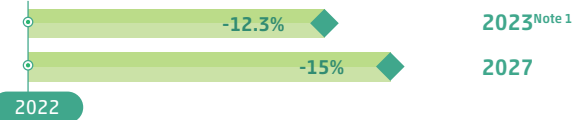
JOURNEY TO GREEN PRODUCTION OF SOLAR GLASS

The environmental efficiency of solar glass production in 2023

Carbon footprint

Strive to reduce greenhouse gas emission intensity of solar glass product by 15% by 2027 compared to 2022

↓ 15%

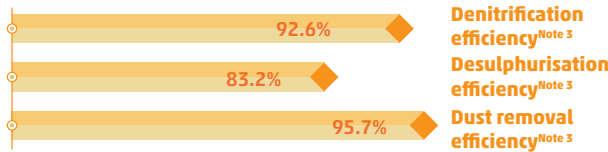


In 2023, the solar glass products sold by the Group can meet the PV module demand of approximately 154GW, representing approximately 108 million tonnes of carbon dioxide emission reduction

CO2 Reduction contributed by PV power generation equivalent to 72.7% of GHG Emissions from Solar Glass Production ^{Note 2}

Air pollutants management

Adopt strict standards to regulate and manage the emission of exhaust gas, and strive to surpass national standards



Energy management

Strive to reduce energy consumption of finished solar glass product by 13% by 2027 compared to 2022

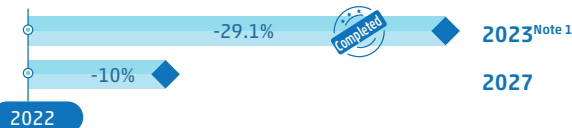
↓ 13%



Water resource management

Strive to reduce water consumption of finished solar glass product by 10% by 2027 compared to 2022

↓ 10%



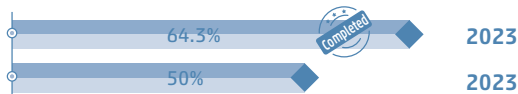
Obtain and use water resources in a responsible and sustainable manner to further improve the utilisation rate of recycled water and strive to achieve zero waste except normal evaporation and sedimentation tank loss

Utilisation rate of recycled water in 2023: 96%



Packaging materials management

To promote higher standard of environmentally-friendly product packages, and strive to have 50% of products adopt paperless package by 2023



Consumption of packaging materials per square metre of finished solar glass product recorded a year-on-year decrease of

-33.0% ^{Note 1}



Notes:

- (1) The figures were derived by comparing the data of emission/consumption per square metre of finished products in 2023 and 2022, respectively. The accounting scope, statistical method and calculation formula of data are consistent in both years and conform to the comparability principle
- (2) In 2023, the Group's solar farm projects, contributed to a reduction of 4,150,000 tonnes of carbon dioxide emissions through PV power generation, while the total greenhouse gas emissions from solar glass production were 5,710,000 tonnes
- (3) For specific calculation methods, please refer to page 149 of this Report

Ecological-friendly and Sustainable Business Model

Environmental Compliance

The Group complies with the environmental laws and regulations of the countries and regions in which it operates, and has established and continuously optimised its internal environmental responsibility management system in compliance with the ISO14001 environmental management system standard. The Group has obtained the green finance pre-issuance stage certificate issued by the HKQAA in 2019. Subsequent additions of the solar glass production sites also implement the same environmental management and protection practices, and therefore all the solar glass production bases of the Group in operation met the requirements of the HKQAA's Green Finance Certification Scheme during the Reporting Year.

The Group has established PV environmental protection office, which is responsible for coordinating and managing all environmental management-related activities in the production of solar glass. The PV environmental protection office updates the ESG working group on a quarterly basis on the performance of environmental-related core indicators, and proposes feasible proposals for the optimisation and improvement of the core indicators to assist the SDM Committee in monitoring the environmental management-related work of solar glass business. In order to improve the environmental protection supervision mechanism and ensure that the management of exhaust gas, sewage and waste materials complies with or exceeds the requirements of statutory emission standards, the Group has set up environmental protection management teams in each of its production bases to supervise and inspect the key environmental protection and emission equipment. The Group has also established the position of environmental protection officer to maintain good communication with environmental protection regulatory authorities and keep abreast of the latest environmental protection policies and regulatory requirements to ensure that all environmental protection indicators are in compliance with national and local standards. In addition, the Group undergoes regular external audits by certification bodies (e.g. TÜV SÜD) to ensure that the Group's environmental management system continues to meet international standards.








Ecological-friendly and Sustainable Business Model

Green Production Base

As solar glass production involves the consumption of energy (natural gas and electricity), water resources, raw materials (such as soda ash, ultra-clear silica sand) and other resources (such as packaging materials, wood, paper, plastic strips, etc.), the production processes generate greenhouse gases, air pollutants, hazardous and non-hazardous wastes and sewage and other pollutants. During the Reporting Year, the standard environmental protection facilities at the environmental protection practices implemented by the Group's solar glass production bases were as follows:



Environmental goals	Environmental facilities/ Environmental practices	Specific environmental performance indicators
 <p>Reduce greenhouse gas emissions</p>	<p>Use of clean energy (natural gas)</p> <hr/> <p>Residual heat power generation equipment to reduce purchased electricity ^{note 1}</p> <hr/> <p>Rooftop distributed PV power generation system to reduce purchased electricity ^{note 1}</p>	<p>To reduce Scope 1 greenhouse gas emissions</p> <hr/> <p>To reduce Scope 2 greenhouse gas emissions</p> <hr/> <p>To reduce Scope 2 greenhouse gas emissions</p>
 <p>Reduce air pollutants</p>	<p>Desulphurisation device</p> <hr/> <p>SCR denitrification device</p> <hr/> <p>Electrostatic precipitator</p>	<p>To reduce SO₂ emissions</p> <hr/> <p>To reduce NO_x emissions</p> <hr/> <p>To reduce particulates emissions</p>
 <p>Improve utilisation of water resources</p>	<p>Water recycling system (sewage treatment and recycling system)</p>	<p>To reduce new water intake by using recycled water in production</p>
 <p>Improve resources efficiency</p>	<p>Regular maintenance and energy-saving upgrades</p>	<p>To reduce energy and resources consumption per unit of finished products by improving production efficiency and yield rate</p>
 <p>Effective waste management</p>	<p>Waste recycling facilities</p>	<p>To reduce hazardous and non-hazardous waste emissions</p>

Note:




(1) Purchased electricity is mainly coal-fired power, which causes greater environmental pollution

Ecological-friendly and Sustainable Business Model

Energy Management


According to the definition of direct energy consumption accounting scope in the Hong Kong Stock Exchange's "Reporting Guidance on Environmental KPIs", the Group's direct energy consumption mainly includes fuel used in the production of solar glass, electricity generated from residual heat power generation system and distributed PV generation equipment and used for solar glass production, and diesel used in forklifts and gasoline used in motor vehicles. Indirect energy consumption mainly includes purchased electricity used in the processing, stacking, transportation and loading processes. During the Reporting Year, the Group achieved effective reduction in the primary carbon intensity of its solar glass products and continued to improve the energy efficiency of its production process mainly through the following measures:



	Measures	Environmental benefits of the relevant measures	Performance in 2023
Effective reduction of initial carbon intensity	 Use natural gas as the primary source of energy	Heavy oil and natural gas are the two most commonly used production fuels in solar glass production. With the same amount of calorific value provided to the furnaces, the carbon emission of natural gas is 27% ^{Note 1} lower than that of heavy oil. To effectively reduce primary carbon intensity of solar glass products, the Group has chosen natural gas as its primary production fuel	<ul style="list-style-type: none"> The Group continued to use natural gas as its primary production fuel during the Reporting Year Scope 1 greenhouse gas emissions per unit of finished goods (in square metres) decreased by 10.1% year-on-year
	 Replace diesel forklifts with electricity forklifts	The use of electric forklifts instead of diesel forklifts can reduce the amount of diesel used in the production process, thus reducing air pollutants and Scope 1 greenhouse gas emissions	<ul style="list-style-type: none"> During the Reporting Year, the production bases at Tianjin, Beihai and Malaysia enhanced their production output, while the consumption of diesel recorded a year-on-year decrease of 18.6%, 5.5% and 17.4% respectively The emission of nitrogen oxides (NOx), smoke and dust, and scope 1 greenhouse gas of Tianjin production base recorded a year-on-year decrease of 6.9%, 47.0% and 3.3% respectively
	 Utilising residual heat and rooftop distributed PV power generation to meet part of the production electricity demand of the Group	Reduce the use of purchased electricity, which will in turn reduce Scope 2 greenhouse gas emissions	<ul style="list-style-type: none"> By increasing capacity and optimising residual heat power generation equipment, the total power generation from residual heat increased by 34.0% year-on-year during the Reporting Year, accounting for 18.2% of the Group's total electricity consumption for solar glass production Installed capacity of rooftop distributed PV power generation at Wuhu production base and Zhangjiagang production base increased. The Group's total power generation from distributed PV power generation increased by 30.4% year-on-year during the Reporting Year, accounting for 7.5% of the total power consumption for solar glass production

Ecological-friendly and Sustainable Business Model



	Measures	Environmental benefits of the relevant measures	Performance in 2023
Continuous enhancement in energy efficiency	 <p>Energy-saving renovation of production equipment and optimisation of production process, furnaces and production lines</p>	<p>Reduce natural gas consumption and power consumption of production lines by retrofitting production and environmental protection equipment in the deep-processing procedures, improving equipment efficiency, reducing equipment use frequency and optimising process parameters, etc.</p> <p>Continuous optimisation of production processes, furnaces and production line design through R&D to improve yield rate and reduce energy consumption intensity of products</p>	<ul style="list-style-type: none"> During the Reporting Year, all production bases have implemented various measures to increase energy efficiency. Such measures can save approximately more than 13 million kWh and 12 million m³ of natural gas every year when in full operation. Through reducing the consumption of energy and electricity, utilising energy in a highly efficient manner, reasonably adjusting the electricity usage at peak and trough, and saving of equipment costs have brought economic benefits of more than RMB40 million to the Group

Note: (1) Calculated by using the unit calorific value of natural gas of 9,000 kcal/m³ and unit calorific value of heavy oil of 9,600 kcal/L

Case studies

During the Reporting Year, Beihai production base implemented energy saving rectification on the precipitator, which effectively solves the problem of high energy consumption, high failure rate and prolonged repair time of the original equipment, thus enhancing the operation efficiency of the equipment and achieve cost-saving. After renovation, the Group can save more than RMB300,000 per annum through the reduction of electricity consumption and the saving of equipment costs, etc. During the Reporting Year, clean energy and renewable energy accounted for 99.94% of the Group's total direct energy consumption in solar glass production, purchased electricity as a percentage of total energy consumption accounted for 12.2%, intensity of energy consumption of solar glass products significantly decreased by 8.6% year-on-year to 15.31 kWh/m², achieving the green production target of less energy consumption and lower carbon intensity.

Water Resources Management

Solar glass production processes, such as raw material mixing, equipment cooling, residual heat generation, as well as washing and cleaning during the tempering process, all require water resources. The Group's sewage recycling and treatment system ("**water recycling system**") adopts different methods such as cooling circulation, separation and precipitation to recycle and reuse the production wastewater according to the impurities contained in the water after the calendaring process and tempering process. The Group continuously optimises the water recycling system through innovation and upgrade of the original equipment, adding new water purification system, enhance the usage frequency of sewage processing equipment and carry out regular cleaning on sewage tanks, in order to further enhance the utilisation rate of recycled water and to maximise the usage of recycled water in production. During the Reporting Year, the utilisation rate of recycled water of the Group increased by 1.4 percentage points to 96.0%. The Group will continue to strive to improve the efficiency and purification capacity of the sewage treatment system, with the target of increasing the utilisation rate of recycled water to 100% for some processes, so as to achieve the long-term goal of "zero waste except normal evaporation and sedimentation tank loss".

Ecological-friendly and Sustainable Business Model

The Group's production bases are located in the PRC (Wuhu of Anhui Province, Zhangjiagang of Jiangsu Province, Beihai of Guangxi and Tianjin Municipality) and Malacca City in Malaysia, with no production capacity located in areas with high/extremely high baseline water pressure. In addition, an average of approximately 95% or more of the water used in the production of solar glass could be met through recycled water, and the most of the fresh water intake come from natural water sources, thus the reliability on fresh water (in particular municipality water supplies) for the production of solar glass is very low. As the Group achieved efficient water resources management and it is still being optimized continuously, the Group is not currently under or expected to be under, pressure to obtain water resource. Nevertheless, the Group is still actively adopting various water-saving measures to further reduce the water consumption intensity of solar glass products, in order to conserve the water resource of the earth, and to effectively enhancing its ability to resist water resource risks.

Case studies

During the Reporting Year, by adjusting the water replenishment method for further processing, implementing water intake equipment modification and optimising the water discharge method for certain equipment, and re-treating the effluent discharged from tempering to enhance the water recycling rate, the water consumption intensity of solar glass products decreased by 29.1% year-on-year to 0.011 m³/m². During the Reporting Year, the Wuhu Jiangnan Base optimised the usage of water in the tempering process. By adjusting the process parameters, equipping with energy efficient equipment, and adding sewage treatment equipment to fully purify the previously unused production wastewater and then recycle it into production, thereby reducing the amount of water intake and saving sewage charges, which is estimated to bring about cost savings of approximately RMB350,000 for the Group. Effective water conservation measures have enabled the Group's Wuhu production site to reduce its water consumption by 4% year-on-year while its annual production volume has increased by over 20% year-on-year. During the Reporting Year, the Tianjin production base implemented a number of measures to enhance water efficiency, including the replacement or upgrading of sewage treatment equipment and the rational adjustment of water supply sources according to the water demand of different processes, which resulted in a decrease in water consumption by more than 36% year-on-year.

Emission and Treatment of Greenhouse Gas and Other Pollutants

The major greenhouse gas generated during the production of solar glass is carbon dioxide, which is mainly generated from direct emissions (Scope 1) as a result of natural gas combustion and raw material decomposition as well as indirect emissions (Scope 2) as a result of the consumption of purchased electricity. Measures to reduce Scope 1 greenhouse gas emissions per unit of finished goods include: i) choosing the cleanest production fuel (natural gas) within the realm of available technology, leading to less initial CO₂ emission concentrations than using heavy oil; ii) continuously improvement of production processes through optimisation of production lines and equipment to increase production efficiency and yield rate; and iii) replacing diesel forklifts with electric forklifts. Measures to reduce Scope 2 greenhouse gas emissions per unit of finished goods include: i) using residual heat generated electricity and PV distributed power generation to fulfil part of the electricity demand for production; ii) continuously optimising the furnace melting process to enhance residual heat power generation; and iii) adopting more efficient energy saving measures to reduce the electricity consumption of deep-processing section. During the Reporting Year, the Group's Scope 1 and Scope 2 greenhouse gas emissions per square metre of solar glass products decreased by 10.1% and 19.4% year-on-year, respectively. The comprehensive greenhouse gas emissions intensity of solar glass products decreased to 4.99 kilograms of carbon dioxide equivalent/square metre.

Ecological-friendly and Sustainable Business Model

Case studies

Fossil fuels and purchased electricity are the main sources of energy for solar glass production, accounting for about 95.8% of the total energy consumption and more than 70% of the total greenhouse gas emissions caused by solar glass production. Therefore, by actively taking energy-saving and consumption-reducing measures, on the basis of reducing energy and electricity consumption, we can ultimately achieve the goal of reducing the carbon footprint of solar glass products. In addition, enhancing the yield rate and changing the product mix could also facilitate the lowering of carbon emission per square metre of solar glass products. During the Reporting Year, the production bases of the Group implemented a total of more than 10 energy-saving and emission-reduction measures. By reducing the consumption of natural gas and purchased electricity, it is estimated that more than 34,000 tonnes of carbon dioxide emissions can be reduced per year after the measures are fully operational.

In addition to greenhouse gas emissions, the Group has identified the major pollutants generated during the solar glass production process and classified them as follows:

- (i) Air pollutants: SO₂, NO_x and particulates (smoke and dust) are generated as a result of the feeding and mixing of raw materials and the consumption of natural gas, electricity and water in melting raw materials. Among them, SO₂ and NO_x are mainly generated from the melting process, and particulates are generated from various processes from feeding of raw materials to packaging of finished products
- (ii) Sewage: Production sewage that cannot be recycled after being recycled several times in the production process, and domestic sewage generated by employees for domestic use
- (iii) Solid wastes: Major hazardous wastes included discarded packaging barrels, waste mineral oil, denitrification catalysts, waste paint, discarded brushes/gloves, and discarded chemical reagent; major non-hazardous wastes included sludge (glass powder) generated after sedimentation of production sewage, desulphurisation gypsum collected by environmental protection facilities, ash and dust, discarded raw material ash, construction waste, and broken glass and discarded packaging materials during production process
- (iv) Noise: Mainly generated from wind turbines used in raw material feeding, mixing, melting, calendaring and annealing processes as well as residual heat generators

Ecological-friendly and Sustainable Business Model

During the Reporting Year, all provinces fully implemented the "Glass Industry Air Pollutant Emission Standards (GB26453-2022)". Anhui Province, where the Group's production capacity is most concentrated, requires the implementation of the more stringent local standards of Anhui Province for new production capacity, and is required to meet the emission standards of Class A enterprises in the flat glass and electronic glass industries, that is, the emission limits of SO₂, NO_x and particulate (smoke and dust) tightened to 50mg/m³, 200mg/m³ and 10mg/m³, respectively. Existing production capacity is also required to implement more stringent emission standards from October 2024. The provincial and local emission standards where other production bases are located will remain consistent with 2022.

Case studies

In 2023, several production bases such as those in Wuhu, Beihai and Malaysia adopted a more active emission reduction measures, including the reduction of exhaust gas emission through equipment modification and process optimisation in order to reduce the initial emission concentration of air pollutants from the furnace. It also carried out regular maintenance, inspection and timely replacing/cleaning catalyst and the accessories of the equipment in order to enhance the standard and rectify the existing environmental protection equipment, adding spare equipment, formulating and optimising equipment cleaning plans, thus safeguarding the stable operation of the environmental protection equipment throughout the year, and to enhance the emission reduction efficiency of the equipment, resulting in enhancements in the comprehensive desulphurisation efficiency, denitrification efficiency and dust removal efficiency of the Group by 8.8, 2.3 and 1.3 percentage points to 83.2%, 92.6% and 95.7%, respectively.

Regarding the major pollutants identified, the Group strictly complies with the requirements of the national and local environmental protection-related laws and regulations in the countries where it operates, and adopts the treatment techniques, disposal methods and monitoring measures set out in the table below under the supervision of local environmental protection regulatory authorities, to ensure the Group complied with the national, local and/or industry in respect of the discharge and treatment of pollutants during the Reporting Year, and implemented the highest standards among them.



Sulphur dioxide (SO₂), Nitrogen oxides (NO_x), Particulates (smoke and dust)

Treatment/Disposal

- Use natural gas as fuel
- Adopting oxygen-enriched technology for production
- Equipped with desulphurisation, denitrification and dedusting devices along with spare devices
- Clean, maintain, inspect and replace devices regularly
- Upgrade and renovate existing devices
- Adjust dose of usage of catalysts and replace catalysts regularly
- Exhaust gases from production is processed to meet the standard and then discharged through the exhaust pipe at high attitude
- Enhance operation of precipitator, reduce unorganised emissions of workshop dust
- Arrange water sprinkling on roads regularly to reduce fugitive dust in working areas



Ecological-friendly and Sustainable Business Model

Monitoring methods

- Internal self-inspection and routine exhaust gas emission monitoring and inspection are mainly controlled by the designated environmental protection personnel, and shared by the equipment department, calendaring and production department and third party operation and maintenance unit
- An online monitoring system is installed for flue gas at the exhaust ports and monitoring spots are set up for 24-hour ongoing monitoring, with the monitoring data uploaded through the CEMS system. The Wuhu, Zhangjiagang, Tianjin, Beihai and Malaysian plants are connected with their respective local environmental regulatory departments, and are monitored by the government to ensure their emission data are up to standards
- During the period when the CEMS equipment is repaired, replaced or cannot be operated normally for any reason, the normal operation should be resumed within a time limit in strict accordance with legal and regulatory requirements. If the time limit is exceeded, the third-party operation and maintenance unit will report the data through manual sampling according to the required frequency.

Applicable standards

Production bases in China:

Integrated Emission Standards of Air Pollutants (GB16297-1996) (National Standard)

Comprehensive Air Pollution Control Plan for Industrial Furnaces and Kilns (National Standard)

Emission Standard of Air Pollutants for Flat Glass Industry (GB26453-2011) (Industry Standard)

Local Standards of Anhui/Jiangsu/Tianjin/Guangxi

Industry standards: $SO_2 \leq 400 \text{mg/m}^3$; $NO_x \leq 700 \text{mg/m}^3$; smoke and dusts $\leq 50 \text{mg/m}^3$ or the local standards whichever are higher

Production base in Malaysia:

National standard under the Environmental Quality Act 1974 on the emission of exhaust gases from glass furnaces: $SO_2 \leq 800 \text{mg/m}^3$; $NO_x \leq 800 \text{mg/m}^3$; smoke and dust $\leq 50 \text{mg/m}^3$

Ecological-friendly and Sustainable Business Model



Sewage

Treatment/Disposal

- Sewage from tempering is recycled after treatment through the sewage treatment and collection system and the efficiency of purification is enhanced using filter presses, water purifier and a water agent, thereby improving the water recycling utilisation rate
- Production sewage, rainwater and domestic sewage that cannot be reused are collected centrally and transported to urban sewage treatment plants through designated channels after sedimentation/filtration/septic tank/grease trap treatment

Monitoring methods

- Qualified third party inspection agencies are commissioned to conduct monitoring and quarterly sampling on the main outfall of sewage, sources of pollution in the plant, sewage tanks and sewage processing and collection system, to ensure that the key indicators are met: pH value (pH), chemical oxygen demand (COD_{Cr}), biological oxygen demand (BOD₅), suspended solids, ammonia nitrogen, animal and vegetable oil
- Production and equipment departments conduct tests and records the concentration of sewage at discharge point at pre-determined frequency, which are verified by designated environmental protection personnel and the person-in-charge of the department. In addition, production bases in China are continuously monitored 24 hours a day through an online real-time sewage discharge monitoring system and are subject to real-time monitoring by local environmental protection authorities. The production base in Malaysia is required to submit sample analysis to regulatory departments regularly

Applicable standards

Production bases in China:

Level three standard under the Integrated Wastewater Discharge Standard (GB8978-1996), or local standards whichever is higher

Production base in Malaysia:

Standard A under the Environmental Quality (Industrial Effluents) Regulations 2009

Ecological-friendly and Sustainable Business Model



Solid wastes

Treatment/Disposal

- The Group has established a waste management system to manage waste. Each department collects, sorts, and transports waste within the scope of its control to designated locations within the factory for storage and disposal in accordance with applicable regulations and internal systems.
- Construction waste: Recycle and reuse by the manufacturer
- Dust and sludge: Reduce discharge of solid wastes through reusing after deep processing, engage qualified agencies to dispose those which is unfit for reuse
- Discarded broken glass: Reuse in production after recycling
- Domestic refuse: Collected and cleared by sanitation service agents
- Discarded packaging materials and discarded electronic equipment: Recycle/dispose by legal means
- Hazardous wastes: Develop a hazardous waste management plan and file it with local ecological and environmental protection department. For hazardous wastes, enterprises are required to specify a transfer plan in annual declaration plan, confirming the qualified agency and types and quantity of hazardous wastes to be disposed of, and to be filed with local ecological and environmental protection bureau by the relevant unit. In case of transfer outside the province, enterprises are required to report to the provincial ecological and environmental protection bureau and upon receiving approval, the qualified agency should arrange vehicles to conduct the transfer. After the hazardous waste is transferred, the enterprise is required to register the transferred hazardous waste data information in the local solid waste management information system, and confirmation of receipt is required from the receiving party. Some of the waste packaging barrels that can be recycled for reuse will be handed over to the manufacturer for recycling

Monitoring methods

- Non-hazardous solid wastes are sorted and stored in designated locations before disposal, whereas the relevant departments are responsible for statistics and the material control team is responsible for supervision
- Hazardous waste store will only be opened in prescribed time and access to which must be arranged by a designated person. No other personnel may enter the store without permission. All hazardous solid wastes are properly pre-treated before storage to prevent dumping and leakage during disposal.

Ecological-friendly and Sustainable Business Model

Applicable standards

Production bases in China:

Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes
(Revised in 2020)

Standard for pollution control on the non-hazardous industrial solid waste storage and landfill (GB18599-2020)

Technical specification for setting identification signs of hazardous waste (HJ1276-2022)

Control of Environmental Pollution by Solid Wastes (GB18597-2023)

National Catalogue of Hazardous Wastes (2021 edition)

Management Measures for Hazardous Wastes Movement

Production base in Malaysia:

Environmental Quality (Scheduled Waste) Regulations 2005



Noise

Treatment/Disposal

- Noise insulation for plants
- Shock absorption
- Install sound insulators and silencers for fans

Monitoring methods

- Annual inspections by qualified third parties

Applicable standards

Production bases in China:

Emission Standard for Industrial Enterprise Noise at Boundary (GB12348-2008), Category 3 Standards, the limit for daytime is 65dB(A) while the limit for night time is 55dB(A)

Production base in Malaysia:

Occupational Safety and Health (Noise Exposure) Regulations 2019, not exceeding 82dB(A)

Ecological-friendly and Sustainable Business Model

Green Actions in Non-production Section

The Group adheres to the concept of “green manufacturing” in its production process, implements established environmental protection practices and proactively adopts all feasible measure on energy-saving and reducing consumption measures to effectively reduce the unit consumption of energy, water resources and other raw materials, as well as to minimise air pollution, water pollution, solid waste pollution and noise pollution. The Group has also taken the initiative to incorporate the concept of sustainable development into every non-production process, from site selection and construction to daily operations, striving to achieve better environmental benefits. Meanwhile, the Group encourages employees, suppliers and other business partners to adopt sustainable development concept similar to the one adopted by the Group, and to conserve resources, reduce waste in their daily lives/operation, and take move proactive actions to reduce carbon footprints and minimise the negative effect to the environment, so as to achieve green and low-carbon development.



Ecological-friendly and Sustainable Business Model

Product Life Cycle Management

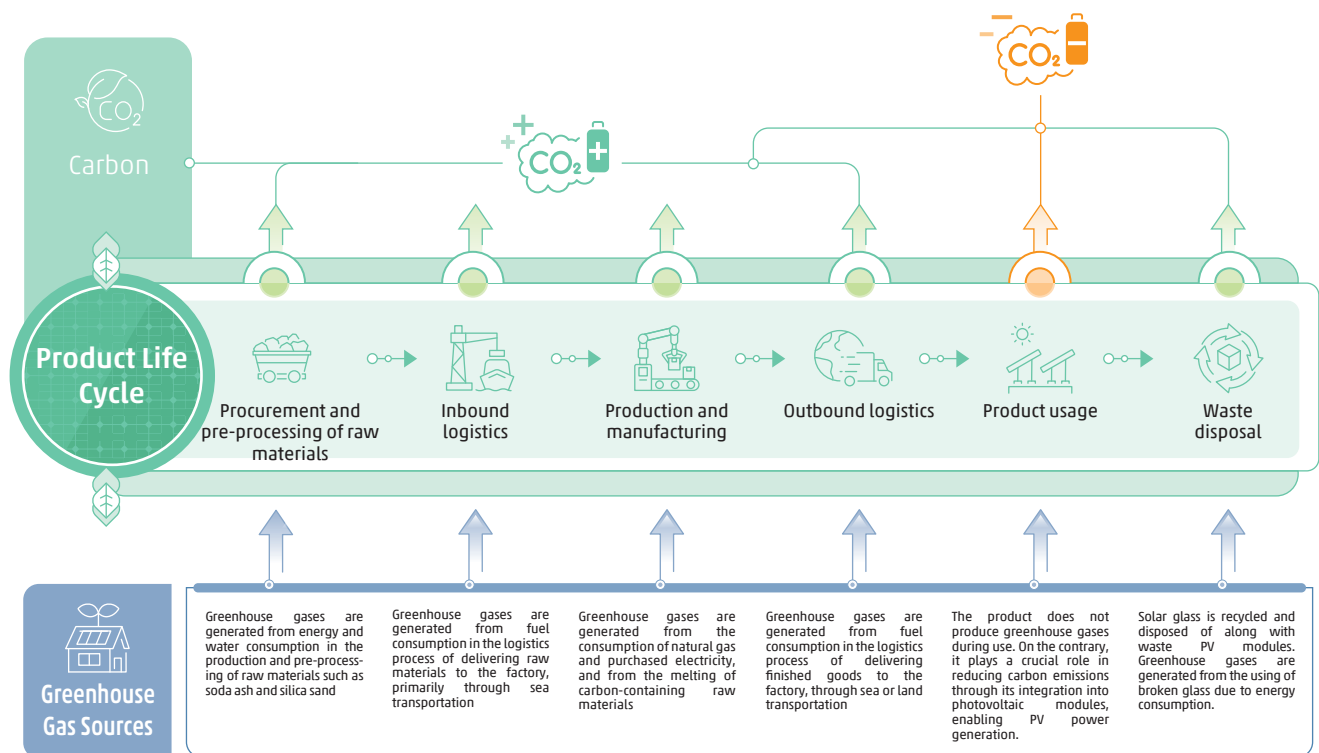
The PV Recycle Industry Development Center under the PV Committee of the China Green Supply Chain Alliance (中國綠色供應鏈聯盟光伏專委會光伏回收產業發展合作中心), based on empirical data on the power degradation of PV modules in China's typical climatic conditions, predicts that the cumulative amount of PV modules retired in China will reach 1 million tonnes in 2030 and 55 million tonnes in 2050 under a regular retirement scenario, and 4 million tonnes by 2030 and 66 million tonnes by 2050 under early retirement scenario. In the face of China's "dual-carbon" goal and the upcoming wave of waste PV module, the Ministry of Industry and Information Technology has proposed to accelerate the transformation and upgrading of the traditional manufacturing industry, establish a sound carbon emission accounting system, and shore up the establishment of a product carbon footprint management system. Six ministries and commissions, such as the National Development and Reform Commission, the Ministry of Industry and Information Technology, and the Ministry of Ecology and Environment, have jointly released a guidance document, which requires the construction of a recycling system of photovoltaic equipment in a productive way, with focus on 1) green design during the product design phase; 2) establishment of a sound mechanism of responsibility for the handling of waste equipment; 3) improvement of the equipment recycling system; 4) acceleration of the cultivation of the industrialised capacity of detailed dismantling and high-level regeneration and reuse of waste photovoltaic equipment, and so on. Coupled with the rising requirements and standards for carbon footprint certification of photovoltaic products in various regions and countries around the world, such as the European Union, the United States and South Korea, the Group has taken a proactive approach to exploring a sustainable lifecycle management model applicable to solar glass products based on the existing product management and value chain management models. By taking into account the changes in policies and market trends, the Group is committed to low carbon product development, responsible procurement, green and efficient production, environmentally friendly packaging, and choice of transportation methods, in order to lower the carbon footprints of solar glass products, and realise the green and low-carbon development of their entire life cycle.



Ecological-friendly and Sustainable Business Model

Product Carbon Footprints

Although solar glass accounts for a relatively low percentage of the carbon footprint of PV modules, it is not the main source of the carbon footprint of PV modules. For example, based on the French carbon footprint requirement for low-carbon PV modules (less than 550kg CO₂/kW), the Group's solar glass products only accounted for 4% and 8%, respectively of the carbon footprint of single-glass and double-glass PV modules in 2023. As the EU Carbon Border Adjustment Mechanism and the U.S. Clean Competition Act are expected to come into force or increase their coverage in the future, PV products exported to the region may need to comply with the relevant carbon footprint verification requirements; therefore, the Group has commenced the carbon footprint certification of its mainstream solar glass products in 2023 and expects to complete it within 2024. The carbon footprint of the entire life cycle of PV glass products is illustrated below:



Lifecycle Green Management

As a global leader in the solar glass industry, the Group actively participates in the process of promoting the closed-loop green development of the photovoltaic industry in its entire life cycle, and is committed to seeking a green management model for the entire life cycle of the solar glass sector that has technical feasibility and wide commercial application possibilities, and to making breakthroughs in new products, production technology and production efficiency through continuous investment in research and development, so as to enhance the environmental performance of solar glass in areas such as product design, procurement of raw materials, production and manufacturing, logistics and transportation, and product usage. We also expect to cooperate with our customers and other partners in the industry chain in the recycling and reuse of waste products under the strong promotion of national policies on the recycling of photovoltaic equipment, and truly realise the closed-loop management of the entire lifecycle of solar glass. As the photovoltaic recycling industry in the PRC is still in the early stage of development, the technical standards are yet to be explored and improved, the waste product management and responsibility mechanism of photovoltaic modules are still being established, and at the same time, there are objective factors restricting the direct participation of solar glass manufacturers in the recycling and reuse segment, the Group has not yet actually participated in the recycling and reuse of the solar glass products on the waste photovoltaic modules as at the end of 2023.

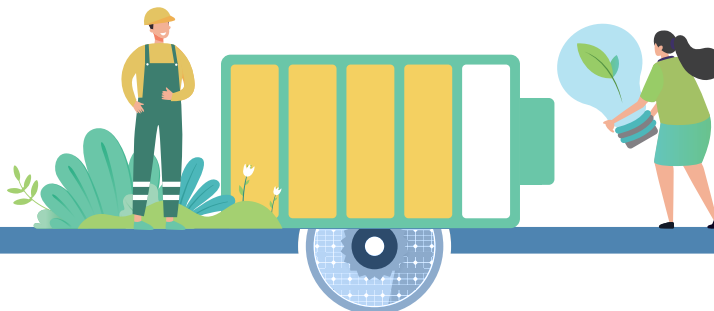
Ecological-friendly and Sustainable Business Model

1 Product Design and R&D

- Since the light transmittance and physical strength of solar glass have a substantial impact on the power generation efficiency and service life of PV modules, improving the transmittance, physical strength and other parameters of the product can help PV modules increase the power generation throughout their whole life cycle, corresponding to bringing more considerable carbon emission reduction to the society
- As the only solar glass company with its own glass research institute, Xinyi Solar has led the launch and commercial mass production of high-efficiency and low-carbon new products (such as thin glass, large format, ultra-high transmittance products) for large-scale applications in the solar glass industry in recent years
- Since the double glass module can generate additional 10-15% power generation from the back of the module and extend the service life by about 5 years, based on the full life cycle power generation, a single 182-size double-glass module can reduce CO₂ emissions by 32-38% more than a single-glass module

2 Responsible procurement

- Pay great attention to the performance of suppliers in occupational safety and health management, environmental protection, business ethics, respect for and protection of human rights and labour rights, and ensure that their ESG-related areas other than products, services and costs also meet the Group's standards by formulating and requiring all suppliers to sign and confirm the "Supplier Code of Conduct" to regulate their relevant behaviors
- Comply with the "Conflict Minerals Procurement Policy" and require both suppliers and their upstream to comply with the same policy and not use minerals from conflict mining areas
- Ensure that the suppliers' environmental management-related activities and their products comply with the requirements of the Group's environmental policy, RoHS and REACH, etc. by entering into Green Purchasing Agreements. With the increase in the supply of natural alkali in the soda ash industry, the Group will be able to select and more easily procure raw materials with lower carbon emissions in the future, so as to reduce carbon emissions in the raw material procurement and pre-processing processes
- Waterway transportation is the mode of transportation with the lowest carbon emissions per transport work. The Group's production bases in Wuhu and Beihai have their own terminals, while other production bases are also close to local freight terminals, therefore the Group prefers areas with convenient waterway transportation when identifying new production bases. Although the logistics accounts for a relatively small portion of the carbon footprint of our products, the Group has taken the initiative to adopt transportation methods with lower carbon emissions, so as to further reduce carbon emissions in the logistics by increasing the use of waterway transportation
- Global supply channels are established with intentions to gradually increase the proportion of self-supply of core raw materials in the future, so as to ensure supply stability, enhance procurement efficiency and environmental benefits for upstream sectors



Ecological-friendly and Sustainable Business Model

3 Green production

- Set 5-year carbon intensity and energy intensity targets, and reduce carbon intensity of products and enhance other environmental benefits through continuous optimisation of energy conservation and emission reduction measures, research and development, and continuous improvement of production efficiency and yield ratio
- Continue to invest in the research and development of glass furnace technology, strive to break through the dependence of existing technologies on fossil fuels, and help decarbonise solar glass production from the source. Although there is the possibility of using hydrogen for solar glass production after retrofitting the existing furnaces, given the current price of hydrogen, the supply and stability of low-carbon hydrogen fuels (e.g. green hydrogen), as well as production safety considerations. Hydrogen is still not suitable as the main fuel for commercial production of solar glass. Therefore, achieving decarbonization or low-carbon production still requires further attention to technological development, the cost and supply capacity of alternative fuels

4 Customer management and product usage

- Quality control is carried out according to ISO9001:2015, the products have obtained China's National Compulsory Product Certification (CCC), and can also meet RoHS and REACH requirements
- Only natural gas is used as the fuel for production, and some of the peers still use heavy oil, so our carbon emissions per unit calorific value are low. At the same time, the unit energy consumption of the Group's solar glass products is at the leading level in the industry, and the energy consumption accounts for more than 80% of the carbon intensity of the product, so lower unit energy consumption means lower product carbon intensity, which helps customers reduce their Scope 3 emissions and product carbon footprint
- Based on the data provided by SGS in their earlier assessment of the Group's overseas production bases, it has been determined that solar glass products exhibit zero carbon emissions during their usage. Furthermore, as a vital component of photovoltaic modules, solar glass contributes significantly to reducing carbon dioxide emissions through photovoltaic power generation. For instance, a 182mm single-glass module, throughout its 25-year lifespan, generates green electricity that leads to a remarkable reduction of 14.5 tonnes of carbon dioxide emissions for our planet. In 2023, the Group's sales of solar glass can be utilised in 154 GW of photovoltaic modules, resulting in an annual reduction of carbon dioxide emissions equivalent to 108 million tonnes for the earth

5 Product recycling and reuse

- The theoretical recoverability of solar glass products exceeds 98%, and the theoretical reuse rate reaches 95%, so theoretically, the possibility of recycling is high. However, as a solar glass manufacturer, the main reasons why closed-loop management cannot be completed at present are: Solar glass products need to be processed by PV module factories after leaving the factory, so when the product is applied to PV modules and after a 25-30 year use cycle and up to the module retirement. We, as a solar glass manufacturer, can no longer trace the products, so there is no objective basis for assuming the main responsibility for recycling
- For the recycling of solar glass products in the future, we can participate in the following ways:
 - Δ Cooperate with module customers to work on the "reuse" level after they have completed module recycling and separation of solar glass, such as reuse as cullet for production or reprocessing for more complete glass. During the Reporting Year, we communicated with some customers about the possibility of cooperation, but there are no actual implementation cases yet
 - Δ The guidance document issued by the National Development and Reform Commission and other relevant departments promotes the involvement of third-party organisations in professional recycling services and the adoption of a "one-stop" approach. Based on the actual development of the PV recycling industry in China during the Reporting Year, it became evident that professional third-party organisations made notable progress in recycling technology research and development. As a result, future collaboration with these specialized third-party entities for the recycling of solar glass products seems more likely. The primary mode of cooperation is anticipated to involve the procurement of recycled solar glass from professional photovoltaic module recycling organizations and integrating a certain percentage of this recycled solar glass into the Group's own solar glass production. This approach aims to achieve improved environmental and economic performance through the secondary utilisation of resources. It is important to note that the PRC is still in the phase of researching and developing technical standards, establishing responsibility mechanisms, and constructing and refining recycling systems. Consequently, large-scale industrial applications have not yet been implemented. During the Reporting Year, the Group did not engage in the purchase of recycled solar glass from professional third-party organisations

Ecological-friendly and Sustainable Business Model

ACHIEVEMENT OF A MUTUALLY BENEFICIAL RELATIONSHIP BETWEEN SOLAR FARMS AND THE ECOLOGY

PV power generation is expected to play a crucial role in driving and ultimately realising the global energy transition and carbon neutrality. Considering that centralised solar farms utilise significant land resources and are responsible for supplying green electricity, their development, construction, and operation can have long-term impacts on local communities, ecosystems, and economies. Therefore, it becomes even more important for developers and operators to embrace the principles of sustainable development. They should strive to minimise and prevent negative impacts on the ecological environment during development while ensuring a stable supply of green electricity during operation and maintenance. This approach aims to enhance the local atmosphere, water, and natural environment, bolster climate resilience, and promote the transformation towards a green and low-carbon power structure.

Since its engagement in the development, construction, and operation of centralised solar farms in 2014, the Group has never forgotten the mission of "Leading green new energy". The Group has adopted a sustainable development model that emphasises "coexistence with society and the environment" during solar farm development. Actively exploring the "PV+" model, the Group strives to protect and improve the ecological environment and fully utilise resources and space. Over the past nine years, the Group has invested approximately HK\$21.9 billion in cumulative fixed assets for solar farms, with a total approved grid-connected capacity of nearly 6 GW. These endeavors have showcased multiple successful examples, demonstrating how photovoltaic power generation can create a win-win-win situation for the local economy, the environment, and society as a whole.

WIN-WIN DEVELOPMENT MODEL OF SOLAR FARM BY XINYI SOLAR



Biodiversity conservation

- Since the investment and development of the first utility-scale solar farm in 2014, the Group has been adhering to the environmentally friendly model of harmonious coexistence with the original ecological environment. Before project development, professional institutions will be commissioned to conduct environmental impact assessment to ensure that the project does not involve ecological protection areas, ecological red lines and natural reserves, scenic spots and drinking water source protection areas. Environmental protection acceptance procedures will also be conducted upon completion of project construction to ensure compliance with regulatory requirements
- Throughout the Reporting Year, the Group placed significant emphasis on the development concept of "optimising light and shade", which involves harnessing sunlight for efficient photovoltaic power generation while concurrently utilising the space beneath solar panels for the breeding or cultivation of shade-loving animals and plants. This approach aims to enhance the ecological environment while simultaneously improving comprehensive economic benefits. Around 80% of the Group's newly constructed grid-connected utility-scale solar farms in 2023 followed the agriculture-PV/fishery-PV power station model. Over the past nine years, the Group has implemented various "PV+" development models, such as integrating fishery, agriculture, and floating power stations in areas affected by coal mining subsidence. These approaches were tailored to the unique ecological environments of different projects, maximizing the advantages of the original ecosystem and minimizing biodiversity impacts during project development. By employing measures such as vegetation restoration, the Group aims to restore and enhance the local environment



Proportion of agricultural PV/fishery-PV projects to our solar power generation projects

67%

(Based on cumulative grid-connected capacity as at end of 2023)

80%

(Based on the newly grid-connected capacity in 2023)



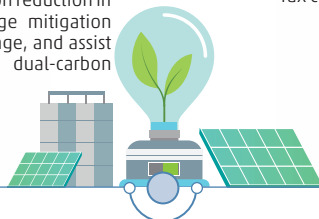
Social Benefits

- In 2023, the total power generation capacity reached 5.04 billion kWh, entirely generated through photovoltaic power. This capacity is sufficient to fulfill the annual green power requirements of 2.1 million households, resulting in a reduction of 4.15 million tons of carbon dioxide emissions by replacing an equivalent amount of coal-fired thermal power.
- The process of photovoltaic power generation does not consume energy or water resources. Therefore, providing green electricity through photovoltaic power can effectively decrease the consumption of non-renewable resources, reduce air and water pollution caused by coal-fired power generation, and contribute to the overall well-being of individuals.
- By offering stable green electricity and promoting carbon reduction in the power system, we support local climate change mitigation efforts, enhance the resilience of cities to climate change, and assist China in achieving its energy transformation and dual-carbon objectives.



Economic Benefits

- Accumulated fixed asset investment of **HK\$21.9 billion** in solar farm projects
- Solar farm segment revenue of **HK\$2.97 billion** in 2023
- Tax contribution from the solar farm segment in 2023 reached **HK\$355 million**
- Tax contribution per MW of **HK\$64,000**

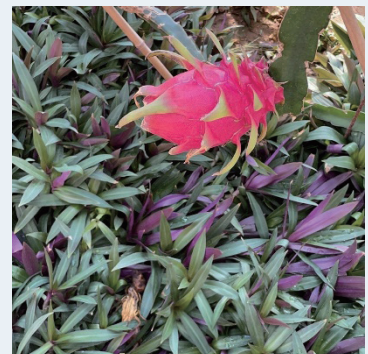
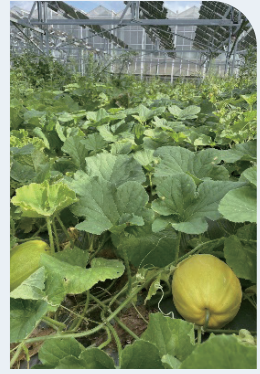
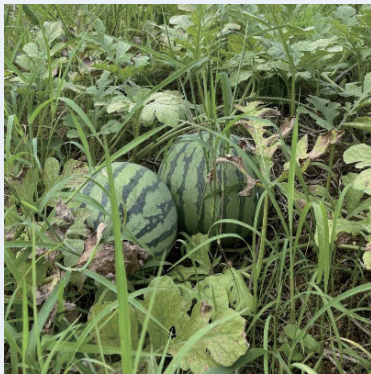


Ecological-friendly and Sustainable Business Model

Concentrated solar farm projects, which require the utilisation of large areas of land or water, are prone to the misconception that they will adversely affect the native ecological environment and biodiversity. However, the Group strictly adheres to the principle of “not sacrificing the ecological environment and not destroying the ecological balance” throughout the entire process of project development, construction, and operation. As a result, not only have completed projects shown no detrimental effects on the ecological environment, but many of them have also undergone ecological restoration and renovation in areas previously affected by pollution or ecological damage. This has led to the revitalisation of the surrounding ecological environment, creating a more favorable habitat for plants and animals. For instance, the Huainan Project and the Huaibei Project have successfully implemented ecological restoration and landscape enhancement in former coal mining subsidence areas, which restored the cleanliness of the water surface as well as planted flowers and vegetation in the surrounding area, contributing to the restoration of biodiversity. During preliminary site investigations, the Group effectively avoids areas designated as ecological red lines or other protected resource areas. Consequently, none of the projects will impact or harm the habitats of rare and endangered species. In the design and development phase, the Group carefully selects the most suitable approach that aligns with the local ecological environment, implementing effective measures to minimise changes and impacts on the land, air, and water systems. After construction, a series of restoration measures is employed to rehabilitate vegetation and improve the overall environment. The operational process of our projects does not involve the consumption of fossil fuels, thus minimizing adverse impacts on the ecosystem.

Case studies

The Xiaochang Tianzihu Project serves as a prime example of an agricultural-PV initiative that promotes local green economy development. This project combines electricity generation above the panels with agricultural cultivation underneath. Based on the seasonal climate characteristics, suitable crops or ornamental plants are grown, such as rapeseed flowers in spring, various fruits and vegetables like watermelons, melons, honeydew melons, pumpkins, and figs in summer, chrysanthemums in autumn, and lotus roots in winter. This approach maximises the utilisation of space beneath the solar panels while effectively preserving and enhancing the biodiversity of the local community. In addition, the project is equipped with 10,000 square metres of modern agricultural PV greenhouses, adopting the mode of power generation on the roofs of the greenhouses and planting in the greenhouses, with an annual power generation capacity of about 5 million kilowatt-hours, in which more than a hundred species of tropical plants will be planted and cultivated. It serves as a base for studying plant diversity in Xiaochang County and attracts tourists and students from local primary and secondary schools. The project aims to promote knowledge about PV greenhouse planting, the principle of PV power generation, and the application of PV technology in conjunction with agriculture.



Ecological-friendly and Sustainable Business Model



The frequent occurrence of extreme climate events has had significant impact on the economy and the safety of people's lives and property. Without effective measures to mitigate climate change, these events will become even more frequent and intense, posing a greater threat to society, the economy, and public well-being. PV power generation has emerged as the most economically competitive renewable energy source, thanks to cost reductions and efficiency improvements over the years. It represents the most promising alternative to coal power in the future energy mix. Replacing high-carbon fossil fuels with renewable energy sources is vital for achieving a low-carbon energy transition and strengthening our ability to tackle climate change and its existential crisis. During the Reporting Year, the Group proactively seized the opportunity of the significant drop in PV module prices driven by polycrystalline silicon prices to add a new record high of over 1 GW of new grid-connected capacity in 2023, bringing the cumulative capacity close to 6 GW. The Group provided over 5.04 billion kWh of green electricity to the community throughout the year, satisfying the annual electricity demand of nearly 2.1 million households. It also resulted in a reduction of 1,514,000 tonnes of standard coal consumption and 4.15 million tonnes of carbon dioxide emissions compared to traditional thermal power. The development, construction, and operation of solar farms not only provide economic benefits such as fixed asset investments, tax contributions, and increased employment but also deliver various social advantages through the "PV+" model.

Case studies

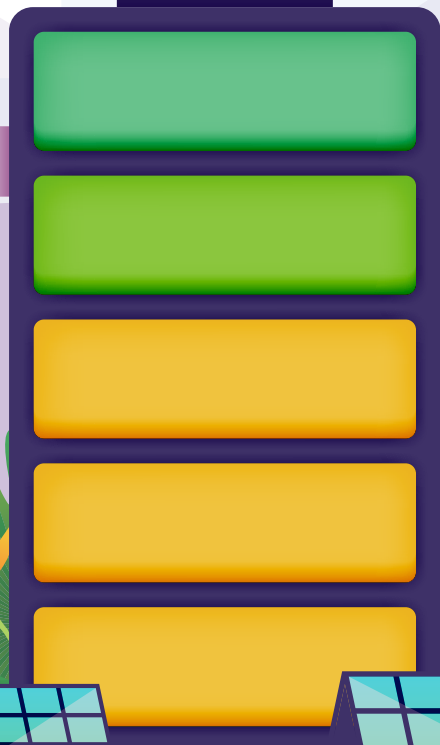
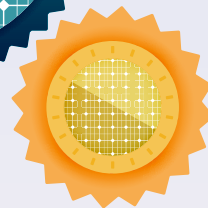
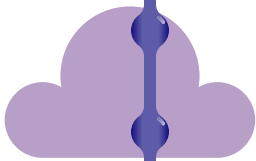
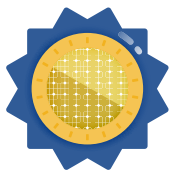
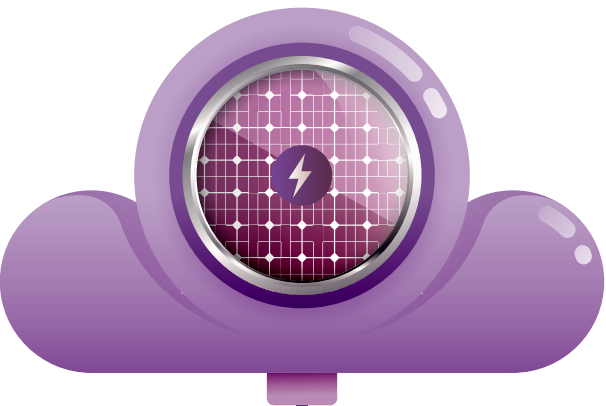
During the Reporting Year, the Group successfully connected a 550MW photovoltaic project to the grid. This project transformed barren mountains and wastelands into green and clean photovoltaic power plants. It is expected to contribute approximately 700 million kWh of green electricity and reduce about 580,000 tonnes of carbon dioxide emissions annually. It contributed to the green and low-carbon development of Qujing, a city with a rich industrial history. Moreover, by integrating agricultural cultivation with the project, the Group achieved efficient land utilisation and increased the value of each acre through the combination of agriculture and photovoltaics. By elevating the installation height of PV modules, the project created ample space beneath for growing food crops, economic crops, Chinese herbs, pasture grasses, and enabling small-scale agricultural machinery operations, thus providing local farmers with a sustainable way to increase their income.



Engaging with the Value Chain and Community

Issues of focus	Sustainable Supply Chain Management	Product Quality and Safety	Customer Management
	Managing Supply Chain Risks and Enhancing Procurement Efficiency	Social Welfare and Community Engagement	

Xinyi Solar
GREEN strategy



Suppliers, customers, and the community are important stakeholders for us, and they play an indispensable role in the sustainable development of Xinyi Solar. Therefore, in our business collaborations and community engagement efforts, we prioritise a win-win approach. We accomplish this by practicing responsible procurement, offering high-efficiency and low-carbon products, and actively engaging in community development, leveraging our expertise in the field. In doing so, we share our sustainability principles with suppliers, customers, other business partners, and the community, encouraging them to adopt the same principles. Our aim is to decarbonise the value chain, enhance the community's resilience in addressing climate change, and work together with the value chain and the community to achieve a vision of sustainable development.



Work and achievements in 2023



Throughout the Reporting Year, the Group engaged with a total of 3,136 suppliers, all of whom met the Group's supplier development and management practices, and successfully adhered to the standards set during regular assessments



To encourage suppliers to enhance their sustainability performance, the Group entered into a Green Purchasing Agreement, granting preferential purchasing rights as an incentive



The Group established and continually refined a quality control system in line with the ISO9001:2015 quality management system standard. This ensured that product quality, safety performance, and environmental benefits met or exceeded industry and international standards, as well as customer needs. Notably, no products were recalled for safety or health reasons during the Reporting Year



The Group achieved a 100% complaint handling rate and the customer satisfaction score reached 95 points during the Reporting Year



Efforts were made to implement and continuously improve an information security management system, safeguarding the Group's information assets. There were no significant failures in the Group's information systems, nor any instances of trade secret leakage, sensitive information exposure, customer data breaches, or major/significant information security incidents during the Reporting Year



UN Global Compact related principles

Principle 2: Businesses should make sure that they are not complicit in human rights abuses
Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery



Future actions plans and targets

We aim to enhance the flexibility and resilience of our supply chain by upholding the principles of sustainable development in supplier management. We will continually refine our selection, management, assessment, reward, and penalty mechanisms to ensure that suppliers align with our established code of conduct

We will prioritise product research and development to improve product quality, performance, and environmental sustainability. Through continuous improvement in management and services, we will effectively address evolving customer needs and foster enduring, trust-based relationships

We are committed to actively participating in community building, leveraging our resources to make a positive impact. We will take proactive measures to assist underprivileged communities and contribute to their well-being

XSG 9: Conduct procurement in a responsible and sustainable manner and regulate supplier behaviour through quality, environmental protection and safety protocols

XSG 12: Promote the development of mutual prosperity for the community and make positive contributions to the economy, environment and public welfare





Engaging with the Value Chain and Community

SUSTAINABLE SUPPLY CHAIN MANAGEMENT

Management Concept

The global demands for sustainable supply chain management are becoming increasingly stringent, with developed countries and regions such as the European Union, the United States, the United Kingdom, and Germany issuing policies pertaining to green supply chain management. As nearly half of the end demand for PV industry originates from overseas, the international community places significant emphasis on the supply chain management of PV enterprises. Specifically, there is a strong focus on the constraints, evaluation, and audit mechanisms applied to suppliers regarding environmental management, human rights protection, labour rights, business ethics, and supplier performance. The PV industry's upstream manufacturing sector is predominantly concentrated in Mainland China. In response, the Central Economic Work Conference has advocated for expediting the development of a green and low-carbon supply chain. Additionally, eight ministries and commissions, including the Ministry of Industry and Information, have jointly issued guidance documents urging the acceleration of transformation and upgrading within traditional manufacturing industries, while encouraging enterprises to establish green supply chains. As a company with production capabilities both in the PRC and overseas, selling products globally, the Group recognizes the significance and potential opportunities associated with a sustainable supply chain for long-term development. Consequently, the Group is committed to extending our concept and requirements for sustainable development to the broader supply chain. Supply chain management holds great importance for us. While procuring high-quality raw materials and services at competitive terms, and safeguarding the safety and stability of our supply, the Group steadfastly uphold the standards of our suppliers in terms of labour management, human rights protection, environmental governance, and business ethics. Our aim is to mitigate any adverse impacts on the environment and society throughout the supply chain.

Management Policy

The Group's natural gas is purchased from the most upstream suppliers, and each production base has established a stable natural gas supply channel. For the procurement of core raw materials like soda ash and silica sand, centralised procurement takes place through the Group's ERP system, while subsidiaries may be involved in procuring goods and services that are not core raw materials for production. As a result, the Group has developed a sustainable procurement policy, which is regularly reviewed and enhanced. This policy includes standardised processes and criteria for evaluating, selecting, managing, and assessing suppliers, focusing on non-economic aspects such as environmental impact, social responsibility (including human rights protection), and governance (including business ethics) and requirements for qualified products and services. Departments and administrative management personnel responsible for centralised procurement, and all relevant employees involved in procurement decisions are required to comply with the established human rights policies, the "Conflict Minerals Procurement Policy," the "Guidelines on Suppliers' Conduct," the "Safety Management Requirements for Related Parties," the Integrity Management System, and other sustainable procurement-related agreements.

Through the formulation and oversight of the sustainable procurement policy, the Group aims to achieve the following objectives: 1) ensure suppliers understand and adhere to the code of conduct; 2) encourage suppliers to adopt best practices in areas such as environmental sustainability, occupational safety and health, human rights, labour standards, and business ethics. This assists the Group in building a sustainable supply chain and achieving other sustainability goals; 3) emphasize and regulate the sustainability performance of suppliers; 4) identify potential sustainability risks within the supply chain and promptly address them by developing appropriate policies.



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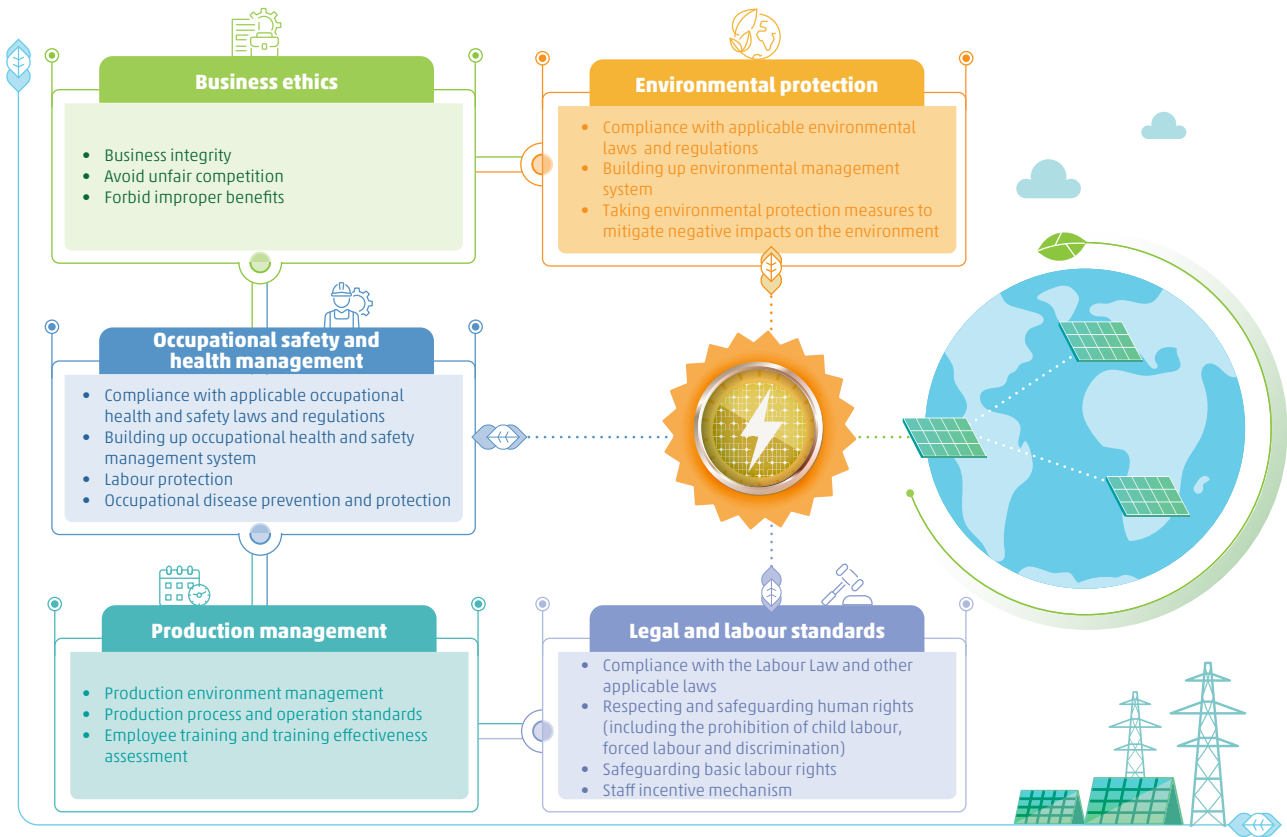
Management Process

Evaluation and Introduction of New Supplier

Supplier development is conducted by an assessment team comprising relevant personnel from various departments, including quality control, purchasing, production, logistics, and technology. The assessment plan is developed based on established indicators and standards, and the assessment is strictly conducted according to the plan. The process of onboarding new suppliers involves the following steps: 1) suppliers submit applications and provide basic information, initiating the evaluation and review process; 2) during the preliminary review, suppliers provide necessary certificates, licenses, and documents related to their management systems, such as quality, environmental, and occupational safety certifications, environmental impact assessment reports, credit reports, tax certificates, etc. Suppliers operating in industries with higher environmental and safety risks are required to provide governmental approval documents as per the Group's requirements, including production licenses and emission permits; 3) selected suppliers that pass the preliminary document audit undergo on-site assessments conducted by the assessment team at the suppliers' offices and production park. The assessment team, comprised of members from different departments, holds meetings with various departments of the selected suppliers to audit their compliance and adherence to the items listed in the supplier audit form. Additionally, the assessment team verifies qualifications, management system documents, and other relevant information on-site, such as environmental certificates, environmental system certificates, environmental impact assessment and inspection reports, sewage permits, documentation on personnel programs (proving voluntary employment) and other support documents related to ESG, and conducts visits to production lines and workshops.

On-site audits of new suppliers are performed through a combination of qualitative and quantitative assessments. Suppliers found to have fundamental issues during the on-site audits, such as engaging in unhealthy competition, monopolistic practices, corruption, or violations of human and labour rights, will be excluded from the onboarding process. Quantitative assessments are conducted based on established evaluation items and scoring criteria. The Group has established 50 detailed assessment indicators and scoring criteria covering aspects such as corporate qualifications, production and supply capacity, quality management, service quality, cost competitiveness, and ESG-related areas. Over 40% of these indicators are related to sustainability performance. New suppliers must achieve an "A" grade in the assessment to be directly included in the Qualified Supplier List. This ensures that new suppliers are not only competitive in terms of product and price but also meet the Group's requirements in ESG areas, which the Group considers equally important. The assessment of new suppliers' compliance with legal and labour standards, occupational safety and health management, production management, business ethics, environmental protection, and other ESG areas primarily includes the following aspects:

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All things being equal, the Group will give preference to suppliers that are more advanced in terms of sustainability management and performance, such as those that have made explicit sustainability commitments and established relevant management policies, as well as those who have implemented internationally recognized sustainability-related management systems and guidelines such as ISO14001, ISO19001, and ISO45001, and suppliers who have made significant contributions to the Group's sustainability objectives.



Engaging with the Value Chain and Community

Supplier Management and Regular Assessment

In line with the established system, procedures, and frequency, the Group's central procurement department and subsidiaries' procurement departments conduct monthly, quarterly, and annual evaluations of suppliers on Qualified Suppliers List. These assessments includes document reviews, performance evaluations, and on-site audits. The departments conducting the assessments have distinct focuses: the monthly assessment focuses on factors such as products, services, quality, and supply capacity. ESG areas, like environmental protection and occupational safety and health, contribute to a relatively smaller portion of the overall score and are primarily overseen by subsidiaries' procurement departments. The quarterly and annual evaluations place significant emphasis on performance in ESG areas, with the Group's central procurement department being responsible for the annual evaluation. The Group will propose corrective actions to those suppliers who have failed to meet targets in the monthly assessment for a number of times, or those who have failed to meet the targets in the quarterly/annual evaluations. Failure to meet the standards after rectification will result in the cancellation of the supplier's qualification and the termination of the business relationship. Throughout the Reporting Year, suppliers who provided products and/or services to the Group were those who adhered to the established supplier development and management practices and met the standards set in regular assessments.

Whistleblowing Policy and Monitoring

The Group has established a whistleblowing policy and encourages suppliers, relevant persons, the Group's employees or third parties to report to the Group if they become aware that a new supplier that the Group is currently working with and/or planning to introduce has acted, is acting or may be attempting to act in a manner that is unlawful, inappropriate or in breach of applicable laws or regulations, including the Group's established or may from time to time be published policies, practices and agreements, and/or the Group's employees have acted, are acting or may act in a manner that is unlawful, inappropriate or in breach of the Group's established or may from time to time be published policies and practices in relation to the introduction of new suppliers and/or the management of its supply chain. Such situations can be reported to the Group, e.g. integrity issues can be reported to the Group's internal control centre. Except where disclosure is required by law or regulation, the identity of the whistle-blower should be adequately protected and the Group should ensure, so far as practicable, that any information disclosed will not be detrimental to the interests or reputation of the parties.

As a responsible purchaser, the Group is dedicated to identifying, preventing, and mitigating environmental, social, and human rights risks throughout the supply chain, from new supplier development to business collaborations. During the Reporting Year, the Group was not aware of any material non-compliance in the supply chain and has not identified any significant environmental, social and human rights risks in the supply chain for the time being.

Suppliers' Code of Conduct and Sustainability Standards of Product/Service

To establish a sustainable supply chain, the Group selects suppliers who share the values of integrity, fairness, honesty, and compliance with sustainable development principles. Through steadfast commitment, deliberate choices, and industry influence, the Group actively promotes the sustainable development of the entire supply chain.

Suppliers' Code of Conduct

A Supplier Code of Conduct has been formulated by the Group, which encompasses 14 points that suppliers must fully comply with. The code references the United Nations Global Compact's ten standards for assessing supply chain sustainability in the areas of human rights, labour standards, environment, and anti-corruption. All suppliers are required to sign and affix their corporate seals as explicit acknowledgment and commitment to comply with the Group's established Supplier Code of Conduct.

Engaging with the Value Chain and Community



Xinyi Solar's Supplier Code of Conduct: Core Elements



Defending human rights

- Adopt a zero-tolerance policy for bonded labour, illegal trade, slavery or child labour, and require the for proof of **voluntary employment**
- **Treat employees with dignity and respect**, and prohibit corporal punishment, threats of violence or other forms of harassment or abuse
- Guarantee the **freedom of association** of employees
- Ensure that the products or materials to the Group do not contain any materials manufactured or procured from the Democratic Republic of Congo or other neighbouring countries, the **"Conflict Minerals Procurement Policy"** is required to sign to commit to comply with the Group's sustainable procurement policy



Environmental protection

- Comply with local environmental laws and regulations, and **provide proof of compliance with local regulations or best practices (such as ISO14001 certification or local equivalent certification)**, and sign the "Green Environmental Protection Agreement" to commit to comply with the sustainable procurement policy of the Group



Compliance with laws and regulations

- Strictly comply with laws and regulations including but not limited to labour, occupational safety and health, intellectual property, anti-corruption and environmental protection



Labour standards

- Take necessary measures to ensure that **the age of employees meets the requirements of the laws and regulations of the place where the business located**
- Ensure reasonable working hours in accordance with laws and regulations, and protect employees' right to rest and vacation
- Adhere to the principles of **fairness, justice and equality**, eliminate discrimination in the workplace, ensure that the employment process, contract terms, compensation, benefits, promotion, contract termination or retirement **are fully respected and non-discriminatory employment measures are taken**
- Suppliers are encouraged to provide employees with remuneration packages that exceed local industry standards on the basis of statutory wages and benefits
- A standardised **occupational safety and health management system** has been established to provide employees with sufficient labor protection supplies and effective safety supervision measures to prevent work-related injuries and deaths and ensure a safe and hygienic working environment. Suppliers who provide meal and housing benefits should ensure the safety and hygiene of meals and accommodations. Suppliers shall **sign the "Related Party Safety Production and Environmental Protection Agreement"** to undertake to comply with the "Related Party Safety Management Regulations" of the Group



Business ethics

- Suppliers are prohibited from offering, supporting, soliciting or receiving (directly or indirectly) any form of bribery as an inducement or reward for any business transaction with the Group. All suppliers are required to **sign a "Supplier Integrity Agreement"** with the Group
- Respect and protect the intellectual property rights of the Group and shall not engage in activities that infringe **the intellectual property rights** of the Group
- Avoid conflicts of interest



Engaging with the Value Chain and Community

The Group considers the Code of Conduct as the fundamental standard that all suppliers must meet. We expect suppliers who provide products/services to the Group to embrace and implement this requirement throughout their supply chain. The Group has imposed more stringent requirements on suppliers in key areas such as human and labour rights protection, integrity, occupational safety and health, and environmental management. Suppliers are requested to sign additional agreements to ensure compliance with these higher standards. Moreover, the Group aims to encourage suppliers to adopt higher standards in their own operations and supply chain practices by prioritising purchases and/or increasing the volume of purchases.

Suppliers should be determined to eliminate forced and child labour in their own areas of operations. They are also expected to regularly assess and take effective measures to mitigate human rights risks in their supply chains. Any use of physical punishment, threats of violence, or any form of physical, sexual, psychological, or verbal abuse as a means of discipline or control in the workplace must be strictly avoided. Suppliers should establish robust management systems and take necessary measures to safeguard the legitimate labour rights of their employees. This includes ensuring non-discrimination throughout the employment process, providing lawful and compliant remuneration and benefits, ensuring timely payment, promoting reasonable working hours and leave entitlements, and prioritising occupational health and safety protection. The Group enforces regulations and guidelines such as the Conflict Minerals Procurement Policy, the Safety Management Regulations for Related Parties, and the Safety Production and Environmental Protection Agreement for Related Parties to regulate and restrict the behaviour of its suppliers. We strive for the full respect and protection of human rights, dignity, and labour rights for all individuals employed within the supply chain.

The Group has always adhered to the business purpose of "reputation first" as the standard for business dealings with all suppliers. Integrity management is the bottom line that the Group cannot compromise when carrying out business cooperation, therefore, the Group issued the "Notification Letter on Integrity Management, Mutual Benefit and Win-win" and required all suppliers to sign and seal to ensure that they are aware of the 14 violations of good faith in business co-operation that the Group is committed to avoiding. In addition, the Group requires all suppliers to sign integrity agreements, pledging to strictly abide by laws and regulations in business transactions, prohibit any form of bribery, and actively monitor and report violations of laws and disciplines in the cooperation between the two parties to protect fair, just and open transactions and the interests of both parties. The integrity agreement clearly sets out the joint and independent responsibilities of both parties, and stipulates the liability for breach of contract, so as to better strengthen the suppliers' integrity awareness and ensure that they abide by business ethics in business cooperation.

The Group calls on suppliers to develop policies aimed at ensuring the sustainable development of their businesses to proactively manage the environmental impacts of their production and operations, and should take proactive actions to minimise negative impacts and enhance positive impacts, which should cover climate, energy, water resources, waste and other sustainable development management issues related to their businesses. The Group has entered into Green Purchasing Agreements with its major suppliers of raw and auxiliary materials to ensure (1) the environmental legality of the products provided to the Group (including compliance with RoHS and REACH); (2) the production management can meet the Group's needs for continuous improvement of the environment, and it is necessary to cooperate with the Group's environmental management related operational requirements and accept written or on-site environmental review activities proposed by the Group; and (3) take the initiative to assume environmental responsibility, not only limited to its own production and operation and products strictly abide by green environmental protection laws and regulations and the Group's environmental management requirements, but also need to strengthen the control of its supply chain and actively promote the green development of its supply chain. Qualified suppliers who have signed and committed to abide by the Green Procurement Agreement are the Group's green partners and enjoy the right of priority in procurement among suppliers with equal conditions.

In accordance with the results of the regular assessment for the Reporting Year, the Group ensures that suppliers have fulfilled the environmental and safety commitments in the Code of Conduct for Suppliers and contract terms, and strictly complied with the agreements and system requirements in human and labour rights protection, integrity and honesty, occupational safety and health, and environmental management. At the same time, the Group also encourages its suppliers to share the Group's sustainability philosophy with their supply chains, to adopt the same principles in supply chain management and to adopt the same standards in regulating the behavior of their suppliers.



Engaging with the Value Chain and Community

Sustainability Standards of Product/Service

The production of solar glass involves a large quantities of mineral raw materials and fossil energy. Although there are no green and low-carbon alternatives to raw materials and energy that are commercially viable under current technology, the Group will adhere to the principle of sustainable procurement, and where appropriate, proactively procure products/services that comply with the following principles:

- Minimising the consumption of non-renewable materials/natural resources
- Substituting disposable goods with reusable or recyclable alternatives
- Mitigating environmental harm throughout the entire life cycle of the product or service
- Minimising excessive packaging and prioritising environmentally friendly packaging options
- Opting for products that have lower energy and/or water requirements whenever feasible
- Selecting products that are durable and repairable
- Utilising materials that have high recyclability rates

During the Reporting Year, the Group implemented the principles of sustainable procurement by 1) proactively selecting recyclable steel trays to replace disposable non-recyclable wooden trays; 2) promoting paperless packaging to reduce the consumption of disposable packaging materials, such as paper and wood, and at the same time lowering the consumption intensity of packaging materials; 3) replacing land transport with water transport for raw material shipments, which has lower carbon emissions per unit; 4) implementing OA system in office to reduce the amount of paper used for office purposes and at the same time purchasing recycled printing paper; 5) giving more consideration to natural soda ash instead of synthetic soda ash in production, which has lower energy and water resource consumption. Regular assessments and reviews were conducted to ensure that all procured products during the Reporting Year adhered to established quality, safety, and sustainability standards.

Global Layout and Enhancing Resilience of Supply Chain

Enhancing resilience of supply chain requires not only focusing on and effectively managing the reputational and market risks that may arise from the environmental, social and human rights performance of the supply chain, but also the changes in regional supply capacity and prices of raw materials and energy due to the international environment, local policies and environmental constraints, as well as the impacts of climate change on the stability and sustainability of the supply chain, and on logistics and transportation. Therefore, the Group endeavours to establish and enhance its supply capacity in different regions around the world and continuously improve its channel distribution in order to reduce the fluctuation of supply capacity and price cost in a single region as well as the impact of climate or other external factors on the supply of raw materials and logistics and transportation. Natural gas, soda ash and silica sand are the three major costs in the production of solar glass. The Group adopts a direct supply mode for natural gas and has established stable natural gas supply channels in each of its production bases, while for the procurement of core raw materials, such as soda ash and silica sand, the Group has established supply channels in various regions around the world and is gradually strengthening its own controllable supply resources, so as to further enhance the stability and cost-effectiveness of supply. The Group's procurement of raw materials for production is managed through an ERP system, and it uses the same monitoring platform for domestic and overseas procurement. The ERP system can give full play to the Group's channel and scale advantages, ensure that resources are obtained at the most reasonable price through comprehensive price comparison and centralised procurement, and establish and gradually improve the Group's global supply chain by combining internal resources to reduce procurement risks caused by regional policy changes. At the same time, it can also enable the Group to manage raw material inventory more efficiently, grasp the inventory situation of each production base in a timely manner, and ensure that inventory is maintained at an appropriate level.

During the Reporting Year, the resilience of the Group's supply chain was further strengthened, mainly due to the enhancement of the controllable supply resources and processing capacity of core raw materials, as well as the further improvement of the global sourcing channels. In addition, the Group has increased the number of liquefied natural gas storage facilities in the major industrial parks for supplemental use in case of fluctuation in pipeline natural gas prices or insufficient supply. Despite the frequent occurrence of climate change and extreme weather events in recent years, there was no disruption in the supply chain during the Reporting Year. The impact of climate change on the supply chain in the short to medium term is still within control and is not expected to have a significant impact. In the future, the Group will continue to further enhance the stability of raw material supply, the controllability of logistics and transportation and the cost-effectiveness through various means, such as resource reserves, long-term strategic cooperation, improvement of processing capacity and logistics and transportation capacity, in order to establish and gradually improve the resilience of the supply chain in response to climate change. The Group maintained a 100% performance rate for economic contracts during the Reporting Year.

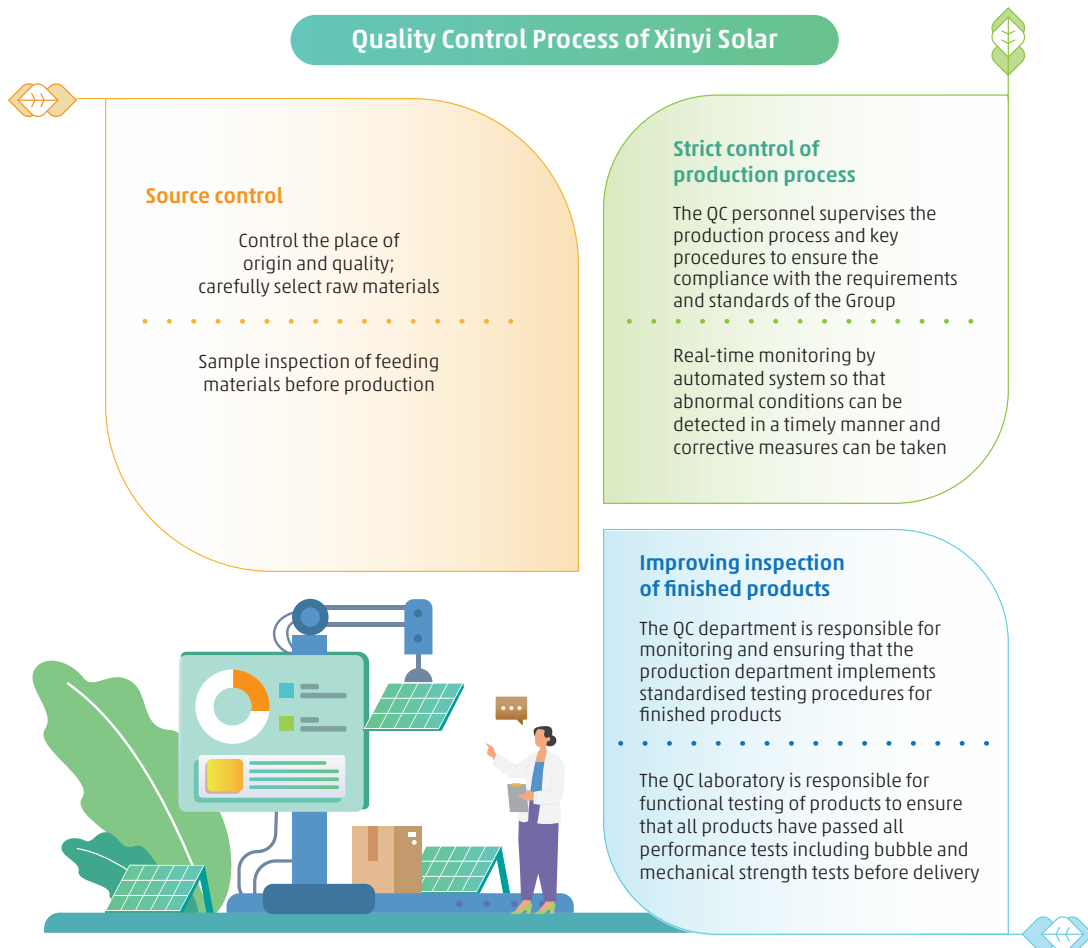
Engaging with the Value Chain and Community

SUSTAINABLE CUSTOMER RELATIONSHIPS

The Group is a global leader in the solar glass industry, providing a wide range of solar glass products to global PV module manufacturers to meet their needs for continuous cost reduction and efficiency improvement as well as environmental benefits. Solar glass is mainly used as the cover and back sheet of PV modules. It plays a key role in protecting the cells in PV modules. Therefore, the quality of solar glass has a significant impact on maximising the service life of the battery and minimising the degradation rate of PV modules. As there is defined degradation rate of PV modules over 25 years under the IEC and TÜV standards, customers are particularly concerned about the quality of solar glass products, and have set stringent standards on performance parameters. The Group has established and continuously improved the quality control system in accordance with the ISO9001:2015 quality management system standards to ensure that product quality meets industry standards and customer requirements. Through its sales and after-sales service teams and annual customer satisfaction surveys, the Group understands and follows up in a timely manner on customer feedback and suggestions regarding the quality of the Group's solar glass products and after-sales services. According to the annual customer satisfaction survey for 2023, customers highly recognised the quality of the Group's solar glass products and were satisfied with the after-sales services.

Product Quality Assurance and Sales Management

The Group adhered to the guidelines outlined in the internal document "Quality Control Manual" to ensure comprehensive oversight of the solar glass production process. There was no change in the quality control management process during the Reporting Year.





Engaging with the Value Chain and Community

In addition to the testing of finished products, the Group has also established and strictly enforced a regular re-inspection process for glass in stock to ensure that all its performance indicators meet internal control and customer standards. For nonconforming products that fail to pass the finished product/inventory/shipment test, the “Non-conforming Product Management Procedures” is implemented, and the quality control department is responsible for supervising the disposal of relevant products to ensure that they are not delivered if they do not meet the standards. On the basis of ensuring product quality, the Group standardises the delivery process in accordance with the requirements of the internal system, strictly abides by the delivery deadline, and ensures on-time delivery through smooth communication among sales, production, storage and transportation departments to protect the interests of customers.

After the product is delivered, the after-sales service personnel will follow up with the customer in time to understand their feedback on the product and service. In order to further improve customer satisfaction, increase customer loyalty, and establish and maintain long-term cooperative relationships, the Group focuses on strengthening after-sales service. After learning the customer’s feedback on product quality problems, the after-sales service staff will respond within the specified time in accordance with the internal system requirements, and take timely measures to remedy the negative impact on customers. If it involves the appeal of returning the product, the after-sales service staff and quality engineers need to communicate with the customer within the specified time limit in accordance with the return operation process, and after jointly analysing the urgency of the customer feedback, make corresponding arrangements as soon as possible according to the negotiation results, and should provide an analysis and improvement report according to customer needs after the incident is resolved, and feedback the relevant situation to the production department and the leaders in charge. The Group’s responsive and proactive attitude, aftersales service and handling procedures have been consistently highly recognised by customers, and customers are satisfied with the quality of the Group’s services, especially the attitude of the after-sales service team, the speed of response, the ability to solve problems and the accuracy of solutions.

Sustainable Products and R&D Innovation

As the global push for carbon neutrality advances, various countries and regions, including the European Union, the United States, Korea, and China, have implemented measures such as carbon pricing and trading mechanisms, carbon tariff policies, and carbon footprint management policies. With over 50% of PV module demand expected to come from overseas markets, end-users are increasingly demanding lower carbon footprints for PV modules. Consequently, PV module manufacturers are not only adopting green production practices within their own processes but also setting higher environmental standards for their upstream raw materials and auxiliary components, particularly regarding carbon footprint performance. In late 2023, the Group initiated a carbon footprint assessment for its mainstream solar glass products. This assessment focuses on measuring carbon emissions from the production stage up to the point of sale. The assessment is expected to be completed and accredited within 2024. We will then be able to provide our customers with precise and specific data for calculating the carbon footprints of their own products, and help them to choose solar glass products with lower carbon footprints and greater environmental benefits, meeting the requirements for product carbon footprint certification and supporting the development of low-carbon photovoltaic modules. This is especially significant when participating in solar power project bids in markets like France and Korea. Throughout production and operations, the Group prioritises enhancing the environmental efficiency and reducing the carbon footprint of its solar glass products, so as to better align with customers’ demands for low-carbon and highly efficient solutions. The following strategies are employed:

- (1) promoting the R&D and mass production of low-carbon and high-efficiency products, such as 2.0mm glass and ultra-high transmittance glass;
- (2) using cleaner fuels and replace heavy oil with natural gas to reduce carbon emissions per unit of calorific value by 27%;
- (3) enhancing production efficiency, yield rates, and reducing energy consumption per unit of finished product, electricity usage, and carbonaceous raw material consumption, thereby minimising the carbon footprint of the products;
- (4) when appropriate, selecting raw materials with lower carbon emissions during the production process, such as natural soda ash, to decrease carbon emissions during raw material acquisition and pre-processing stages;
- (5) opting for transportation methods with lower carbon emissions, predominantly utilising water transportation instead of land transportation for raw material transportation, thus reducing carbon emissions in the upstream transportation sector;
- (6) choosing environmentally friendly packaging solutions, such as substituting wooden pallets with steel pallets and promoting paperless packaging, to reduce carbon emissions from the production and transportation of packaging materials by minimising packaging material consumption.



Engaging with the Value Chain and Community

In April 2023, the French Energy Regulatory Commission updated the “Tender Specifications relating to the Construction and Operation of Solar Power Facilities” (AO PPE2 PV Sol). These updates introduced new requirements for simplified carbon assessments (ECS) of PV modules and imposed increasingly stringent standards for product carbon footprints. Additionally, all PV projects exceeding 100kWp must undergo mandatory ECS assessments and obtain carbon footprint certification from a professional organization. Based on the carbon intensity performance of the Group’s solar glass products in 2023, the carbon dioxide emission per kilowatt of single-glass/double-glass module amounts to approximately 23/44 kilograms. Considering the French requirement for the carbon footprint of low-carbon photovoltaic modules (less than 550 kg CO₂/kW), the carbon emissions from the Group’s production of solar glass in single-glass and double-glass modules account for only 4% and 8%, respectively of the carbon footprint of the photovoltaic modules, which can fully meet the requirements of low-carbon PV modules.

Furthermore, overseas jurisdictions have consistently strengthened regulations pertaining to environmental protection and safety standards for solar glass products, in addition to the requirement for carbon footprint assessments and higher standards. During the Reporting Year, the Group diligently adhered to its internal environmental liability management system and occupational health and safety management system. It ensured compliance with the ISO14001:2015 environmental management system and the ISO45001:2018 occupational health and safety management system. The Group also prioritised responsible procurement by implementing its sustainable procurement policy, human rights policy, Conflict Minerals Procurement Policy, Code of Conduct for Suppliers, Safety Management Requirements for Related Parties, and Integrity Management System. It further solidified its commitment to sustainable procurement through agreements with suppliers, such as the Green Environmental Protection Agreement and the Green Procurement Agreement. By selecting suppliers and procuring products that align with the Group’s sustainable development philosophy, it aimed to meet the diverse needs of customers worldwide in terms of production management, supply chain management, and product safety. This approach aimed to fulfill global customer requirements regarding the Group’s production management, supply chain management, and corporate social responsibility. During the Reporting Year, the Group primarily focused on selling deep-processed solar glass products, which obtained the China Compulsory Certification (CCC) and complied with relevant safety performance requirements. Products supplied to overseas markets primarily originated from the production base in Malaysia, meeting international certification standards such as RoHS and REACH. During the Reporting Year, the Group did not encounter any safety or health-related product recalls for sold or shipped items.

Sustainable customer relationships not only need meeting customers’ requirements for product quality, safety performance, environmental benefits and carbon footprint, continuously improve customers’ satisfaction in sales and after-sales service, but also keep pace with customers in product development and supply capabilities. In order to meet the needs of diversified photovoltaic application scenarios, such as application on rooftops, offshore and in deserts, the product specifications and designs of PV modules are becoming increasingly diversified, so PV module customers are increasingly paying attention to the product research and development capabilities of solar glass manufacturers and the supply capacity and stability of diversified products. As a leading private solar farm developer and operator in the PRC. The Group has been involved in the development and construction of solar farm projects since 2012, so it has been able to maintain a keen market sense over the long term. The unique business model enables the Group to develop and deploy new product markets early, optimise and transform production equipment in an orderly manner to meet the demand for new products, and continuously meet the needs of customers for product innovation, so as to form a closer strategic cooperative relationship with customers. During the Reporting Year, the Group maintained its competitive advantage in the thin glass and large-format glass markets, and continued to improve in areas of light transmittance, strength and weather resistance, and its new products were well recognised by customers. The Group’s R&D investment in 2023 exceeded HK\$760 million, representing a year-on-year increase of 36.4%, mainly for the research and development of solar glass production technology, equipment and products.

The Group manages confidential information such as intellectual property rights and customer information in strict accordance with the requirements of the “Confidentiality System”. The sales contract contains confidentiality clauses to protect customer information and privacy, and the Group also has internal systems to regulate the legal use and effective management of customer information by the sales department to ensure customer information security and prevent information leakage. Important customer files and information are classified as Class I confidential files and are properly managed by the Group’s archive. During the Reporting Year, no customer information leakage was reported for the Group.



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INFORMATION SECURITY MANAGEMENT

The World Economic Forum has identified the risk of cybersecurity breaches as one of the top ten global risks in the next two years. The Group's materiality assessment also indicates a significant increase in stakeholder concern regarding information security. With the promotion of green and low-carbon operations, the application of internal office OA system, enterprise resource planning (ERP) system and business intelligence (BI) system as well as the wider support for the information management of the Group's different business divisions and operational processes, the issue of information security has been fully recognised and highly regarded by the Group as a whole.

In order to improve the Group's information security management system and to conduct information security management in a more standardised and effective manner, the Group has revised and implemented the "Information Security Management System" in 2022 and put forward more detailed requirements in respect of document management, file management specifications, classification and management of information security incidents during the Reporting Year. The Group implements information security management by the Information Technology Center in accordance with the established system for all software, hardware and the Group's information assets, including intangible assets such as information, services, personnel and patents, which are held and managed by the Information Technology Center. The Group also requires that employees and external partners related to the information assets regulate their own behavior in strict compliance with the established management system and principles of the Group in order to avoid information security breaches and leakage incidents. The Group's information technology service management system and information security management system comply with the ISO/IEC 20000-1:2018 and ISO/IEC 27001:2013 standards respectively, and were certified by the China Cybersecurity Review Technology and Certification Center during the Reporting Year. In respect of information security management, the Group has set quantifiable objectives and the progress is regularly reviewed and evaluated by the Information Technology Center. In order to strengthen the information security awareness of all staff and to prevent information security incidents caused by staff neglecting information security regulations and procedures, the Group has formulated and implemented the "Information Security Reward and Punishment Management Measures" as well as provided network and information security related training to all staff during the Reporting Year, which covered the laws and regulations on security information, cultivation of information security awareness, information security management system of the Group, security regulations and codes of practice for the workplace, and cases of information security incidents. Employees are encouraged to emphasize and protect the Company's information assets and act in strict accordance with the established management system through the use of a reward and punishment mechanism. The assessment, evaluation, rewards and punishment of information security incidents are the responsibility of the information security executive team, but major information security incidents are to be submitted to the Information Security Management Committee for review and decision on the outcome of the incident. Departments and individuals who have complied with the information security management system and service procedures for a long period of time, protected the Group's information assets, effectively prevented the loss, misuse and theft of information assets, and excelled in the management of information security will be awarded with annual merits and extra points in performance appraisal. Employees who have discovered and reported information security incidents that are seriously detrimental to the interests of the Group and have taken effective measures to prevent the impacts of the incidents from spreading will be awarded with cash incentives. While for employees who violate the information security management system, cause information security incidents, direct economic losses or disclosure of confidential information of the Company, including but not limited to suppliers' and customers' information, employees' personal information, intellectual property information, etc., as well as those who intentionally damage or delete data of the information system to evade the information security supervision, they will be punished by warnings to termination of the labor contract, depending on the severity and impact of the information security incidents. If the incident involves violation of national laws and regulations, we will strictly investigate the legal responsibility according to the law. All rewards and punishments are handled in accordance with the principles of compliance with laws and regulations, timeliness, openness and fairness.

Engaging with the Value Chain and Community

Annually, an independent third-party professional assessment organisation assesses the security of the Group's information systems, provides recommendations for reinforcement, and issues a cybersecurity risk assessment report. This report provides a basis for optimising information systems, strengthening security management, and enhancing network security construction. During the Reporting Year, there were no significant failures of the Group's information systems, nor any instances of trade secrets, sensitive information, or major/material information security incidents being compromised.

SOCIAL WELFARE AND COMMUNITY ENGAGEMENT

The Group's unwavering vision is "treating the world well". As a company, we acquire resources from society to advance and prosper. Consequently, we have a proactive duty to undertake corporate social responsibility and facilitate the sustainable development of society. This entails not only actively organising or participating in volunteer activities, community services, and supporting public welfare and charitable initiatives, but also leveraging our business strengths and advantages. We strive to promote the creation of a society characterised by climate resilience, compassion, mutual support, fairness, justice, and environmental friendliness.

As a leading global manufacturer of solar glass and a prominent private solar farm operator in China, our core products, solar glass, and photovoltaic power, play a pivotal and positive role in achieving the global energy transition, establishing a renewable energy-based power system, and mitigating climate change. During the Reporting Year, our solar glass production could meet the demand for 154 GW of modules, resulting in the generation of green electricity that reduces carbon dioxide emissions by 108 million tons annually. Additionally, our solar farms supplied the society with 5.04 billion kWh of green electricity, equivalent to a reduction of 4.15 million tons of carbon dioxide emissions. Moreover, we actively utilised our business expertise to construct and operate distributed photovoltaic power generation projects for the light rail system in Wuhu, the city where our production headquarters are located. By effectively utilising the available roof space at stations and car parks along the rail line, we provide approximately 7.9 million kWh of green electricity to the stations annually, reducing the demand for purchased thermal power by approximately 11.5%. Furthermore, through the strategic utilisation of space beneath the photovoltaic modules, we foster the integration of photovoltaics with agriculture and fishery farming industries. This approach increases the revenue per unit of land/water area for our solar farm projects and creates income-generating opportunities for local farmers and fishermen. During the Reporting Year, our new grid-connected centralised solar farm projects amounted to 975 megawatts, with around 80% being fishery/agriculture-PV power plants. By the end of 2023, approximately 67% of the solar farm projects owned by the Group will be fishery/agriculture-PV power plants, significantly enhancing the environmental, social, and economic benefits of these projects.

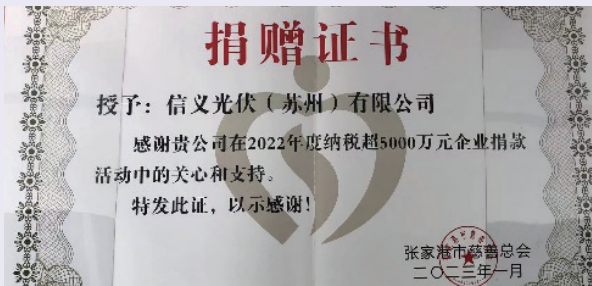


Engaging with the Value Chain and Community

By expanding the production capacity of solar glass and increasing the size of grid-connected solar farms, the Group has actively contributed to the growth of tax revenue and employment opportunities in the areas where it operates. During the Reporting Year, the Group's tax contribution rose by 4.3% compared to the previous year, reaching approximately HK\$871 million. As of 31 December 2023, the Group employed 11,063 full-time workers, representing a 30.8% increase from the previous year. Moreover, since 99.5% of the Group's business revenue originates from the green revenue of the photovoltaic industry, it plays a role in fostering inclusive and sustainable economic development within the local community. During the Reporting Year, the Group achieved green revenue over HK\$26.5 billion, a year-on-year growth of approximately 29.9%.

In 2021, one of the Group's subsidiaries established the Wuhu Xinyi Charity Foundation with the aim of providing police pensions and incentives, recognizing outstanding doctors and teachers, organising initiatives to aid students and educators, as well as providing relief during natural disasters. The Group values knowledge and respects talent, firmly believing that "knowledge changes destiny," and that education is the key to lifting disadvantaged individuals out of poverty and improving their socio-economic status. Consequently, supporting underprivileged groups in completing their studies and establishing a foundation of knowledge for their future through donations to schools has always been a significant focus for the Wuhu Xinyi Charity Foundation. During the Reporting Year, the Wuhu Xinyi Charity Foundation responded to the call of the Wuhu Virtually Unsupported Children's Education Project by granting a total of RMB525,000 to support 105 virtually unsupported children in Wuhu. Since its establishment until the end of 2023, the Wuhu Xinyi Charity Foundation has granted a total of RMB990,000 to 181 virtually unsupported students, assisting them in realising their educational aspirations.

In addition to providing financial support for education, the Group also focuses on the needs of low-income groups, children, disaster-affected communities, and the development of villages where solar farms are located. It also actively initiates or participates in local poverty alleviation activities. During the Reporting Year, the Malaysia production base took part in the Yayasan Aman Foundation's social development programs for low-income groups and the Malaysian government's poverty alleviation and relief initiatives, contributing over HK\$6.47 million to the flood relief fund for those affected in Malaysia. Furthermore, the Group's Zhangjiagang production base and several power stations provided support for poverty alleviation efforts, assistance to the underprivileged, and epidemic prevention and control in the regions where the Group operates through donations and material contributions during the Reporting Year. Overall, the Group made donations and provided goods with a total value of HK\$18.3 million during the Reporting Year (2022: HK\$13.3 million).



Engaging with the Value Chain and Community

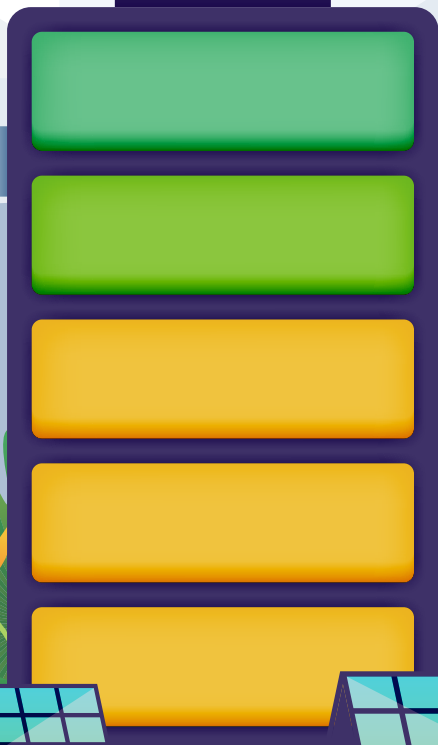
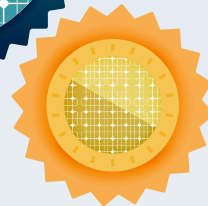
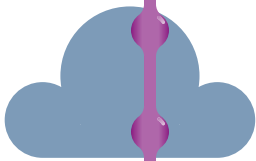
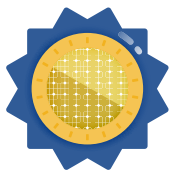
While actively promoting community development and rural advancement through charitable donations, the Group also takes proactive measures to engage its employees in volunteer activities within the communities where it operates, encouraging them to participate alongside their families. The senior management team leads by example, actively joining these initiatives to embody the Xinyi's philosophy of "treating the world well," wholeheartedly caring for the underprivileged and supporting them through their own efforts. Since the establishment of the Xinyi Volunteer Team in 2021, the Hong Kong subsidiary has consistently encouraged and organised its staff to participate in volunteer service activities organised by local charitable organisations on an annual basis. During the Reporting Year, the subsidiary continued its involvement in various initiatives, including the distribution of festive food bags and holiday blessings to elderly during the Chinese New Year, Dragon Boat Festival, and Mid-Autumn Festival through the Lok Sin Tong Benevolent Society of Kowloon. Additionally, they participated in flag-selling activities organised by renowned local charities such as the Tung Wah Group of Hospitals and Yan Chai Hospital. In addition to the Community Chest Casual Day activities, the Group won the "Most Active Corporate Participation Award" for its first participation in the Charity Run organised by Lok Sin Tong Benevolent Society of Kowloon, and joined hands with Bliss District Elderly Community Centre of Hong Kong Christian Service to conduct the Moca-5 Cognitive Screening and Assessment Activity for the elderly in Choi Fook Estate, Kowloon Bay, to call for their attention to their cognitive health.



Nurturing Talents for Long-term Development

Issues of focus	Employment Compliance	Talent Attraction and Retention
	Occupational Safety and Health	Diversity, Inclusion and Equal Opportunities

Xinyi Solar
GREEN strategy



Employees are the cornerstone of our sustainable development. Against the background of uncertainty in the macro environment and significant intensification of industry competition, a group of like-minded peers who uphold the same philosophy and work resolutely on sustainable business development is the key to enable the Group to maintain its leading position in industry competition and maintain long-term competitiveness. We strictly follow the requirements of laws and regulations and protect the legitimate rights and interests of our employees through a scientific talent management system. We pay great attention to the physical and mental health and safety of our employees. We are committed to safeguarding their human rights and labour rights through a complete safety management system, a fair and equitable training and promotion system. We guide the career development planning and provide employees with a safe and comfortable working environment as well as equal and broad development opportunities and strive to become a company that creates employee happiness and a trustworthy employer.



Work and achievements in 2023



2,604 new employees are added during the Reporting Year. As at December 31, 2023, there were 11,063 full-time employees, and the average revenue per employee was approximately HK\$2.41 million



Defend employees' human rights and labour rights, respect diversity, and eliminate bias and discrimination in the workplace. During the Reporting Year, the Group is not aware of any incidents that violated the human rights and labour rights of employees, violated the Ten Principles of the Global Compact and the labour laws and regulations of the place where it operates



Recorded zero mortality of employees, and the number of days lost due to work-related injuries per 100 full-time equivalent employees decreased by 4.3% 21.1 compared to 2022



We attach great importance to employees' career development and personal pursuits as an important part of the Group's sustainable development. We provide employees with diversified and comprehensive training as well as guidance and consultation related to career planning, and implement a fair and equal promotion mechanism, so as to assist employees to develop career-related knowledge and skills and fully stretch their personal potential and realise their career aspirations. During the Reporting Year, 88,138 hours of training were provided to employees, covering 99.6% of employees at the end of the year, with an average of 8 hours of training per person.



UN Global Compact related principles

- Principal 3: Enterprises should uphold the freedom of association and recognise the right to collective bargaining
- Principal 4: Enterprises should eliminate all forms of forced labour
- Principal 5: Enterprises should support the elimination of child labour
- Principal 6: Enterprises should eliminate any discrimination in employment and occupation



Future action plans and targets

During the employment process, we fully abide by the Ten Principles of the Global Compact to protect human rights and labour rights, and improve supervision, feedback and complaint handling mechanisms to ensure that every employee is fully respected and treated equally with fair opportunities at every stage of employment

Improve training, occupational safety and health management, and salary and welfare systems to enhance employees' sense of happiness, security, corporate belonging and work accomplishment

XSG 11: Protect the health and safety of employees with an ultimate goal of zero harm



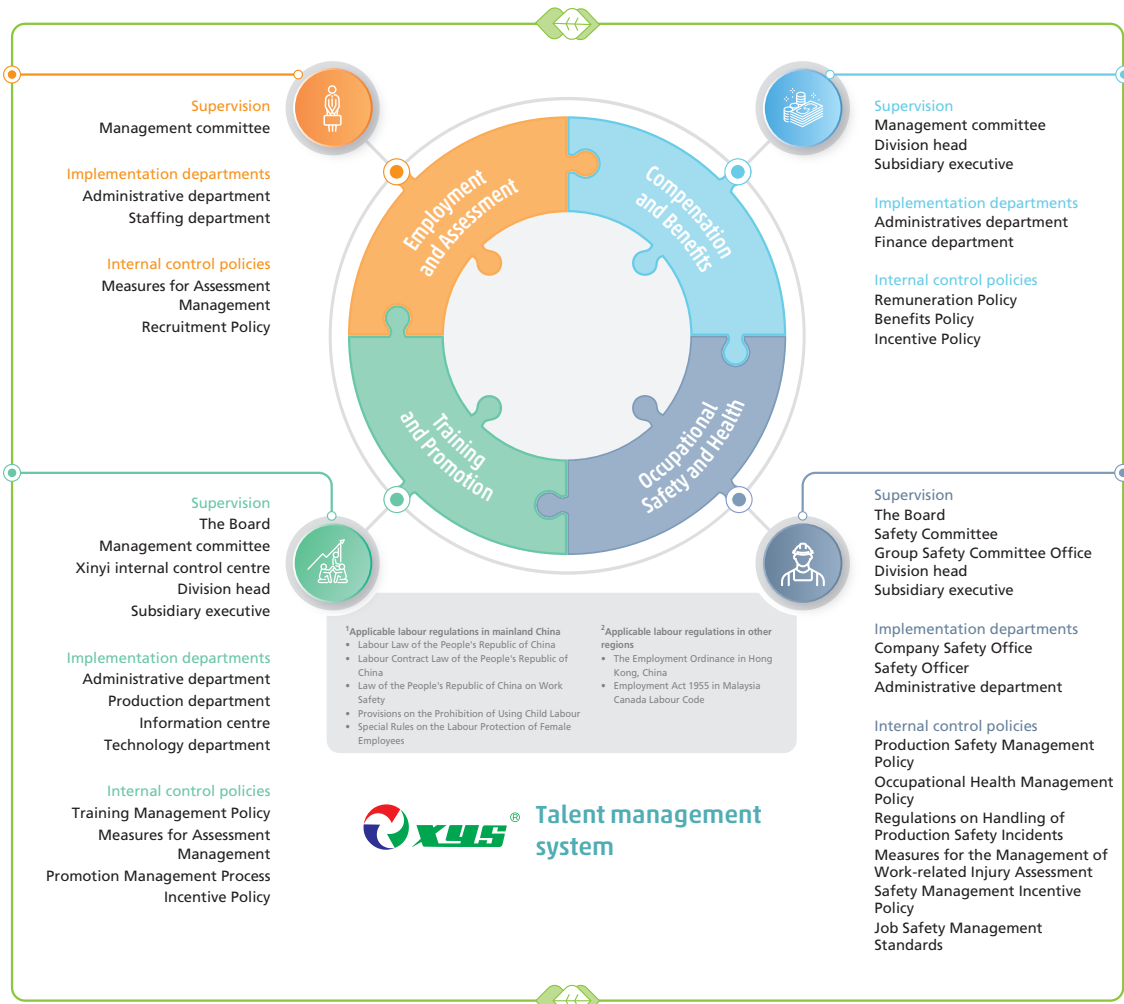
Nurturing Talents for Long-term Development

EMPLOYMENT COMPLIANCE

Talent Management System

In terms of talent management, the Group strictly abides by the laws and regulations of the place where it operates and the requirements of the Ten Principles of the Global Compact on human rights and labor standards, respects and upholds various human rights and labour standards of employees granted by law, the Universal Declaration of Human Rights and the International Labour Organisation Declaration on Fundamental Principles and Rights at Work, and implements the “people-oriented concept” into every aspect of talent management through the establishment and improvement of the talent management system.

The Group’s talent management system is established based on the requirements of local regulations/laws and regulatory authorities where it operates, and benchmarks industry, local and international best practices as reference. The Group’s internal management system was set up according to the four core modules of “Employment and Assessment”, “Compensation and Benefits”, “Training and Promotion” and “Occupational Safety and Health”, which are implemented by the relevant departments and monitored by the Board, the management committee (“**Management Committee**”) or dedicated committees/organisations (such as the Safety Committee (“**Safety Committee**”) and the Internal Control Centre). An effective communication and feedback mechanism is established and continuously improved to ensure that employees receive fair and equal treatment in hiring, training, assessment and promotion, adequate safety and health protection in the workplace, timely care and assistance in work and factory life, and comprehensive protection of employees’ human rights and labour interests. If there is any suspected violation of regulations or violation of employees’ human rights and labour interests, the Group will immediately initiate investigation procedures and follow-up.



Nurturing Talents for Long-term Development

Employment Relationship

The Group mainly employs new employees through social recruitment, campus recruitment and other channels. In terms of employee recruitment, the Group has always adhered to the principle of equal employment and firmly upheld the right of everyone to equal employment opportunities. Through the implementation of a strict personnel recruitment system and enhanced supervision of the employment process, the Group has effectively eliminated all kinds of discriminatory measures and behaviors concerning employment, including but not limited to differential treatment due to non-personal ability factors such as race, ethnicity, nationality, age, gender, religious belief, marital status, etc. of applicants, discriminatory conditions contained in recruitment information, and discriminatory conditions as selection criteria in actual recruitment.

On the basis of ensuring fairness and equality in the employment process, the Group protects the interests of both employees and the Group itself through equal and friendly communication, negotiation and determination of employment terms, including job and occupational requirements, basic working hours, compensation and benefits, training and promotion mechanisms, occupational safety protection, non-competition agreements, confidentiality and termination clauses. After both parties have clarified their rights and obligations and agreed to the terms of employment in writing, the employment relationship is established by signing a written employment contract. During the Reporting Year, the Group standardised the management of employment contracts and maintained a 100% signing rate of employment contracts.

In recent years, the human rights policies and management of PV companies have attracted great attention from major stakeholders including regulators, customers, shareholders/potential investors, etc. The Group has always strictly abided by the laws, regulations and industry norms related to labour and human rights in the places where it operates, and ensures that the Group's employment systems, behaviors and measures comply with the human rights and labour-related principles of the United Nations Global Compact. Human rights are inviolable. We timely identify and avoid the risks of child labour and forced labour through due diligence in the employment process, and have established and continuously improved a sound feedback communication mechanism to timely understand, effectively intervene and properly handle so as to reduce and avoid the risk of human rights violations and employees' labour rights violations in the Group's own business scope. The Group resolutely abstains all employment practices that violate human rights and the spirit of the United Nations Global Compact in its own business areas, and requires suppliers and other business partners to follow the same standards. The Group also sets up and strictly implements a standardised due diligence process in selecting suppliers and other business partners to avoid human rights violations in business relationships. At the same time, as a global leader in solar glass, the Group makes good use of its influence in the industrial chain to call on and guide more enterprises to comply with the principles of the United Nations Global Compact.



United Nations Principle 4: Elimination of all forms of forced and compulsory labour
Global Compact Principle 5: Effective abolition of child labour



We promise not to allow child labour, forced or involuntary labour within the Group.

Our actions

- Never employ anyone below the legal minimum age of labour in the place of business
- The terms and conditions of employment are set out in writing and are made known to employees, and the employment relationship is determined by a written employment contract
- Strict inspection and supervision of the recruitment and entry process, including verification of original identity documents such as ID cards and other required documents to avoid child labour and forced labour
- Respect and protect employees' right to terminate their employment contracts, and ensure that employees are entitled to the benefits of termination in accordance with the terms of employment, including but not limited to wages and share options
- Establish a system of reasonable working hours. Strictly comply with the statutory regulations on working hours in the place of business. If working hours need to be extended, ensure that the wishes of employees are respected and the requirements of laws and regulations in the place of business are met and provide overtime allowances

Nurturing Talents for Long-term Development



United Nations Global Compact Principle 3: Uphold the freedom of association and the effective recognition of the right to collective bargaining



We are committed to respecting and protecting our employees' rights of association and freedom to participate in trade unions

Our actions

- Respect for employees' rights to association in accordance with the law
- Respect and protect the freedom of employees to participate in trade unions. Trade unions have been established at all production sites and all employees have the right to participate in trade unions and to communicate their opinions, suggestions and demands to the Group through trade unions
- Strictly comply with the relevant laws of the place where the Company operates in relation to "Collective bargaining" and "Collective contracts"



United Nations Global Compact Principle 6: Elimination of discrimination in respect of employment and occupation



We undertake not to allow differential or unequal treatment of employees on the basis of characteristics unrelated to their personal qualities or the knowledge, skill and experience required for the job

Our actions

- We are committed to establishing a work environment free of harassment, bullying, defamation and harm to ensure that all employees are treated with respect, fairness and dignity, and are monitored through effective internal control mechanism
- Strictly follow the established internal systems and regulations of Xinyi Solar's talent management system in handling employment, assessment, remuneration, benefits, training, promotion and other related matters, and ensure compliance with relevant local laws and regulations to eliminate inequality treatment of employees in any employment matters based on race, ethnic, nationality, age gender, religious beliefs, marital status and other factors

During the Reporting Year, the Group was not aware of any violations of laws and regulations regarding the prohibition of child labour and forced labour, nor was it aware of any other violations of employment laws and regulations or human rights and employees' labour interests violations.



Nurturing Talents for Long-term Development

TALENT ATTRACTION AND RETENTION

Compensation and Benefits

The changing social environment and economic fluctuations have made employees more concerned about the stability of their jobs, income and development prospects. In response to the call of the United Nations Sustainable Development Goal 8, the Group ensured its own operational efficiency through stable operations and timely expansion strategies, while promoting productive employment in the areas where it operates, with 2,604 new employees added during the Reporting Year. The Group also shares development results with employees by enhancing overall remuneration returns and diversified benefit protection, so as to motivate employees to work hand in hand with the enterprise and give full play to their strengths to help the enterprise to reduce costs and increase efficiency in the long term.

Based on the basic requirements of the labour laws and regulations of the place where it operates, the Group has formulated and strictly implemented the "Salary Policy" and "Welfare Policy" to ensure that the determination, and adjustment of employees compensation and benefits comply with the legal requirements, industry norms and our internal rules and regulations, and at the same time, with reference to local market and industry average salary levels, ensure that the overall remuneration returns of employees are attractive and competitive in the market through the implementation of the "Incentive Policy" to attract and retain outstanding talents.

The compensation of the Group's employees is mainly composed of basic salary, performance pay and reward and punishment adjustment. When determining the compensation of employees, we consider the duties and responsibilities of employees, individual performance, corporate performance, market benchmarks and economic environment, etc., and strive to achieve a balance between employee expectations and the Group's benefits. The basic salary is set in a manner that ensures legal compliance and adherence to the principle of fairness and equality. In addition, based on the responsibilities of different positions, the Group has set up quantifiable performance appraisal standards in terms of economic performance, environmental performance, and production/sales/R&D and other job objectives. According to the results of regular assessment and the provisions in the "Incentive Policy", the Group sets the performance pay and the amount of rewards and penalties, and ensures the objectivity, fairness and impartiality of the assessment and results through an effective supervision mechanism so as to reward the good and punish the bad. The Group implemented a compensation assessment system for middle and senior management, and during the Reporting Year, in order to fully mobilise the work enthusiasm of administrative management personnel, the Group set up additional administrative assessment scores and provided additional incentives. [Case studies](#)

Taking the administrative personnel of production-related departments as an example, ESG-related indicators account for more than 50% of the annual key assessment indicators, covering energy conservation and emission reduction performance, resource efficiency, supply chain management, talent management etc. and the weight of ESG indicators in the additional administrative assessment scores is as high as 80%, focusing on energy conservation and consumption reduction, innovation and efficiency project establishment, participation and effectiveness, administrative personnel's own integrity behavior and integrity management performance in the area of responsibility, and safety management and performance in the area of responsibility. The results of the annual administrative assessment is an important reference for the evaluation of professional titles and promotion, and since the weight of ESG-related indicators in the comprehensive performance indicators of the annual administrative assessment is more than 65%, it ensures that middle and senior management personnel pay close attention to and attach great importance to ESG daily affairs, governance and performance, so as to work together with the Group to achieve the long-term goal of sustainable development.

Nurturing Talents for Long-term Development

The Group's working hours are set and managed in strict accordance with the statutory working hours requirements of the place where the business is located, and employees are guaranteed paid holidays such as statutory holidays, marriage leave, maternity leave, sick leave and paid annual leave. We encourage employees to combine work and rest, arrange work and rest reasonably, and achieve a balance between work and life. [Case studies](#) For employees working outdoors such as those working for construction and inspection of solar farm projects, taking into account the seasonal characteristics, the actual situation of different provinces and different types of power stations, the Group released seasonal and regional-specific work and rest schedule during the Reporting Year, which effectively avoided high-intensity outdoor work at the highest temperature and sunlight intensity in various places. Flexible working and rest schedule not only ensures sufficient rest for employees, but also ensures work efficiency and work completion.

The Group provides employees with medical benefits (critical illness insurance, occupational disease physical examination, annual health examination, etc.), housing benefits (housing subsidy/provision of housing), holiday benefits (gifts/holidays/festive activities), various subsidies (meals, transportation, communications, etc.), share options, education funds, etc., and also rewards employees with outstanding performance and long-term service to the Group, such as bonuses, additional paid holidays, and additional share options. [Case studies](#) In the Group's 2023 annual assessment, a total of 10 teams and 30 employees were rated as the "Excellent Teams" and "Excellent Employees" for their outstanding performance in performance contribution, quality cost, operation and maintenance efficiency, safety management, technological innovation, key tasks and core performance indicators, and were awarded bonuses as an incentive. During the Reporting Year, the Group also provided a scholarship fund of RMB544,000 to the children of 136 employees through the Xinyi Education Fund.



In order to seize the golden period of rapid growth of the photovoltaic industry, the Group intends to adopt a more proactive expansion strategy in the coming years. In order to meet the strong demand for talents brought about by rapid business expansion, especially professionals with rich industry experience, the Group's different production bases and departments of solar farm business system actively implemented the talent reserve plans during the Reporting Year in response to the actual talent needs. [Case studies](#) In order to meet the human resources needs of the Group's rapid development and business expansion, especially to increase the reserve of university talents, the Group implemented the "Hundred Talents Scheme" during the Reporting Year, and planned to recruit 100 university graduates to reserve professional and highly educated talents for each major business system. The scheme determines the starting salary according to the institutions and implements salary adjustments based on the regular assessment performance after confirmation of the position and the working location. The Group arranges a one-year training period for university talents, including centralised training, business system job rotation, two-way job selection, one-on-one mentoring and follow-up feedback to consolidate and retain talents. The Group also implements an incentive mechanism for instructors, including cash and performance evaluation incentives, to encourage more employees who meet the qualifications of instructors to actively participate in the scheme, so as to provide more comprehensive, practical and theoretical professional guidance and help university talents to find suitable positions and integrate into the working status in shorter time. In addition, for the recruitment of professional talents in the operation, management, development and construction system, the Group also encourages internal employees to recommend new hires and implements the internal recruitment recommendation reward policy during the Reporting Year. After the expiry of the probation period and the passing of the qualification assessment of the recommended candidates, both the recommended candidates and the employees who recommended those candidates can receive cash rewards to attract more outstanding professional talents.

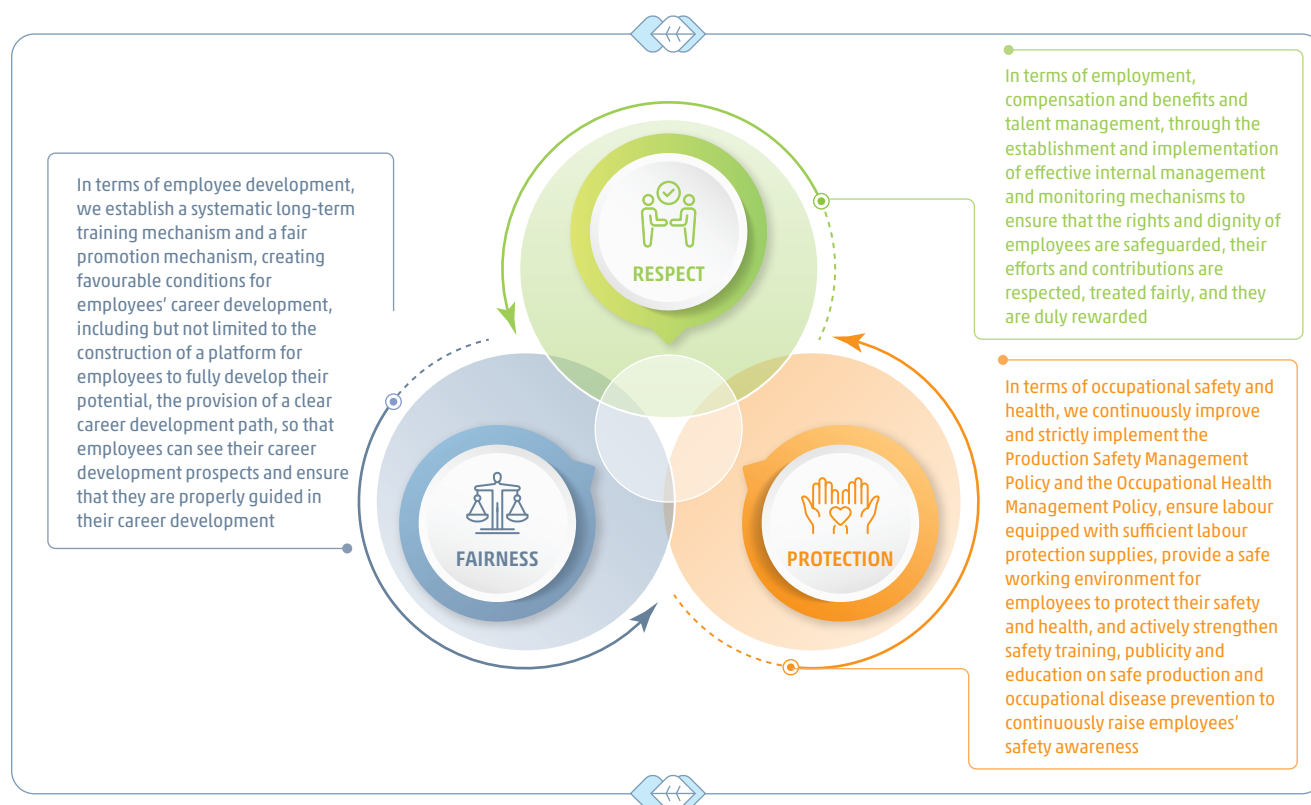
Nurturing Talents for Long-term Development

In order to attract, cultivate and retain technical talents, the Group encourages employees to participate in the establishment and implementation of energy saving, cost reduction and efficiency improvement, product innovation technology project. The benefits and performance of related projects are linked with the evaluation of professional titles. The Group also sets up an incentive mechanism according to the substantive benefits brought by the projects, attracting more employees to pay attention to the technology that creates long-term benefits for the enterprise, to continuously expand the Group's technical talent team, and further enhance the welfare of core technical talents through project benefit rewards and equity incentives, so as to attract more external technical talents. [Case studies](#) In 2023, a total of 45 technicians received technical project awards issued by the Group. During the Reporting Year, the Wuhu production base, the Group's largest production base, achieved zero loss of core technical talents. As of the end of 2023, more than 94% of employees in the core technical team of the Wuhu production base have served for more than 5 years, of which 58% have served for more than 10 years.

Employee Care

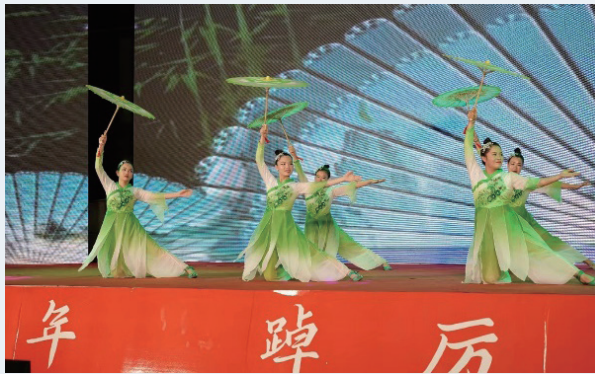
We pay close attention to the needs of employees. We not only care about them in terms of work. When we know that employees encounter confusion or difficulties in life in the factory area and achieving a balance between work and life, we also take active response and take effective measures to answer the questions and solve the difficulties for them, so that they can fully feel the care of the Company and thus enhance their sense of belonging and cohesion. Therefore, the Group has established and continuously improved its internal communication mechanism and continuously strengthened effective communication with employees.

In the areas of work, we strive to achieve:



Nurturing Talents for Long-term Development

After the COVID-19 pandemic, the physical and mental health of employees should be fully valued. Therefore, the Group actively guides employees to choose a healthy lifestyle, and at the same time, through the active communication of the labour union, effectively adjusts and relieves the pressure of employees, and gradually establishes the concept of mental health. During the Reporting Year, the impact of the pandemic on social activities has gradually subsided. Therefore, the Group has resumed diversified offline employee activities, including celebration activities during the traditional festival with the meaning of reunion, birthday parties, departmental outdoor team building activities, etc., to enhance communication between and within departments, so that employees can gradually eliminate trust anxiety and social fear caused by the pandemic and return to the pre-pandemic state of interpersonal interactions.



In addition, the Group believes that health is the foundation for employees to live and work efficiently. Therefore, we insist on guiding employees to pay more attention to their health through employee activities and publicity and education, gradually establish a healthy life concept and develop the habit of regular exercise to stay healthy. During the Reporting Year, the Group held a variety of health promotion activities at various production bases, including basketball, badminton, billiards, bowling and other ball game competitions, as well as healthy sports such as marathons and brisk walking. At the same time, at the Wuhu Research and Development Centre, we provide fitness facilities and sports courses for employees to relieve their physical and mental health, such as yoga and dance, with an aim to encourage employees to be more active in daily life, which not only helps employees to strengthen their physical fitness, but also benefits to relieve work pressure and maintain emotional health.

Nurturing Talents for Long-term Development



The pandemic and macroeconomic uncertainty have led to a wave of layoffs in many industries, and many enterprises have experienced wage cuts, wage frozen and welfare cuts, which have caused individuals' concerns about the stability of business operations and their own development. Therefore, the Group not only helps employees stay happy and full of energy through employee activities and daily communication, but also strives to alleviate employees' worries and anxieties from the root causes. During the Reporting Year, despite the pressures of intensified industry competition, significantly higher operating costs and heated up trade disputes, the Group has continued to improve its economic efficiency and maintain steady development through stable operation, excellent cost control and strategic scale expansion. The Group takes the initiative to share the results of its achievements with its employees, conducts annual reviews of their performance and remuneration in accordance with the established policy, continuously improves employee welfare, and continues to increase medical insurance, housing and meal allowances, holiday benefits, employees' children education fund and other aspects that can effectively reduce employees' economic pressure. Therefore, employees' remuneration packages were further enhanced in line with the improvement in corporate efficiency during the Reporting Year.



Nurturing Talents for Long-term Development

Intellectual Property Right Protection

The Group attaches high importance to technical talents and their scientific research achievements and attracts and retains technical talents through a number of reward systems. In terms of intellectual property management, the Group has formulated the "Measures for the Administration of Intellectual Property" in accordance with the "Patent Law of the People's Republic of China", and further strengthened the protection of intellectual property rights and guided employees to pay more attention to patent creation and protection through setting up requirements of various rules on the patent application process, management structure, training system and award issuance. The Technology R&D Centre of the Group is responsible for patent management. The Group has also set up a special team at the Group level and assigned dedicated personnel to each subsidiary to be responsible for patent application, management and protection. We will resolutely take legal measures to protect the rights and interests of the Group and its employees in the event of infringement, and strengthen the protection of intellectual property rights through the engagement of third-party professionals such as external experts, patent agents and attorneys. As of 31 December 2023, the Group had a total of 234 registered patents.

In order to motivate employees to strive for innovation, the Group can combine regular work inventions/propose patents that can be fully applied to the production of solar glass and the development, construction and operation of solar farms, and can effectively improve production efficiency, economic and/or environmental performance. According to the "Measures for the Administration of Intellectual Property", the Group will reward the invention employees/teams according to the patent types and stages for each patent that has been accepted, disclosed and granted. During the Reporting Year, the Group disbursed patent incentives of approximately RMB108,000.

OCCUPATIONAL SAFETY AND HEALTH

Production Safety Management

The Group always places safety first, adheres to the concept of "no small matter in production safety" and strictly implements the established production safety management system of the Group. By continuously improving or supplementing the newly refined management system, the Group is committed to providing employees with a safe and fully protected working environment. In addition to strengthening system construction and implementation, the Group highly recognises that the establishment of a strong culture of occupational safety and health is crucial to the long-term development of the enterprise, and therefore attaches great importance to the strengthening of safety awareness from senior management to ordinary employees. The Group calls on every employee to value life and jointly promote a safe and healthy working environment by clearly and firmly fulfilling the safety responsibilities of their own positions. The Group strictly complies with the applicable laws and regulations related to safety production, such as the "Law of the People's Republic of China on Work Safety", "Provisions on Safety Training for Production and Operation Entities", "Measures for the Administration of Contingency Plans for Work Safety Incidents" and the "Factory & Machinery Act 1967". The Safety Committee under the direct leadership of the Chief Executive Officer supervised and managed the production safety work in accordance with various established production safety management related systems and standards, including hazard source identification and management, risk assessment and hierarchical control, safe operation of position personnel and equipment management, standardised use and management of labour protection equipment, etc.

The Safety Committee is the highest supervisory and decision-making body for the production safety management of the Group, with the Group's chief executive officer as the director and the deputy director being the respective division head. The deputy director of the Safety Committee is also the first responsible person for the division he/she in charge and is responsible for the overall leadership of the safety production work under his/her jurisdiction and assists the director to perform the duties of the Safety Committee. The Group has set up a two-level safety management structure under the Safety Committee, with the first tier being the office of the Safety Committee of Xinyi Solar (the "**Group Safety Committee Office**") and the second tier being the safety management office of each corporate company (the "**Company Safety Office**"). The main responsibilities of each level of the organisation are as follows:

Nurturing Talents for Long-term Development






Nurturing Talents for Long-term Development

Since the implementation of safety production management with a new safety management structure in 2021, the Safety Committee has continuously promoted the construction of the Group's safety management system by strengthening the implementation of established systems and introducing detailed systems and measures, so as to realise institutionalised, standardised and refined management of safe production. The Group implements a dual prevention mechanism to identify, assess and hierarchically manage hazards and risks, and implements the established regional risk control measures in accordance with the "Hazard Source Identification and Risk Grading Control and Management System". The Group especially strengthened the safety control of major risk areas, and eliminated potential safety hazards in a timely manner through regular inspections by safety officers and monthly safety hazard investigations, so as to further reduce safety risks. [Case studies](#) In order to further standardise and strengthen the safety risk control of major hazard sources, comprehensively reduce the Group's accident risks, curb major safety accidents related to the storage and use of hazardous chemicals, and ensure the safety and health of the Company's production and operation and employees, the Group issued and implemented the "Management System for Major Hazard Sources" during the Reporting Year, which clarifies the main responsible persons and their responsibilities in production and operation as well as technology and operation, regulatory processes and daily standardised management requirements, employee risk notification and safety training, etc. In addition, in order to strengthen the safety management and supervision of hazardous operations, prevent and reduce safety accidents, and ensure the safety of operators, the Group strictly implemented the "Safety Management System for Hazardous Operations". The "Safety Management System for Hazardous Operations" clearly states: (1) the responsibilities of personnel related to hazardous operations, requiring operators to hold certificates to work, and guardians and operation leaders need to bear corresponding guardianship, education and supervision responsibilities; (2) all hazardous operations must strictly perform the approval procedures, and be approved and managed according to the hazard degrees of the operations; (3) operators and guardians must strictly implement relevant safety precautions, operators shall receive relevant safety education before operation and obey the command of on-site management personnel during operation, and abide by the operation site management system; and (4) the corresponding working procedures and supervision of eight hazardous operations.

In addition to ensuring its own safe production, the management of related parties is also an important part of the Company's safety production activities. After establishing cooperative relationships with related parties, the safety management performance of related parties will have a practical impact on the safety performance of the Group. Therefore, the Group is committed to strengthening the safety management of related parties, aiming to build a safety community and work together to achieve sustainable safety production. The Group strengthens the personnel management of suppliers, contractors and other external institutions, teams and individuals related to the Group's production and operation activities, and implements the responsibility system for safe production of all types of personnel at all levels. The Group strictly implemented the "Regulations on Safety Management of Related Parties": (1) requiring related parties to sign the "Agreement on Safety Production and Environmental Protection of Related Parties" to clarify the safety management responsibilities of both parties; (2) to review strictly the safety management system, safety training system and technical qualifications of foreign operators of related parties, and require related parties to conduct safety education and training for employees; and (3) related parties must provide adequate labour protection supplies and purchase labour insurance for their employees. The Company Safety Office performs its responsibilities to supervise and inspect the implementation of the requirements of related parties, while the Group Safety Committee Office is responsible for reviewing the related parties' documents for safety management system, construction operations and technical plans, relevant qualifications, employee insurance and safety training implementation.



Nurturing Talents for Long-term Development

The implementation of the system is inseparable from effective supervision mechanism and the emphasis on safety of every employee.  During the reporting year, the Group formulated and implemented the “Job Safety Management Standards” to clarify the specific responsibilities of the management and implementation level related to safety production management, and put forward standardised process requirements and strict standards for the safety operation of personnel in each position, the wearing of protective equipment, the operation status of equipment and facilities, safety protection devices and the work of personnel of related parties. Through daily, weekly and monthly safety inspections, the Group ensures the implementation of established standardised procedures and standards by employees and related parties, eliminates operations that violate the regulations, and requires corresponding departments to implement rectification and follow up the rectification of inspection items that fail to meet the standards, so as to avoid accidents caused by safety hazards. The Company Safety Office is responsible for the follow-up and management of the daily inspection results, and the weekly and monthly inspection results are required to be reported to the Safety Committee of the Group to ensure that the existing safety hazards are timely understood at the Group level and the implementation of regulatory rectification measures. In addition, the Group enhanced the awareness of safety red lines of all employees by implementing the safety production responsibility system for all employees, and ensures that all employees can clearly understand the potential safety risks of their posts, the safety responsibilities they should perform, and the importance and necessity of complying with the standard operating procedures of the post and regulations by strengthening safety training and education. The Group provided three levels of safety training to all new employees. Strict training and assessment were also set up to ensure that all employees have a correct safety concept from the time they join the company. In 2023, the Group provided a total of 31,525 hours of new employee safety training, special safety training and routine safety training, with 29,595 participants. At the same time, the Group has established an incentive mechanism through the implementation of the “Safety Management Incentive Policy” to encourage all departments and employees to improve their safety production performance, to gradually reduce and ultimately avoid safety accidents caused by human negligence. During the Reporting Year, the Group recorded 78 work-related accidents, with a work-related injury rate of 0.71, 2,331 working days lost and the ratio of work-related days lost decreased to 21.1.

Occupational Health Management

The Group strictly complies with the laws and regulations related to occupational safety and health in the country and the region where it operates, such as the “Law of the People’s Republic of China on the Prevention and Treatment of Occupational Diseases”, the “Occupational Safety and Health Act of 1994”, and the “Regulations on Occupational Safety and Health”. Under the supervision of the Safety Committee and the Group Safety Committee Office, our occupational health and safety management is implemented by the Company Safety Office in accordance with the established occupational health management policy, which complies with the standards of international ISO45001:2018 Occupational Health and Safety Management Systems. By arranging professional organisations to regularly monitor occupational hazardous factors in workplaces, the Group ensures that the intensity and concentration of occupational hazardous factors in workplaces meet or are lower than the occupational health standards of the regions and countries where the businesses are located, takes effective technical measures, such as dust removal by ventilation, noise reduction, etc., as well as reasonable working hours arrangement and provide necessary personal protective equipment to reduce exposure levels and physical work loads of employees and protect the health of employees. The Group also provides annual health check-ups and occupational health check-ups for its employees to ensure that they are aware of their health conditions in a timely manner so that they can respond to and deal with health problems as soon as possible.

The Group strictly implemented the “Occupational Health Management Policy” and the “Management Policy for Occupational Protection Supplies” to better standardise the reporting, procurement, distribution and use of occupational health-related work and occupational protection supplies, so as to continuously improve the Group’s occupational health management system, ensure that employees receive move protection, prevent, control and eliminate the occupational disease hazards, improve the production and working environment, and protect employees’ life safety and physical and mental health. The relevant policies define the supervisory responsibilities of the Safety Committee. The Group Safety Committee Office is responsible for urging each subsidiary to strictly implement the established systems and conduct regular assessment. The Company Safety Office is responsible for formulating detailed implementation measures to ensure the implementation of relevant policies, regularly checking the development of relevant works, carrying out special training as needed and assessing the training effect to ensure that employees fully understand the Group’s management system for occupational health and labour protection supplies, and continuously improve their occupational health professional knowledge and labour protection awareness, so as to strictly abide by the standardised operation procedures in daily work to protect their own safety.

Nurturing Talents for Long-term Development

The Group is committed to strengthening five major areas of work and improving occupational health management in daily management to provide employees with more comprehensive protection:



Occupational Health Management System

Legal Compliance



- Compliance with local laws and regulations relating to occupational safety and health
- Arranging and supervising occupational health management in accordance with the Occupational Health Management System

Strict Supervision



- Under the supervision of the Safety Committee and the Group Safety Committee Office
- We have established an employee's personal occupational health management file, and the safety officer responsible for occupational health management has obtained the Occupational Health Training Certificate
- Making reasonable adjustments to work arrangements for special weather such as high temperature and workplaces that may cause physical burden to employees
- Develop and take corresponding protective measures for special processes
- Set up occupational health and safety affairs representatives to collect employees' opinions and suggestions on occupational health, safe production and labour protection, and provide regular feedback to supervisors
- Employees can also provide feedback on the Group's existing occupational health management system, work and protection measures through channels such as trade unions and mailbox

Training and Publicity



- Regular occupational health training is arranged to ensure that employees understand occupational hazards related to their positions, occupational disease prevention and protection and control measures, continuously improve their health awareness, and ensure that they consciously abide by the Group's established rules and regulations
- Set up an employee care team to carry out occupational health, labour protection and safety publicity in the factory on a daily basis to improve employees' occupational health and safety awareness



Labour Protection

- Provide employees with adequate professional labour protection supplies according to the needs of different departments and job positions, and arrange special training for labour protection supplies to ensure that employees understand the relevant systems of the Group, the meaning of using labour protection supplies and the correct use of labour protection supplies
- Conduct at least one evaluation of the status of occupational hazards every three years
- Arrange qualified professional institutions to test occupational hazards in the production site every year, including noise, high temperature, air quality, etc., to ensure that the working environment meets the standards and is continuously improved



Health Protection

- Provide pre-employment health check-ups and annual health check-ups for employees to ensure that they are regularly informed of their health conditions
- Providing occupational health examinations for employees in specific positions before taking up their posts, during their employment and before leaving each year
- Purchase critical illness insurance for employees to provide additional protection and reduce the impact of critical illness on employees and their families

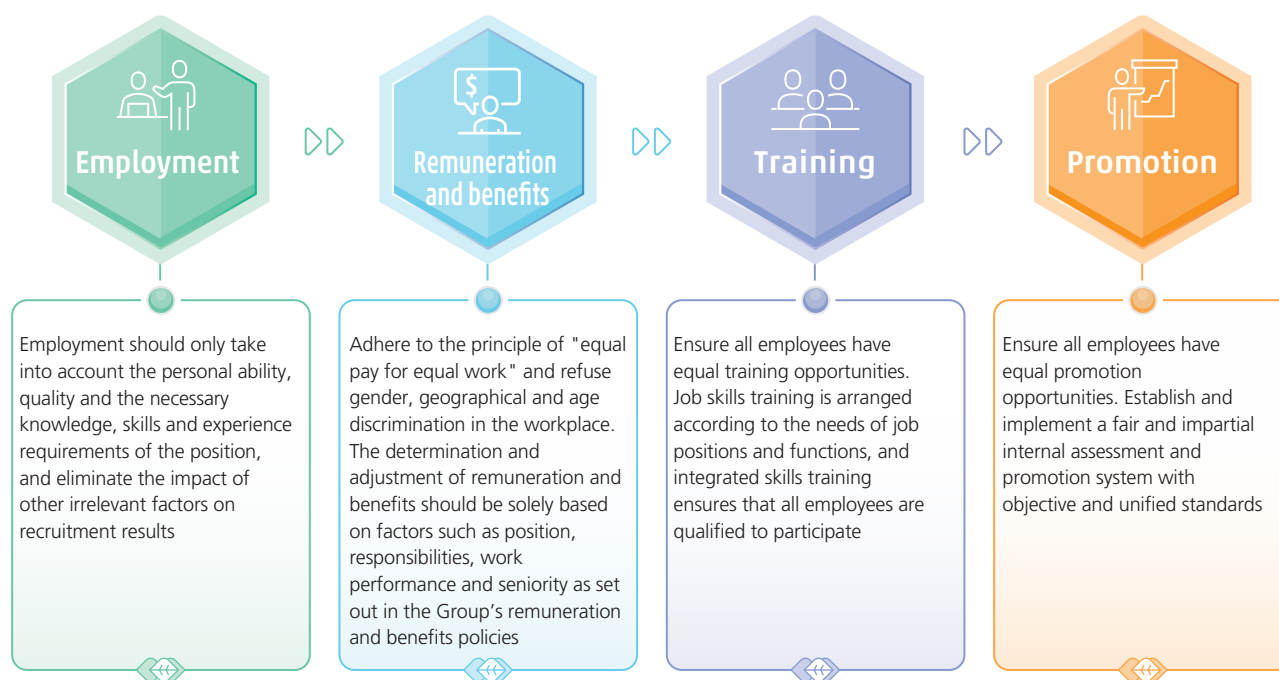
Nurturing Talents for Long-term Development

DIVERSITY, INCLUSION AND EQUAL OPPORTUNITIES

Principle of "Equality, Diversity and Inclusion"

The Group believes that a diversified talent team help us stand out from the global competition. The Group also intends to accelerate its overseas presence and enhance overseas production capacity to better cope with the uncertainty of trade disputes. In the face of talent management challenges brought about by the expansion of business scale and overseas expansion, the Group deeply recognises the importance of diversity and adheres to the principles of "equality, diversity and inclusion" in every aspect of talent team building and talent management, and is committed to taking all effective measures to build a harmonious, mutual assistance and inclusive working environment, forming a team culture of mutual respect, equality and inclusion, so that all employees feel respected and treated with dignity, and prevent and strive to eliminate all forms of unequal treatment at work.

"Equality" is the Group's primary principle in talent management, which is reflected in all aspects of talent management:

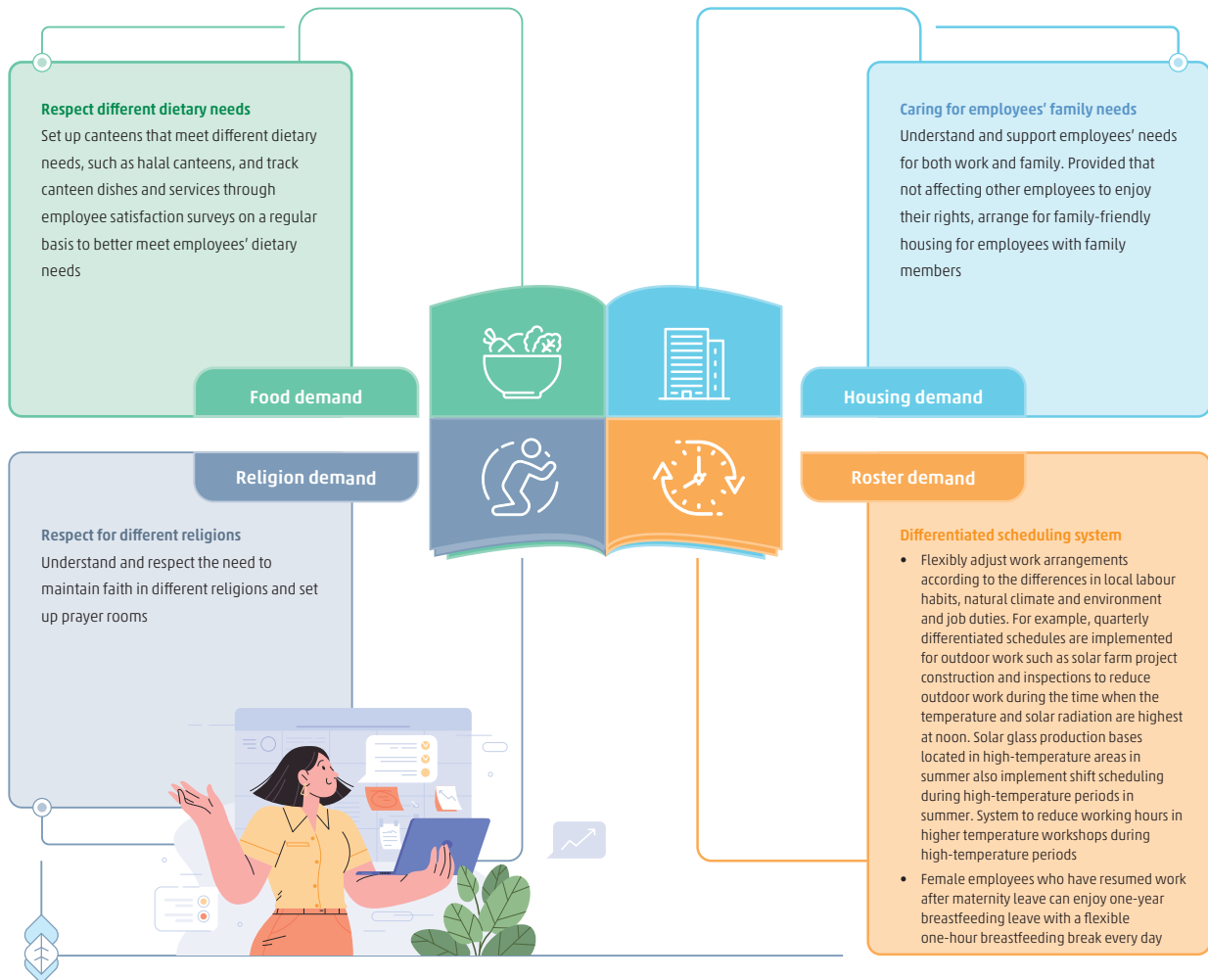


When an employee encounters unfair treatment or feels that his/her own rights and interests are infringed upon during his/her employment, including but not limited to bullying, harassment, encountering incidents that violate the principles of honesty and ethics, failure to properly solve problems or punishment for improper handling, he/she can appeal to the direct leader, the head of the relevant department, the head of the business system and the Chief Executive Officer through different channels such as the local office, the affairs supervision team, the Group's office, the Internal Control Centre and the CEO's mailbox. The Group is committed to providing employees with a fair, efficient and equal mechanism to handle employees' complaints. Through the effective supervision of the affairs supervision team, the Group can better ensure that employees' complaints are handled fairly and effectively by the local office. When the problems that cannot be effectively solved by the local office are involved or the local management is involved, employees can appeal to the higher level of management departments and management through the affairs supervision team, or directly to the Group's office, Internal Control Centre and the CEO's mailbox. Employees are required to lodge a complaint in their own name and ensure that the complaints are true and the information required for the complaints is provided. The Group strictly abides by the principle of confidentiality to the names of all parties involved in the complaints as well as the details of the complaints, so as to ensure that employees can file complaints without worry when applicable.

Nurturing Talents for Long-term Development

The Group's first overseas production base was put into operation in 2016, and after six years of development, the proportion of localised talents has increased significantly with over 60% local employees. Based on the talent management experience of the Malaysia production base, talent localisation can help the Group understand and integrate into the local society in which it operates, and is the key to building a closer relationship with the local government and local residents and gaining recognition. At the Group level, a staff team with different nationalities, ethnicities, ages, genders, professional knowledge, skills, cultural and educational backgrounds, experiences and qualifications can give the Group a broader perspective to better grasp the market needs and development opportunities of different cultural backgrounds. At the same time, building and managing a diversified team is also conducive to the formation of an inclusive culture and the gradual enhancement of inclusiveness in the Group. We learn to listen to the demands of different employees, create a diverse and inclusive working environment from the details, and pay attention to the establishment and improvement of a fair and equitable talent management system, which makes our talent team more competitive and flexible.

The differentiation comes from the different employee structure and cultural background of each production base. The Group respects and accepts differences, so it has set up local labour unions at each production base to allow different production bases to make differentiated arrangements in terms of employee management, training and development and employee activities that are more in line with the actual situation and needs of local employees on the basis of the principle of equality in talent management of the Group. In addition, employees with different races, ethnicities, nationalities, ages, genders, religious/beliefs and marital status have different demands for work and factory life. Under the premise of ensuring that the requirements of the Group's talent management system and the principle of equality are not violated, the Group is committed to meeting the differentiated demands of employees in terms of dietary, religious/beliefs, work arrangements and family balance by taking different measures:



Nurturing Talents for Long-term Development

Support to Female Employee Development

The long-term development of the Group is inseparable from the efforts and endeavours of all employees. Therefore, the contribution of female employees in their positions should be equally valued and recognised, and the rights and interests in the whole process of employment should also be treated and protected fairly. The Group is committed to maintaining gender balance in the workplace. We not only will not limit the development of female employees with stereotyped professional or job impressions, on the contrary, we are committed to taking all necessary measures to support the development of female employees in practice, providing equal training and promotion opportunities for female employees, and providing full tolerance and care to female employees during the special period. The Group's principle of equality is to ensure that all employees are not treated unequally in any employment matters on the basis of race, ethnicity, nationality, age, gender, religious/belief, marital status, etc., therefore, gender has never been a condition for the Group to assess talents. On the contrary, we respect employees' personal wishes and demands for positions, and strive to protect their equal right to choose.

Due to the historical imbalance of gender ratio in the large-scale industrial manufacturing industry, especially in the front-line manufacturing process, the imbalance is more obvious, and the proportion of front-line production employees in the Group is more than 86% due to the flat structure, therefore, although the Group adheres to the principle of equality and strives to eliminate gender bias, the absolute ratio of female and male employees is still far from equal. We believe in equality not in numbers, but in ensuring that every employee does not feel discriminated, harassed, or treated unfairly or unjustly because of their gender during their employment with the Group. Through the Group's persistent efforts, the number of female employees maintained the highest level during the Reporting Year among the past three years, accounting for 21.1% of the total number of employees. In middle and back offices functions such as quality control, sales, finance, administration or subsidiaries that do not involve production, the gender mix is more balanced with an even higher proportion of female employees.



Nurturing Talents for Long-term Development

The Group is committed to creating an equal, fair, inclusive and caring environment for female employees in the following areas:



Nurturing Talents for Long-term Development

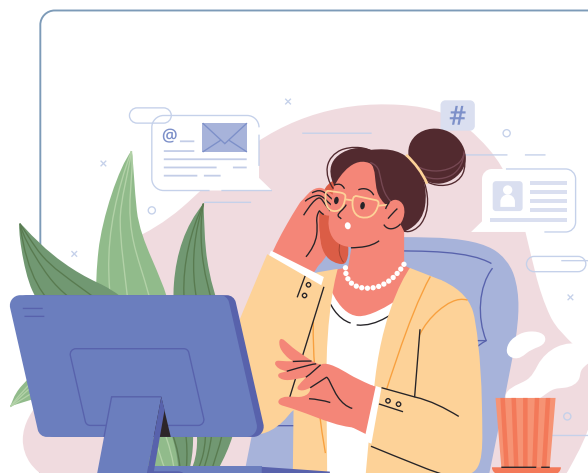
Female employees are the indispensable backbone of the Group's talent team. With the advantages in observation, empathy and communication skills, job stability and psychological toughness, female employees have demonstrated outstanding work abilities in management positions and many technical positions of the Group. They have demonstrated their dedication and expertise to create long-term value for the Group.



Female Power

GU Yue'e (顧月娥)

as a veteran member, witnessed the development of Zhangjiagang solar glass production base from initial planning to production and operation. While accompanying the branch to grow together, Ms. Gu also became the office manager of the Zhangjiagang production base from a newly hired recruitment specialist. She bluntly said that she has witnessed the Company grow from scratch, accompanied the Company through the initial recruitment team to the current vigorous development of the business, and experienced the times when the Company was facing difficulties. In the process, she also gained a deeper understanding of the Company's core values and corporate culture of continuous self-improvement. Ms. Gu is happy and proud to be a part of the Xinyi Solar family. She is also deeply grateful for the platform and career development support provided by the Company, and said that she will continue to actively utilise her abilities to contribute to the Company's long-term development in higher positions in the future.



Fu Danfeng (付丹鳳)

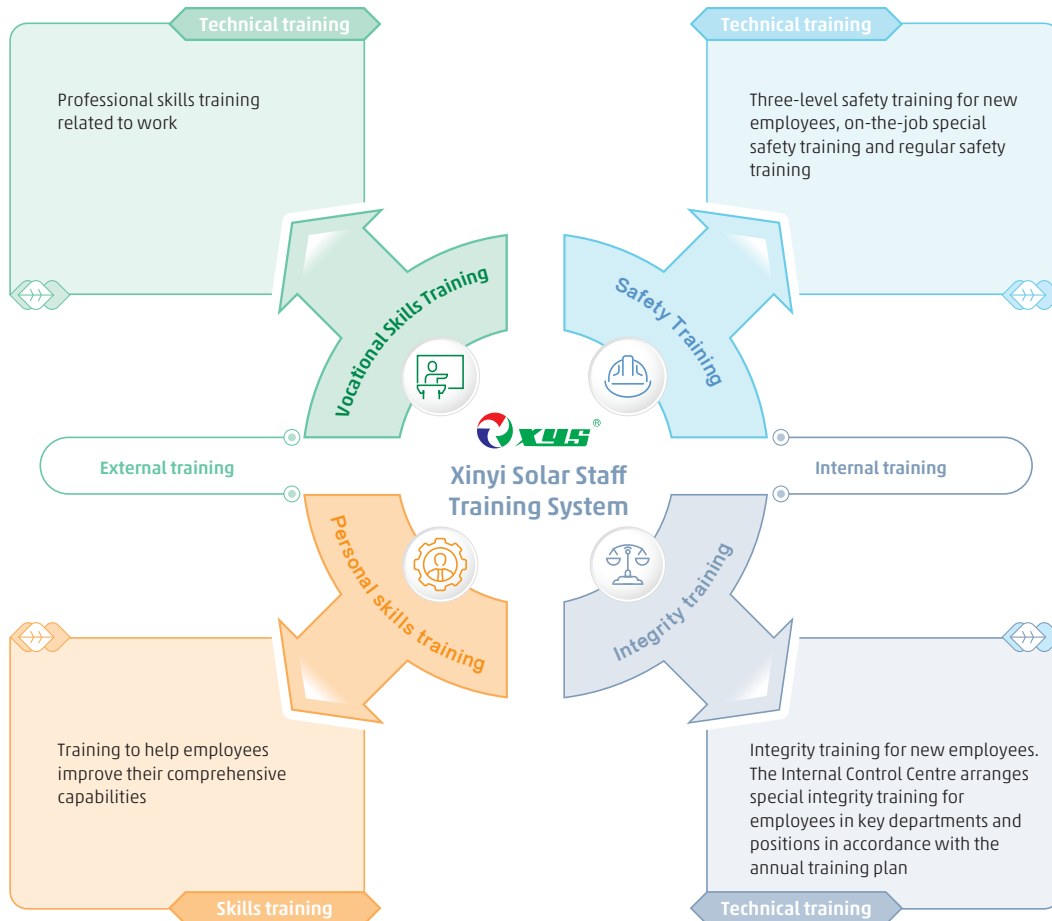
joined Zhangjiagang PV in 2021 and witnessed the entire process of the Zhangjiagang base from preparation to production. As an environmental engineer, she participated in the daily management of the projects from the approval of various early procedures to the later production. Although it is only about three years, she has been deeply influenced by the Group's corporate culture. She also sees that the global carbon reduction trend will continue to promote the Company's long-term development prospects. Ms. Fu said that she has met many outstanding colleagues at work. Their seriousness and hard work have become role models for her to learn from. Working together with outstanding colleagues and supporting each other has also made her more motivated and confident at work. At the same time, Ms. Fu recognised that as a responsible environmental engineer at the Zhangjiagang production base, she could not perform well without the opportunities and support provided by the Company, which enabled her to continue to grow and progress in her work. She not only improved her own skills and abilities, but also found a sense of belonging and honour in the Xinyi family.



Nurturing Talents for Long-term Development

Training and Promotion Mechanism

Systematic training is essential for employees to enhance their professional skills and comprehensive abilities and to achieve their career development goals. Therefore, the Group organised employee training in accordance with the established employee training management policy and the administrative department of the Group or its subsidiaries are responsible for organising employee training. Internal training is arranged by production, technology, solar farms operation and maintenance, internal control centre, information centre, Group Safety Committee Office, Company Safety Office and other departments that offer/receive the training services. According to the targeted employee group, training theme and based on the training effect, the Group flexibly adopts different forms of training, such as large-class training, small-class training, theoretical training and practical operation training. During the reporting year, the Group organised a total of 79,191 hours of internal training and engaged qualified external professional institutions to provide 8,947 hours of training to employees to meet the needs for professional knowledge and skills that were not covered by internal training.



Nurturing Talents for Long-term Development

The Group's employee training is broadly divided into two categories: technical training and skill training according to different needs, such as long-term development needs of the enterprise, customer needs, legal compliance requirements and personal development needs of employees. Technical training includes vocational skills training, safety training, integrity training and environmental protection training. Through vocational skills training, employees can enhance their professional ability to match job needs and have a deeper understanding of job requirements and responsibilities. Safety education and integrity training strengthen employees' safety awareness and integrity awareness through case analysis and education on the Group's management system, safety and integrity culture, so that employees can more consciously abide by the Group's established safety production management system and integrity management system. In addition, the Group hopes to convey the concept of "live and learn" to employees through skills training, and provide corresponding training resources for employees, so as to encourage employees to continuously improve their comprehensive personal abilities through learning and achieve self-enhancement. Therefore, the themes of skills training cover (but are not limited to) laws and regulations, leadership, time management, business writing and communication skills, digital skills, business etiquette, etc. During the Reporting Year, the Group provided 77,871 hours of technical training and 10,267 hours of skills training to employees respectively.



Occupational health training



Vocational skills training



Safety production training



Mental health education



Integrity training



Waste management training



Nurturing Talents for Long-term Development

Practical operation training has a strict assessment system. In addition to examinations and assessments performed by their respective department, the administrative department also regularly follows, assesses and evaluates relevant training during and after the training to ensure the effectiveness. In addition, for special jobs and special positions, the Group conducts skill assessment and regular review in strict accordance with national laws and industry regulations and ensures that certificates are maintained. The Group also welcomes feedback from employees on the training content and internal training instructors through the Training Assessment Form, so that we can timely receive feedback from employees on the arrangement and effectiveness of training, which will help the Group to continuously optimise staff training arrangements and continuously improve training effectiveness.

Adhering to the concept of “meritocracy”, the Group has established and continuously improved the promotion mechanism to build a diversified promotion ladder for all conscientious employees, provide sufficient development space, and ensure equal promotion and career development opportunities for all employees. The Group’s promotion mechanism is based on regular appraisal of staff performance and key performance indicators. The promotion process is strictly implemented in accordance with the Group’s established system to ensure fairness and impartiality and to eliminate all forms of discrimination and prejudice.

The Group conducts employee performance assessment by strictly complying with the “Measures of Assessment Management”, and sets key performance indicators for different departments and individual employees, including but not limited to economic performance and environmental performance, to ensure that the targets are specific, objective, and quantifiable for assessment. The quarterly/annual appraisals of employees are conducted by the department heads, the heads of the subsidiaries or the supervisors in charge and monitored by the Management Committee. Based on the confirmed evaluation results, incentives or promotion opportunities will be offered to employees with excellent performance, and improvement measures such as retraining will be proposed to those who do not meet the standards. The administrative department will assist in arranging, following up and evaluating the implementation progress and effectiveness of the improvement measures. The promotion of managerial personnel emphasises the results of annual administrative assessment. The annual administrative assessment consists of two parts, the annual key performance indicator assessment and the additional administrative assessment, in which the weight of ESG-related indicators is more than 50%. The assessment has a point deduction mechanism, and the managerial personnel with the highest comprehensive performance ranking will be given priority in the promotion. This motivates the managerial personnel not only to pay attention to production and economic indicators, but also to pay equal attention to the performance of ESG areas related to the Group’s sustainable development, and to strive to improve the ESG performance of its own management areas to promote the realisation of the Group’s long-term goals.

2023 Key Performance Indicators

This section presents the Group's performance in the aspects of business development, governance, economic, environment, employment, safety and society for 2023. The data collection and calculation methods used in this Report are consistent with the Hong Kong Stock Exchange's "Reporting Guidance on Environmental KPIs" and "Reporting Guidance on Social KPIs", unless otherwise stated, and follow the quantification and consistency principles to provide quantifiable KPIs performance and ensure the comparability between current year data and historical data. Additional remarks will be made for the calculation methods and/or reference coefficients that need special explanation. Unless otherwise stated, the data provided in this section are annual figures for the year or the figures as of 31 December. In the event that previous figures need to be restated, the reasons will be explained accordingly. Following the Hong Kong Stock Exchange's recommendation, on the basis of disclosing the data of key performance indicators, in accordance with the ESG Reporting Guide", the Group also made reference to other international best practices/photovoltaic-industry related reporting standards, such as the Global Reporting Initiative (GRI), "Sustainability Accounting Standards for the Solar Technology & Project Developers Industry" issued by the SASB. Supplementary disclosures are made for some of the applicable indicators and other key performance indicators.



Business Performance	Key stakeholder groups concerned with the relevant data:		
	2023	2022	2021
Sustainable Business Development			
Addition in production capacity of solar glass (tonnes per day)	6,000	6,000	4,000
Production capacity of solar glass (tonnes per day) (as at 31 December)	25,800	19,800	13,800
<i>Capacity ratio in areas with high/extremely high baseline water pressure (%)</i>	0%	0%	0%
Addition in grid-connected capacity of solar farms (MW)	1,094	806	603
<i>Number of new projects delayed due to ecological impacts</i> ^{Note 1}	0	N/A	N/A
Cumulate grid-connected capacity of solar farms (MW) (as at 31 December)	5,944	4,879	4,073
Total fixed asset investment in grid-connected and under-construction solar farm projects (as at 31 December) (HK\$ million)	21,884	18,800	18,300
Annual electricity generation capacity of solar farms (million kWh)	5,036.2	4,395.9	3,695.5

Note:

(1) Newly disclosed data in 2023, not disclosed in 2022 and 2021

2023 Key Performance Indicators



Governance Performance	Key stakeholder groups concerned with the relevant data:		
Business Ethics	2023	2022	2021
Number of anti-corruption training sessions	33	44	N/A ^{Note 4}
Number of employees receiving anti-corruption training	508	3,632	N/A ^{Note 4}
Percentage of employees receiving anti-corruption training ^{Note 1}	4.6%	43%	N/A ^{Note 4}
Percentage of employees in key departments and positions receiving anti-corruption training ^{Note 2}	100%	100%	N/A ^{Note 4}
Average hours of anti-corruption training ^{Note 3}	1.08	1.34	N/A ^{Note 4}
Concluded legal proceedings involving the Group or its employees in corruption offences	0	0	0
Confirmed case of termination or non-renewal of contracts with business partners ^{Note 5} due to corruption offences	0	0	0
Confirmed case of termination or non-renewal of contracts with business partners ^{Note 5} due to breach of the principle of good faith and fair trading	0	0	0

Notes:

- (1) Percentage of employees receiving anti-corruption training = number of employees receiving anti-corruption training during the Reporting Year/total number of serving employees at the end of the year
- (2) Percentage of employees in departments/positions identified by the Internal Control Centre as having potential corruption risks in their daily work and business development, such as sales, purchasing, finance, project development, who received anti-corruption training during the Reporting Year
- (3) Average hours of anti-corruption training = hours of anti-corruption training/number of employees trained during the Reporting Year
- (4) Relevant data for 2021 has not been disclosed
- (5) Suppliers that provide products/services to the Group/partners having dealings with the Group in the corresponding year

2023 Key Performance Indicators



Product Responsibility	2023	2022	2021
Product recyclable ratio ^{Note 1}	98-100%	98-100%	76-100%
Product reusability ratio ^{Note 2}	95%	95%	95%
Weight of product recovered during the Reporting Year (tonnes) ^{Note 3}	N/A	N/A	N/A
<i>Proportion of total sales (%)</i> ^{Note 3}	N/A	N/A	N/A
Proportion of products that contain IEC 62474 declarable substances/arsenic-containing substances/beryllium compounds/antimony compounds (%)	0%	0%	0%

Notes:

- (1) This value is an estimate. The 2023 and 2022 value are acquired according to the preparation notes of the national standard "Physical Method for Recycling and Treatment of Crystalline Silicon Photovoltaic Modules" (Draft for Comment) issued in September 2022, in which 100% recovery rate of solar glass can be achieved by different treatment methods, where only mechanical crushing treatment method will lead to 98% qualified recovery rate, while other methods can achieve 100% qualified recovery rate. The 2021 value is acquired according to the research by GreenMatch, a British institution, the recovery rate of glass in crystalline silicon modules can reach 76%, and also by reference to the research of KIER and IEA, the recovery rate of solar glass can reach 100% if non-destructive solar module recycling technology is adopted
- (2) This value is an estimate. According to the research by GreenMatch, a British institution, the glass reuse rate in crystalline silicon modules can reach 95%. With reference to "General Technical Requirements for the Recycling and Reuse of PV Modules in China" (GB/T39753-2021), solar glass can be used directly in the production of PV modules after processing if it is recycled as intact glass and the parameters such as light transmittance can meet the standard requirements for solar glass for modules. Therefore, the Group believes that the overall reusability of the products is high, but it is not possible to reach 100% because of the wastage during processing, so 95% is a reasonable estimate
- (3) Since solar glass is a component of PV modules, the recycling and reuse of solar glass in waste PV modules is a part of PV module recycling. According to the "General Technical Requirements for the Recycling of Photovoltaic Modules in China" (GB/T39753-2021), waste photovoltaic modules should be handed over to qualified organisations for dismantling and processing, and the recycling and processing organisations should comply with the "Technical Specification on the Environmental Protection of Centralised Zone for Dismantling, Utilisation and Disposal of Waste Electrical and Mechanical Products (Trial)" (HJ/T181-2005). As photovoltaic module recycling in China is still in the stage of development and exploration of technical standards, and has not yet been scaled and industrialised. According to the current regulations of China on the main responsibilities of recycling entities and the qualification of processing enterprises, solar glass manufacturers do not assume the main responsibility and do not have the corresponding qualification to perform the services. Therefore, the Group did not provide the service of recycling solar glass from waste PV modules by the end of 2023

2023 Key Performance Indicators



Sustainable Supply Chain	2023	2022	2021
Number of suppliers	3,136	2,841	2,389
By geographical region (%)			
Chinese Mainland	2,878(91.8%)	2,600(91.5%)	2,168(90.7%)
Overseas (including Hong Kong)	258(8.2%)	241(8.5%)	221(9.3%)
Percentage of suppliers meeting regular assessment ^{Note 1} (%)	100%	100%	100%

Note:

- (1) Such figure refers to the periodic assessment pass rate of suppliers providing products/services to the Group during the corresponding financial year



Customer Management	2023	2022	2021
Percentage of products sold or shipped that have to be recalled due to safety and health concerns (%)	0	0	0
Complaint cases related to products and services	192	164	109
Complaint handling rate ^{Note 1} (%)	100%	100%	100%
Customer satisfaction (score) ^{Note 2}	95	95	N/A

Notes:

- (1) Complaint handling rate = number of complaint cases handled in accordance with the Group's internal procedures with the outcome recognised by the customers/total number of complaint cases received in the corresponding financial year
- (2) Based on the results of the annual customer satisfaction survey. Relevant figures for 2021 have not been disclosed

2023 Key Performance Indicators



Economic Performance	Key stakeholder groups concerned with the relevant data:		
	2023	2022	2021
Sustainable Capital Investment and Income			
Total capital investment by asset class (HK\$ million)	9,895	6,646	4,938
Share of capital investment in photovoltaic industry (%)	100%	100%	100%
Revenue by asset class (HK\$ million (%))	26,629	20,544	16,065
Solar glass production and sales	23,533	17,655	13,019
Solar power generation and sales	2,971	2,744	2,840
Others	125	145	206
Share of green revenue ^{Note 1} (%)	99.5%	99.3%	99.5%

Note:

- (1) In line with the FTSE Russell's Green Revenues Classification System, the Group's two core businesses (solar glass manufacturing and solar farms) are classified under the green sectors of "solar equipment" and "energy production - solar energy", respectively.

2023 Key Performance Indicators



Other Key Financial Indicators	2023	2022	2021
Direct economic value (HK\$ million)			
Produced ^{Note 1}	26,804	20,835	16,463
Allocated ^{Note 2}	24,107	18,269	13,283
Retained ^{Note 3}	2,697	2,567	3,180
Earnings performance			
Consolidated revenue (HK\$ million)	26,629	20,544	16,065
Consolidated net profit attributable to shareholders (HK\$ million)	4,187	3,820	4,924
Earnings per share - basic (HK cents)	47.04	42.95	55.65
Dividend per share (HK cents)	22.50	20.00	27.00
Asset positions			
Net assets value attributable to shareholders (HK\$ million)	31,975	29,748	30,312
Bank and cash balance (HK\$ million)	3,877	5,370	7,458
Bank loans (HK\$ million)	10,503	8,032	8,008
Net gearing ratio (%)	17.50	7.70	1.50
Current ratio	1.15	1.80	2.70

Notes:

- (1) The direct economic value produced includes revenue, other income, other losses, net, impairment losses of financial and contract assets, share of profit/loss of investments accounted for using the equity method, finance income as disclosed in the consolidated income statement
- (2) The direct economic value allocated includes cost of sales, selling and marketing expenses, administrative and other operating expenses, finance costs, income tax expense and dividends as disclosed in the consolidated income statement
- (3) Direct economic value retained = Direct economic value produced - Direct economic value allocated

2023 Key Performance Indicators



Key stakeholder groups concerned with the relevant data:			
Environmental Performance	2023	2022	2021
Environmental Performance of Solar Glass Business			
Greenhouse gas emissions			
Total greenhouse gas emissions ^{Note 1} (tonnes of CO₂ equivalent)	5,710,230	3,929,933	3,249,629
• Direct greenhouse gas emissions (Scope 1) ^{Note 2}	4,490,174	3,003,130	2,417,539
• Indirect greenhouse gas emissions (Scope 2) ^{Note 3}	1,220,056	926,803	832,090
Greenhouse gas emissions intensity (kg CO₂ equivalent/m² of finished product)	4.99	5.69	6.56
• Direct greenhouse gas emissions intensity ^{Note 4}	3.91	N/A	N/A
• Indirect greenhouse gas emissions intensity ^{Note 4}	1.08	N/A	N/A
Air pollutants management			
• Nitrogen oxides (NO_x)			
Amount of emissions (tonnes)	4,285	3,455	3,568
Emission reduction ^{Note 5} (%)	92.6%	90.3%	84.1%
• Sulphur dioxide (SO₂)			
Amount of emissions (tonnes)	1,593	1,518	1,386
Emission reduction ^{Note 5} (%)	83.2%	74.4%	66.6%
• Particulates (smoke and dust)			
Amount of emissions (tonnes)	186	141	133
Emission reduction ^{Note 5} (%)	95.7%	94.4%	91.7%
Energy management			
Total energy consumption (MWh)	17,540,379	11,561,961	9,768,624
• Direct energy consumption ^{Note 6}	15,395,782	10,186,141	8,533,205
i) Share of non-renewable energy (%)	95.18%	94.51%	95.43%
↳ <i>Natural gas</i>	95.12%	94.43%	95.37%
↳ <i>Gasoline/diesel</i>	0.06%	0.08%	0.06%
ii) Share of renewable energy ^{Note 7} (%)	1.41%	1.64%	1.41%
iii) Share of self-produced energy ^{Note 8} (%)	3.41%	3.85%	3.16%
• Indirect energy consumption ^{Note 9}	2,144,597	1,375,820	1,235,419
Share of energy consumption from renewable energy sources (%) ^{Note 4}	1.24%	N/A	N/A
Share of energy consumption from grid-supplied electricity (%) ^{Note 4}	12.23%	N/A	N/A

2023 Key Performance Indicators



Environmental Performance	Key stakeholder groups concerned with the relevant data:		
	2023	2022	2021
Environmental Performance of Solar Glass Business	2023	2022	2021
Total energy consumption intensity (kWh/m² of finished product)	15.31	16.74	19.73
• Direct energy consumption ^{Note 4}	13.40	N/A	N/A
• Indirect energy consumption ^{Note 4}	1.91	N/A	N/A
Water Management			
Total water consumption ^{Note 10} (million m³)	12.153	10.490	8.202
• By use			
Production water consumption ^{Note 11}	11.641	10.094	7.959
Domestic water consumption ^{Note 12}	0.512	0.396	0.243
• By source ^{Note 4}			
Natural water resources	9.210	N/A	N/A
Municipal water supply (third-party water supply)	2.943	N/A	N/A
Capacity ratio in areas with high/extremely high baseline water pressure (%)	0%	0%	0%
Utilisation rate of recycled water (%)	96.0%	94.6%	95.6%
Water consumption intensity (m³/m² of finished product)	0.011	0.015	0.017
Total amount of sewage discharge ^{Note 4, Note 13} (million m³)	6.240	N/A	N/A
Packaging material management			
Total amount of packaging materials used (tonnes)	74,317	67,864	53,608
• Wood, wood slats and wood pallets	29,746	33,000	27,475
• Paper and paper boxes	32,066	24,508	18,857
• Plastic, plastic stripes and plastic tapes	12,401	10,275	7,193
• Other packaging materials	104	81	83
Packaging materials consumption intensity (g/m² of finished products)	66	99	108
Utilisation rate of paperless packing (%)	64.3%	46.1%	34.4%

2023 Key Performance Indicators



Environmental Performance	Key stakeholder groups concerned with the relevant data:		
Environmental Performance of Solar Glass Business	2023	2022	2021
Waste management			
• Hazardous waste			
Total amount of hazardous wastes generated (tonnes)	188.4	248.6	112.9
Compliant disposal rate of hazardous waste ^{Note 14} (%)	100%	100%	100%
Hazardous waste intensity (g/m ² of finished product)	0.17	0.36	0.23
• Non-hazardous waste			
Total amount of non-hazardous wastes generated (tonnes)	129,629	61,611	38,557
Non-hazardous waste intensity (g/m ² of finished product)	115.4	89.6	77.9

Notes:

- (1) Total greenhouse gas emissions are the sum of direct and indirect emissions
- (2) Direct emissions (Scope 1) are greenhouse gas emissions generated directly from solar glass furnaces due to the consumption of fuel (natural gas) and the decomposition of raw materials in the production of glass, calculated according to the formula proposed in the "Accounting Methods and Reporting Guide on Greenhouse Gas Emissions of Enterprises Producing Flat Glass in China"
- (3) Indirect emissions (Scope 2) are greenhouse gas emissions from the Group's consumption of electricity purchased from external sources, calculated according to the formula proposed in the "Accounting Methods and Reporting Guide on Greenhouse Gas Emissions of Enterprises Producing Flat Glass in China". In calculating indirect greenhouse gas emissions in 2023, the latest national grid average emission factor of 0.5703 tonnes of CO₂/MWh as specified in the Notice of the Management of Greenhouse Gas Emissions Reports for Electric-generating Corporates 2023-2025 issued by the Ministry of Ecology and Environment on 7 February 2023 was used, and the emission factors used in 2022 and 2021 were the average carbon emission factors applicable for different production bases
- (4) Newly disclosed data in 2023, not disclosed in 2022 and 2021
- (5) Reduction in air pollutants emissions = (1 - Such type of air pollutant emissions/Amount generated) × 100%
- (6) In accordance with the recommendations of the "Reporting Guidance on Environmental KPIs", the Group has included internally generated energy from equipment owned/controlled by the Group (i.e., electricity generated from residual heat power generation equipment and rooftop distributed PV power generation equipment) when accounting for direct energy consumption
- (7) Energy consumption from renewable energy refers to the electricity generated by the rooftop distributed photovoltaic power generation equipment owned by the Group used in the production of solar glass
- (8) Energy consumption from self-produced energy refers to the electricity generated by the residual heat generation equipment owned by the Group in the production of solar glass

2023 Key Performance Indicators

- (9) Indirect energy consumption represents indirect energy purchased from external sources and consumed by the Group, i.e. electricity supplied by local power companies
- (10) Water consumption is the amount of fresh water intake, which mainly consists of tap water supplied by local municipal water supply enterprises (third-party water supply) and natural water resources (seawater, river water, etc.)
- (11) Production water consumption is calculated based on the amount of fresh water intake consumed in production, i.e., it is equivalent to total water intake, excluding recycled water consumption
- (12) Domestic water consumption is calculated based on the amount of water billed for the living area and is apportioned in the proportion to the number of employees in the living area
- (13) Total amount of sewage discharge is the volume of effluent discharged which is treated internally by the Group in compliance with the applicable laws and regulations of each production base and then carried to the local municipal sewage treatment plant through designated sewage pipes
- (14) Qualified enterprises were engaged for temporary storage and disposal of hazardous waste in strict accordance with the procedures and requirements for disposal of hazardous waste under the applicable laws and regulations of each production base. Therefore, the compliant disposal rate of hazardous waste was 100%



Environmental Performance of Solar Farm Business ^{Note 1}	2023	2022	2021
Annual power generation of solar farms (million kWh)	5,036.2	4,395.9	3,695.5
Equivalent to standard coal savings ^{Note 2} (thousand tonnes)	1,514.4	1,325.4	1,126.8
CO ₂ emission reduction ^{Note 2} (thousand tonnes)	4,149.8	3,639.8	3,074.7
Electricity demand of households to be met ^{Note 3} (thousand households)	2,098.4	1,831.6	1,539.8
Equivalent to the amount of trees planted (thousand trees)	180,426.5	158,254.2	133,680.4

Notes:

- (1) Solar energy is a renewable energy source and the photovoltaic power generation process does not involve the consumption of energy and water and therefore produces virtually no air pollutants and wastewater discharge. The Group has singled out the environmental performance indicators of the solar farm business to present more clearly the positive environmental performance of the green electricity generated from the solar farm projects held by the Group in the corresponding years
- (2) The figures are calculated based on the annual conversion factors of the corresponding year provided in the "Annual Report on the Electricity Industry in China" published by the China Electricity Council
- (3) Calculated based on 2,400 hours of annual electricity consumption for each household

2023 Key Performance Indicators



Employment Performance	Key stakeholder groups concerned with the relevant data:		
Employee Overview	2023	2022	2021
Number of employees	11,063	8,459	7,072
By employment type (%)			
• Full-time	100%	100%	100%
• Part-time	N/A	N/A	N/A
By gender (%)			
• Female	21.1%	21.1%	19.9%
• Male	78.9%	78.9%	80.1%
By age group (%)			
• ≤30	40.0%	38.3%	40.8%
• 31-40	35.4%	35.6%	33.4%
• 41-50	19.4%	20.6%	20.5%
• ≥51	5.2%	5.5%	5.3%
By geographical region (%)			
• Chinese Mainland	89.8%	89.4%	87.4%
• Malaysia	9.9%	10.2%	12.4%
• Other regions	0.3%	0.4%	0.2%
By employment category (%)			
• Senior management	0.4%	0.4%	0.4%
• Middle management	1.0%	1.1%	1.2%
• General employees	98.6%	98.5%	98.4%

2023 Key Performance Indicators



Employment Performance	Key stakeholder groups concerned with the relevant data:		
Employee Overview	2023	2022	2021
Turnover rate of employees (%) ^{Note 1}	28.4%	30.4%	27.5%
By gender (%)			
• Female	28.2%	50.2%	27.7%
• Male	28.5%	25.1%	27.5%
By age group (%)			
• ≤30	37.1%	46.7%	37.6%
• 31-40	26.2%	22.8%	22.6%
• 41-50	19.7%	19.2%	19.9%
• ≥51	8.8%	7.9%	9.7%
By geographical region (%)			
• Chinese Mainland	29.1%	28.8%	26.7%
• Malaysia	22.6%	45.1%	33.4%
• Other regions	20.0%	9.1%	6.3%

Note:

(1) Turnover rate = Number of resigned employees in the category/total number of employees in the category at the end of the Reporting Year

2023 Key Performance Indicators



Training and Development	2023	2022	2021
Total hours of training received by employees	88,138	102,643	47,994
Average hours of training received by employees ^{Note 1}	8.0	12.1	6.8
By gender (hours)			
• Female	8.0	10.7	6.2
• Male	8.0	12.5	6.9
By employee category (hours)			
• Senior management	1.4	10.0	0.5
• Middle management	5.1	35.1	3.7
• General employees	8.0	11.9	6.8
Number of employees trained	75,349	98,524	39,645
By gender (%)			
• Female	24.9%	18.5%	20.5%
• Male	75.1%	81.5%	79.5%
By employee category (%)			
• Senior management	0.06%	0.17%	0.03%
• Middle management	0.53%	3.12%	0.39%
• General employees	99.41%	96.71%	99.58%
Number of employees trained (coverage ratio ^{Note 2, Note 3} , %)	11,014 (99.6%)	6,983 (82.6%)	N/A
Coverage ratio by gender ^{Note 2, Note 3} (%)			
• Female	119.4%	74.3%	N/A
• Male	94.2%	84.7%	N/A
Coverage ratio by employee category ^{Note 2, Note 3} (%)			
• Senior management	25.6%	51.5%	N/A
• Middle management	70.7%	63.3%	N/A
• General employees	100.1%	82.9%	N/A

Notes:

- (1) Average hours of training received by employees = Total hours of training received by employees/Total number of employees at the end of the Reporting Year
- (2) Relevant data for 2021 has not been disclosed. Training coverage ratio of different employee categories = Number of employees trained in the category/Total number of employees in the category as at the end of the Reporting Year
- (3) The number of employees trained is the actual number of employees trained in the Reporting Year, one person is counted once only and is not double counted. As 3,141 employees left the Company during the Reporting Year, any training received by the relevant employees during the Reporting Year will be counted as part of the number of employees receiving training, and therefore the training coverage ratio may be greater than 100%

2023 Key Performance Indicators



Occupational Safety and Health Performance	Key stakeholder groups concerned with the relevant data:		
	2023	2022	2021
Case of work-related fatalities ^{Note 1}	0	0	2
Work-related fatal accident rate ^{Note 2}	N/A	N/A	0.028
Number of work-related injuries ^{Note 3}	78	57	46
Work injury rate ^{Note 4}	0.71	0.67	0.65
Number of workdays lost ^{Note 5}	2,331	1,953	1,657
Number of workdays lost due to work-related injuries per 100 full-time employees equivalent ^{Note 6}	21.1	22.0	23.4
Case of occupational disease ^{Note 7}	0	N/A	N/A
Total hours of safety training (hours)	31,525	32,896	13,990
Number of employee trained	29,595	32,001	12,848

Notes:

- (1) The definition of work-related fatalities is consistent with the definition of the relevant local labour laws
- (2) The Work-related fatal accident rate is calculated according to the requirements of GRI 403: Occupational Health and Safety 2018 Disclosure Item 403-9
- (3) Based on the definition under the relevant labour laws in the places where the Group operates, excluding the traffic accidents while commuting to and from work on transportation not provided by the Group or minor work-related injuries
- (4) Work injury rate is the number of reported work-related injuries per 100 full-time employees equivalent
- (5) Workdays lost represents the absence for one or more workdays lost due to work-related injuries (including the day of injury)
- (6) Workdays lost due to work-related injuries per 100 full-time employees equivalent (or the rate of workdays lost) = total workdays lost/ total working hours*annual working hours per 100 full-time employees equivalent. Annual working hours per 100 full-time employees equivalent is calculated by referencing to the standard working hours required by the local labour laws in each of the locations where our business operates.
- (7) Newly disclosed data in 2023, no relevant data disclosed in 2022 and 2021. The definition of occupational disease is consistent with the definition of occupational disease under local labour laws and regulations

2023 Key Performance Indicators



Social Performance	Key stakeholder groups concerned with the relevant data:		
	2023	2022	2021
Charitable donations (HK\$'000)	18,280	13,293	72,915
Share of fishery-PV and agricultural-PV complementary solar farm projects ^{Note1}	66.7%	56.3%	N/A

Note:

- (1) Relevant data for 2021 has not been disclosed. Combining photovoltaic power generation with fishery farming/agriculture planting, the fishery-PV and agricultural-PV complementary projects can be an effective way to promote income generation for local farmers and fishermen, and each 100 mu of agricultural-PV complementary project can promote the stable employment of about 12 farmers

Appendix I: Awards and Certifications

AWARDS



The World's 100 Most Sustainable Corporations in 2024

(Corporate Knights)



Most Honoured Company

(Institutional Investor)



Investor Relations Award
(For three consecutive years)

(Hong Kong Investor Relations Association)



Caring Company

(Hong Kong Council of Social Service)



Hang Seng Corporate Sustainability Index Series Member 2023-2024

Constituent of Hang Seng Corporate Sustainability Benchmark Index

(Hang Seng Indexes Company Limited)



FTSE4Good

Constituent of FTSE4GOOD Emerging Index

(FTSE Russell)



Greater China Business Sustainability Index 2022
大中華企業可持續發展指數2022

2022 Greater China Business Sustainability Index

(Center for Business Sustainability of the Chinese University of Hong Kong)



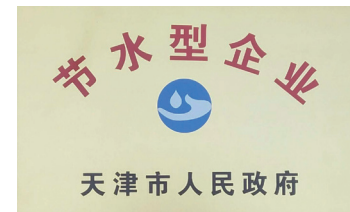
Top 100 Private Enterprises for Employment Absorption in Anhui Province

(Department of Human Resources and Social Security of Anhui Province)



Top 100 Private Manufacturing Enterprises in Anhui Province

(Department of Economy and Information Technology of Anhui Province)




Water-saving Enterprise

(The People's Government of Tianjin)

Appendix I: Awards and Certifications

CERTIFICATIONS

 <p>ISO9001: 2015 Standards for Quality Management System (TÜV SÜD Management Service GmbH)</p>	 <p>ISO14001: 2015 Standards for Environmental Management System (TÜV SÜD Management Service GmbH)</p>	 <p>ISO45001: 2018 Standards for Occupational Health and Safety Management System (TÜV SÜD Management Service GmbH)</p>
 <p>China Compulsory Certification (CCC) (China Testing & Certification International Group Co., Ltd.)</p>	 <p>RoHS Certification (SGS)</p>	 <p>REACH Certification (SGS)</p>
 <p>ISO/IEC 27001:2013 Information Security Management System Standards (China Cybersecurity Review Technology and Certification Center)</p>	 <p>ISO/IEC 20000-1:2018 Information Technology Service Management System Standards (China Cybersecurity Review Technology and Certification Center)</p>	

Appendix II: 2023 ESG Report Guide Content Index



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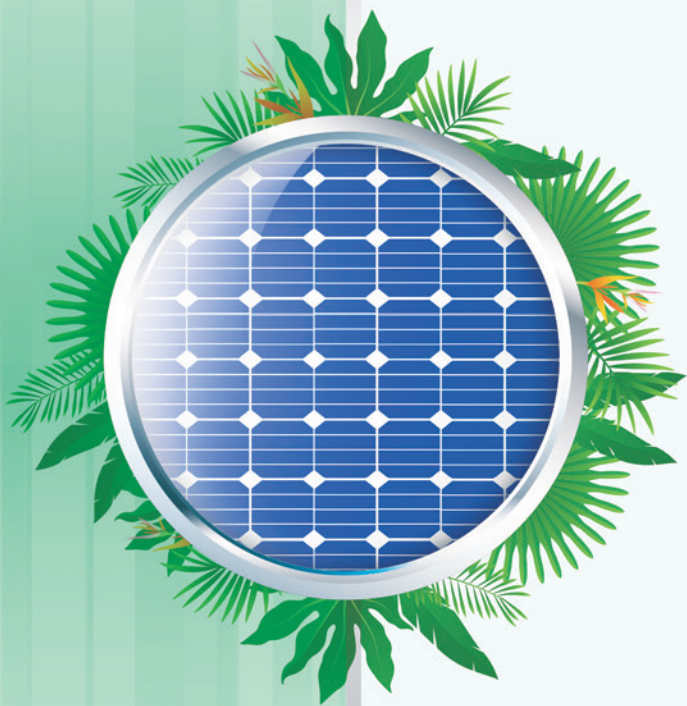


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