GCL Technology Holdings Limited
協鑫科技控股有限公司

(Incorporated in the Cayman Islands with limited liability)
(Stock Code: 3800)

Environmental, Social and Governance Report 2021

- Technology
- Digital
- Green


• Technology
• Digital
• Green


Strive to be the leading silicon material manufacturer with the lowest carbon emissions, the lowest cost, the largest production capacity, and the best customer experience

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TECHNOLOGICAL GCL

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ABOUT THE REPORT

Report Overview

This report is the ninth Environmental, Social and Governance ("ESG") Report of GCL Technology Holdings Limited (hereinafter referred to as the "Company" or "GCL Technology", previously known as GCL-Poly Energy Holdings Limited), focusing mainly on the management and performance in environmental protection, society, and governance of GCL Technology and its subsidiaries (hereinafter referred to as the "Group" or "we"). It is an annual report which covers the work between 1 January 2021 and 31 December 2021 (hereinafter referred to as the "Reporting Period").

Basis of Preparation

The report has been prepared in accordance with the *Environmental, Social, and Governance Reporting Guide* set out in Appendix 27 to the *Listing Rules* of The Stock Exchange of Hong Kong Limited (the "SEHK" or the "Stock Exchange"), with reference to the issues of concern regarding ESG ratings under the United Nations Sustainable Development Goals ("SDGs"), MSCI and Hang Seng Corporate Sustainability Index, taking into account the current development level and actual ESG practices of the Company. The content of this report is determined according to a set of systematic procedures, which include identifying and ranking major stakeholders and important ESG-related issues, defining the boundary of the ESG Report, collecting relevant materials and data, preparing the report based on the data, and reviewing the data of the report.

Scope and Coverage of the Report

Unless otherwise specified, the policy documents, statements and data in this report cover the headquarters of the Company and the subsidiaries and holding companies actually controlled by the Company. The previous data quoted in this report are the final statistics, and the financial data in this report are denominated in RMB.

Reliability Assurance

After being confirmed by the management, this report was adopted by the Board of Directors on 26 May 2022. The Group ensures that this report contains no false records, misleading statements or material omissions. We undertake to be responsible for the authenticity, accuracy and completeness of this report.

Access and Response to the Report

Traditional Chinese and English versions of this report are available. The electronic version of this report can be obtained from the "Financial Statements/Environmental, Social and Governance Information" category on the website of the SEHK and the "Corporate ESG" section of the official website of the Group (http://www.gcltech.com). If you have any questions or suggestions on the content of this report, please contact us by following means:

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STATEMENT OF THE BOARD OF DIRECTORS

Responsibilities of the Board of Directors

As the highest responsible body for the management and disclosure of the ESG matters of GCL Technology, the Board of Directors of the Company (the "Board") shall assume the ultimate responsibilities of the ESG management policies, ESG strategies, formulation of ESG-related targets, review of target fulfillment progress and ESG performance of GCL Technology. The Board shall give guidance to the formulation of ESG-related strategies, targets and management policies, coordinate ESG resources and work implementation, and hold meetings on a regular basis to consider and approve the sustainable development targets of the Company, supervise and review the ESG-related policies, management, performance and target fulfillment progress of the Company, and consider and approve the disclosure of ESG-related performance of the Company. GCL Technology is in the process of establishing the ESG Committee, which will be directly managed by the Board, to supervise the ESG matters of the Company and facilitate the launch and implementation of ESG related initiatives.

Daily Practices

The heads of all business departments and major subsidiaries shall assist in the formulation and implementation of ESG strategies, targets, management policies and other initiatives in order to integrate ESG elements into daily operations.

Supervision of ESG Risks and Targets

GCL Technology shall maintain close communication with internal and external stakeholders to identify and evaluate material ESG issues and formulate ESG strategies. We have discussed and approved the identified ESG issues, and will formulate ESG strategies, targets and management policies based on relevant issues, keep track of international ESG development trends and peer performance in a timely manner, and regularly review the progress of related work.

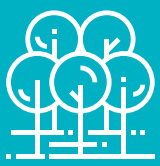
For more details of ESG materiality, please refer to the section on ESG Governance.

REVIEW OF 2021

Overview

- Annual revenue was reported as of **RMB19.698 billion**, representing a year-over-year increase of **34.3%**
- Net profit attributable to the parent company was reported as of **RMB5.08 billion**, marking a **significant year-over-year turnaround**
- Well-designed sustainability strategies, including **business profitability, manageable liabilities, prudent expansion, business continuity,** were developed to ensure the sustainability of the Company

Environmental



- Capitalizing on the **opportunities in clean technology**, R&D investment **RMB1.041 billion** was made, while a total of **98 patents** were applied and **99 patents** were granted during the year
- Using silicon material produced by the Company in 2021 as the key raw materials for the construction and operation of solar plants at downstream, the Company helped **reduce carbon emission** by **44.67 million tonnes**/year***25 years**[1]
- Its granular silicon products were **the first in China** to obtain the "**Carbon Footprint Certificate**" from international authoritative institute
- Efforts were made to **accelerate the construction of** the silicon "black technology" **intelligent production bases**, creating a **zero-carbon industrial park** under its "Digital GCL" strategies

[1] As compared with the carbon emission of thermal power based on the component life cycle of 25 years

Social

- Provided **equal and diversified employment opportunities** to a total of **8,863 employees**
- Focusing on **human capital development**, providing an average 102.12 training hours per employee and **100%** employees participating
- To ensure the health and safety of its employees, the Company organized **897** safety production emergency drills during the year, with a total of **22,204** headcounts participated. It recorded **0** case of employee occupational disease

Governance

- The composition of the Board was **further enhanced**
- **Continuous improvement** was made to the corporate risk control and compliance systems
- The Company has initiated the pilot run of **sustainable development performance assessment**

CHAIRMAN'S STATEMENT

2021 was the beginning of the "14th Five-Year Plan" and the first year of carbon neutrality. It was also a year for GCL Technology to turn around the business and achieve excellent financial results. The whole economy has entered the era of "carbon economy", and a series of unprecedented new technologies, new business models and new applications have emerged. In addition, an alternative energy revolution has been born in which "carbon energy" is replaced by "silicon energy". GCL Technology adheres to the corporate mission of "bringing green energy into life" and firmly capitalizes on the opportunities under the strategic goal of "dual carbon". Therefore, our high-tech solar material business driven by granular silicon continues to develop. In 2021, the total revenue was reported as of RMB19.698 billion, representing a year-over-year increase of 34.3%, and the net profit was reported as of RMB5.084 billion, which greatly turned previous year's losses into profits.

The Company firmly believes that maintaining a high level of corporate governance is one of the important factors to achieve its business sustainability. Currently, the firm has supplemented and improved the level of corporate governance from the perspectives of compliance, responsibility, transparency, equality, efficiency and diversity. Corporate governance has been optimized through a series of positive measures. The Company is further clarifying and improving the ESG governance structure and management mechanism, and is in the process of establishing the ESG Committee, which will consist of members of the Board with professional qualifications and experiences in the solar industry and risk control areas, in order to directly manage ESG-related tasks. The Company will also establish an ESG executive team under the ESG Committee, which has clearly defined responsibilities for all business units to strengthen the participation of the Board in decision-making and supervision. The ESG Committee, will strive to incorporate ESG-related core elements into every aspect of the Company's business development in a scientific and systematic manner, aiming for creating value for all stakeholders, and establishing a benchmark for the sustainable development in the solar industry.

As a global leading supplier of silicon-based materials, GCL Technology always adheres to the innovation of clean technology to drive green solar manufacturing, and to apply clean technologies to its product development, production management and other aspects. In terms of products, the Company has focused on the FBR-based granular silicon technology, the entire manufacturing process of which is in line

with the national strategic direction of "low carbon emission, energy saving, green manufacturing". At present, GCL Technology is the only low-carbon silicon-based material enterprise in the world that commercialized the FBR-based granular silicon technology with a massive production scale. The total power consumption per kilogram of granular silicon production is approximately 2/3 lower than that of the traditional Siemens method. Its advantages of low carbon emission will become a new growth driver for the solar industry to realize the national goal of carbon neutrality. For example, the 2021 global solar PV installation of 183GW corresponded to 650,000–700,000 tonnes of polysilicon demand at upstream, if granular silicon was fully applied, a carbon emission reduction of more than 20 million tonnes will be achieved. In terms of production management, the Company has established a systematic environmental management system and formulated strict compliance emission methods specifically for granular silicon products. Through the adoption of innovative digital factory management models, production standardization, quality analysis and management systems, infrastructure management systems and other intelligent technologies, the Company has improved its green governance in dynamic, informatized and digitalized approaches while enhancing employees' efficiency.

GCL Technology believes its employees as the most valuable resources, and adheres to the "people-oriented" principle as the direction of its human resource managements. The Company has approximately 8,863 employees in mainland China, Hong Kong and abroad, including the US R&D center. Our employees come from all over the world with diversified and experienced backgrounds. While we increase the expansion of bases in Jiangsu, Sichuan and Inner Mongolia, the Company flexibly adopts the localized recruitment strategy, and provides a clear talent development path, a safe and healthy working environment through more competitive remuneration packages, and a variety of training systems, allowing its employees to create value for the Company in a happy and harmonious working environment. The Company regularly organizes various training programs to tap into the potential of all employees, helping them to improve their management skills, expertise and professional quality. Moreover, as part of its commitment to make contributions to society, the Company actively participates in various community initiatives, charity work, donation and other activities, to fulfill its corporate social responsibility.

In terms of sustainable development, GCL Technology has always adhered to the management concept of "Green GCL", strengthened energy use and emission management, and improved its ability to deal with climate risks. We continue to optimize the corporate governance structure, protect the rights and interests of employees, actively advocate environmental protection and public welfare activities, promote the development of the global PV industry, and create green value for the society. With previously made efforts, we become a respectful global clean energy enterprise.

Based on the current corporate development blueprint of "Technological GCL", "Digital GCL" and "Green GCL", GCL Technology is determined to fulfill its corporate responsibility to provide low carbon emission clean energy. Let's work together to build a better society!

OUR OVERVIEW

Corporate Vision

GCL Technology Holdings Limited (3800.HK) was established in Hong Kong in 2006. In 2022, "GCL-Poly Energy Holdings Limited" was renamed as "GCL Technology Holdings Limited". We are a global leading supplier of silicon-based materials and an upstream raw material supplier for solar plant construction. Our holding subsidiary, GCL New Energy Holdings Limited (451.HK) ("GNE"), is also a developer and operator of solar plants which has been deeply involved in the PV industry for many years.

In the development process of constantly pursuing technological innovation and striving to be the industry leader, GCL Technology has also made continuous progress in various aspects of sustainable development such as environmental protection, employee empowerment and customer services. During the Reporting Period, under the dual-carbon background of "carbon neutrality" and "emission peak", we focused on the research and development of low-carbon silicon materials and the implementation of related technologies, and committed to improve product innovation and customer service quality. Under the guidance of "technological GCL, digital GCL and green GCL", we aim to become a silicon-based material supplier with the lowest carbon emissions, the lowest cost, the largest production capacity and the best customer experience.

As the Group officially changed its name to "GCL Technology" on the SEHK, we will present a new corporate image and a clear development vision based on the new strategic goal of "Technological GCL, Digital GCL and Green GCL". We always bear in mind the mission and dream of "bringing green energy into life", firmly strengthen the core of science and technology, rely on the main business of silicon materials, promote the transformation and upgrading of the energy industry structure and cooperate with partners to create a zero-carbon economy era.

Corporate Culture

While pursuing business development and improving economic efficiency, the Group also attaches great importance to the construction of its corporate culture. Based on the corporate spirit of "entrepreneurship, innovation, competitiveness and leadership", we integrate the goal of "Strong GCL, Rich Employees and Social Praise" into our ordinary operation, and establish an accountability goal of being responsible to shareholders, employees and society which leading our green, low-carbon and sustainable development.

GCL Visions	GCL Missions	Core values	Corporate spirit	Goals
• Becoming a respected global new energy and clean energy company	• Focusing on green development • Continuously improving human living environment	• Value orientation • Innovation • Competitiveness • Synergy	• Entrepreneurship • Innovation • Competitiveness • Leadership	• Strong GCL • Rich Employees • Social Praise

Corporate culture of GCL Technology

Developing Milestones

2007
Listed in Hong Kong (stock code: 3800.HK)

2009
Acquired 100% equity interest in Jiangsu Zhongneng Polysilicon Technology Development Co., Ltd. ("Jiangsu Zhongneng") at a consideration of HKD26.35 billion, making it the largest supplier of polysilicon in China and a leading supplier of polysilicon in the world

2010
Selected as a constituent stock of the Hang Seng Composite Index; 200,000 tonnes capacity of refrigeration and hydrogenation facility commenced commercial production

2011
Becoming the first domestic polysilicon company to achieve a breakthrough in the refrigeration and hydrogenation process, with its production capacity reaching the world's leading level of 65,000 tonnes/year by the end of the year

2012
Successfully produced up-to-standard silane gas, filling the gap of silane producing technology in China and marking the milestone of FBR-based granular silicon technology

2014
Acquired GNE (451.HK) at a consideration of HK$1.44 billion and formally became its controlling shareholder

2016
Its subsidiary, GNE (451.HK), became the largest private solar power generation enterprise in China with the production capacity of its solar power plants exceeding 4GW

2017
Acquired SunEdison in the United States, facilitiating the application of CCZ and FBR-based granular silicon technologies in China; its patent *GCL polysilicon production method* won the national patent award

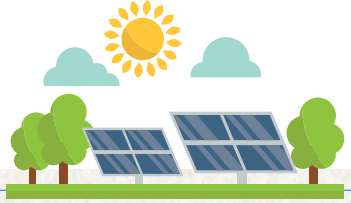
2019
Technological breakthrough in key materials of granular silicon and completion of localization of key equipment enabled stable and long-term production of granular silicon

2020
The production capacity of granulated silicon in Xuzhou base, which applied the fifth-generation fluidized bed, reached 6,000 tonnes/year, with its coverage extending to the supply chain of downstream manufacturers through quality certification

2021
The 20,000-tonnes/year module capacity of granular silicon was put into production, officially establishing the basis for replicable mass production; the production capacity of granular silicon reached the world's leading level of 30,000 tonnes/year by the end of the year

2022
The production capacity of granular silicon in Jiangsu, Sichuan and Inner Mongolia began to be released, and the nominal prdouction capacity of granular silicon will reach 260,000 tonnes/year by the end of the year

Developing Milestones of GCL Technology

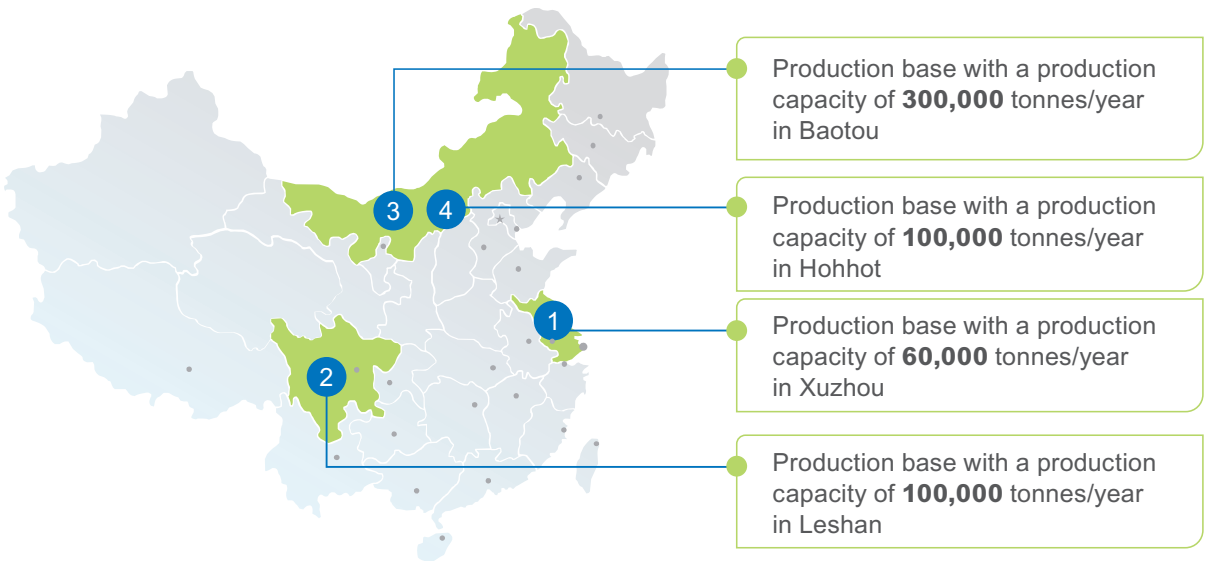


Business Layout

Persisting on the mission of "focus on green development, keep improving the environment we live in", GCL Technology has been committed to reducing unit energy consumption in the PV manufacturing process and improving production processes and product conversion efficiency. It has also strived to develop the clean energy segment, and provide customers globally with clean, safe and efficient green energy by mastering and leading the development of high-efficiency PV materials technologies.

Apart from developing cutting-edge solar technology, the US R&D center also establishes strategic partnerships with world-class engineering and technology institutions and continues to support the leading technology reserve of the Group. Against the backdrop of carbon neutrality and emission peak, GCL Technology actively responds to national policies and provides quality PV materials. In addition to improving the economic benefits, it has expanded its businesses, and cooperated with international partners to achieve the "dual carbon" goal.

Currently, GCL Technology's granular silicon business has entered the stage of replicable modular expansion and stable mass production. Based on our experience in the construction, operation and management of 20,000-tonnes/year modules in Xuzhou, we are orderly accelerating the replication and construction of 100,000-tonnes/year production lines in Leshan and Inner Mongolia. Upon the completion of the construction, the production capacity in Xuzhou, Leshan, Baotou and Hohhot will be 60,000 tonnes/year, 100,000 tonnes/year, 100,000 tonnes/year (total planned capacity of 300,000 tonnes/year) and 100,000 tonnes/year[2], respectively. In addition, our high-purity nano-silicon production base will also have a synergistic effect, further reducing the production cost of our products.



Granular Silicon Production Capacity[3] Layout and Planning of GCL Technology

[2] Nominal production capacity

[3] Nominal production capacity

Leshan base

Xuzhou base

Baotou base

Developing Updates

In 2021, in view of carbon neutrality, the PV industry had fully demonstrated its advantages of low energy consumption and low cost. GCL Technology accurately grasped market opportunities by taking the PV material granular silicon as its major investment direction and pushing forward the progress of granular silicon project.

With experience of more than ten years in technological research and development, a new generation of silicon-based material with exclusive technology of the Group, FBR-based granular silicon, achieved a breakthrough and started commercial mass production in 2019. FBR-based granular silicon represents the most advanced technological product of silicon materials at present, and will also become an important technological transition point for PV materials. During the Reporting Period, the annual production capacity of granular silicon in Xuzhou base reached 30,000 tonnes/year, and it has entered the stage of replicable modular expansion and mass production. In addition, the granular silicon projects in Leshan and Baotou bases are under construction. The total unit electricity consumption of granular silicon of the Group's Xuzhou base has been stably controlled at 14.8kWh/kg, and the total unit steam consumption is 15.3kg/kg, which brings huge cost and carbon emission advantages.

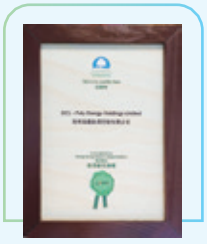
In respect of specific implementation of projects, based on the national policy of "Dual Control of Carbon Emissions" and on the basis of maintaining close communication with government and regulatory authorities in key investment regions, the Group will continue to promote energy-saving certification and energy-consumption certification for its projects, and provide technological advancement reports to related local governments, in order to further enhance the energy saving and consumption reduction of its projects.

In the future, GCL Technology will continue to focus on its main business of silicon materials and the development of granular silicon, so as to keep abreast of the trend of low tariff and achieve the goal of "carbon neutrality".

Major Awards

In 2021, while continuing to improve economic efficiency and expanding business layout, the Group also relied on its excellent performance in environmental, social and corporate governance, strong technical strengths and sincere service attitude to continuously strengthen its brand. The Group and its subsidiaries have not only been selected into the list of national green products, national high-tech enterprises, and "specialized new and special new" demonstration enterprises, but also been widely recognized by the peers and the society.

Award	Photo
The "Application of Granular Silicon in Czochralski Monocrystalline" of Jiangsu Zhongneng, a subsidiary of GCL Technology, won Terawatt Diamond Award in the 15th "SNEC Top Ten Highlights Selection"	
The dispatching team of the production and operation department of Jiangsu Zhongneng, a subsidiary of GCL Technology, won the title of the 20th "National Youth Civilization"	
The photovoltaic monocrystalline workshop of Jiangsu GCL Silicon Material Technology Development Co., Ltd ("Xuzhou Photovoltaic"), a subsidiary of GCL Technology, was awarded the honorary title of "Worker Pioneer" in Xuzhou	
Suzhou GCL Photovoltaic Technology Co., Ltd. ("Suzhou GCL"), a subsidiary of GCL Technology, won the honorary title of "Jiangsu Industrial Internet Development Demonstration Enterprise — Benchmark Factory"	
GCL Technology received the Hong Kong Awards for Environmental Excellence	

Award	Photo
GCL Technology was selected as the Most Influential PV Materials Manufacturer	
GCL Technology obtained the Hong Kong Green Organisation Certification	
GCL Technology was rated as the most influential raw material enterprise	
GCL Technology won the Listed Company Outstanding Industrial Contribution Award	
GCL Technology won the Golden Hong Kong Stocks Award in 2021	
GCL Technology was rated as the "Best IR Team" in Golden Hong Kong Stocks Award	

SOUND GOVERNANCE

SOUND GOVERNANCE

GCL Technology believes that maintaining high level of corporate governance is one of the major factors to achieve a sustainable development of an enterprise. Under the core value of "Value-orientation, Innovation, Endeavour and Synergy", we have complied with the rules of capital market and continuously enhanced our internal governance to achieve the vision of "becoming a globalized and respectable new and clean energy enterprise".

Enhancing Corporate Governance

During the Reporting Period, the Group further referred to the provisions of the *Corporate Governance Code* of the Stock Exchange and other regulatory requirements, and benchmarked against the United Nations Economic Commission for Asia and the Pacific (UNESCAP) for its key elements of excellent corporate governance. Focusing on reference to the world's leading corporate governance excellent practice cases, GCL Technology has identified its existing governance shortfalls, and coordinated internal and external resources to narrow the gap and enhance optimization.

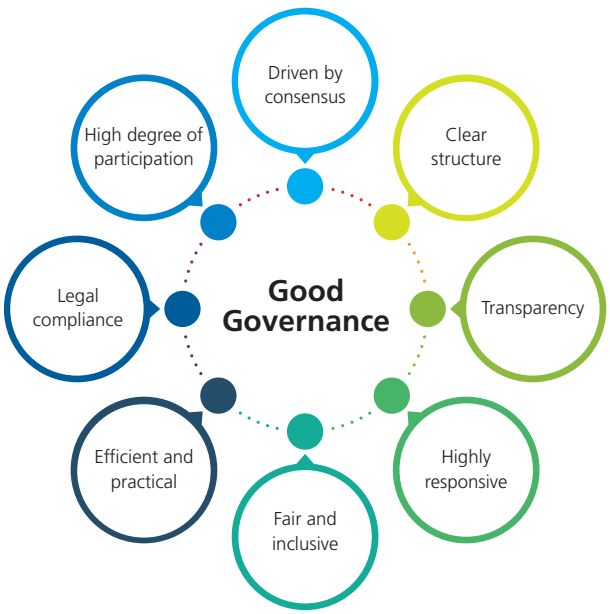
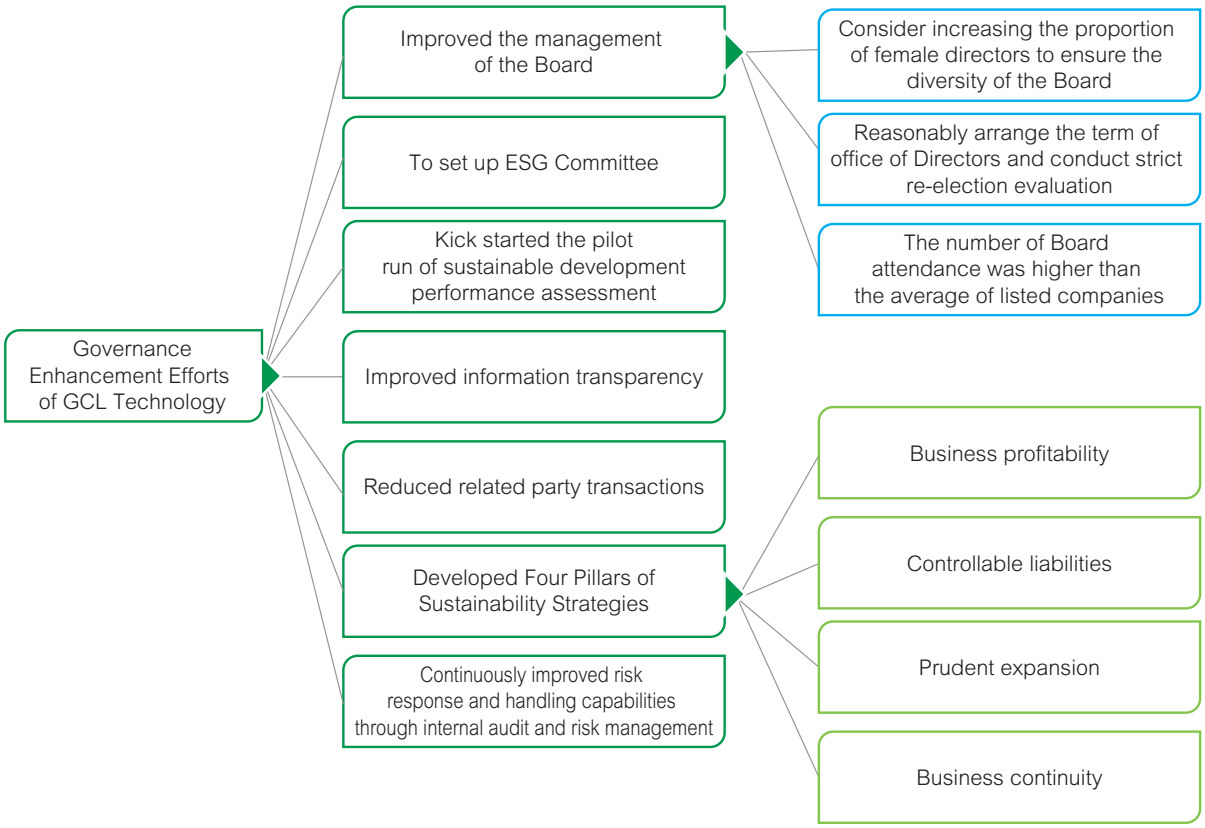


Illustration on key factors of good corporate governance[4]

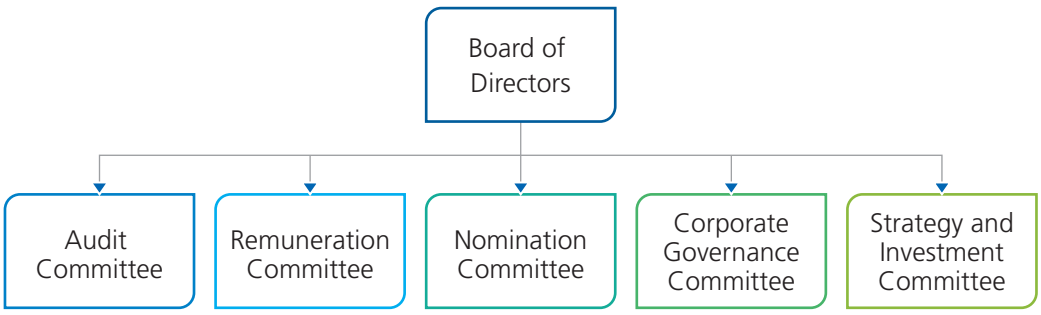
During the Reporting Period, we improved and enhanced corporate governance of GCL Technology in compliance, accountability, transparency, equality, efficiency and diversity. We built a solid foundation for sustainable development with our high-level corporate governance and further improved the corporate governance through a series of proactive initiatives. Looking forward, GCL Technology will incorporate professional advice from external third parties to further strengthen its corporate governance with feasible corporate governance enhancement plans, so as to safeguard the interests of various stakeholders including investors and customers. We will strive to root out the occurrence of any materially negative events to ensure our stability and continuity in terms of compliance, efficiency and correctness.

4 What is Good Governance, UNESCAP, Macroeconomic Policy and Financing for Development Division, 2009



Governance Structure

Strictly abided by the *Company Law of the People's Republic of China*, the *Listing Rules* of the Stock Exchange, laws and regulations and requirements of normative documents related to corporate governance in the places where the Company operates, GCL Technology established a governance structure with the Board as core and the Audit Committee, Remuneration Committee, Nomination Committee, Corporate Governance Committee and Strategy and Investment Committee as executive authorities with clear accountability. We continued to enhance diversity and professionalism of governance to guide the Group in conducting its businesses in an orderly manner and enabling future development of GCL Technology.



Authority	Main duties
Board	• Being responsible for the overall decision-making of the Company; • Reviewing and approving financial statements of interim reports and annual reports; • Formulating dividend policies and determining the amount of dividend; • Supervising the overall governance of the Company.
Audit Committee	• Communicating with external auditors; • Supervising the completeness of financial statements, annual reports, accounts and interim reports and reviewing material opinions in such reports; • Supervising the implementation of internal financial and accounting policies.
Remuneration Committee	• Providing recommendations on the remuneration policy and structure of Directors and Senior Management; • Considering remuneration and recruitment matters with reference to industry peers; • Supervising and approving the resignation and appointment compensation of Directors and Senior Management; • Ensuring the transparency, openness and fairness of remuneration.
Nomination Committee	• Inspecting the structure, number of members and composition of the Board on a regular basis and providing recommendations on changes in members of the Board; • Proposing candidates for Directors; • Assessing independence of Independent Non-executive Directors.
Corporate Governance Committee	• Formulating and reviewing the Company's corporate governance policies and practices and providing recommendations to the Board; • Reviewing and monitoring the training and continuing professional development of Directors and senior management; • Reviewing and monitoring the Company's policies and practices in compliance with legal and regulatory requirements; • Formulating, reviewing and monitoring a code of conduct applicable to employees and Directors; • Reviewing the Company's compliance with the Code and its disclosure in the *Corporate Governance Report*.

Authority	Main duties
Strategy and Investment Committee	• Business development: reviewing long-term strategies and recent businesses of the Company and providing opinions; • Policy and social affairs: monitoring policies, social and economic development with material impact or potential material impact on the commercial activities of the Group and reporting to the Board timely.

Duty division of the Board and specialized committees of GCL Technology

We are committed to building a professional and compliant Board and senior management talent team with diversity and inclusiveness to facilitate the sustainable development of GCL Technology. The Nomination Committee under the Board will regularly review and revise the *Board Diversity Policy* every year to ensure the effectiveness of the system and the diversity of Board members. When appointing board members, we adhere to the principle of employing talents based on their ability, and comprehensively consider factors such as gender, age, educational background, ethnicity, professional experience, skills, knowledge and term of service. We proactively assessed the feasibility of increasing the proportion of female in the Board to over 30% by 2030. With the diversified professional qualifications and industry experience of the Board, the Company is able to achieve its long-term strategic development objectives.

During the Reporting Period, GCL Technology further strengthened its emphasis on the experience of Directors on risk management, and also performed stringent assessment on the term of office and its renewal of members of the Board, reasonably determined and balanced the term of office of Independent Directors according to the regulatory requirements of the Stock Exchange, so as to ensure the independence of Independent Directors during their term of office and proactively seek for potential outstanding Independent Director candidates.

Our newly appointed joint CEO, a new generation talent who contributed to the growth of GCL Technology, has nearly 15 years of extensive experience in chemical manufacturing and management. With our energetic Board and senior management with diversified background, GCL Technology has strong development momentum. In addition, we have further enhanced the participation of the Board and its specialized committees in various matters of the Company with reference to applicable laws and regulations and actual operation situation of the Company. During the Reporting Period, the Group convened more than 40 Board meetings. Expect for one Director who resigned during the Reporting Period, the Directors attended no less than 24 Board meetings. Looking forward, we plan to achieve our target of 75% attendance of all Directors by 2023.

Name	Financial expert	Industrial expert	Risk management expert	Attendance	Number of Shares held	Gender	Age
Executive Directors							
Zhu Gongshan (Chairman)	—	✓	—	24/40	6,370,388,156	Male	64
Zhu Zhanjun (Vice Chairman and Joint CEO)	—	✓	—	40/40	6,119,359	Male	52
Lan Tianshi (Joint CEO)	—	✓	—	Appointed since 2022	—	Male	41
Zhu Yufeng	—	✓	—	26/40	6,371,898,911	Male	40
Sun Wei	✓	✓	—	38/40	7,435,189	Female	50
Yeung Man Chung, Charles (Chief Financial Officer and Company Secretary)	✓	✓	✓	40/40	1,700,000	Male	54
Independent Non-executive Directors							
Zheng Xiongjiu	—	✓	—	24/40	2,767,924	Male	53
Ho Chung Tai, Raymond	—	✓	✓	37/40	1,007,170	Male	83
Yip Tai Him	✓	—	✓	34/40	1,007,170	Male	51
Shen Wenzhong	—	✓	—	40/40	—	Male	53
Wong Man Chung, Francis	✓	—	✓	36/40	—	Male	57

Directorship of GCL Technology

ESG Governance

GCL Technology has always been striving to balance its economic efficiency and social value and has been focusing on integrating environmental, social and governance factors to all aspects of its operation. We have also established mutual beneficial relationship with various stakeholders with transparent and open information disclosure and diversified feedback channels, promoting a sustainable development in all aspects.

The Company is further clarifying and improving the ESG governance structure and management mechanism, and is in the process of establishing the ESG Committee, which will consist of members of the Board with professional qualifications and experience in the photovoltaic industry and risk control, in order to directly management ESG-related works. The Company will also establish an ESG executive team under the ESG Committee with clearly defined responsibilities for all business units and relevant positions to strengthen the participation of the Board in decision-making and supervision. The ESG Committee will strive to incorporate ESG-related core elements into every aspect of the Company's business development in a scientific and standardized manner, create value for all stakeholders and become a benchmark for the sustainable development in the PV industry.

In addition, the Group has made references to international leading assessment frameworks and standards including ESG rating by MSCI Index and Hang Seng Corporate Sustainability Index, and formulated ESG strategies and administrative measures based on the actual operating situation of the Company. We have strived to incorporate ESG core factors to every aspect of the operating development of the Group in a scientific and normative manner, so as to create value for various stakeholders continuously and become the benchmark of the PV industry in terms of sustainable development.

In addition, GCL Technology will officially launch the pilot work of sustainable development performance assessment in 2022. It will specifically expand the sustainable development rating performance assessment, continue to improve and optimize its mid- and long-term incentive pay system for senior management, and research and formulate a reasonable clawback provision, which will help the Company obtain a good ESG rating in the capital market in terms of performance in the future, and enhance the sustainable development.

Communication with Stakeholders

Corporate development is inseparable with the support of various stakeholders. GCL Technology communicates with various stakeholders comprehensively with its sustainable and sound governance structure and fully understands expectations and demands from its stakeholders to further optimize its operating environment, social and governance and achieve a win-win situation during the process of its sustainable development.

In 2021, we identified seven types of stakeholders namely government departments/regulators, shareholders/investors, customers, employees, partners, community/non-governmental organizations and media. Concerns, channels for communication and frequency of each type of stakeholders are set out as below:

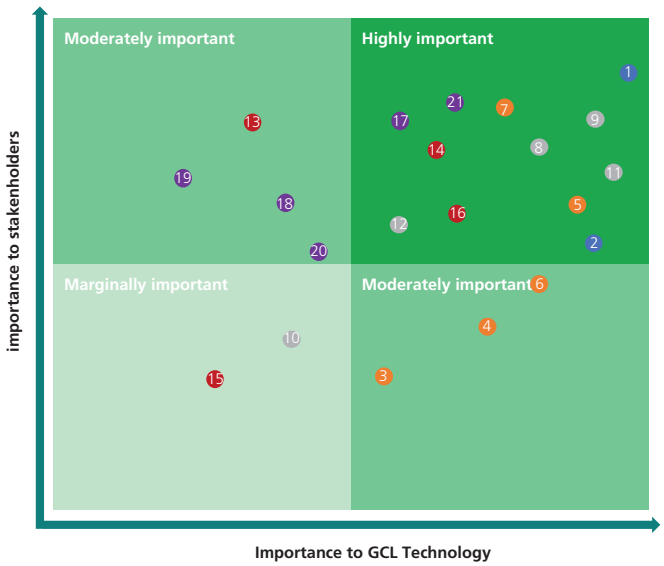
Stakeholder	Concerns	Channels for communication	Frequency
Government departments/ Regulators	• Business performance • Environmental compliance performance • Employee occupational health and safety • Community contribution and charity • Corporate governance and risk management • Business ethics and anti-corruption	• On-site visits • Meetings • Phone	• Irregular
Shareholders/ Investors	• Business performance • Corporate governance and risk management	• General meetings • Special general meetings • Investor's meetings • Online brokerage strategy meetings • Online industry meetings • Result announcement presentations • Press releases/ announcements • On-site visits	• General meetings are held annually, and special general meetings are held where required by a material event • Other meetings are held from time to time as and when necessary

Stakeholder	Concerns	Channels for communication	Frequency
Customers	• Product quality management • Technological R&D and innovation • Customer service	• On-site visits • Meetings • Client appreciation and communication meetings	• Irregular
Employees	• Guarantee of employee rights and benefits • Employee occupational health and safety • Diversity and equal opportunities • Career development and training	• Regular meetings • Employee meetings • Performance reviews • Internal publications	• Annual (performance review, employee meetings) • Regular (internal publication)
Partners	• Technological R&D and innovation • Supply chain management • Sector synergy and innovation • Business performance • Product quality management	• On-site visits • Meetings • Suppliers' conferences • Industry exhibitions	• Irregular

Stakeholder	Concerns	Channels for communication	Frequency
Community/NGOs	• Environmental compliance performance • Management of materials and water resources • Energy management and conservation • Discharge of sewage, exhaust gas and solid waste • Greenhouse gas emission • Community contribution and charity • Impact on community	• On-site visits • Meetings • Press releases/public reports	• Irregular
Media	• Business performance • Sector synergy and innovation • Community contribution and charity	• Press releases/ announcements • Meetings • Exhibitions • Luncheon meetings • Appreciation meetings • Management interview invitations	• Irregular

Material Matters

During the Reporting Period, bench marked against its industry peers, GCL Technology analyzed and identified 12 material matters closely related to corporate development based on the feedback of various stakeholders and its actual corporate development and major future development. 2021 material matters matrix was prepared to direct and guide our future development.



Governance issues

1 Business performance
2 Corporate governance and risk management

Environmental issues

3 Materials and water reource management
4 Energy management and conservation
5 Environmental compliance performance
6 Sewage, exhaust and waste discharge management
7 GHG emission

Products and Services issues

8 Product quality control
9 Technology R&D and innovation
10 Customer services
11 Supply chain management
12 Business synergy and innovation

Labour issues

13 Protection of employees' interests
14 Occupational health and safety for employees
15 Diversity and equal opportunities
16 Career development and training

Social issues

17 Contribution to the community and charity
18 Impact of Business on the Community
19 Business ethics and anti-corruption
20 Contribution to ethnic unity
21 Epidemic control and response

2021 material matters matrix of GCL Technology

Information Transparency

GCL Technology understands the expectations of investors and other stakeholders on the development of the Company. The Group takes the initiative to further disclose relevant financial data and business information in addition to those required by regulatory requirements and proactively seeks solutions to deal with any information mismatch. We continue to optimize our scope and quality of information disclosure while enhancing information transparency.

Improving Financial Transparency

During the Reporting Period, GCL Technology reviewed the relevant indicators of the Company's financial data and requirement of stakeholders in relation to the disclosure of the Company's financial data, and published the following data and information in the capital market:

- Detailed data on financial indicators;
- Data of off-balance sheet business held;
- Business data disclosure, such as production expansion, order data, product quality index improvement;
- Cooperation framework agreements and long-term framework agreements.

Related Party Transaction Disclosure

During the Reporting Period, GCL Technology strived to avoid and strictly monitored related party transactions between the Group and companies controlled by Mr. Zhu Gongshan and his family members. In case of such transactions, we will disclose and announce voluntarily and promptly according to the requirements of the *Listing Rules* of the Stock Exchange, apart from obtaining approval from the independent non-executive directors.

During the Reporting Period, the total amount of related party transactions between the Group and companies controlled by Mr. Zhu Gongshan and his family members was RMB96.253 million. Total revenue from related party transactions was RMB24.211 million, accounting for 0.1% of total revenue; and total purchase amount of related party transactions was RMB72.042 million, accounting for 0.6% of cost of sales. Given that the related party transactions between the Group and the companies controlled by Mr. Zhu Gongshan and his family members only accounted for less than 0.6% of the total revenue and expenses during the year, it is considered that the impact of the above related party transactions on the Company's overall financial performance and business operations was immaterial.

Maintain Investor Relations

GCL Technology attaches great importance to maintaining close relationship with the capital market and enhances positive image of the Company in the capital market by continuous, in-depth and timely communication with its investors to deepen its understanding of investors. In 2021, GCL Technology further expanded its multi-language investor relations team and organized a series of investor relations activities together with various investor relations intermediaries and securities brokers to promote the Company in the capital market.

During the Reporting Period, despite the impact of COVID-19 pandemic, GCL Technology participated in over 400 online and offline investor relations activities including non-deal and deal roadshows, investor seminars and one-on-one meetings by various means such as onsite visits, live Q&A sessions, internet communication, telephone conferences, video conferences and online seminars. It maintained frequent communication and interaction with more than 40 investment banks and more than 5,000 domestic and overseas investors/institutions including Morgan Stanley, BofA Securities, UBS Securities, HSBC, Credit Suisse Securities, CICC, ICBC International and Everbright Securities, so that the capital market could keep abreast of the overall environment of solar industry and various active measures of the Company taken to respond to market changes, seize industry market opportunities, and actively develop various business operations. Furthermore, we maintain smooth communication channels with individual investors and actively participate in interactions among social networking platforms to communicate responsively with a number of investors on the latest business developments of the Company.

Case: Global online live streaming for the commissioning ceremony of the 10,000-tonne FBR-based granular silicon production base of GCL Technology

In February 2021, GCL Technology announced globally through online livestreaming on the increase in annual production capacity of its granular silicon research and manufacturing entity, Jiangsu Zhongneng from 6,000 tonnes/year to 10,000 tonnes/year. We have achieved a new technology matrix for the green production of PV raw material sector of China by reaching ten thousand tonnes/year of production capacity.

The successful increase in production capacity of granular silicon has proven the accomplishment of mature craftsmanship and mass production technology of GCL Technology over nearly a decade of technological research and advancement. Through construction and operation management of a project with a production capacity of ten thousand million tonnes/year, GCL Technology has equipped with leading technologies and sizable replicability in terms of project scale planning, artificial intelligent operation of core equipment, digitalized control of production safety and systematic verification of product quality.

Case: Granular silicon onsite inspection and investment introduction event of GCL Technology

In 2021, we organized a 2-day tour of the FBR-based granular silicon R&D and production base in Xuzhou for over 80 representatives from securities companies, fund, banks and other institutions including Greenwoods Asset Management, Invesco Great Wall, HFT Investment, CITIC Securities, China Merchants Fund, GF Funds, Credit Suisse Securities, UBS Securities, East Money and TF Securities to visit the FBR-based granular silicon production base, the control center and the demonstration of 5GW crystal pulling on site.

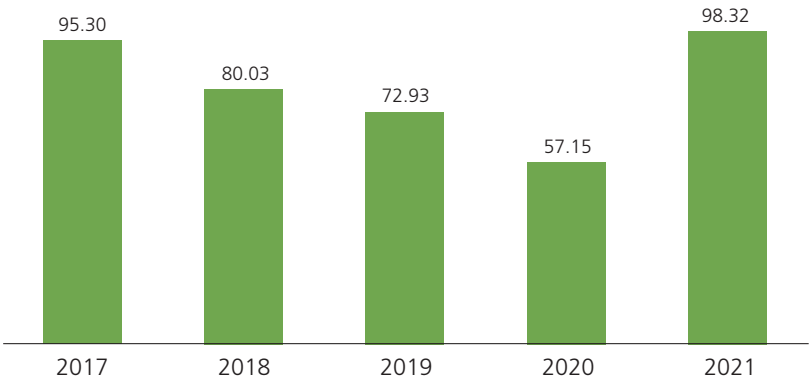
Such reverse roadshow was the largest and most professional onsite inspection for FBR-based granular silicon organized by the Company in over a decade with the highest standards and covering the widest range. Through such reverse roadshow, middle and senior management answered enquires from the investors and further elaborated the advantages of FBR-based granular silicon technology to the investors. Investors can understand the newest development of GCL Technology through the onsite visit.

Sustainable Development

While implementing the sustainable requirements regarding governance, environment and society as well as the highest standard of the industry, GCL Technology has continued to pay attention to its business profitability, controllable liabilities and prudent and continuous expansion. Leveraging its good foundation, the Company strives to gain support from stakeholders and investors on its prospects and provide a solid foundation for the promotion of its sustainable strategies.

Business Profitability

In the past five years, GCL Technology experienced two losses in 2018 and 2020. The most recent loss was a one-off asset impairment loss of property, plants and equipment and rights of use of approximately RMB4,332 million in 2020 in total. It was mainly due to the lower than expected demand under continuing unfavourable market conditions in the solar industry induced by the COVID-19 pandemic and the suspension of production of lower profit margin wafer products[5]. As at 31 December 2021, we have achieved a significant year-on-year turnaround, and the net profit attributable to the parent reached RMB5.08 billion.



Adjusted EBITDA of GCL Technology from 2017 to 2021 (unit: RMB million)

In 2020, although depreciation and amortization of the Group reached RMB3.695 billion, it has been reduced to RMB2.357 billion as at 31 December 2021. In addition, the adjusted EBITDA and operating net cash flow of GCL Technology in the past five years were positive.

Financial indicators	2017	2018	2019	2020	2021
Profit before tax	29.12	(5.11)	31.77	(61.61)	52.92
Impairment loss	2.63	5.26	26.10	43.32	3.31
Total depreciation and amortisation	37.47	42.89	46.30	36.95	23.57

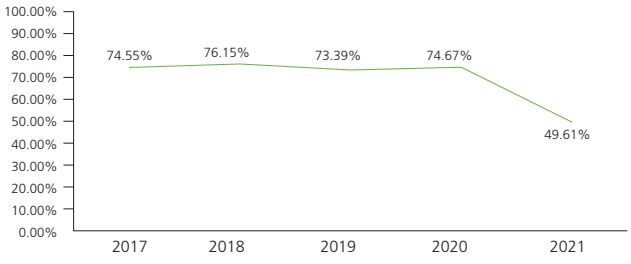
Profit before tax, impairment loss, total depreciation and amortization of GCL Technology from 2017 to 2021 (unit: RMB million)

[5] For details, please refer to "Impairment loss on solar material business segment" under "15. Property, Plant and Equipment" in the Notes to the Consolidated Financial Statements set out in the 2020 Annual Report of the Group

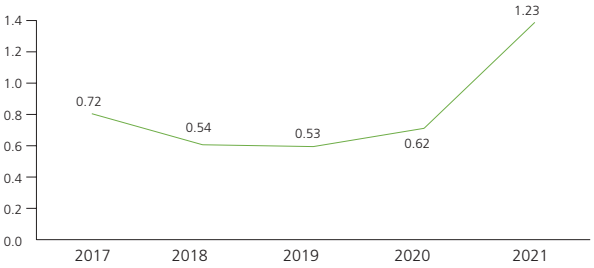
Leveraging its judgement of the PV industry and reasonable optimization of its strategic objectives, GCL Technology has placed an emphasis on the low-carbon technology of granular silicon, further improved corporate governance measures and implemented its refined operation philosophy. Based on the current planned production capacity and the orders at hand, the future profitability of the Company remains highly foreseeable.

Controllable Liabilities

During the Reporting Period, GCL Technology took actions to enhance its control on liability risk and arranged its current liabilities in an orderly manner. It applied a light assets strategy on the business of GNE, one of its subsidiaries, and safeguarded cash flow of the daily operation to further optimize its working capital. It has recovered its baselines while steadily reducing its liabilities. As at 31 December 2021, the total liabilities of GCL Technology decreased from 74.7% in 2020 to 49.6%, representing a decrease of 25.1 percentage points as compared to the same period in 2020. In addition, the unconsolidated gearing ratio of GNE (451.HK, one of its subsidiaries) decreased to a healthy level of 43.4%. We will continue to be prudent during investment in the future and strive to maintain leverage ratio and bank liabilities of its investment projects at a satisfactory level. Looking forward, GCL Technology will continue to optimize the current ratio of the Group through stringent control of its liability level, so as to maintain a sound gearing ratio to further strengthen the sustainability of the Company.



Gearing ratio of GCL Technology from 2017 to 2021[6]



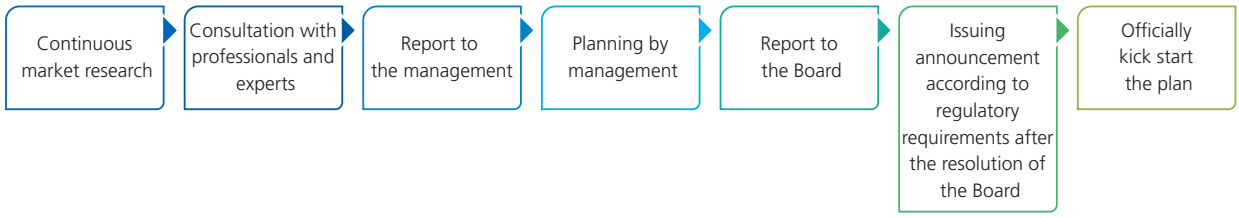
Current ratio of GCL Technology from 2017 to 2021

6 The gearing ratio represents the consolidated data of GCL Technology, i.e. gearing ratio = total liabilities/total assets

Prudent Expansion

Comparing to rapid business growth model, GCL Technology focus on progressive and stable business growth and capacity expansion. It has emphasized on sustainable production planning and project investments and promoted the quality and progressive development of the Company with progressive strategic planning.

For specific business operation, we enter into long term orders of fixed quantity and flexible pricing with our partners to guide our productivity planning and conduct feasibility and sensitivity analysis as well as comparison with industry peers regularly to balance our business profit by estimating our pricing timely. In order to fulfil our responsibility towards stakeholders and the Company, we have prudent and stringent control on productivity upgrade plan of the Company regarding our decision-making processes and methods to ensure all plans are compliant and reasonable. We avoid any disorder capacity expansion and achieve long term strategic development targets with sound and reasonable growth, so as to create a new blue ocean in the silicon industry with granular silicon.



Decision-making process of business expansion and productivity planning of GCL Technology

Business Continuity

We conducted Business Continuity Plan (BCP) on the general operation of the Company to avoid any disruption on key businesses of the Group and reduce operational risk. The BCP of GCL Technology sufficiently considered the continuity assurance including manpower and resources that support key businesses and the minimum service level required for key businesses. Relevant business connectivity drills are conducted regularly to ensure the effectiveness of the BCP.

Case: GCL Technology is taking initiatives in fighting against the epidemic and maintaining its production

In 2021, in the face of the severe situation of epidemic prevention and control, Jiangsu Zhongneng immediately launched a production emergency plan, and through a strong epidemic prevention and control linkage mechanism, tracked the epidemic prevention and control information published by the government as soon as possible, and monitored the physical condition, travel, residence and vaccination information of employees. Flexible arrangements have been made for key production positions.

Thanks to its rapid actions, Jiangsu Zhongneng quickly implemented the responsibility for epidemic prevention and control, actively overcome the impact of the epidemic, and ensured the smooth development of various production tasks. In terms of specific production and operation, Jiangsu Zhongneng adheres to the leadership accountability system. Each department, branch and workshop assign designated staff to the operation site every day to supervise various epidemic prevention measures and check disinfection records, in order to ensure the safety of production operations during the epidemic, and maintain a basic stable development.

Focusing on the overall concept of production and operation, Jiangsu Zhongneng has adopted a detailed supply and marketing emergency plan to cope with the possible impact of the epidemic situation and other factors, such as limited production of suppliers and obstruction of transportation, so as to further fight against the epidemic, ensure operation, overcome difficulties and promote development, to achieve the "win-win" of epidemic prevention and control and production and operation, and fully guarantee the stability of production and business.

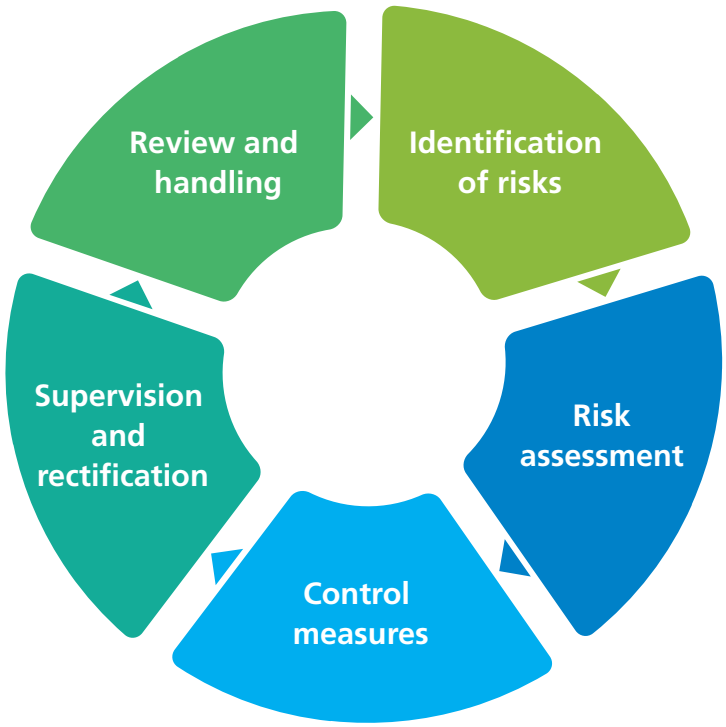
RISK MANAGEMENT

RISK MANAGEMENT

GCL Technology firmly believes that the sustainable growth of an enterprise is inseparable from sound risk management and control. Based on a series of internal systems such as *Principles and Systems of Internal Control and Management*, *Internal Audit Work System and Normative Guidelines* and *Comprehensive Risk Management Guidelines*, we have continuously established a sound risk monitoring system. In particular, through a closed-loop risk management of discovery, assessment, control, rectification and review, we have timely monitored and prevented potential risks in the process of our business operation, so as to ensure a stable operation of the Group.

Risk Control and Compliance

In 2021, on the basis of routine risk management and control, GCL Technology further optimized and strengthened the risk identification, monitoring and prevention functions of the Board and the management. In terms of business risks and internal control and compliance, the Company continued to expand its risk management and control and diversify its internal control structure. The risk control mechanism at different levels was also improved to consolidate its risk management capability. These initiatives allowed the Group to achieve its long-term stable operation and lay a solid foundation for its sustainable development.



Closed-loop risk control and management of GCL Technology

Strengthening business risk control

- Focusing on enhancing business preparation for high-risk businesses such as infrastructure construction, supply chain procurement business, financial accounting and processing compliance
- Cooperating with Xuzhou Engineering Audit Center, Group Bidding Office, and Segment Financial Center to establish a professional counterpart risk management, and to strengthen the understanding of related businesses and in-process management and control

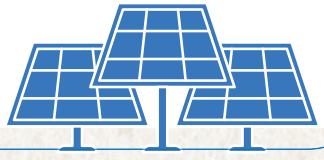
Optimizing internal control and compliance

- Incorporating risk controls of A-class companies, key infrastructure enterprises and business segments in the scope of risk management and control, and consolidating the fundamental risk control

Highlights of Risk Controls of GCL Technology in 2021

Based on management interviews and internal and external information of the year, combined with the possibility and impact of risks, GCL Technology has established an internal risk indicator database, and on this premise, it has actively carried out risk management evaluation and internal control self-examination. We regularly conduct internal and external risk audits, and evaluate the risk management of related business segments every six months and issue semi-annual risk reports for pre-emptive reminders and recommendations on risk management and control. In 2021, the Group selected a total of 16 major business segments and six companies for internal control reviews. A total of 241 corresponding business control points was identified in the audit for monitoring and tracking, and the internal risks were further screened, which continuously improves the risk management and internal control of the Company.

Furthermore, in order to raise the awareness of risk management and control of all employees, based on our business operation, we carry out precise trainings through video conferences, face-to-face communication, online courses and other methods, and set up a strict risk control assessment mechanism to effectively strengthen the awareness of risk management and control of its employees and improve their professional ethics.



Case: Capital Market Compliance Training of GCL Technology

In December 2021, GCL Technology actively organized a listing compliance training. The training was lectured by the vice president in charge of risk control of GCL Technology. The training covered three aspects, namely listing compliance requirements, authorization and process specifications, and basic concepts of internal control that middle and senior management should be aware of. A compliance examinations was organized after the training to ensure that trainees know what they should know.

Business Ethics and Anti-corruption

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* and other applicable laws and regulations related to business ethics and anti-corruption in the places where it operates. It has also formulated and continuously improved its internal systems, such as the *Anti-Fraud and Whistle-blowing Management Standards*, so as to clearly define the types and management standards of fraud and other management details. These systems allow the Group to avoid management vacuum and prevent any improper behavior that violates business ethics. In addition, GCL Technology adheres to its incorruptible sales policy, and has strengthened its employees' anti-corruption awareness and prevented any corrupt behavior in its sales process through specific measures such as signing a letter of commitment to integrity with each salesperson, conducting training presentations and internal auditing and self-examination. Committed to creating an honest, reliable and trustworthy business environment, the Company has adopted a zero-tolerance policy for corrupt behavior.

In 2021, we further refined the *Anti-Fraud and Whistle-blowing Management Standards*, clarifying the responsibilities of whistle-blower acceptance units, setting up specific fraud and corruption reporting channels and stipulating strict undertaking terms of whistle-blowing confidentiality. These amendments provide effective guidance for the Group in handling and accepting business ethics and anti-corruption whistle-blowing. During the Reporting Period, the Group did not have any incidents of corruption or litigations.

Whistle-blowing hotline	Whistle-blowing email address
0512-68533870	xxpvjubao@gcl-power.com

Whistle-blowing channels of GCL Technology

We always encourage our employees or external third parties to make real-name or anonymous reports of any business ethics violations and corruption incidents by phone and email. After receiving the relevant report, the Review Committee of GCL Technology and other specific units will conduct a rigorous investigation and report to the whistleblower within 10 business days. The relevant incident or the person involved will be transferred to any judicial authority based on the seriousness of the behavior. During this process, we guarantee to strictly protect the relevant information of the whistleblower. No information shall be disclosed without the consent of the whistleblower. Any improper behavior such as personal attacks and threats against the whistleblower shall be prohibited. We also actively provide trainings on anti-corruption and anti-fraud to our employees, and guide them to consciously abide by business ethics, so as to create an incorruptible atmosphere within the Group. In 2021, we successively carried out training programs on anti-corruption inspection and promoted the Ten Commandments of GCL Technology for all employees (including Directors), all of which have achieved good results.

Case: Trainings on anti-corruption inspection

In 2021, an inspection team will be dispatched by the Disciplinary Inspection and Supervision Center of Golden Concord Holdings Limited ("Golden Concord") to carry out trainings on anti-corruption inspections for GCL Technology. The inspection team visited GCL Technology's Leshan project, Zhongneng and other companies, and listened to the most concerned, direct and realistic matters of employees through listening reports, attending meetings, conducting interviews, accepting letters and visits, setting up suggestion boxes and reviewing copied materials. Matters reported by its employees were strictly investigated and verified.

Case: Promotion and trainings of the Ten Commandments of GCL Technology

In 2021, the Risk Control and Compliance Center of GCL Technology carried out promotion and trainings of the Ten Commandments for its employees of the new base in Leshan and the Inner Mongolia project in respect of integrity culture and fraud theory, regulations and case sharing of the Ten Commandments. It specified and strengthened its business ethics red lines and anti-corruption policy mechanism for its employees.

Responsible Marketing

On the basis of continuous improvement of internal risk prevention and control, GCL Technology also strictly abides by the requirements of relevant laws and regulations in respect of compliance marketing and corporate publicity, and has formulated normative documents such as the *Internal News Publicity Management Standards*, *Press Release and External News Publicity Management Measures* and *Standards for the Management of Press Spokespersons*. An accountability system has been implemented in respect of any press releases of the Company. All subordinate units and functional departments shall be responsible for the truthiness and accuracy of any press releases provided by them, and shall inspect and be responsible for the accuracy of the related contents. The spokesperson of each subordinate unit shall report to the head of administrative department on the topic selection and ideas and seek his/her approval before any interview. Press releases reported by subordinate units and functional departments shall be submitted for approval in accordance with the requirements of the internal online platform. The person in charge of corporate communication shall report to the News Center of GCL Technology after review and approval.

In addition, various departments were organized to formulate a customized publicity prevention and handling process, and carried out researches and prediction on any publicity issues faced by the Group, responded in a timely manner and actively dealt with them, so as to ensure that "ordinary public opinion does not stay overnight, and major public opinion will be ended within 24 hours". As a result, a good corporate image has been established.

Quality Assurance

GCL Technology's service philosophy is to place customer first at all times. We strive to provide high quality products and conscientious services to our customers and to establish long-term relationship with them to achieve mutual benefit. As such, maintaining product quality and improving customer service quality are our major strategic focuses. With our continuous commitment to product quality management, we have established a comprehensive product quality monitoring system and adopted digitalized measures to improve management efficiency and accuracy.

Focusing on Quality

GCL Technology has strictly complied with law and regulations on product quality and safety including the *Product Quality Law of the People's Republic of China*, *Standardization Law of the People's Republic of China* and *Implementing Rules for the Manufacturing License for Industrial Products of the People's Republic of China*. We have continuously improved our quality management mechanism by strengthening the basis of quality management and enhancing employees' awareness and ability of quality management. We have formulated and implemented a series of internal policies including the *Corporate Standards System*, *Standard Development Rules*, *Silane Gas Standards* and the *Solar Grade Polysilicon*. Greater efforts have also been made to enhance product quality control in the whole process, ranging from material sourcing to production, which enabled the Company to further improve and optimize its product quality and performance.

Material sourcing management

- **Raising the standards for supplier selection:**
- We have prioritized our cooperation with state-owned enterprises, listed companies and industry leading companies;
- Cooperation with manufacturers has been preferred over trading enterprises;
- We have prioritized our cooperation with general agents and other large-scale agents;
- **Enhancing the verification of qualification of procurement:**
- Suppliers are required to provide and renew the relevant certificates for the qualification of their products, such as quality management certificates, environmental management certificates and other standardized certificates, pressure vessel production certificates, China compulsory product certificates and other special manufacturing certifications, as well as production safety licenses, agent certificates, hazardous chemical business licenses and other licenses and certificates.

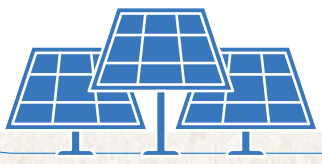
Process management

- **Strengthening the management of production process:**
- To ensure our product meets or exceeds the expectation of the market or our customers, we assess the feasibility of our products' quality management and technical features during production;
- In 2021, we started to exanimate certain major raw materials and auxiliary materials before procurement in order to ensure our quality and reduce cost;
- We organize tests on major raw materials and auxiliary materials, which are classified into small and medium tests. A qualified report will be issued by the relevant department to certify the quality of such materials upon passing the medium tests.

During the Reporting Period, none of the product sold or transported by GCL Technology has been recalled owing to safety and health issues, and the return/replacement ratios of our subsidiaries were less than 0.2%. 11 subsidiaries of the Group obtained the ISO 9001 quality management certificate and organized quality and established a strict product recall mechanism. During the Reporting Period, safety management training programs were organized for our employees to enhance their awareness of product quality.

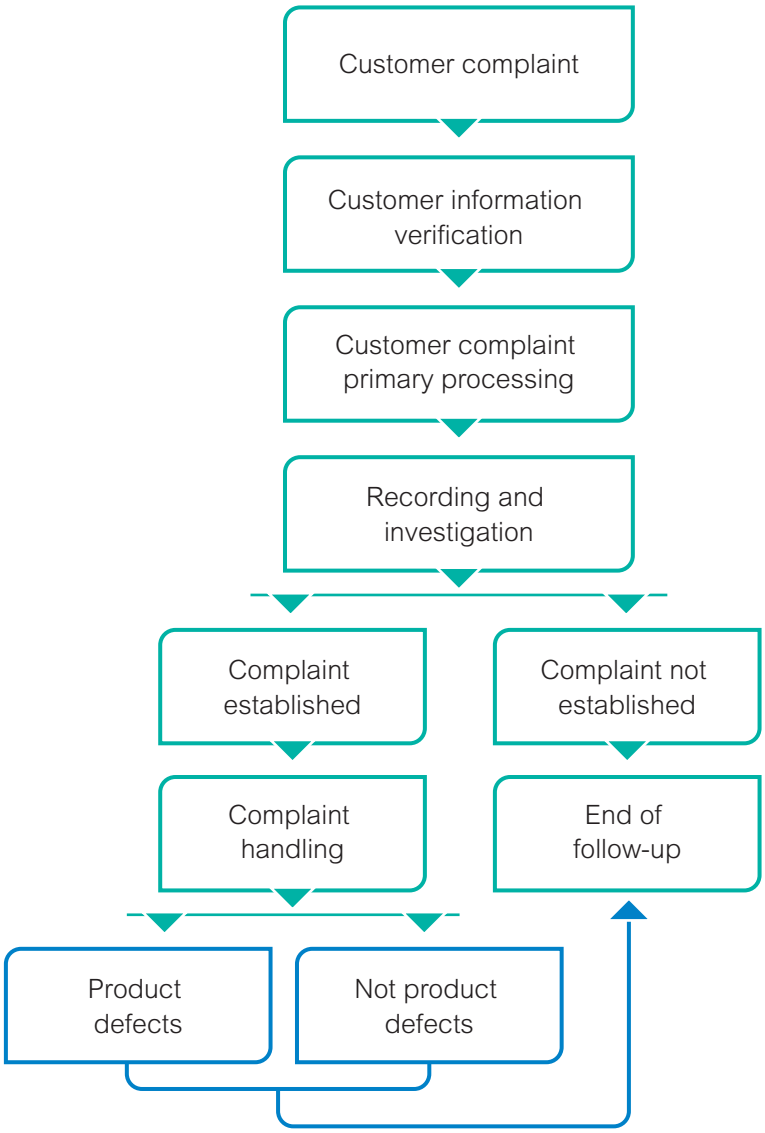
Service-orientated

Creating value for customer is the core value of GCL Technology. We strive to provide quality service and achieve a win-win situation with our customers.



Customer complaint processing

In order to provide excellent customer service and improve customer experience, the Group has established a comprehensive customer complaint and feedback processing procedure, including customer hotline, customer feedback record, customer feedback internal circulation and other key steps to make sure complaint channels are open and complaints are processed in a timely and fair manner. During the Reporting Period, GCL Technology received 369 complaints from customers and 100% of the complaints were settled.



Customer Complaint and Processing Procedure of GCL Technology

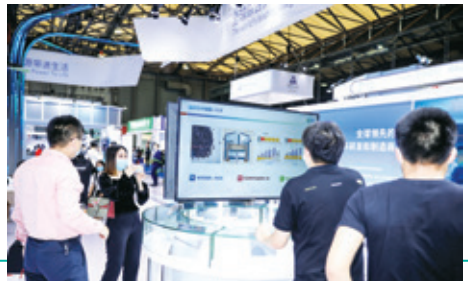
Communication with customers

GCL Technology believes that excellent communication with customers is essential not only for gaining customers' trust, but also for reflecting the product advantages and enhancing brand influence of the Group in a systematic manner. We are committed to maintaining our positive interaction with customers through exhibitions, new product launch, conferences and other means. The 5GW FBR-based granular silicon application demonstration projects were fully opened to customers, enabling them to master the use of granular silicon and form a granular silicon ecology.

Case: Shanghai Solar Photovoltaic Expo in June 2021

Case: New Product Launch in 2021

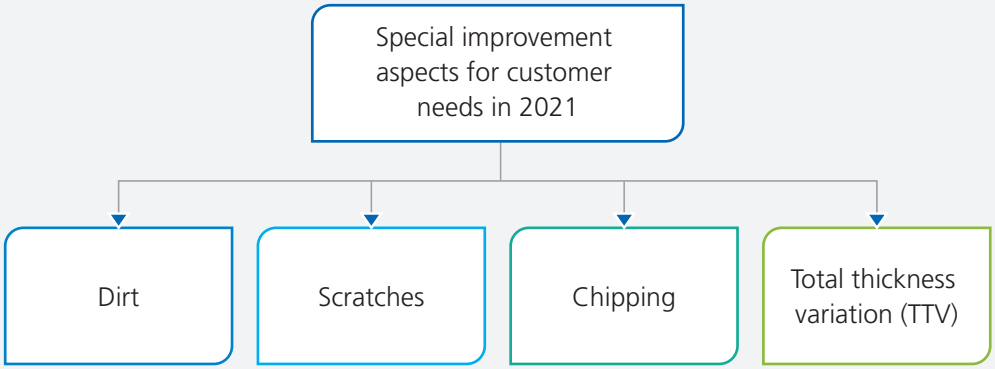
Case: Communicating with long term customers



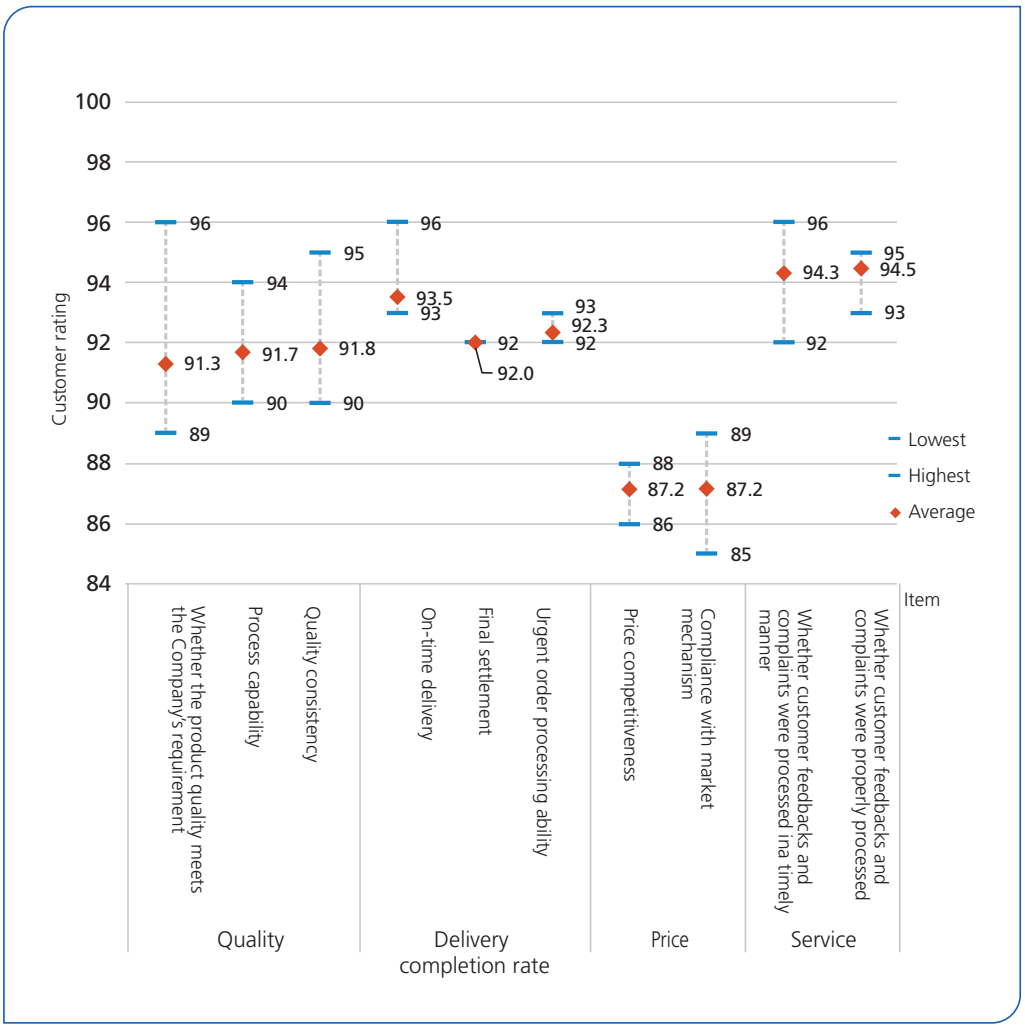
Moreover, we proactively explore the potential needs of customers by making use of the Group's effective communication channels. GCL Technology has carried out special actions to improve products, systematically optimize product performance and improve details to enhance our customer stickiness, attract potential customers and increase our product market coverage while enhancing customer diversity. During the Reporting Period, we signed long-term orders with a total of 14 customers, forming long-term strategic partnerships.

Case: Product improvement in response to customers' needs in 2021

During the Reporting Period, in response to the high product optimization needs of customers, GCL Technology established a dedicated team to carry out special product improvement tasks. We optimize the details on the technical features of the existing products, and finally deliver the improved products smoothly and win high praise from customers.



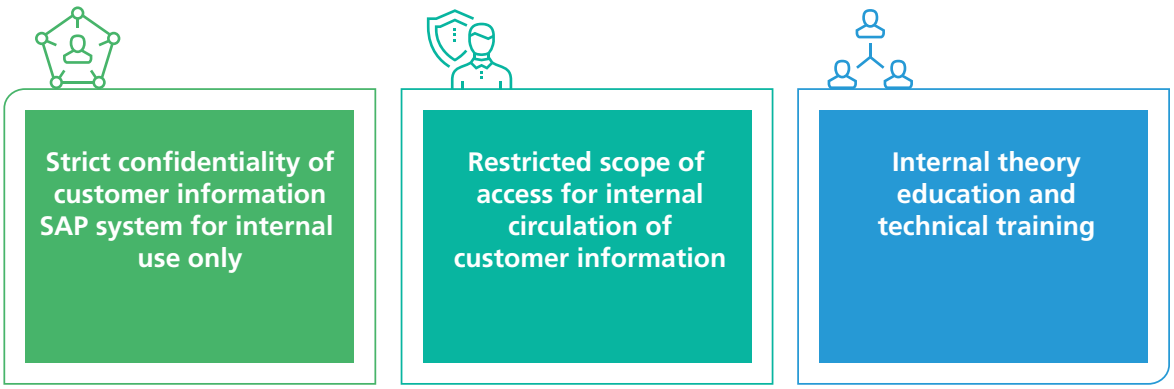
Besides of providing quality products and outstanding services to customers, GCL Technology conducts regular customer satisfaction survey in respect of quality, delivery completion rate, price competitiveness and services and other aspects. We will compile and analyse the customer satisfaction survey results centrally and coordinate relevant departments to carry out optimization and improvements from time to time, striving to maintain the customer satisfaction rate of GCL Technology at 90% and above. In 2021, GCL Technology's customer satisfaction will continue to maintain a high level, with an annual customer satisfaction score of 91.6 points.



Customer satisfaction of GCL Technology in 2021

Privacy Protection

GCL Technology attaches high importance to privacy protection for customers. In strict compliance with the *Cybersecurity Law of the People's Republic of China*, the *Personal Information Protection Law of the People's Republic of China* and other relevant laws of the places where it operates, GCL Technology has adopted a set of internal procedures, including non-disclosure agreement(s) ("NDA(s)"), data system authority control and office equipment authority control, to protect customers' privacy and prevent the risk of information leakage. During the Reporting Period, GCL Technology had no customer information and privacy leakage incidents.



Customer privacy protection procedures of GCL Technology

Responsible Supply

The Company's sound development relies on a stable supply chain. GCL Technology strives to cooperate closely with suppliers and attaches importance to the construction of supply chain system and the comprehensive management procedure. Evaluation of suppliers in respect of their legal compliance, supply level and guarantee ability is conducted through multiple appraisals and assessments to build a fair, efficient, standardized and professional supply chain management system.

Stability of raw material supply

In 2021, silicon materials were in short supply due to the growth of demand from the lower stream of photovoltaic industry. The market development is prosperous and the price of industrial-level silicon materials continues to increase. According to our business strategy to focus on the development of silicon materials business, and due to the fact that the government has strictly controlled energy consumption and intensity, GCL Technology has formulated strategic plans of developing high-purity nano-silicon powder production capacity for the upstream industry, which effectively improve the safety margin of silicon material production of the Company, ensure the stability of the supply chain, and increase the income of the industrial chain. In order to secure stable supply of raw materials, GCL Technology plans to set up bases in Xuzhou and Leshan with planned capacity of FBR-based granular silicon of 100,000 tonnes/year each and a base in Baotou with planned capacity of 100,000 tonnes/year (total planned capacity of 300,000 tonnes/year). The additional production capacity of 20,000 tonnes/year in our Xuzhou base was put to operation in November 2021 and the total capacity reached 30,000 tonnes/year. The Leshan base with a total production capacity of 100,000 tonnes/year is expected to commence production in the second half of 2022 and will reach full production by the end of the year. Phase 1 of the Baotou base with total capacity of 100,000 tonnes/year will be put into production in the second half of 2022 and will reach full production in the first half of 2023.

By constructing production bases with 10,000-tonne scale in northern, eastern and western China, GCL Technology has promoted the R&D and manufacturing of granular silicon to a reproducible era equipped with "systemized, standardized, digitalized, integrated, intelligent and modularized" features and established a three-way development pattern in the industry, which has further fostered the stability of the Group's raw materials supply. It is expected that 70% to 80% of our raw materials can be supplied by our own sources.

Supplier Management

GCL Technology has established a comprehensive supplier management system, and formulated and implemented supplier management measures, including the *Supplier Management System*, the *Supply Chain Management System*, the *Procurement Management System* and other policies, to regulate the management responsibility, scope and approach, reporting and record procedures for supplier management.

For supplier selection management, we have formulated the qualification, review procedures, and approval criteria and elimination criteria for supplier selection. Priority has been given to the procurement of green and low-carbon environmental-friendly materials while alerts have been issued in respect of the potential legal risks associated with the suppliers. Qualified suppliers may be exempted from review at our discretion according to the rules. Suppliers who have passed our review shall be included in our list of qualified suppliers for further cooperation.

1. The supplier must be an independent legal entity, group or individual with valid business license and relevant qualification document in accordance with the laws and regulations of the PRC and capacity to execute contracts and fulfil the obligations thereunder. It shall have good taxation and social security record and credit profile. Its legal representative and senior management shall have no criminal record, and have no major dereliction of duty in the past three years.
2. For foreign supplier registered outside mainland China, its qualification shall be evaluated according to the requirement of its place of registration.
3. Qualified suppliers shall meet the admission and grading criteria of GCL Technology and pass our assessment and review.
4. The product quality meets the national and industry production standards. For products subject to national compulsory certification, relevant test reports, 3C certificates and other certificates shall be presented.
5. In principle, equipment and materials shall be sourced from the manufacturers. If the manufacturers do not sell equipment and materials directly, the highest-level national or regional agents shall be preferred. Distributors or agents are acceptable under the following circumstances: for hardware and sundries, office supplies and information products, relevant suppliers do not provide delivery and after-sales services; the minimum order quantity requirement is far greater than our annual demand; and specific imported products.
6. Except for *emerging industries*, it is recommended that suppliers with an establishment period of less than three years shall not be approved for admission.
7. Where the managers and their relatives of the management center and project companies as well as companies established and controlled by former employees wish to apply for admission, the admission shall be subject to approval by the supply chain management committee of GCL Technology. Otherwise, no such admission shall be approved.

Admission qualification of suppliers

For supplier assessment management, assessment shall be carried out by project companies, functional departments and operation management center. The assessment scope shall be determined based on the type of suppliers and divided into on-site assessment and off-site assessment. The assessment criteria include four aspects: the qualification and track records, mechanical equipment, on-site assessment results and other information of the supplier. The supplier assessment management shall be in strict compliance with the *Anti-Corruption Regulations* to effectively prevent corruption.

Additions to engineering, materials and equipment

- Assessment shall be conducted before approval
- The assessment is required to inspect the target products of the supplier and prepare an inspection report

Providers of agency and consulting service

- Assessment shall be conducted based on the specific situation

Suppliers that have not been assessed on-site

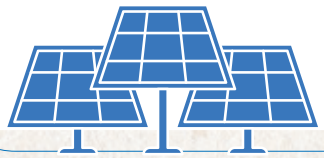
- In order to improve the efficiency of suppliers' inventory, the management center and the supply chain management department of the project company may conduct off-site inspections of suppliers through off-site methods such as data collection, website inquiry, and telephone consultation according to the actual situation

Scope of assessment of suppliers of GCL Technology

For supplier classification management, suppliers are classified and managed according to the total annual purchase amount and whether the target is set in the SRM/EPS system. In addition, categorized management is implemented for materials to be sourced according to the product quality, technological advancement, importance of use, the ability of suppliers to supply the specific materials and other factors. Generally, they are divided into three levels. Suppliers of materials at the same levels shall be in the same group during the bidding process.

Total number of suppliers	**1,764**
Number of suppliers in mainland China	**1,759**
Number of suppliers in Hong Kong, Macau and Taiwan	**2**
Number of overseas suppliers	**3**
Number of suppliers who supply annual purchases with an amount of more than RMB200,000	**951**

Breakdown of the number of suppliers of GCL Technology



Communication with suppliers

GCL Technology attaches great importance to the communication with suppliers. In order to have two-way interaction with suppliers, GCL Technology has established a visualized supplier portal management system. In addition, the Group has adopted a series of measures to support suppliers and achieve mutual benefits through establishing joint ventures with suppliers and making prepayment to reduce the financial pressure of suppliers.

Establishing joint ventures with suppliers	Cooperating with suppliers with innovative approaches	Tiding over the pandemic with suppliers
• Jiangsu Zhongneng established a joint venture with a supplier of adsorbent to deepen the interaction of production, education and research between Jiangsu Zhongngeng and the supplier and assist the supplier in intensifying the efforts in research and development and production.	• Suzhou GCL sources some core components of module light source of separators, hidden crack module of silicon wafer separators, imported parts of edge light source of separators overseas and installs separators with suppliers in China. After several trials and verification, the performance of the components has been proven to reach the level of imported components. Through such cooperation approach, win-win outcomes have been achieved as the operating income of suppliers increases and the procurement price of a single set of components is lower than that of imported components.	• In 2021, the supply of imported quartz sand was in short due to the outbreak of the pandemic. The price of imported quartz sand surged continuously. The market demand for imported quartz sand greatly exceeded the supply. Crucible manufacturers needed to pay a large amount of deposit to secure the supply of quartz sand. Due to the suspension and restriction in the production of monocrystal crucible and the successive mass production in the crystal pulling industry following the expansion in production, monocrystal crucibles were in short supply. In order to ensure the stable supply and normal production of crucibles, Xuzhou GCL Solar Materials Co., Ltd. ("Xuzhou GCL") decisively proposed to make partial prepayment to secure the crucible production capacity of the main suppliers of monocrystal crucibles, so as to tide over difficulties with suppliers and achieve win-win outcomes.

Risk management of supply chain

GCL Technology ensures the stable and secured supply of materials required for production through comprehensive supply chain mechanism and diversified procurement methods. The Group procure materials within China. We procure general materials that are not suitable for long-distance transportation, such as bulky goods, chemical raw materials and hazardous chemicals, from local market as far as practicable. For low-value consumables such as hardware and sundries, tools and labour protection products, we source through local traders, agents or e-commerce platforms. In addition, GCL Technology has formulated and implemented a series of measures including consignment system, reserve supplier system, and annual framework procurement system to manage supply chain risks and minimize the adverse effects brought by ESG risks and other supply chain risks. Moreover, our position and requirements on ESG management are communicated to our suppliers. We take into account the green concept of suppliers in the selection and evaluation of suppliers, so as to foster the sustainable development of the entire value chain.

Consignment	Reserve suppliers	Annual framework procurement
Due to large consumption of consignment materials and frequent delivery, suppliers replenish regularly at assigned region to secure safe stocks. Suppliers also make settlement based on the consumption amount monthly to ensure smooth consignment process which is conducive to decrease stocks.	At least one reserve supplier will be chosen for raw and auxiliary material commodities and consumables and the amount of supply shall be distributed based on actual situation to avoid quality risk and delivery risk caused by the major supplier. This also promotes competition between suppliers.	Annual framework procurement is adopted for consumables that are purchased every month or frequently procured materials. Bidding process shall be conducted for annual procurement. Annual framework contract shall be signed and orders shall be placed based on demands. For materials with more fluctuated quotations, pricing adjustment mechanism is set to ensure equal right of both parties.

ESG Risk Management

Through localized procurement, "safe stocks" and relevant measures, we prevent suppliers from late supply caused by policies, pandemic, climate and other risks; Key ESG elements such as environmental and social initiatives are incorporated into specific management measures and cooperation requirements of suppliers.

Risk management of supply chain of GCL Technology

While managing ESG of suppliers, the Group takes the initiative to reduce potential greenhouse gas emission during transportation through advance planning. We will consider the ESG requirements on the supply chain of the Company before site selection of project. We also proactively seek raw material suppliers and downstream manufacturers that are geographically closer to the production base of the Company. Through appropriate guiding by GCL Technology, we encourage downstream manufacturer to follow the trend of sustainable development so to establish a responsible supply chain.

TECHNOLOGICAL GCL

Under the global trend of green and low-carbon development, photovoltaics industry ushers in a new opportunity for high growth. Through the innovation of low-carbon silicon-based granular silicon materials, GCL Technology continues to promote the green development of renewable energy, cooperates to remove resource and environmental constraints and realizes efficient recycling of resources on earth. GCL Technology is committed to driving energy conservation and carbon reduction through technological innovation and achieving the goal of emission peak and carbon neutrality.

Technological innovation

GCL Technology firmly believes that innovation capability is the core competitiveness and development driving force of the Group and strives for forward-looking technological innovation that leads the development of the technology and the industry. In order to maintain the growth of GCL Technology with the support of science and technology and continue to achieve success in scientific researches, the Company puts great efforts to ensure scientific researches are carried out smoothly. In respect of investments in scientific and technological R&D, GCL Technology has been continuously and steadily increasing its investments in three aspects, namely capital, talent and governance system. The Company has been increasing its financial support for scientific research projects year by year. R&D investment of the Company increased to RMB1.041 billion in 2021 and expected to account for 5% of the operating income for the year in 2022.

As a leader in the domestic polysilicon industry, the Group launched the first large-scale Siemens process hydrochlorinate technology transformation project in China in 2009, which led to the technological reform in the upstream materials of the prevailing PV industry. The Company had subsequently focused on the development of silane fluidized bed reactor (FBR-based) granular silicon technology for over a decade and achieved a breakthrough in 2019 and commenced the commercialization and mass-production of silane FBR-based granular silicon, a new silicon-based material with exclusive technology. At present, the comprehensive electricity consumption per unit of granular silicon in Xuzhou base has been stably controlled at 14.8kWh/kg, and the comprehensive steam consumption per unit is 15.3kg/kg. This improvement has brought significant advantages in cost and carbon emission. Granular silicon represents the most advanced technological product of the existing silicon materials. It also exemplifies the "Technological GCL" and will become an important technological transition process for PV materials.

As a highlight product of a new generation in the photovoltaic silicon material sector, granular silicon has a greater potential for cost reduction. As compared with traditional Siemens-based rod silicon, granular silicon has advantages in cost, quality and application, which is essential to the reduction in electricity cost for the photovoltaic industry and the promotion and realization of "carbon neutrality" to the world.

- **Cost**

The CAPEX per unit, power consumption and labor cost for the production of granular silicon are relatively low. Granular silicon produced with FBR technology has shorter process flow and fewer post-processing steps and takes up less space. Comparing with other silicon products, the production of granular silicon has a lower CAPEX per unit, power consumption, headcount of labor, water consumption and hydrogen consumption by 30%, approximately 70%, 30%, 30% and 42%, respectively. According to the empirical data, the power consumption for the production of FBR-based granular silicon is only 14.8 kWh/kg, which is much lower than that of traditional polysilicon of 60 to 70 kWh/kg.

- **Application**

With better filling properties, granular silicon is suitable for producing continuous Czochralski monocrystal pulling. As granular silicon is spherical in shape and has good fluidity, the volume of silicon in granular form fed into each reloader can be increased by 15% to 20% as compared with other form, which is essential for large-scale CCZ technology as it can increase unit output, reduce production cost and prevent blockage by bulk materials. As compared with the current traditional RCZ monocrystalline technology, CCZ technology has higher efficiency in crystal pulling. In addition, the external rechargeable system for the production of granular silicon is easier to automate, which saves labor cost and time for recharging silicon materials.

- **Quality**

As crushing process is not required in the production of granular silicon, loss of silicon material can be avoided, cost of crushing and the risk of introducing impurities during the crushing process can be reduced. The quality of granular silicon has fulfilled the requirement for the production of monocrystalline.

Silicon wafer pulled from granular silicon has a higher electrical performance and is suitable for producing N-type silicon wafers. Combined with the CCZ continuous feeding technology in the medium and long term, the electrical performance index of monocrystalline rod pulled by granular silicon is more consistent than that of rod-shaped silicon and is more suitable for pulling N-type silicon wafers.

- **Policy**

Under the trend of "carbon neutrality", the requirement of fulfilling energy consumption indicators will be further tightened and resources will be scarce in regions with low electricity prices. As granular silicon production can reduce power consumption by 70% and carbon emission by 65% to 70%, it will be much easier to meet the energy consumption indicators and the production expansion planning can be carried out more smoothly. With the implementation of carbon trading and carbon border tax in the future, the low-carbon attributes of granular silicon will reduce the carbon tax of enterprises, reduce the burden on enterprises, and promote the sustainable development.

Advantages of granular silicon of GCL Technology

R&D system

The Group attaches great importance to the independence and diverse direction of scientific and technological R&D. Our Central Research Institute is endowed with a high level of independence in R&D and has a well-developed and sound independent management system. The institute consists of five modules, including (silicon industry) R&D center, design center, US R&D center, technology management and intellectual property management, which can maximize the independence and confidentiality of R&D and allow the great diversity of scientific and technological R&D. The institute currently focuses on two major aspects, including R&D in granular silicon technology and silicon-based materials, which is a part of strategic plan of the Group, covering important areas such as improvement in FBR-based granular silicon product quality and process, optimization of equipment and upgrade of key materials. The Company is further seeking to expand its business to the upstream and downstream industrial chain and reaching a leading position in the exploration and research of silica, silicon carbide, silicon nitride, cathode and anode materials and other products. We have established and maintained long-term and stable partnerships with domestic and international first-class universities and research institutions to exchange and cooperate in various aspects. A comprehensive research and development system has been set up. We have developed technological research cooperation projects with Tianjin University, Nanjing University, Zhejiang University, Nanjing University of Aeronautics and Astronautics, Jiangsu University, Southern University of Science and Technology, College of Energy of Soochow University and other universities in respect of silicon materials and wafers and achieved a number of research results.

Optimization of Production Process

During the Reporting Period, GCL Technology achieved a breakthrough in technology optimization. We optimized and improved the manufacturing process of granular silicon, rod silicon and silicon wafer products to further reduce production costs and improve production efficiency.

Silicon materials – *Optimization of proportioning process of silicon core* of Henan GCL Photovoltaic Technology Co., Ltd. ("Henan GCL")

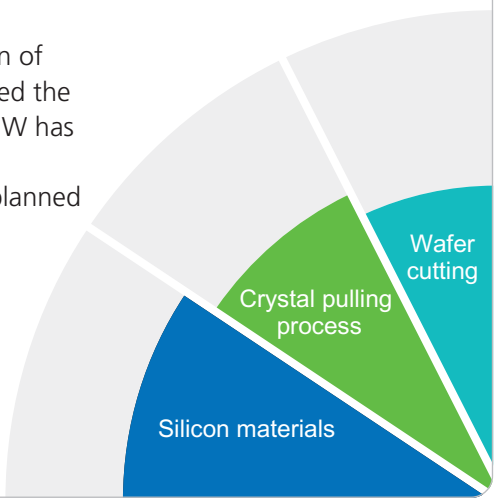
Henan GCL replaced the original block material (30 – 100mm) to the current scrap material (1 – 3mm) while maintaining the physical and chemical performance indicators of silicon core. Through optimizing silicon material formular by replacing low quality materials with high quality materials, the cost has been reduced and efficiency has been enhanced.

Crystal pulling process – "Renovation of heating system for monocrystal pulling" of Ningxia GCL Monocrystalline Silicon Technology Development Co., Ltd ("Ningxia GCL")

Ningxia GCL consolidated 28-inch heating system of Tiantong, promoted 30-inch and 32-inch heating systems of Jingsheng and Jingyuntong, respectively, renovated 28-inch furnace of Hanhong and developed 36-inch heating system to increase volume of inventory and daily production capacity.

Wafer cutting – "Upgrading of large-sized wafer cutting machine" of Suzhou GCL

The upgraded cutting machine may save RMB900 million of investment and its 20GW production capacity has reached the industry benchmark level. The large-scale project of 10GW has reached its planned production capacity in July and the large-scale upgraded project of 7.5GW has reached its planned production capacity in February 2022.



In order to encourage innovation in scientific research and enhance the internal driving force of innovation, GCL Technology has formulated and implemented the *Incentive Measures and Reward Standards for Scientific and Technological Achievements* to present scientific and technological progress awards, intellectual property awards and other awards for outstanding achievement in scientific and technological progress (including research and development projects, technical transformation projects, and technical research projects), scientific and technological journal papers, conference papers, patents, participation in establishment of standards, government approved scientific and technological awards/scientific and technological projects/research and development platforms/qualifications/talent projects and other aspects. In addition, GCL Technology also presents outstanding scientific and technological project teams and outstanding scientific and technological talents with awards.

Case: Economic and Technological Conference

Interim Economic and Technological Conference for 2021 of GCL Group was held at Suzhou GCL Energy Center on 24 July 2021. At the end of the conference, scientific and technological project teams and scientific and technological talents of GCL Group who had outstanding performance in the first half of 2021 were presented with awards. Eight scientific and technological project teams and 18 scientific and technological talents of GCL Technology were rewarded for their outstanding projects, including *Development and Application of Granular Silicon Products for Monocrystalline* and *Application and Development of Granular Silicon in Czochralski Monocrystal Pulling*.

Case: Annual Awards Ceremony

The 2021 GCL Technology Awards Ceremony was held in the GCL Xuzhou Energy Museum on 18 January 2022. 11 scientific and technological talents won the Most Outstanding Technological Talent Award for 2021.

Awards for scientific research and innovation of GCL Technology

During the Reporting Period, GCL Technology innovated and improved preparation methods, which successfully reduced energy consumption and carbon emissions and won various scientific and technological awards. *Polysilicon Wafer and its Preparation Method* of Xuzhou GCL won the first prize in the Xuzhou Economic Development Zone Patent Competition and *Preparation and Purification Method of Monosilane by Reactive Distillation* of Jiangsu Zhongneng won the first prize of Xuzhou Economic Development Zone Patent Competition. The "Research and Development of Large Monocrystalline Silicon Wafer of M12 (210mm)" of Suzhou GCL was selected as a key core technology research and development project in Suzhou. In addition, the Key Laboratory of Silicon-Based Electronic Materials in Jiangsu of Xuzhou GCL also successfully passed the performance appraisal in 2021.

Intellectual Property and Confidential Management

GCL Technology continues to optimize its own intellectual property management system while putting efforts in promoting independent innovation research and development, optimizing processes and technologies and developing intelligent manufacturing. To standardize its intellectual property management, GCL Technology has formulated the *Intellectual Property Management Standards*, *Trademark Management Standards*, *Patent Management Measures*, *Trade Secret Management Measures*, *Intellectual Property Incentive and Accountability Management Measures* and other internal policies and established efficient procedures, regulated systems and effective process for intellectual property management in accordance with the *Patent Law of the People's Republic of China*, *Implementation Rules of Patent Law of the People's Republic of China*, *Copyright Law of the People's Republic of China*, *Anti-Unfair Competition Law of the People's Republic of China*, *Enterprise Intellectual Property Management Standards* of the PRC and *Patent Law*, *Anti-Monopoly Law*, *Anti-Unfair Competition Law*, *Trademark Law* and *Copyright Law* of the United States, and other laws and regulations of the places where it operates based on its actual situation and development needs.

In order to improve the management of secret information, protect intellectual properties and secure the essential assets of the Company, the silicon material division of GCL Technology has established the granular silicon technology safety and confidentiality committee to protect its intellectual properties with the support of labor, technologies and equipment and implement standardized management of personnel, places and equipment that have access to secret information. The members of the committee are responsible for cooperating with units that may obtain secret information, human resources department, supervisory departments and other related departments to strengthen the training of personnel who have access to secret information, provide guidance to the relevant departments that have access to secret information in the establishment of security and confidentiality system, implementation of regulations and daily operation. The committee is also responsible for preparing files related to personnel who have access to secret information and establishing efficient plans and procedures for approval and review. The committee implements scientific management based on category and level through identifying the core and key departments and positions for protecting secret information and determining the scope of authority for access to secret information and classification of confidential technical data. In addition, the committee is responsible for the inspection and supervision of the implementation of internal security and confidentiality policies and providing educational training for personnel who have access to secret information based on the level of such personnel. A standardized mechanism covering educational training and inspection and supervision has been established. The committee also coordinates relevant departments to carry out investigation and impose penalty on personnel who violate the rules and disclose secret information. Companies under the silicon material division have also established confidentiality committees and classified confidential rooms and areas. Access control management for confidential areas has been implemented and personnel who enter and leave the area shall be subject to security registration. 24-hour surveillance audio and video recording systems without any blind spot have been set up. Only personnel with permission may enter the confidential area. We have formulated approval process for the accessing and borrowing of confidential materials and technically control the computers, mobile phones and other office communication devices of our employees. Confidential agreements and subordinate confidential agreements are entered into with cooperative units that may have access to trade secret and their employees, respectively.

Adhering to the concept of innovation and leveraging on its world-leading technologies, well-equipped scientific research base and first-class scientific research team, GCL Technology has held numerous patents through independent research and development. During the Reporting Period, GCL Technology had 98 patents applied and 99 patents granted for its FBR-based granular silicon, modification of polysilicon production method of Siemens, high-efficiency polysilicon, ingot monocrystalline, continuous Czochralski monocrystalline (CCZ), silicon wafer cutting process, wet black silicon and other technologies. The grant of various core invention patents has provided strong support for the independent intellectual property protection of GCL Group. The related scientific and technological achievements have also won two China Patent Awards and four Jiangsu Science and Technology Awards.

In addition to improving its internal intellectual property protection mechanism, GCL Technology has also strengthened the cooperation with external law firms. Through holding consultation on intellectual properties with senior intellectual property experts, GCL Technology has reviewed its management of research and development, competition in the industry and key inventors and taken various measures to improve its management. In addition, in order to strengthen the publicity and implementation of internal intellectual property and trade secret protection training and comprehensively enhance employees' awareness of intellectual property and trade secret protection, GCL Technology also regularly invites professional institutions to carry out relevant special trainings, and actively guides all employees to participate in relevant special trainings to enhance their knowledge and awareness of intellectual property protection.

Inclusive energy

With the steady and continuous growth of domestic demand for photovoltaic power, China will enter the era of photovoltaic development. "Carbon neutrality" facilitates a clean-alternative revolution, in which "carbon-based energy" is replaced by "silicon-based energy", and the transformation of energy structure is under progress steadily. As a global leading supplier focusing on silicon-based materials, GCL Technology has strategically focused on the low-carbon and low-consumption FBR-based granular silicon technology by leveraging on technological innovation. GCL Technology is committed to promote the carbon reduction in the PV industry with technological innovation and strives to achieve the goal of negative carbon emissions. Leveraging on its first-mover advantage and regulatory incentives, GCL Technology assumes its responsibilities to contribute affordable green energy to society and facilitates the transition from affordable grid access to low-cost grid access, thereby achieving business objectives while maintaining the sustainable development of society.

Building Industry Ecosystem

As a global leading manufacturer of silicon-based materials, GCL Technology adheres to the concept of open cooperation, mutual benefit and win-win. It actively shares front-end research and development results with the industry, and takes its own excellent technology application as the starting point, opens up the experience of its forward-looking technologies, and continuously leads the development and commercialization of high-efficiency and low-carbon silicon technology. GCL Technology builds an upstream and downstream sustainable development ecosystem of the industry with its own forward-looking technological innovation strength, leading the industry to make continuous progress towards the goal of carbon neutrality.

Sharing development achievements

In order to effectively improve customers' experience and loyalty, GCL Technology carried out comprehensive exchanges and cooperation with downstream customers and industry peers during the Reporting Period. In terms of technical cooperation, we have conducted on-site tests of granular silicon products to promote the further development and improvement of the crystal pulling process. In terms of technology openness, we have fully opened the 5GW granular silicon monocrystalline application demonstration area supporting CCZ technology research and development to customers. GCL Technology encourages, guides and cultivates the upstream and downstream ecosystems of the industrial chain, which in turn empowers GCL Technology to optimize and innovate its products. In the future, the Group will continue to provide a driving force for technological innovation for the PV industry with a combination of the three major mechanisms, namely resource investment, external joint training and industrial cooperation.

Formulating industrial standards

GCL Technology actively participates in the formulation of industrial standards, and promotes industrial standardization with years of practical experience in the industry. During the Reporting Period, our subsidiary, Jiangsu Zhongneng, led the preparation of the national standard of *FBR-based Granular Silicon*, which entered the stage of public opinion solicitation. The standard of *Specifications for Photovoltaic Crystal Silicon Wafers*, the formulation of which was led by GCL Technology (Suzhou) Energy Limited ("GCL-Tech (Suzhou)"), has been submitted for review. In the future, the Group will further actively involve and participate in the formulation of industrial standards, and contribute to the healthy growth of the PV industry.

Expanding cooperation

GCL Technology has established a long-term and stable cooperative relationship with domestic and foreign academic and research institutions. Through joint R&D and other forms, it has continuously injected scientific and technological innovation vitality into its development, and contributed scientific research strength into the progress of the industry. During the Reporting Period, we have established good cooperative relationships with high-quality academic institutions and scientific research units including the Chinese Academy of Sciences, Stanford University and Tsinghua University, which will further empower GCL Technology's technological innovation and product research and development capabilities.

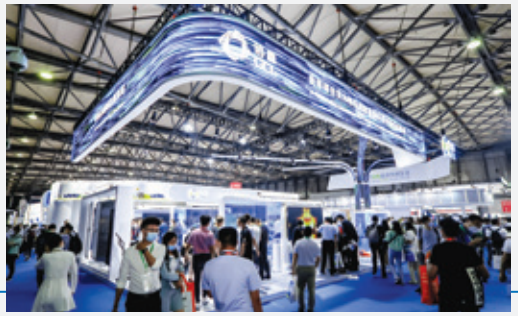
R&D cooperation units of GCL Technology (partial)

Exchanges with industry peers

During the Reporting Period, GCL Technology actively participated in various industry exchange opportunities such as large exhibitions, industry forums and media exchanges, and comprehensively displayed its latest innovations and demonstrated application cases to industry peers. The attention has further enhanced the social influence of GCL Technology.

Case: SNEC 15th International Photovoltaic Power Generation and Smart Energy Conference & Exhibition in Shanghai

In 2021, the SNEC 15th International Photovoltaic Power Generation and Smart Energy Conference & Exhibition was held in Shanghai. GCL Group coordinated its business segments to participate in the event. The granular silicon and high-efficiency silicon wafers demonstrated by GCL Technology have won the attention and affirmation of industry experts on site. In addition, the research of the "Application of Granular Silicon in Czochralski monocrystalline" of Jiangsu Zhongneng, a subsidiary of GCL Technology, was shortlisted in the "Top Ten Highlights Selection" in the expo, and won the Terawatt Diamond Award.



Case: China (Yantai) Carbon Emission Peak and Carbon Neutrality Energy Equipment Expo

GCL Group coordinated its business segments to participate in the exhibition. All the contents displayed by GCL Technology (including booth design and construction, exhibit allocation, on-site material planning and on-site personnel arrangement) were organized and implemented by the Brand and Public Relations Center. At the exhibition, GCL Technology highlighted the "black technology" product, granular silicon. The presentation of granular silicon products with leading technology and excellent carbon footprint attracted strong attention from the audience at the exhibition and leading media.

During the Reporting Period, leveraging its black technology of FBR-based granular silicon, GCL Technology maintained its leading position in the market. Its carbon-footprint has been endorsed by authoritative organizations and its potential for cost reduction and efficiency enhancement has been widely recognized by downstream customers, who have placed long-term production orders totaling no less than 700,000 tonnes. Major downstream manufacturers across the world have already started using granular silicon commercially. The commercial use of granular silicon has passed empirical data test. The Company continued to put great efforts in R&D of continuous Czochralski monocrystalline technology (CCZ) and achieved a breakthrough. The 5GW granular silicon monocrystalline application project in Xuzhou has been regarded as the "experiment field" for the adaptive application of granular silicon and CCZ. The successful experience of 5GW demonstration project will be fully opened to the market and promote the wide application of CCZ technique in pulling process during the technique transition from P-type to N-type in the PV industry, thereby increasing the market penetration of FBR-based granular silicon products, which perfectly match with the pulling process. Granular silicon and CCZ will help the PV industry usher in the N-type ear of high efficiency and low cost.

5GW granular silicon monocrystalline application project in Xuzhou

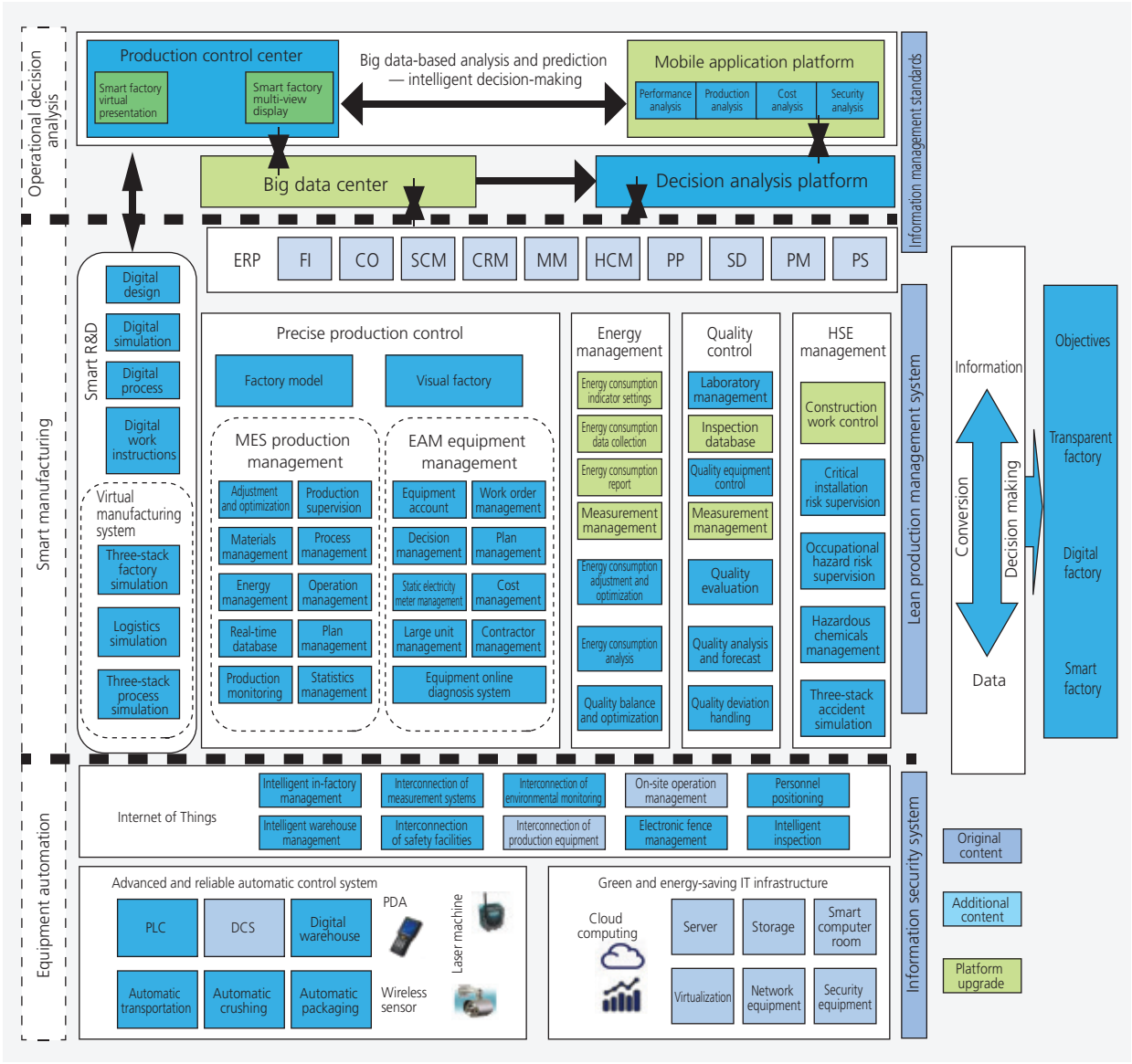
In the context of digital transformation, innovation is the life of an enterprise, and intelligent manufacturing is the general trend. GCL Technology has clearly elevated "digital GCL" to the second context of corporate strategy, adhered to the informatization strategy, applied information systems to solve the efficiency problem of daily business processes, and promoted management informatization, production digitization and intelligent decision-making.

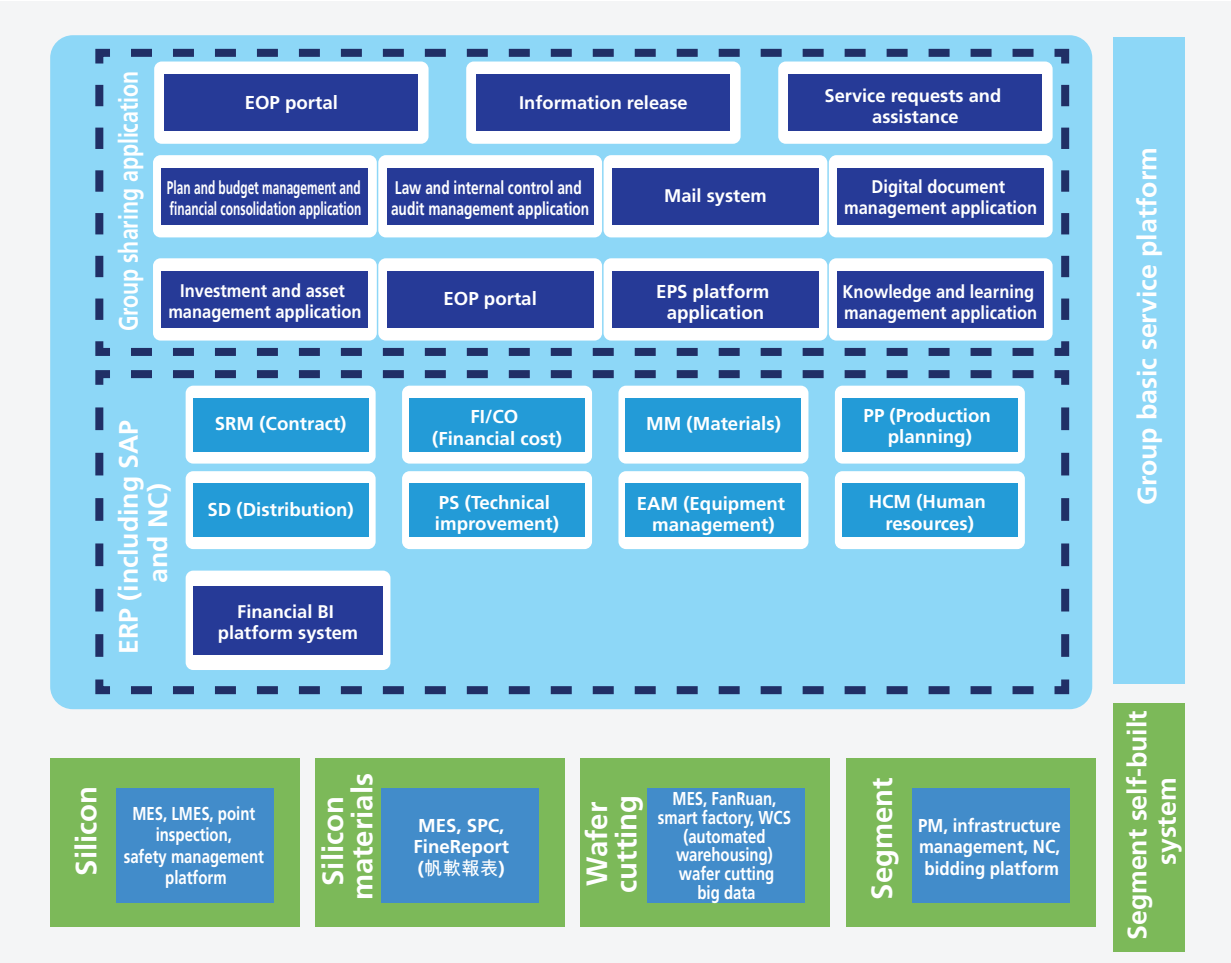
Strategic Planning

GCL Technology adheres to the informatization development strategy. Through digital factories, production system standardization, quality analysis management system, infrastructure management system and other information projects, it has improved production efficiency and quality, promoted refined management, and used data analysis to assist decision-making, so as to serve its operating goals and form an informatization system.

Construction of digital factory	Standardization of production systems	Quality analysis and management system	Infrastructure Management System
Opening up the data interconnection between information systems and automated production lines and production equipment, improving performance and optimizing decision-making through digital production and digital management	Laying the foundation for the reproducibility of production management, which is the basis for benchmarking management and the basis for promoting automated production	Collecting production data systematically and automatically to establish a reasonable operation model, analyzing the correlation data of production safety and quality fluctuation, and providing analysis results to production management to ensure production safety and product quality	Carrying out infrastructure information management and control of new construction, renovation and expansion projects, with schedule management as the main line and budget cost control as the core, focusing on project construction quality and safety management and control, and establishing a standardized infrastructure project management system

Case: Information System Planning of GCL Technology

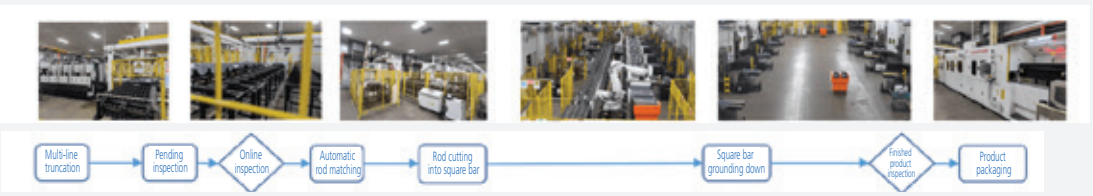




Information System Hierarchical Construction

In 2021, GCL Technology's informatization construction had made outstanding achievements. In terms of production and operation, the MES system was fully connected with the SAP system. In terms of the construction of the operation and maintenance system, a consultative competence center combining information technology and business capabilities was established to cultivate key users, promote information work into a virtuous circle, and aim to achieve advanced intelligent manufacturing, and combine informatization with existing production automation and lean production. In terms of factory construction, Leshan project was selected as a pilot to build a benchmark digital factory.

Case: Granular Silicon Application Demonstration Project — Comprehensive connection between MES system and SAP system



Project
PM system and SAP interface (granular silicon)
DCS centralized control
SAP phase III promotion (Leshan, Inner Mongolia)
HSE safety production information system
Infrastructure construction in Leshan and Inner Mongolia (computer room network, park security, anti-leakage)
Zhongneng virtual desktop
Connection of MES and SAP interfaces of four wafer cutting companies
Henan MES project
Monocrystalline material MES project

Key Informatization Construction Projects of GCL Technology

Smart Factory

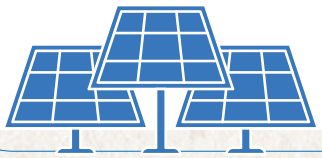
The implementation of digital transformation is required to be based on smart factories by realizing the parallel interaction of various resources and creating a collaborative and shared intelligent manufacturing platform. The informatization construction of the factory adopts a "three-step" implementation route, focusing on the promotion and implementation of mature information systems, automation upgrades and machine replacement. With an overall planning, clear focuses and full participation, the construction has been implemented gradually and thoroughly, and achieved good progress.

First Step Full implementation of factory automation and informatization	Second Step Full implementation of factory digitalization	Third Step Full implementation of smart factory
• Establishing basic systems such as MES, LIMES, promoting SAP, and deepening their application to lay a good foundation for smart factory • Combining with the planning of new factory, fully realizing the automation of production processes and the intelligentization of logistics systems	• Establishing APS, EAP, WCS, AGV scheduling systems to realize the integrated optimization of planning, scheduling and operation, and realizing automatic operations in the entire production process • Realizing the simulation and prediction of the whole production process through the construction of 3D digital factory to provide an interactive platform for intelligent production • Fully realizing the intelligent perception through the construction of Internet of Things, intelligent inspection and other systems • Accelerating the construction of smart factories based on model technology	• Realizing the intelligentization of operation management and decision-making and the active response and independent learning of enterprise production based on the intelligent production and big data analysis technology

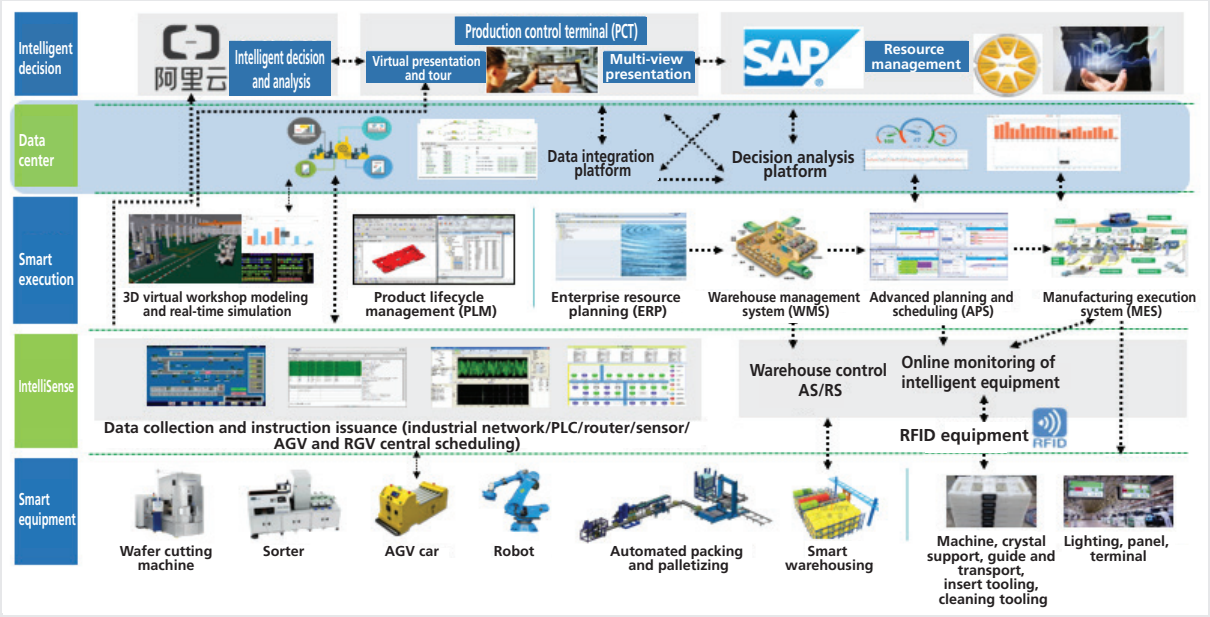
Overall design and step-by-step implementation	Focusing on key points and achieving immediate results	Demonstration projects with full participation
• Completing the top-level design of smart factories, and planning the architecture and implementation roadmap for smart factory construction based on industry best practices and actual factory management needs • Implementing the plan gradually according to the actual business situation and the status of automation and informatization	• Being business-oriented and focusing on benefit improvement as the goal to determine priorities of the project during the construction process since the construction of a smart factory is not achieved overnight • Paying attention to the implementation of key projects and building system architecture and functions in a targeted manner, so as to achieve quick results	• Selecting factories with good basic conditions and high enthusiasm, carrying out pilot projects of intelligent workshops, and establishing demonstration projects • Mobilizing the participation of all employees to ensure the application effect of intelligent workshop, and promoting it to the whole factory

Intelligent Construction Path of GCL Technology

The big data monitoring system of GCL Technology integrates various original relatively isolated information systems, and introduces advanced big data analysis algorithms and strategies to provide guidance for production operations, which will become an important part of factory intelligence. The big data system architecture based on smart factories can provide big data platform services for big data global business analysis, financial analysis, human resources analysis and supply chain analysis, which improves production yield, promotes optimization of production processes, reduces costs and increases efficiency, reduces IT repetitive investments and adds value to IT assets.

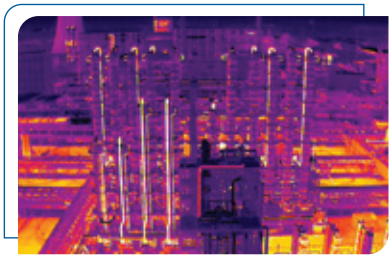


Case: System Architecture Diagram of Smart Factory



During the construction of smart factories, GCL Technology uses digital technology to continuously improve product performance and management efficiency. We further promote the intelligent level of the production and management of the Group through applying advanced technologies of Industry 4.0 such as AR eagle eye system, thermal imaging inspection system and unmanned aerial vehicle system. In 2021, the Company accelerated its digital transformation. Based on the reform of "Three Models and One Digital System", the Company modernized its strategic objectives, business values, processes and systems and digitized its operations under an efficient and intelligent operating system to support its outstanding performance.

AR eagle eye system which facilitates the safety and environmental protection management and control with AR real scene

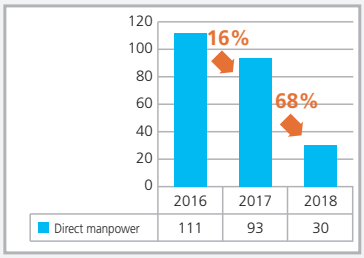


Thermal imaging inspection system which guides the external operators to inspect any unusual situation to ensure on-site safety

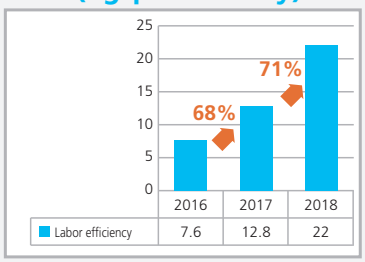
Unmanned aerial vehicle system. Emergency scene is displayed on the screen to facilitate the on-site emergency command.

Case: Smart workshop improved production efficiency

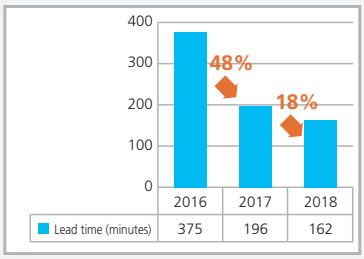
Direct manpower (three shifts)



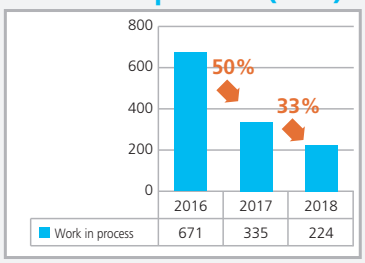
Direct labor efficiency (kg/person/day)



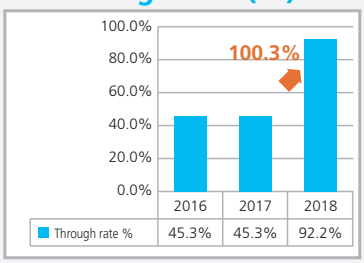
Lead time (minutes)



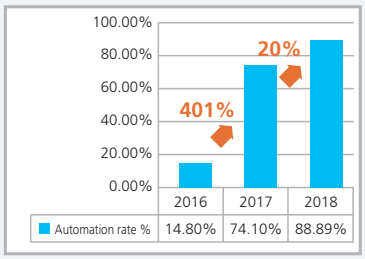
Work in process (unit)



Through rate (%)

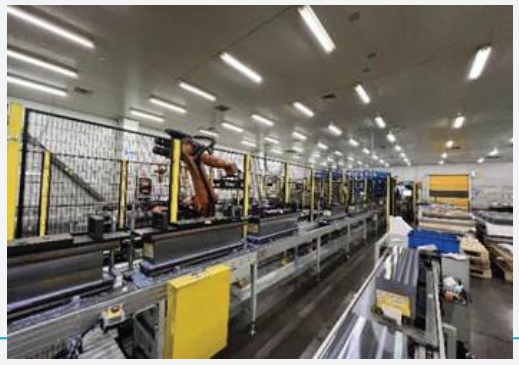


Automation rate (%)



Case: Suzhou GCL smart manufacturing workshop

The workshop construction plan of the wafer cutting factory of Suzhou GCL uses handling robots, automatic glue lines, automatic palletizing lines and AGV trucks. In the cleaning and sorting process, "machine replacement" has been realized. The viscose process in each workshop reduces the consumption of each rod by 400 kg. The cutting efficiency of each workshop is approximately 500 rods per day, reducing the load of employees by 200 tonnes, and reducing the number of posts by 36 in three workshops. In addition, the automatic feeding of Fanuc robots in three workshops was completed. The sorting and feeding process in each workshop reduced the consumption of each rod by 250 kg. The cutting efficiency of each workshop was approximately 500 rods per day. The workshop reduced the load of employees by 125 tonnes, and the number of posts was reduced by 30, improving production efficiency significantly.



In addition, based on its development strategies, actual conditions and IT development, GCL Technology adhered to the goal of digital and intelligent manufacturing during the production and optimization stage of the black technology FBR-based granular silicon project. Through closely cooperating with domestic leading digital technology companies in monitoring equipment, intelligent inspection and other projects and learning advanced concepts of domestic networks and technology manufacturing companies, the Company set up "manufacturing data center" and "operation data center", and applied "rules for forecast and analysis" and "digital risk control". Through the four initiatives of "database consolidation, data integration, enhanced business application and efficient decision-making", it has achieved effective bottom-up data integration and created a digital twin system, which can be replicated under its multi-base and segmented management.

Case: Intelligent wafer cutting process

Based on customers' orders, GCL Technology uses RFID and other means to collect information to achieve full-process automation, informatization and digital management. For example, in the wafer cutting process of Suzhou GCL, automatic unpacking — AGV feeding — automatic double-chip insertion — automatic slicing and unloading — automatic packaging of the whole process automation has been implemented. GCL Technology has realized an intelligent black silicon production process and achieved a monthly production capacity of 230 million silicon wafers. In addition, GCL Technology has established an unmanned intelligent warehousing system through RFID, AGV and RGV transmission lines to realize automatic warehouse management of raw materials and silicon wafer products.

Digital factories not only create value for enterprises in a fast and effective manner, but also assist enterprises in opening up an information platform and integrating information, thereby laying a solid foundation for intelligent transition of enterprises. At the production base in Xuzhou, an automatic, intelligent and intensive centralized control system has been established for the production of granular silicon. Through intelligent analysis and application of cloud big data platform and massive data of the whole chain, operators will be able to fully comprehend the operating situation of granular silicon production and R&D bases in Xuzhou, Leshan and Baotou. With the support of a series of remote digital intelligent control technologies, such as robot inspection, early warning system, eagle-eye recognition and remote scheduling, which were jointly developed with various domestic technological leading enterprises, the production process in granular silicon production base has been designed through an accurate and intelligent digital cloud. The production efficiency has been improved and the production safety risks have been mitigated.

Data Governance

The Group has always focused on customers' needs and attached great importance to the protection of corporate and customer data security. Relying on relevant internal regulations such as *Industrial Information System Security Manual*, *Information System Security and Media Confidentiality Management Standards* and *Information Security of GCL Technology*, we have established a complete data security protection mechanism, and have formulated strict requirements on network boundary, host, security detection, security management and other aspects to protect the basic rights and interests of its customers.

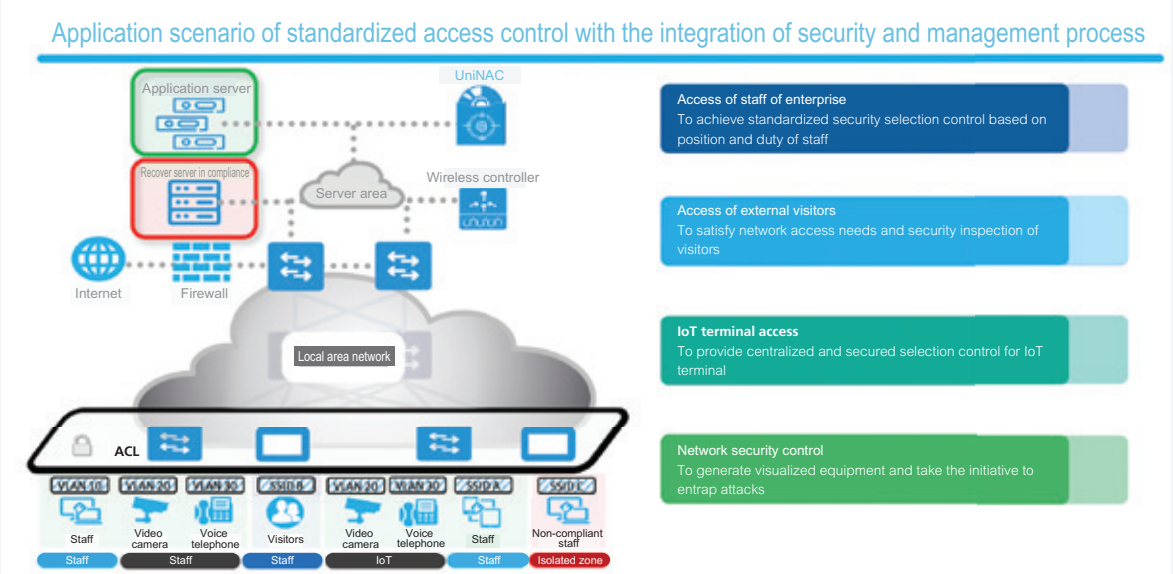
Network boundary protection	• The internal boundary of the industrial control system has been horizontally isolated, and the industrial control system and the corporate information network (office network) have been vertically isolated; • Effective monitoring, alerting and control of any network attacks initiated inside and outside the industrial control system have been carried out; • On-site deployment and log retention based on industrial special environments have been conducted.
Security monitoring and auditing	• Centralized monitoring and auditing of network links, traffic and logs have been conducted in the production area of industrial control systems, and any extraordinary communication and abnormal operation behavior have been monitored and recorded; • New attacks (such as APT, 0day vulnerabilities, etc.) have been monitored in the production area network in a timely manner to ensure accurate identification and reporting.
Host protection	• Anti-virus measures have been implemented on the host computer and engineer stations of the industrial control system in the production system; • The use of USB or CD-ROM have been prohibited or restricted and monitored on the host computer and engineer stations of the industrial control system; • Operation audit logs, program operation monitoring and software upgrades have been conducted on the host computer.
Unified security management	• Industrial control security incidents have been identified and traced in a timely manner, and an unified management has been conducted on various equipment; • Problems that identification and statistics rely on manual means in traditional asset management, which is inefficient and full of errors, have been solved; • Problems of non-standard processes and related specifications for various IT operations in office and production networks have been solved.

Security protection mechanism of GCL Technology

Information Confidentiality and Security

In 2021, we further strengthened the construction of information systems to ensure information security by establishing virtual desktops, deploying infrastructure management systems and integrating with SAP. In addition, we have increased our investments in various projects such as access control upgrades, virtualization of platforms and monitoring of installation and deployment. We also engaged SAP consultants and experts of data architecture, network and intelligent manufacturing to facilitate the construction of GCL Technology's informatization.

Case: Access Control Plan



Case: Security and Protection System

Network boundary protection

① The internal boundary of the industrial control system has been horizontally isolated, and the industrial control system and the corporate information network (office network) have been vertically isolated

② Effective monitoring, alerting and control of any network attacks initiated inside and outside the industrial control system have been carried out

③ On-site deployment and log retention based on industrial special environments have been conducted

Safety monitoring and auditing

① Centralized monitoring and auditing of network links, traffic and logs have been conducted in the production area of industrial control systems, and any extraordinary communication and abnormal operation behavior have been monitored and recorded

② New attacks (such as APT, 0day vulnerabilities, etc.) have been monitored in the production area network in a timely manner to ensure accurate identification and reporting

Host protection

① Anti-virus measures have been implemented on the host computer and engineer stations of the industrial control system in the production system

② The use of USB or CD-ROM have been prohibited or restricted and monitored on the host computer and engineer stations of the industrial control system

③ Operation audit logs, program operation monitoring and software upgrades have been conducted on the host computer

Unified security management

① Industrial control security incidents have been identified and traced in a timely manner, and an unified management has been conducted on various equipment

② Problems that identification and statistics rely on manual means in traditional asset management, which is inefficient and full of errors, have been solved;

③ Problems of non-standard processes and related specifications for various IT operations in office and production networks have been solved

Objectives of Virtual System Upgrades

✓ Completeness: to provide a more complete IT infrastructure virtualization solution, covering network, security, storage and computing.

✓ Simplicity: to reduce the overall cost without the use of special and unique network and server equipment, and to develop a platform by using the existing network of the Company without any expensive data center-level switches with complex functions.

✓ Centralized management: to establish an efficient and streamlined management, operation and maintenance system with zero learning cost and clear IT structure, and to allow operation and maintenance personnel handle the deployment, operation and maintenance and troubleshooting of all IT resources in the cloud computing center efficiently and conveniently by using a single management interface.

✓ Stability: to build the Sangfor Hyper-Converged Infrastructure and establish a large-scale resource pool covering computing, storage, network security through the software-defined data center, so to facilitate the flexible and rapid development of a business system of the data center and secure the stability of business system without affecting the business performance by making use of various technologies, such as live migration technology, HA technology, data backup and recovery and multiple-copies technologies for virtual machines.

✓ Data reliability: instead of using the raid method for traditional FC storage, the virtual storage aSAN copies each data into multiple copies for storage. The server only needs to mount the hard disk by conventional means, and the virtual storage platform will create 2 to 3 identical copies of the data in different physical server hard disks. All data changes will be tracked through the network, and all copies in aSAN will be synchronized to ensure data consistency. The benefits of the above method are significant. On one hand, without using raid, the disk utilization of the server will be very high. On the other hand, the synchronous storage of multiple copies can ensure mutual backup of data to the greatest extent, so as to achieve high reliability of storage at low cost.

✓ Scalability: the scale can be extended as and when required. The administrator of the cloud center may increase virtual machine resources according to the business development of tenants and expand the functions and properties of virtual devices as needed, which can prevent the elimination and replacement of equipment due to increase of tenants and insufficient performance of hardware devices as in the past, so as to protect our investment.

We also conducted thorough researches and analysis on potential IT risks, such as industrial information systems, computer viruses and daily use. We have formulated 14 fundamental security guidelines, including designating industrial control system administrators, strengthening local network management, updating system security patches and strengthening notebook protection, in order to ensure the availability of internal industrial systems. In 2021, we further updated the system patches in response to virus attacks on companies in the PV industry, and implemented comprehensive security inspections. We have actively promoted emergency drills and related security system management audits to ensure the stable operation of each system.

In addition, we have focused on the promotion and implementation of employee information security. We require all employees to comply with relevant information security and confidentiality management standards, and specify in detail the punishment mechanism for any violation of security regulations. Besides, we provide trainings to our employees, especially new employees, on the current situation of informatization, the use of information systems, information security and protection, software installation, smart factory planning and informatization platform construction planning. We have regularly conducted information confidentiality inspection to help our employees better understand the relevant regulations of corporate information security, and guide them to consciously establish information security awareness.

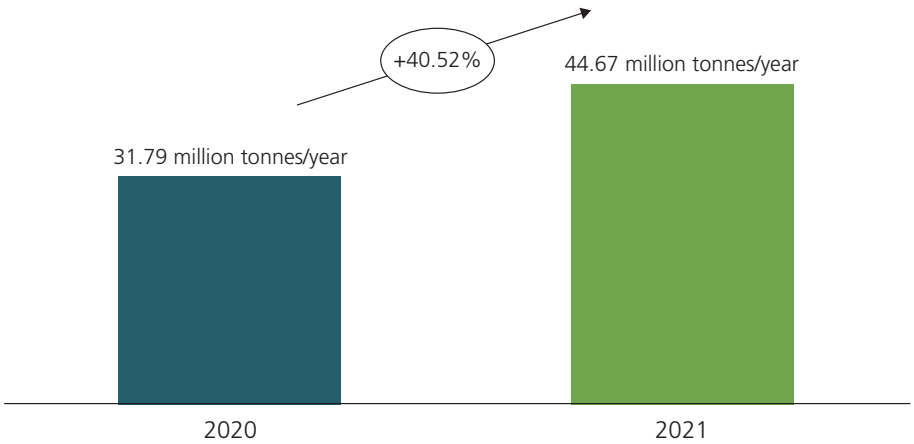
GREEN GCL

Green and sustainable development has always been the core concept of GCL Technology. Adhering to the philosophy of "Bringing Green Power to Life", we are committed to provide green energy to the world while assuming our own responsibilities to create a zero-carbon and sustainable future. With the support of effective system, management innovation, awareness enhancement and technological transformation, we have comprehensively carried out green and low-carbon management in the production and operation process, so as to become a model enterprise of sustainable development.

Green Energy

With the steady and continuous growth of domestic demand for photovoltaic power, China will enter the era of photovoltaic development. "Carbon neutrality" facilitates a clean-alternative revolution, in which "carbon-based energy" is replaced by "silicon-based energy", and the transformation of energy structure is under progress steadily. As a global leading supplier focusing on silicon-based materials, GCL Technology has strategically focused on the low-carbon and low-consumption FBR-based granular silicon technology by leveraging on technological innovation. GCL Technology is committed to promoting the carbon reduction in the PV industry with technological innovation and strives to achieve the goal of negative carbon emissions. Leveraging on its first-mover advantage and regulatory incentives, GCL Technology assumes its responsibilities to contribute affordable green energy to society and facilitates the transition from affordable grid access to low-cost grid access, thereby achieving business objectives while maintaining the sustainable development of society.

The product volume of silicon materials of the Company in 2021 was 104,506 tonnes (2020: 74,389 tonnes). Based on the silicon consumption of 2.8g/W and the capacity ratio of 1.3, the silicon materials produced by the Company in 2021 corresponded newly solar PV installation of 28.7GW (2020: 20.4GW). Solar plants using these materials for construction and operation will reduce carbon emission significantly during power generation. When compared with thermal power, solar power plants can reduce carbon emission by 44.67 million tonnes/year. Based on the component life cycle of 25 years of solar plants, the full life cycle of solar plants can reduce carbon dioxide emission by 1.117 billion tonnes when compared with thermal power.



Carbon emission reduction of solar power plants compared with that of thermal power plants after application of silicon materials of GCL Technology to the production of modules

Environmental Management

Adhering to the environmental management concept of "green development", GCL Technology strengthens energy and emission management by setting environmental goals and strengthens the ability to deal with climate risks in compliance with management requirements. We have developed detailed indictors for greenhouse gas emissions, energy consumption, water consumption and waste generation and further monitored the progress of the implementation of plans and the achievement of goals.

Environmental Goals			
Energy consumption goal	**Water consumption goal**	**Waste generation goal**	**Greenhouse gas emission goal**
Putting efforts in the promotion of green operation and green office and comprehensive utilization of resources, so as to achieve negative growth in energy consumption intensity	Optimizing water resources management and establishing a water recycling management system to improve reuse efficiency of reclaimed water	Optimizing waste management and improving the performance of waste reuse to ensure waste disposal is in full compliance with regulations	Proactively responding to the goal of "emission peak and carbon neutrality" goal set by the government and striving to achieve negative growth in carbon emission intensity

Environmental Management System

In strict compliance with the *Environmental Protection Law of the People's Republic of China*, *Air Pollution Prevention and Control Law of the People's Republic of China*, *Law of the People's Republic of China on Environmental Impact Assessment*, *Law of the People's Republic of China on Prevention and Control of Environmental Pollution by Solid Waste* and the *Civil Code of the People's Republic of China* as well as other relevant laws and regulations, we have formulated a series of administrative regulations, such as *Environmental Protection Regulation*, *EHS Accident Management Regulation*, *Regulation on EHS of Projects* and *Provision of Emergency Management* based on the actual situation. We have also set up environment and security units to supervise and manage the issues related to environment in the process of production and operation. During the Reporting Period, 11 subsidiaries of the Company have passed the ISO 14001 environmental management system certification.

Emergency Response and Handling of Emergency Environment Incidents

GCL Technology conducts risk assessments for environmental emergencies on a regular basis. We have established an environmental emergency response plan system to handle emergency environment incidents, investigated and managed potential environmental safety hazards, optimized risk prevention and control measures for emergency environment incidents and formulated *Contingency Plan for Environmental Pollution Incident*. In order to deal with incidents such as leakage and loss of radioactive sources, the *Contingency Plan for Radiological Incident* has been formulated. We dynamically revise different environmental emergency response plans based on their implementation and require our subsidiaries to refine their environmental emergency response plans based on the actual situation of their production and operation. During the Reporting Period, we carried out emergency drills for different kinds of emergency environment incidents such as hazardous chemical leakage, monocrystalline silicon leakage, pressure vessel and pressure pipeline explosion and natural disasters, so as to improve employees' awareness of risk prevention and emergency response capabilities for environmental emergencies.

Environmental Protection Training

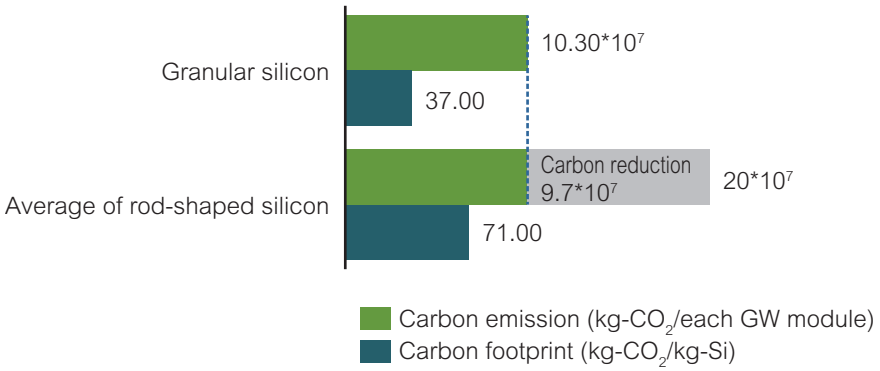
The Group puts efforts in the development of environmental protection culture. In order to ensure the compliance and fulfillment of green production responsibilities and enhance the initiative of environmental protection of all employees, we have organized regular training and assessment to raise their awareness of environmental protection and promote the knowledge of environmental protection. An environmental-friendly atmosphere with the characteristics of GCL Technology has been created. During the Reporting Period, we conducted environmental protection training and publicity activities, with topics covering environmental pollution, basic legal knowledge of environmental protection, radiation protection, identification of environmental factors and hazards, and knowledge of environmental protection. We provided a total of 7,017.5 hours of environmental protection training for 10,806 employees.

Cast Study: Environmental protection training program organized by Funing GCL

Funing GCL Photovoltaic Technology Co., Ltd. ("Funing GCL") organized an environmental protection training program based on its own annual training plan. The training program covered environmental pollution, air pollution, noise pollution, solid waste pollution, environmental protection and other topics. Through case studies, the training program raised the legal consciousness of employees and taught employees the methods to identify environmental pollutants. Funing GCL aimed to ensure the stable operation of environmental protection treatment facilities through providing training on the operation of such facility.

Low-carbon Production

In addition to reducing the impact of our operation on the environment, GCL Technology is also committed to empowering green products with technology. With the low carbon characteristics of granular silicon, emission of carbon dioxide is reduced by over 4.50 million tonnes for every 100 thousand of granular silicon. By the end of 2022, GCL Technology's nominal annual production capacity of granular silicon will reach 260,000 tonnes, which can reduce carbon dioxide emissions by about 11.7 million tonnes. The low-carbon footprint certification is deemed the "golden key" for global trade. In May 2021, Jiangsu Zhongneng, a wholly-owned subsidiary of GCL Technology, obtained the *Product Carbon Footprint Certificate* issued by the China Quality Certification Center for its granular silicon products. At the end of October 2021, Jiangsu Zhongneng received the *GCL Granular Silicon Product Carbon Footprint Certificate* issued by the French Environment and Energy Control Agency, proving that its carbon footprint value of every kilogram of granular silicon produced is only 37 kilograms of CO_2 equivalent. This breaks the world's previous lowest record of 57.56 kilograms of CO_2 equivalent per functional unit, and is also the first "carbon footprint certificate" of domestic granular silicon products issued by a foreign authority. This recognition has shown that the excellent performance of domestic granular silicon carbon emission has an absolute advantage in the global solar energy industry, paving the way for GCL Technology to realize the goal of "peak emission and carbon neutrality" and the achievements in green energy development.



Comparison between silicon material on carbon dioxide (CO_2) emission by each GW module

Granular Silicon CQC Product Carbon Footprint Certificate

GCL Granular Silicon Product Carbon Footprint Certificate

GCL Technology is committed to establishing a green and sustainable production system. In 2021, GNE, a subsidiary of GCL Technology, has 47 solar plants with an aggregate installed capacity of 1,051MW. The annual average power generation of GNE's solar plants is over 3.87 billion kWh, representing an annual carbon emission reduction of over 3.86 million tonnes when compared with thermal power. The reduction was equivalent to the plantation of 210,000 mu (equivalent to approximately 34,600 acres) of forest. In order to coordinate clean production, circular economy, ecosystem, resources utilization and sustainable development, we continued to promote sustainable resources and environment development based on our principles of low carbon, low emission and energy saving.

Meanwhile, we strictly abide by *Energy Conservation Law of the People's Republic of China*, *Law of the People's Republic of China on Promoting Clean Production*, *Electric Power Law of the People's Republic of China*, *Renewable Energy Law of the People's Republic of China* and other laws, and implemented the *Decision of the State Council on Strengthening Energy Conservation*, *Notice of the State Council on Further Enhancing the Efforts to Phase out Outdated Production Capacities*, *Energy Conservation Measures for Key Energy-Consuming Units* and other laws and regulations and proactively obtained the tri-fold certifications of the "three standards". We have obtained ISO 50001 energy management system certification and formulated policies such as the *Manual of Energy Regulation* and *Regulations on Energy and Water Conservation*. GCL Technology integrates green concept into its whole production process and further strengthens management of energy, water, material and other resources. By optimizing energy structure and production process and taking measures on energy saving and emission reduction, GCL Technology is committed to contributing to energy saving and waste reduction and reducing the carbon emissions during its business operation.

Coping with climate change

Since the beginning of the 21st Century, environmental and ecological problems such as climate warming, water pollution, biodiversity reduction, and the depletion of fossil energy resources have become increasingly serious. GCL Technology pays close attention to the risks arising from climate change and recognizes potential impacts of such risks on its business and operations. Therefore, GCL Technology proactively takes countermeasures to fully support global climate action and has initially identified risks related to climate change:

Risks related to climate change			Descriptions
Transition risks	**Technological risks**	Upfront costs for technological transformation for achieving low-carbon emission	The upfront costs for technological transformation include costs of renovation or research and development incurred for research and development and production equipment and facilities to improve energy efficiency, as well as the book value and disposal costs incurred for early scrapping of original equipment and facilities. In addition, upfront costs for technological transformation also include costs incurred for the development of energy-saving and low-carbon technologies applied in research and development and production process. The upfront costs result in an increase in research and development costs.
		Failure of investment in new technologies	According to "14th Five-Year Plan" and the Long-Range Objectives Through the Year 2035 of China, the Chinese government has set a binding target of reducing its carbon dioxide emissions per unit of GDP by 18 percent in 2025 as compared with that 2020. In order to achieve this goal, the government has controlled overall carbon emissions, which forces GCL Technology to speed up its technological transformation and invest in energy-saving and carbon-reducing process to minimize its greenhouse gas emissions. However, the benefits from technological investment of GCL Technology depend on the timing and results of the development and deployment of technologies, which, in turn, are subject to uncertainties.

Risks related to climate change			Descriptions
Transition risks	**Market risks**	Increase in raw material costs	Companies under GCL Technology have a large demand for electricity. Any increase in the price of raw materials (such as energy and water resources) will lead to an increase in their production cost.
	Reputational risks	Changes in customer preferences	If our performance of sustainable development in respect of energy saving and consumption reduction fails to meet the expectation of our customers and we are not able to continue to maintain our leading position in the carbon development of the industry, our customers may elect to cooperate with our competitors, which will result in customer loss and decrease in revenue.
		Increasing concern of stakeholders for negative feedback	GCL Technology has received attention of ESG rating agencies. ESG rating is determined based on the performance of energy consumption and emission, which in turn affects the recognition of GCL Technology in the capital market.
Physical risks	**Acute risks**	Drought	Subsidiaries of GCL Technology operate in Inner Mongolia, Ningxia and other regions with high drought risk. Drought results in shortage of water and insufficient water supply, which in turn results in an increase of water bills and operating costs.
		Typhoon	The research and development and production center of GCL Technology in Jiangsu is vulnerable to typhoon and other extreme weather conditions, which may result in production safety accidents caused by power outages, waterlogging and other conditions. We may be forced to suspend our research and development and production, resulting in reduction and interruption of production capacity.

Risks related to climate change			Descriptions
Physical risks	**Acute risks**	Extremely hot weather	Extremely hot weather results in higher demand for cooling in summer which exerts additional pressure to the refrigerating system of the offices and leads to the increase in failure rate of refrigerating equipment, resulting in additional maintenance costs and energy costs.
		Extremely cold weather	Subsidiaries of GCL Technology operate in Inner Mongolia, Ningxia and other regions with severe winter. Due to extremely cold weather, the costs for purchasing energy will be higher and certain machines of production lines may be subject to the risk of malfunction, which would result in a decline in product quality or increase in rejection rate and additional maintenance costs and losses.
		Flood	Heavy rains and floods may lead to damage in operating sites, factory infrastructure and related facilities, causing power outages in equipment and facilities and requiring evacuation of personnel, which in turn may result in the decline or interruption of production capacity. Heavy rains and floods may also disrupt the supply chain of raw materials and equipment, resulting in insufficient supply and shortage of raw materials and equipment, which may affect the research and development and production of the Company and result in the decline and interruption of production capacity. Procurement costs may also increase under such circumstances, resulting in an increase of production cost.
	Chronic risks	Extreme weather variability and changes in rainfall pattern	Extreme precipitation may trigger secondary disasters such as floods and cause submerging of, or even damage to, factory infrastructure, resulting in production interruptions and causalities. Additional costs may be incurred for purchasing equipment and maintenance. Extreme precipitation may also affect the production and transportation of suppliers in the supply chain, resulting in operation interruptions or other material impacts due to insufficient supply of products.

Striving to grasp opportunities in crisis, GCL Technology closely follows the trend of carbon neutrality and assists in the global low-carbon transformation. In respect of technology, we continue to explore low-carbon practices and have developed new technologies, in particular granular silicon, so as to improve the environmental performance of products. In respect of value chain, we have put great efforts in promoting low-carbon transformation of upstream and downstream industries and strengthening the capability in preventing risks related to climate changes and operating resilience. In respect of operation planning, we closely follow the trend of new technologies and business and create new momentum for the development of a low-carbon economy. In respect of carbon emission management, we proactively carry out transformation for energy saving and carbon reduction and improve efficiency of our production. Leveraging on our advantages, we aim to support the sustainable development of the whole industry.

Energy Management

Capitalizing on its consistent, orderly and efficient management system, GCL Technology supports the achievement of goals of low-carbon and energy-saving. Through effectively strengthening its energy management, the value of finite energy resource is maximized. During the Reporting Period, we launched various energy-saving and consumption-reduction projects and enhanced energy efficiency by transforming our technologies and upgrading our traditional equipment.

Case: Technical transformation of cleaning machines of production lines of Suzhou GCL

Suzhou GCL adjusted the settings of its cleaning machines from high-flow and long-overflow to material overflow plus water pressure so as to reduce the power used for heating of the fast-heating tank. The temperature in the cleaning machines has been decreased by 5% and the power used for heating has been reduced. The transformation of overflow mode and the function of the tanks significantly reduce the power consumption per machine. The power consumption has been decreased by approximately 598 kWh/unit on average and the water consumption of a single machine has been decreased by approximately 5.83 tonnes/unit.

Case: Renovation of water trays of reduction furnace

In order to further reduce the steam consumption in the production of rod-shaped silicon, during the Report Period, we increased the secondary production volume of steam by 0.2Mpa by further reforming the water flow in the trays of reduction furnace and increased the volume of steam by 0.2Mpa by transforming the steam supply process, which fundamentally reduces the amount of steam purchased and further reduces the consumption of steam.

Energy consumption of our silicon business and silicon wafer business from 2020 to 2021 is set out as follows[7]:

Energy consumption of silicon business[8]

Indicator	Unit	2020	2021	Change
Coal	Tonne	1,066,600	917,673	(14%)
Diesel	Litre	79,453	84,885	7%
Natural gas	Cubic metre	2,301	2,400	4%
Purchased electricity[9]	MWh	553,838	1,353,552	144%
Steam	Tonne	1,010,181	1,157,023	15%
Direct energy consumption	MWh	6,405,864	5,549,208	(13%)
Indirect energy consumption	MWh	1,610,870	2,564,237	59%
Total comprehensive energy consumption[10]	MWh	8,016,733	8,113,446	1%
Comprehensive energy consumption intensity per tonne of silicon material production volume	MWh/tonne of silicon materials	190.02	170.41	(10%)

7 In order to reflect the potential impact of the business operation of the Company on the environment, the data for the Reporting Period have been compared with 2020 in terms of silicon business and silicon wafer business. The data of Xinjiang GCL New Energy Materials Technology Co., Limited, an associate of the Company, were excluded as it does not fall in the scope of this report

8 The change may vary due to rounding of figures in this report

9 The significant increase in purchased electricity and the decrease in comprehensive energy consumption intensity were due to the mass production and expansion of production line for granular silicon in 2021

10 Direct energy consumption includes coal, natural gas and diesel, while indirect energy consumption includes purchased electricity and steam. The energy consumption was calculated with reference to the "GB2589–2008T General Rules for Calculation of the Comprehensive Energy Consumption" of the National Standards of the People's Republic of China (中華人民共和國國家標準《GB2589–2008T綜合能耗計算通則》)

Energy consumption of silicon wafer business				
Indicator	**Unit**	**2020**	**2021**	**Change**
Diesel	Litre	98,387	82,680	(16%)
Natural gas	Cubic metre	217	241	11%
Purchased electricity	MWh	847,324	854,512	1%
Steam	Tonne	42,111	20,382	(52%)
Direct energy consumption	MWh	20,396	22,417	10%
Indirect energy consumption	MWh	891,388	875,839	(2%)
Total comprehensive energy consumption	MWh	911,784	898,256	(1%)
Comprehensive energy consumption intensity per megawatt of silicon wafer production volume	MWh/megawatt of silicon wafers	28.99	23.57	(19%)

Greenhouse Gas Management

We proactively promote the optimization of energy structure. Capitalizing on the unique technical advantages in photovoltaic power generation and self-built distributed photovoltaic projects, we further improve the utilization ratio of renewable energy. When designing and planning for the energy center of the headquarters, we have reserved spaces for facilities such as rooftop solar power system, lake solar power system and wind power generation for street lighting. Through the above projects, our green electricity usage ratio has been continuously improved and the cost of purchased electricity and our carbon emission in the daily operation have been reduced.

Case: Rooftop solar power generation project of Jiangsu Zhongneng

Jiangsu Zhongneng, a subsidiary of GCL Technology, built a rooftop distributed photovoltaic power generation system with a capacity of 1.1MW on the roof of energy center, east restaurant and activity center. The generated renewable energy power was fully consumed for power consumption in the daily operation of the Company. The minimum daily average power generation of the project is 2,901.98 kWh.

Greenhouse gas emission of our silicon business and silicon wafer business from 2020 to 2021 is set out as follows:

Greenhouse gas emission of silicon business				
Indicator	**Unit**	**2020**	**2021**	**Change**
Scope I greenhouse gas emissions	Tonne of CO_2 equivalent	2,259,434	1,953,085	(14%)
Scope II greenhouse gas emissions	Tonne of CO_2 equivalent	679,979	342,778	(50%)
Total greenhouse gas emissions (Scope I + Scope II)[11]	Tonne of CO_2 equivalent	2,939,413	2,295,863	(22%)
Total greenhouse gas emissions intensity per tonne of silicon material production volume	Tonne of CO_2 equivalent/tonne of silicon materials	69.67	48.22	(31%)

Greenhouse gas emission of silicon wafer business				
Indicator	**Unit**	**2020**	**2021**	**Change**
Scope I greenhouse gas emissions	Tonne of CO_2 equivalent	4,950	5,435	10%
Scope II greenhouse gas emissions	Tonne of CO_2 equivalent	12,476	6,038	(52%)
Total greenhouse gas emissions (Scope I + Scope II)	Tonne of CO_2 equivalent	17,426	11,473	(34%)
Greenhouse gas emissions intensity per megawatt of silicon wafer production volume	Tonne of CO_2 equivalent/ megawatt of silicon wafers	0.55	0.30	(46%)

[11] The sources of greenhouse gas emissions (Scope I) are coal, natural gas and diesel and the sources of greenhouse gas emissions (Scope II) are purchased electricity and steam. Reference was made to the *Guideline for the Calculation and Reporting of Greenhouse Gas Emission for Industrial and Other Industries (Trial)* (《工業其他行業溫室氣體排放核算方法與報告指南 (試行)》) issued by the National Development and Reform Commission of the PRC for the calculation of greenhouse gas emission.

With the steady increase in the market penetration of granular silicon, GCL Technology's carbon footprint will extend to the downstream wafers and components manufacturers. Under the global trend of carbon reduction, low carbon development is becoming the main strategies to increase overseas market shares for downstream wafers and components manufacturers. The improvement of the carbon market shows that the carbon footprint advantage of products in the whole industry will be transformed into a carbon cost advantage in the near future, and the penetration cost and production cost of goods will be included in the form of carbon tariffs and carbon prices.

Water resources management

We strengthen our water resources management and strictly abide by the *Water Law of the People's Republic of China* and other laws and regulations. During the Reporting Period, we carried out a number of technical transformation projects for water saving and water recycling based on the operating characteristics of our subsidiaries. We have arranged equipment maintenance on a regular basis to prevent water dripping and leakage and save water, thereby enhancing the operating efficiency. During the Reporting Period, Henan GCL, a subsidiary of GCL Technology, was named as a municipal water-saving enterprise.

Case: Modification of recycled water and sewage system of Jiangsu Zhongneng

In response to the national water saving policy, Jiangsu Zhongneng modified the water circulation of its recycled water and sewage system to collect recycled water and sewage for reuse in the third stage of clean water tank through rainwater pipe based on its water consumption requirement during the production process. The total amount of water conservation was approximately 110,000 tonnes during the year.

Case: Technical transformation of water pipeline of Funing GCL

In 2021, Funing GCL analyzed the whole process of water use. It communicated with different parties and transformed some water pipes of the pure water system based on the actual situation after carrying out detailed water sample testing and comparison analysis. The pure water production rate was greatly improved. After the technical transformation, the purified water production efficiency has been increased from 55% to 64% and 36,500 tonnes of water will be saved annually.

Case: Transformation of pure water system of Jurong GCL

In order to enhance water production rate, based on the characteristics of its own production process, Jurong GCL Photovoltaic Technology Co., Ltd ("Jurong GCL") held technical consultation with relevant parties to collect and introduce EDI module pole water to original water tank to re-produce pure water for the production plant. The transformation can save 18,250 tonnes of water annually.

Water consumption of our silicon business and silicon wafer business from 2020 to 2021 is set out as follows:

Water consumption of silicon business				
Indicator	**Unit**	**2020**	**2021**	**Change**
Total water consumption	Ten thousand tonnes	565	513	(9%)
Total water consumption intensity per tonne of silicon production volume	Ten thousand tonnes/tonne of silicon materials	0.013	0.011	(20%)

Water consumption of silicon wafer business				
Indicator	**Unit**	**2020**	**2021**	**Change**
Total water consumption	Ten thousand tonnes	575	727	26%
Total water consumption intensity per megawatt of silicon wafer production volume	Ten thousand tonnes/megawatt of silicon wafers	0.018	0.019	4%

Materials management

GCL Technology attaches great importance to the economical use and management of materials in production based on the principles of "cost effectiveness, environmental protection and conservation". We adopt stringent selection measures for different kinds of materials used in the production process, such as silicon powder, hydrogen, and steel wire. These measures include collecting and verifying the Raw and Auxiliary Material Safety Data Sheets (SDS) involved in relevant production, and utilizing the material in production after full verification by experiments. During the Reporting Period, we carried out various technical transformation for our production processes.

Case: Jiangsu Zhongneng adopts silane method to produce high-purity granular silicon

Jiangsu Zhongneng adopts silane method for its high-purity crystalline silicon replacement and upgrading project which has the characteristics of short production process, low energy consumption and continuous production. Comparing to rod-shaped silicon, the overall production cost of granular silicon has decreased by approximately 30%, hydrogen consumption during production process has decreased by 40%, labour cost has decreased by 65%, and the power consumption of the whole process has decreased by 70%. In addition, The quality of granular silicon products produced by this project has reached electronic-grade standards. The technical process has shown satisfactory performance in environmental protection and we have independent intellectual property rights thereof. With such process, we have achieved a breakthrough in closed cycle of material and the localization of core technologies and equipment, filling the gap of silane gas technology in China.

Case: Recycling of argon of Xuzhou Photovoltaic

Through technical transformation, Xuzhou Photovoltaic collects and dedusts the tail gas of the single crystal furnace and removes oxygen, hydrocarbons, carbon monoxide and other impurities from the tail gas to obtain pure argon gas, which can be used as the raw material for the production process of Czochralski monocrystal pulling. With the technical transformation, recycling of argon gas can be realized and the volume of production materials can be greatly reduced, thereby reducing the production cost of products. It is estimated that RMB20 million can be saved every year.

Case: Technical transformation of automatic dispensers of Funing GCL

In 2021, Funing GCL completed the transformation of automatic dispensers used in the viscose process. With the technical transformation, RMB558,144 worth of glue materials and RMB13,824 worth of paper cups can be saved every year. In addition to saving materials, the weight of hazardous waste (empty plastic drums) generated reduced by 1.97 tonnes and RMB11,820 of hazardous waste treatment costs and RMB216,000 of labor costs were saved.

We further transform our production technology, optimize production process and improve comprehensive utilization rate of materials. We have technology of producing high-purity crystalline silicon by silane method with independent intellectual property rights, which fills the gaps in relevant domestic technical fields and achieves breakthroughs in material recycling and reduction of energy consumption and cost.

Material usage of our silicon business and silicon wafer business from 2020 to 2021 is set out as follows:

Material usage of silicon business				
Indicator	**Unit**	**2020**	**2021**	**Change**
Use of packaging material[12]	Tonne	1,035	1,260	22%
Density of use of packaging material	Tonne/tonne of silicon materials	0.02	0.03	8%

Material usage of silicon wafer business				
Indicator	**Unit**	**2020**	**2021**	**Change**
Use of packaging material	Tonne	4,931	5,370	9%
Density of use of packaging material	Tonne/megawatt of silicon wafers	0.16	0.14	(10%)

Discharge Compliance

In strict compliance with the *Air Pollution Prevention and Control Law of the People's Republic of China*, *Water Pollution Prevention and Control Law of the People's Republic of China*, *Law of the People's Republic of China on Prevention and Control of Environmental Pollution by Solid Waste*, *Integrated Emission Standard of Air Pollutants*, *Emission Standard of Air Pollutants for Boilers* and other laws and regulations, we classify and mange exhaust gas, wastewater and solid waste generated during the daily operation in accordance with the standards and requirements of the Company. Our discharge of exhaust gas and wastewater meets or exceeds national standards, and solid waste is handed over to qualified third-party institutions according to their categories for disposal as required.

[12] As granular silicon requires small packaging, there was a substantial increase in the packaging material for the silicon business of the Company.

Wastewater Discharge Management

Case: Transformation and upgrading of wastewater system of Suzhou GCL

During the Reporting Period, Suzhou GCL expanded and transformed its wastewater system and increased its treatment capacity by 67%, so as to fully meet the needs of production capacity improvement of the Company and ensure that all wastewater discharged in production process is effectively treated and discharged in compliance with standards. The major improvements are as follows:

- Transforming the high-concentration wastewater treatment system to improve high-concentration wastewater treatment capacity;
- Eliminating and upgrading outdated pumps to high-efficiency pumps to stabilize wastewater transport capacity;
- Installing high-efficiency diaphragm filter presses to improve sludge disposal capacity;
- Adding mud-water separation modules and submersible flow propellers in hydrolysis and acidification tanks to improve the pretreatment performance of the hydrolysis and acidification tanks;
- Installing rapid sedimentation system for tail sand and air flotation treatment device to improve water treatment capacity;
- Improving exhaust gas system of wastewater station and installing glass fiber reinforced plastic cover in the adjustment tank, sludge tank, aerobic tank and accident tank to improve the environment of the site.

Renovation of iron-carbon tank	Pouring silty	Cleaning settling tank I	Renovation of settling tank II	Renovation of hydrolysis tank
				

Exhaust Gas Emission Management

Our exhaust gas pollutants mainly come from nitrogen oxides, sulphur oxides, sulfur dioxide and dust particles produced in the production process. We supervise and manage exhaust gas in strict compliance with the *Procedures for Controlling Production Exhaust Emissions* and other internal policies of the Company. We recycle tail gas through exhaust gas absorption device, remove workshop dust by dust removal and purification devices such as dust removal bags, and collect the ammonia and hydrogen sulphide gas discharged from the sewage station by the application of "sprayed, ionized and activated carbon" adsorption device and discharge after purification treatment. In addition, we engage qualified third parties to monitor our exhaust gas emission on a regular basis. Some of our subsidiaries have maintained environmental liability insurance. In order to reduce the carbon emissions during the product transportation, we proactively relocate our plants to the places near our customers to shorten the product transportation distance, thereby reducing the transportation costs and exhaust gas emission.

Case: Technical transformation of exhaust system of production line of Suzhou GCL

During the Reporting Period, Suzhou GCL invested RMB1.18 million to upgrade its exhaust system of wafer cutting system, degumming system and cleaning equipment of production lines in its workshop and install VOCs and dust treatment systems. The treatment processes include spray tower, UV Photolysis catalysis, activated carbon filtration and adsorption box (column activated carbon) and activated carbon fiber sheet adsorption box, which ensure that the exhaust gas emission of the workshops meet the standard.

Waste Discharge Management

We categorize, collect and dispose solid waste in strict compliance with the *Management and Control Procedures for Waste and Hazardous Waste* and the *Management Regulation for Three Wastes*. Adhering to the waste management principle of volume reduction and recycling, solid wastes are disposed properly based on the categories.

For general solid waste, we have built storage yards in accordance with the requirements of "anti-leaching, anti-seepage and anti-scattering" and engaged qualified third parties for the recycling and reuse of recyclable general solid waste. We have implemented four-level duplicated form management system and sludge transfer confirmation system. For hazardous waste, we have set up temporary storage sites and engaged qualified third parties for centralized disposal. We adopt five-level duplicated form management system for the transfer of hazardous waste to achieve the traceability of transfer of hazardous waste.

We put great efforts in emission reduction in various production processes and attach great importance to the management of waste generated during our production and operation. We take various measures to reduce waste generation. The *Environmental Protection Regulation*, *EHS Inspection and Hidden Hazard Control Regulations* and other internal regulations provide institutional foundation for waste reduction. We also aim to achieve the goal of reducing waste and emission through purchasing waste treatment facilities and recycling waste.

Case: Highlights of waste reduction performance of GCL Technology

- Henan GCL recycled 12.32 tonnes of silicon-containing wastewater in 2021, and the discharge of wastewater was reduced with higher water utilization efficiency.
- During the Reporting Period, Ningxia GCL recycled waste oil with vacuum pump and newly installed oil mist purifier treatment system. An acid mist washing tower equipment has also been installed to reduce acid-washing exhaust gas emission.
- GCL High-tech Nano New Materials (Xuzhou) Co., Ltd. ("Xuzhou High-tech") invested RMB8.95 million for the purchase of environmental protection facilities such as tail gas treatment devices, sewage treatment facilities and bag filter and maintenance of wastewater pool, which facilitated the reuse and recycling of "three wastes" with significant environmental and economic benefits. Xuzhou High-tech was able to make social and economic contributions while deriving environmental benefits.
- Jiangsu Zhongneng repaired the rooftop of the hazardous waste warehouse and newly installed hazardous exhaust gas treatment facilities.

Pollutant discharge of our silicon business and silicon wafer business from 2020 to 2021 is set out as follows:

Pollutant discharge of silicon business

Indicator	Unit	2020	2021	Change
Nitrogen oxides	Tonne	18.60	11.54	(38%)
Sulphur oxides	Tonne	0.62	0.29	(53%)
Dust	Tonne	2.36	2.10	(11%)
Hazardous waste[13]	Tonne	514	624	21%
Hazardous waste intensity per tonne of silicon material production volume	Tonne/tonne of silicon materials	0.012	0.013	8%
Non-hazardous waste	Tonne	17,747	22,505	27%
Non-hazardous waste intensity per tonne of silicon material production volume	Tonne/tonne of silicon materials	0.42	0.47	12%
Wastewater discharge	Tonne	1,172,332	1,115,457	(5%)

[13] The major source of waste of the Company was equipment and pipeline maintenance. As a result of sporadic maintenance, there are large differences and changes in the data of different years/reporting period.

Pollutant discharge of silicon wafer business				
Indicator	**Unit**	**2020**	**2021**	**Change**
Nitrogen oxides	Tonne	17.54	14.50	(17%)
Sulphur oxides	Tonne	1.06	1.21	14%
Dust	Tonne	9.95	12.21	23%
Hazardous waste	Tonne	706	686	(3%)
Hazardous waste intensity per megawatt of silicon wafer production volume	Tonne/megawatt of silicon wafers	0.022	0.018	(20%)
Non-hazardous waste	Tonne	10,880	14,951	37%
Non-hazardous waste intensity per megawatt of silicon wafer production volume	Tonne/megawatt of silicon wafers	0.35	0.39	13%
Wastewater discharge	Tonne	5,747,279	3,474,450	(40%)

Green Office

GCL Technology adheres to the concept of green, sustainable and low-carbon office in its daily operation and corporate culture construction and is committed to raising the awareness of energy conservation and environmental protection among its employees. GCL Technology encourages its employees to adopt a new lifestyle of low carbon and strives to create a low-carbon and sustainable company atmosphere gradually. We participate in environmental protection activities including the "Earth Hour" with our employees to enhance their environmental protection awareness. We also proactively participate in relevant certifications by green organizations.

Paperless office

- All application procedures shall be initiated and approved online to minimize the use of paper
- If printing of documents is required during daily operation, printing permission shall be set and black-and-white and double-side printing shall be used, so as to reduce the consumption of ink cartridges and paper
- Use electronic bills and electronic delivery bills to replace traditional paper bills

Air-conditioning and lighting control

- LED lights are used in office. Except for peak commute hours, only half of the lights in basement shall be switched on to reduce unnecessary consumption
- Curtains shall be half drawn during summer to block out sunlight and reduce the use of air conditioning
- Property management staff shall conduct daily inspection as scheduled and turn off lights in office area to avoid unnecessary lighting
- Air-conditioners shall be turned off an hour in advance before leaving to maintain room temperature at normal level

Improving the greening rate of office area

- The site area of the GCL Technology Energy Center is 85,000 square meters with a GFA of 174,000 square meters and a green area of 75,000 square meters. The greening rate reaches 88.23%.
- A green wall of around 120 square meters is set on the first floor of the second phase of office building of GCL Technology and more than 400 pots of green plants are planted in the office area.

Reduction of disposable consumables

- Encouraging employees to bring their own cups to reduce the consumption of disposable paper cups
- Encouraging employees to bring their own tableware to stop using disposable tableware
- Using refillable containers for detergents, hand soap and others
- Giving priority to the use of second-hand stationary, folders and file clips

Waste classification

- Contacting community organizations to organize seminar on waste classification and broadcasting knowledge of waste classification on screens in restaurants and lobbies to promote waste classification
- Classifying waste into hazardous waste, kitchen waste, recyclable waste and other waste in strict compliance with standards and all wastes shall be disposed within the same day

Water saving in office

- Promoting the use of water-saving appliances
- Reconstructing domestic water pipeline network to prevent water dripping and leakage

Case: Reconstruction of domestic water pipeline of Jurong GCL

The domestic water pipes of Jurong GCL are buried pipes with a depth of 1 meter and many leaking points. It was estimated that 100 tonnes of water leaked from the pipes every day, which was not easy to check and maintain. In order to solve such problem, the relevant departments of the Company reconstructed the domestic water pipeline network, replaced the deep buried pipes with shallow buried pipes and set up signs. The direction of the pipelines was also optimized. After the reconstruction, water consumption can be reduced by 36,000 tonnes annually.

Green Organisation Certification of GCL Technology

HUMANITIES GCL

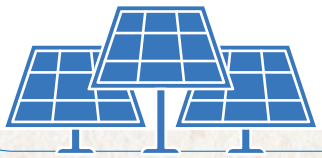
GCL Technology operates with the "people-oriented" management philosophy and develops together with its employees. We continuously empower employees to grow, adopt diversified employment policies, competitive remuneration and benefit policies and various training systems, and provide smooth talent development paths as well as safe and healthy working conditions, to ensure that the legitimate rights and interests of all employees of GCL Technology are not infringed, while enabling its employees to create value for the Company in a happy and harmonious working environment.

Diversified Employment

In strict compliance with the *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 the Protection of Rights and Interests of Women* and *Regulations on the Prohibition of Child Labour* and other relevant laws and regulations of the places where it operates, and based on its own situation, GCL Technology has formulated internal policies such as the *Recruitment Management Standards* and *Internal Recommendation Management Standards*. We strive to create a diversified and equal labour relationship by fully supporting employees to choose suitable positions according to their own situations and matching the professional abilities of employees with the Group's businesses. Employees shall enter into labour contracts with the Company according to laws and receive corresponding remuneration.

The Group has zero tolerance for child labour, forced labour, employment discrimination and workplace harassment. We carry out regular inspection for the above matters and will take disciplinary action according to the relevant requirements if misconducts are identified. In order to avoid child labour, we strictly review the identity documents of new employees and carry out strict reference checks to ensure that the employees are of legal employment age. In addition, we eliminate any action or rule linked to gender, marital status, physical condition, geographical, national or religious beliefs in the process of recruitment, promotion and selection to ensure that all employees are treated fairly and justly. During the Reporting Period, GCL Technology did not have any incidents of child labour, forced labour and harassment.

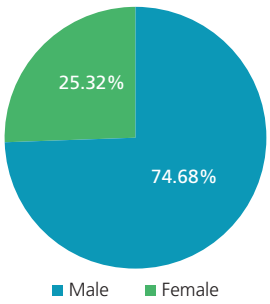
The Group is committed to building an excellent, professional, inclusive and diversified talent team as we believe that experienced management and well-trained frontline staff are critical to our business development. Based on the Company's development strategies and business operation, we actively carry out talent demand forecasts. In line with the recruitment principles of "integration of internal and external factors, market-oriented competition and recruiting outstanding candidates", we actively expand recruitment channels. In addition to traditional online recruitment, talent market recruitment and other channels, we actively develop internal employee recommendation channels to attract outstanding talents to join GCL Technology. Moreover, we continuously strengthen the campus recruitment and have established graduate traineeship programs, partnership with educational institutions, targeted employment cooperation and orientation class cooperation with middle and higher education institutions in various regions. During the Reporting Period, we introduced 508 outstanding fresh graduates through school recruitment channels to continue to expand our outstanding reserve talent pool.



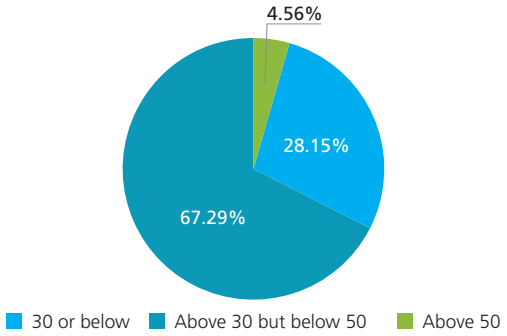
In respect of talent pipeline, GCL Technology is cooperating with top domestic and overseas research institutes and colleges of chemical engineering and macromolecule materials to jointly cultivate high-skilled, precision and advanced technicians. Through expert introduction, internal cultivation, public recruitment and other approaches, we have launched a special project for attracting high-tech talents. Based on the existing R&D staffing, we continuously recruit new scientific and technological forces. In the future, we expect to increase the percentage of technical and management personnel with doctoral and master's degrees to over 70%.

At the project locations of GCL Technology, we flexibly adopt the strategy of recruiting local talents. We insist on cultivating management and key technical employees through mature projects, and recruit local talents through public and campus recruitments for practical trainings at the project locations. This not only enlarges the proportion of local employees, thus reducing the turnover rate of employees and ensuring workforce stability, but also continuously increases the employment rate of the project locations and promotes the diversification of employees of the Company.

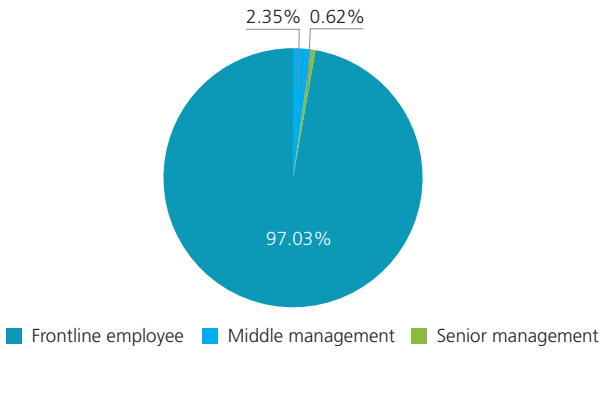
During the Reporting Period, our diversified employee team consisted of members from mainland China, Hong Kong SAR, the United States and other foreign countries with diverse professional backgrounds and practical experiences to continuously support the stable development of GCL Technology. The total number of employees of GCL Technology was 8,863, all of which are full-time employees, among which employees from mainland China account for 99.56% and those from Hong Kong SAR, the United States and other foreign countries account for 0.44%. Our staff mix is illustrated as follows:



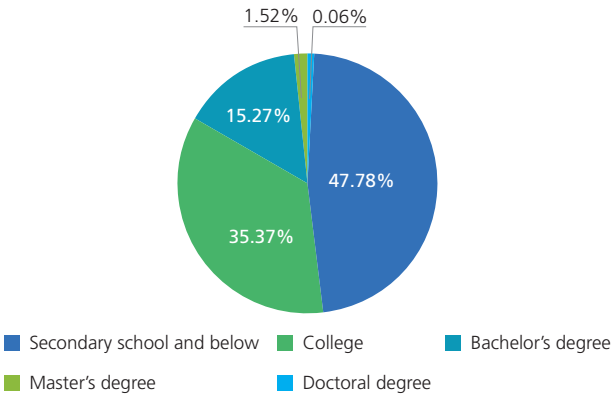
Number of employees by gender



Number of employees by age



Number of employees by position



Number of employees by education background

Case: Local recruitment by Leshan GCL

During the Reporting Period, Leshan GCL New Energy Technology Co., Ltd. ("Leshan GCL") under GCL Technology recruited 245 local employees in Sichuan and Chongqing, including 2 ethnic minority employees. In addition, it continued to increase the incomes of employees with financial difficulties, actively recruit workers from local communities, consolidate the national poverty alleviation achievements, further demonstrate the Company's positive image of serving and giving back to the local communities, and improve the overall social value of the Company.

Case: GCL Technology's partnership with educational institutions — "Future's Youth of GCL" graduate traineeship program

Inner Mongolia Xinyuan Silicon Material Technology Co., Ltd. ("Inner Mongolia Xinyuan") launched the "graduate traineeship program" in cooperation with a well-known local chemical engineering college, and successfully developed a friendship with the college to introduce the corporate culture to the fresh graduates in advance.

Case: GCL Technology — Management Trainee Program for Future GCL

Adhering to the main goal of "cultivating future department heads or company leaders", GCL Technology selects outstanding fresh graduates with management potential to join its management trainee program according to business needs. We have developed a unique management approach for trainees, covering recruitment, training, appointment, assessment, remuneration and benefits, care and career planning, to attract all kinds of outstanding talents who recognize the value and mission of GCL Technology of "value orientation, innovation, competitiveness and synergy" and join us to pursue green development together.

Compensation and Benefits

In strict compliance with the *Social Insurance Law of the People's Republic of China* and *Trade Union Law of the People's Republic of China*, and through the optimisation of internal rules and policies such as the *Salary Management Standards*, *Performance Appraisal Management Standards for Functional Departments* and *Benefits Management Standards*, GCL Technology has partially adjusted the income structure of employees, the fixed-to-variable salary ratio and the remuneration and benefits of directors, to strengthen the standardized management of the remuneration system. We have created a more attractive compensation and benefit system as well as employee incentive system for all employees, aiming to offer more competitive remuneration for employees of GCL Technology. During the Reporting Period, GCL Technology adjusted the existing remuneration system with reference to market benchmarking data, and formulated differentiated payroll scales for management units, polysilicon business and ingot wafer business, to align the remuneration standard with GCL Technology's business strategies and market conditions. A separate payroll scale has been formulated for scientific and technological personnel of GCL Technology to retain and incentivize scientific and technological talents through more effective measures, allowing talents to achieve their full value in GCL Technology.

Subsidies and allowances	Insurance	Employee leave	Female preferential treatment	Diverse benefits
• Communication allowance • Meals allowance • Transportation allowance • Meal allowance • Extreme weather allowance • Marriage and maternity allowance • Bereavement allowance • Remote area allowance • Holiday benefits	• Retirement insurance • Medical insurance • Work injury insurance • Unemployment insurance • Housing provident fund • Commercial insurance • Employers' liability insurance	• Statutory holidays • Paternity leave	• Baby care room • Breastfeeding leave and maternity leave • No-pay leaves and preferential shifts for female staff in pregnancy	• Ethnic minority eateries • Holidays for ethnic minority festivals

Compensation and benefits of GCL Technology

GCL Technology is committed to giving more considerate care for female employees. We provide pregnant female employees with special preferential treatment such as no-pay leaves and exemption from night shifts. In addition, breastfeeding leaves and maternity leaves are also provided to ensure that female employees can enjoy not only basic legal treatment, but also the Company's deep care for them.

Case: Building the future of GCL Technology by taking care of pregnant employees

GCL Technology cares about female employees, especially pregnant and breastfeeding employees. Each of our subsidiaries has a baby care room equipped with facilities such as refrigerators, tables and chairs to facilitate female employees to breastfeed or rest.

During the Reporting Period, we continuously launched more flexible and diversified employee benefit policies according to the personalized needs of employees. For example, we sought advices from employees on procurement for holiday benefits, offered customized employee uniforms and adopted suggestions from the catering committee to improve the quality and pricing of employees' meals, allowing employees to further feel the warmth of home in GCL Technology.

Employee Incentive

GCL Technology is committed to creating a community of interests between the development of employees and the Company, deeply integrating and binding employees' career development goals with the Company's sound development. We focus on attracting scientific research personnel by sharing the benefits of R&D achievements. In the first quarter of 2022, we granted options for a total of 214 million shares to 152 production and technical team members. We shared the sales revenue of patent achievements to core R&D personnel and attracted talents through equity incentive, building a strong connection between the Company and its scientific and technological personnel.

Growing Together

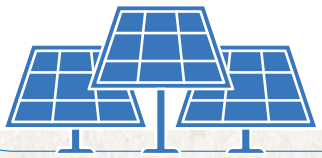
GCL Technology firmly believes that talents are the foundation of the Company's development. We have established a scientific and comprehensive employee training system and a clear career development path to provide its employees with more opportunities to realize their own value, learn and improve their skills at work, and unleash more personal potential in the Company.

Talent Training

In line with our own situation and according to the GCL Technology's *Training Management Standards*, we continuously improve the Company's internal training system. During the Reporting Period, "GCL Technology University" was established with a focus on professional cultivation and value output, in order to support the industrial development of GCL Technology from five dimensions including innovation-driven development, cultural inheritance, talent cultivation, business support and ecological empowerment. In addition, we organized online and offline trainings to provide various categories of multi-dimensional and diverse employee trainings, aiming to improve employees' managerial skill, professional capability and vocational abilities, and deeply explore the potential and value of each employee.

Employee Training System of GCL Technology

In addition, we promote digitisation capabilities in line with trends and provide various online learning options for employees of different positions and business lines through online platforms. We implement the "GCL Sea of Knowledge" online learning system, Himalayan GCL courses, e-learning platforms and other platforms to provide the latest, recommended and hottest open optional courses to all employees, and also offer designated learning courses and allow its employees to take online examinations, encouraging its employees to improve themselves in their spare time and acquire diverse and new knowledge through online learning.



Case: Customized online learning platform for the granular silicon ecological chain

In order to support the development path of GCL Technology based on the granular silicon ecological chain, GCL Technology University has been communicating with suppliers to develop a full-scene, digital, social and interesting customized online learning platform of GCL Technology, providing smart matching services for employees, jobs and courses. It will support the digital development and upgrade of corporate talents, striving to create a corporate learning and talent development platform specialized in digital empowerment.

GCL Technology advocates the partnership of all subsidiaries with educational institutions. Currently, it has entered into school-enterprise cooperation agreements or graduate traineeship programs with five regional colleges and universities, and eight colleges and universities expressed their intentions. We will launch a wide range of training activities such as improvements in academic qualifications and skills for all employees, actively subsidize our employees to pursue further degrees and continuously increase the proportion of employees with bachelor's and master's degrees in the Group. In addition, we provide job-specific development training programs for front-line technicians to prepare for the steady growth in production capacity under the "14th Five-Year Plan" of GCL Technology.

In respect of practising certificates and professional examinations, we encourage employees to obtain professional qualifications in their spare time, such as certified public accountants and financial risk managers, and the Company provides corresponding financial assistances and support.

Case: "Vocational Education" of GCL Technology University

In order to support the construction of GCL Technology's digital factory of "Digital GCL", GCL Technology University also cultivates highly skilled industrial workers with digital knowledge, mindset and operation ability through "vocational education", enabling them to become "digital engineer" of silicon-based materials.

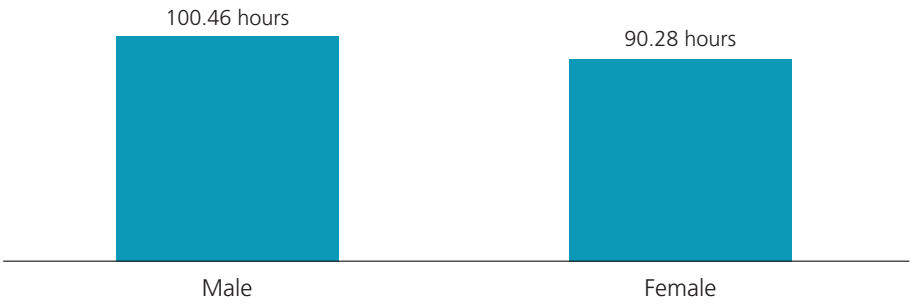
Case: The first phase of "GCL Star" training camp for new school-recruited employees of GCL Technology University

GCL Technology University was established on 15 June 2021 under the supervision of Zhu Gongshan, the chairman of the Group. Only 15 days after its establishment, GCL Technology University launched its first training programme — the first phase of "GCL Star" training camp for new school-recruited employees of GCL Technology University, demonstrating the "GCL Speed" of a corporate university. In 2021, a total of seven phases of "GCL Star" projects was launched to cultivate 555 new school-recruited students for the granular silicon projects in Xuzhou, Leshan and Inner Mongolia.

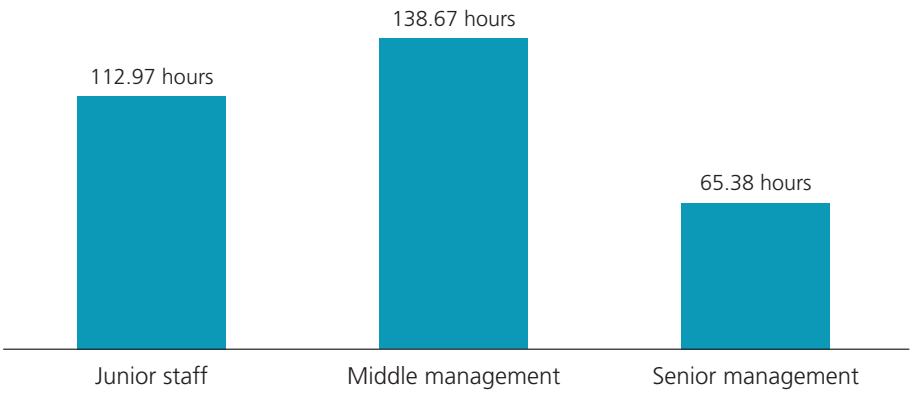
Case: TWI (Training Within Industry) on-site manager management skill improvement training

The first phase of "TWI Team Leader Management Skill Improvement Training Camp" of GCL Technology University was launched in Suzhou GCL. 25 participants were newly promoted team leaders of Suzhou GCL, Jurong GCL and Funing GCL, being subsidiaries under the ingot wafer business of GCL Technology. The TWI (Training Within Industry) on-site manager management skill improvement training programme originated in the United States and has been developed in Japan. It is a set of standard training programmes designed for junior managers and aims to cultivate and improve the comprehensive management ability of on-site managers.

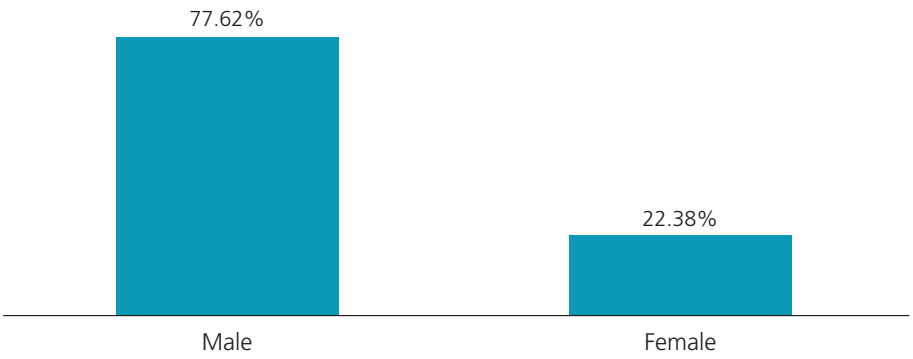
During the Reporting Period, a total of 12,873 employees of GCL Technology participated in the training, with an average training time of 95.37 hours. We strive to arrange more training time for employees in the future so as to facilitate their self-improvement. The details of the employee training are set out below:



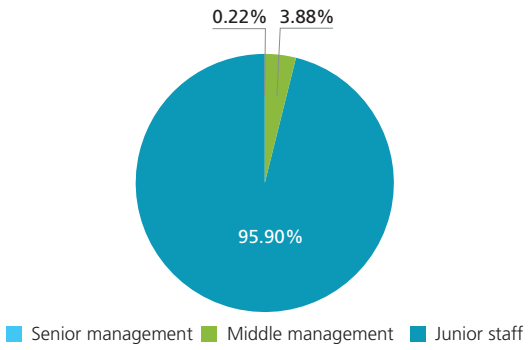
Average training hours of employees by gender (hours)



Average training hours per employee by position



Proportion of employees trained by gender



Proportion of employees trained by position

Career Development

As a leading enterprise in the industry, GCL Technology devotes all its efforts to the career development of talents. It not only emphasizes the construction of career paths for employees, but also strives to create diverse career development opportunities for various outstanding employees.

Adhering to the goal of fairness and justice, encouraging diversification of talents, and focusing on the career development planning of employees, we have created a clear and smooth career promotion path for employees, and established a systematic hierarchical structure of human resources, to further facilitate the development of employees while regulating our employment system.

We have opened up promotion channels in different functions including management, professionalism, technology, R&D and operation, and continuously increased the ranking of non-managerial posts. While maintaining consistency and continuity, we have clarified the development paths of non-management personnel to attract and retain technical talents, promote the internal horizontal flow of employees and help employees identify their own career development direction. We have also diversified career development paths for employees to help them realize career development. In addition, GCL Technology provides all employees with career counselling and consultation as well as vocational training resources, and ensures that all employees have the right to apply for job relocation and creates an equal competitive environment and career development opportunities for employees.

Deputy General Manager → General Manager → Assistant Vice President → Vice President → Senior Vice President → Chief Executive Officer

Managerial positions of holding company

Assistant officer → Officer → Supervisor → Manager → Senior manager → Director → Senior director → Executive director → Vice Chief XX Officer → Chief XX Officer

Professional positions of holding company

Assistant to department manager → Deputy department manager → Department manager (Production director) → Director → Deputy general manager (Chief Financial Officer) → General Manager

Managerial positions of subsidiary

Junior officer → Intermediate officer → Senior officer → Supervisor → Manager → Senior manager → Executive manager → Vice Chief XX Officer → Chief XX Officer

Professional positions of subsidiary

Technician → Assistant engineer → Engineer → Senior engineer → Project leader engineer → Chief engineer

Technical positions of subsidiary

Assistant to researcher → Deputy researcher → Researcher → Senior researcher → Scientist → Chief scientist

R&D positions of subsidiary

Operator → Intermediate operator → Senior operator → Assistant technician → Technician → Senior technician → Executive technician

Operation positions of subsidiary

Career Promotion Path of GCL Technology

In response to the diverse career development demands of employees, we actively facilitate employees' customized career development plans. Our employee flow plan supports outstanding employees to transfer their posts flexibly within GCL Technology including various offices and operation sites in Suzhou, Xuzhou, Hong Kong and other places. We fully support employees to explore positions and promotion channels that best match their own development needs.

In daily operation, GCL Technology arranges career partners and career mentors for employees to help them move forward steadily on their career development path. During the early stage, each of GCL Technology's new employee will be assigned a career partner. Under the guidance of their designated career partners, new employees will further familiarize themselves with the Company's daily environment and work details, and deeply understand their own career development opportunities. During the growth stage, GCL Technology's employee will be matched with an experienced career mentor who is generally such employee's immediate team leader or senior. Career mentors serve as a bridge for building a smooth channel of barrier-free workplace communication and real-time career development consultation among business leaders, business teams and employees, to ensure employees' career development needs and difficulties can be timely responded, handled and assisted.

Safety and Health

In accordance with the EHS principles of "safe development with a people-oriented approach; safety as a priority concern and the emphasis on preventive actions; comprehensive governance and full coverage; delicacy management and ongoing improvement; and proactive and advanced actions for efficient outcomes", GCL Technology always puts primacy on EHS, and strives to create a safe working environment for employees through strengthening the fundamental management of EHS by promoting the standardization of production safety and the "dual prevention" mechanism and conducting risk prevention drills and construction.

Production Safety Management System

In strict compliance with the *Production Safety Law of the People's Republic of China* and other laws and regulations of places where it operates, and based on its own situation, GCL Technology has formulated the *Safety Production Assessment Management Standards*, *Management Measures for EHS Inspection and Hidden Danger*, *Administrative Rules of EHS Education*, *the Regulation on EHS of Projects* and other rules and policies. A safety production committee, three-tier EHS management network and safety production management department have been established at the company level and full-time and part-time security officers have been engaged at all secondary units, forming a comprehensive safety monitoring and protection system covering all levels.

Training and Drills in Safe Production

Our safety philosophy is "Safety and effectiveness are fundamental and environment is priority" and efforts have been put in improving EHS by enhancing safety awareness and operational safety of employees. GCL Technology focuses on endeavouring safety training and education for all employees. We have developed a EHS education and training system and annual training plans, and organized various safety training programs on a regular basis. All new employees are specifically required to receive a three-tier (corporate, functional/workshop and job position) education on EHS, and pass the relevant assessment prior to officially reporting to duty. In addition, we proactively organized promotion activities such as the *Occupational Disease Prevention Law of the People's Republic of China* Promotion Week, "Safe Production month" and "Fire safety month" to enhance employees' awareness of safety and ensure that employees "go to work happily and go home safely".

Organized *Occupational Disease Prevention* Promotion Week, 6.5 Environmental Protection Day, Safety Production Month, Fire Safety Month and other activities

On 4 February 2021, at the 2021 annual business conference held by GCL Technology, EHS lecturers and safety consultants were invited to participate in a seminar on safety production risk system management and control to executives of all segments, main person in charge of the Company, heads of all business units and other leaders and safety management personnel

In July 2021, a training on new laws on security was provided to middle and senior management of the Company and an assessment was also conducted.

In July 2021, EHS officers of the management center provided on-site training on safety production law to middle and senior management of Leshan GCL and Inner Mongolia Xinyuan

In November 2021, EHS officers of the management center provided on-site training on the main responsibility of safety production to middle and senior management of Funing GCL, Henan GCL and EHS personnel

At the monthly economic analysis conference, knowledge on ESH laws and regulations and relevant cases were shared to the management of all segments, the head of functional departments, main person in charge of the Company and relevant management personnel

Case: EHS management course of GCL Technology

GCL Technology University invited Mr. Yang Xiaofang, the senior business manager of the strategic operation center of GCL Technology, to develop and teach "GCL Technology EHS Management" course. The course focused on EHS management system, EHS education and training, EHS knowledges and laws and regulations on safety production. Leveraging on his extensive EHS management experience, Mr. Yang shared a number of cases and was highly praised by students.

At present, the *GCL Technology EHS Management* course has been incorporated into the teaching programs for the recruitment training camp of "GCL Star (鑫之星)" of GCL Technology University and the recruitment training program of "New Stars of GCL (新鑫相融)" management center. In addition, a one-day safety and environmental protection theory training is specially organized for students of "GCL Star", as the first level of the three-level safety education for employees.

In addition, we proactively identify potential safety hazards. By formulating comprehensive contingency plans, special contingency plans, on-site contingency plans and drill plans, conducting emergency drills regularly, preparing risk assessment reports and emergency contingency investigation reports, forming contingency teams to conduct professional contingency training and practices, enhancing the training and drills for employees on emergency plans to improve their emergency response capabilities, we remind employees about the emergency reporting process and rescue operation to respond correctly to any danger in a critical moment. We also proactively carry out inspection on hidden dangers and organize all units (including construction projects) to conduct major and special EHS inspections and random inspections before festivals and on a quarterly basis. Based on the deficiencies of subsidiaries detected, we have formulated a list of hidden dangers and urge them to implement rectification plans and conduct closed-loop management.

GCL Technology actively advocates safety production. During the Reporting Period, we organized emergency training and emergency drills in strict accordance with the annual emergency drill plan. In the year, the Company conducted 897 emergency drills at the corporate level with a total of 22,204 participants. During the Reporting Period, the Company had 28 cases of work-related injury, and lost 1,434 days due to work injury. As at 31 December 2021, GCL Technology had no fatal incidents for the past three years.

Case: Hazardous chemical disaster emergency drill of Jiangsu Zhongneng

On 1 April 2021, Jiangsu Zhongneng organized an emergency drill for the leakage of hazardous chemicals from major hazard sources in the 913 plant. The Emergency Management, Fire Safety, Occupational Health, Environmental Protection and other departments of Xuzhou also joined the drill and the total number of participants was approximately 500. The drill effectively tested the contingency planning of Jiangsu Zhongneng and the coordination among various departments of the city and assessed its capability for comprehensive coordination, emergency rescue and dealing with emergencies.

Case: Fire emergency drills of Inner Mongolia Xinyuan

Since its construction preparation in June 2021, Inner Mongolia Xinyuan has been under construction. Based on possible safety risk factors during the construction period, two fire emergency drills have been organized with each construction unit and examined the emergency teams of each construction unit. The construction units have further familiarized with rescue knowledge and emergency material reserve for possible fire incidents. Such drills assessed the deficiencies in the contingency plan, so as to make further improvement. Through organizing emergency drills and with the full cooperation of all parties, expected results have been achieved.

Occupational Health of Staff

GCL Technology is committed to providing a safe and healthy working environment to employees. We strictly abide by *Law of the People's Republic of China on the Prevention and Control of Occupational Diseases*, *Regulations on the Prevention and Control of Pneumoconiosis of the People's Republic of China*, *Regulations on Labor Protection in Workplaces Where Toxic Substances Are Used*, *Measures for the Supervision and Administration of Occupational Health Surveillance at Entities Hiring Employees* and other laws, regulations and regulatory standards of the place where the Company operates, and formulated internal policies and systems including *Management System of Articles (Appliances) for Labor Protection*, *Regulations on Management of Work Subject to High Temperature and Heatstroke Prevention and Cooling*, *Regulations on Occupational Health Management of Radioactive Sources, Occupational Disease Prevention and Control Plans and Implementation Program*, *Responsibility System for Occupational Disease Prevention and Control*, *Occupational Disease Hazard Warning and Notification System*. The Company established a sound accountability management system for occupational disease prevention and control to spare no effort in ensuring the right of occupational health of the employees is not infringed.

We proactively take our occupational health responsibility and comply to national daily regulatory requirements, including risk alert and notice, employee individual protection, onsite regulatory sampling, employee health check and additional commercial insurance, to achieve a closed loop occupational health management. GCL Technology also actively promote occupational disease prevention. Through inviting professionals in occupational disease prevention to hold special seminars, promotional week for occupational diseases and other activities, we enhance employees' awareness and abilities on labor protection to safeguard their occupational health. GCL Technology corporates with professional medical authorities to provide regular body check for employees. Employees can understand their physical condition timely to avoid potential health issues. Health consultation and training seminars are also provided for employees to answer their questions regarding health issues and to promote healthy lifestyles.

During the Reporting Period, we completed occupational disease check and coordinated procedures and all management system of the Company comprehensively. We guarantee our employees with a safe working environment according to laws and analyzed our existing harmful factors causing occupational disease and its impact on the health of labors. We conducted on duty occupation health check on employees whose workplace and position involved harmful factors causing occupational disease and provided fully-equipped labor protection tools to prevent and decrease occupational disease effectively. During the Reporting Period, GCL Technology adhered to the foundation of "three standards management system" and 11 of our subsidiaries in total successfully passed the ISO 45001 occupational health and safety management system examination. Number of GCL Technology staff with occupational disease was zero.

Heartfelt Care

GCL Technology strives to create a good future for its staff by implementing the "GCL Home" vision to our culture. Through establishing a smooth staff communication mechanism, we organized various staff activities to show our care to employees and incentivize their passion and motivation in work and promote a loving and caring working environment.

Communication with Staff

GCL Technology attaches great importance to employee's right of expressing demands. We established all-round staff communication channels for employees to voice out in time and let the senior management of the Company to understand their demands. Through answering questions in regular employee seminars and employee representative exchange meetings and settings time limits in tackling relevant problems, the distance between the management of the Company and them have been narrowed. The effective communication between our staff and the management has strengthened. Care and concern have been expressed by the Company to various employees. Employees can also express their opinions through standard channels including suggestion box, telephone, mail and official account. GCL Technology promises that employees' grievance, complaints and reports will be kept strictly confidential, and will continue to improve our care for employees based on their suggestions and strive to maintain a high level of employee satisfaction. During the Reporting Period, we continued to collect the appeals and opinions of employees, and maintained positive satisfaction level of employees with the Company.

Staff communication mechanism of GCL Technology

Staff Activities

GCL Technology emphasizes on work/life balance of its staff and greatly concerns the physical and mental health of its staff to create a positive atmosphere. We encourage active participation in various staff activities to achieve work/life balance. During the Reporting Period, we organized various staff activities, including corporate culture, birthday parties, choir, fun sports day, gourmet festival and earth day, to strengthen cohesion and facilitate work/life balance of employees while incentivize their passion in work, so as to enhance their happiness.

Case in picture

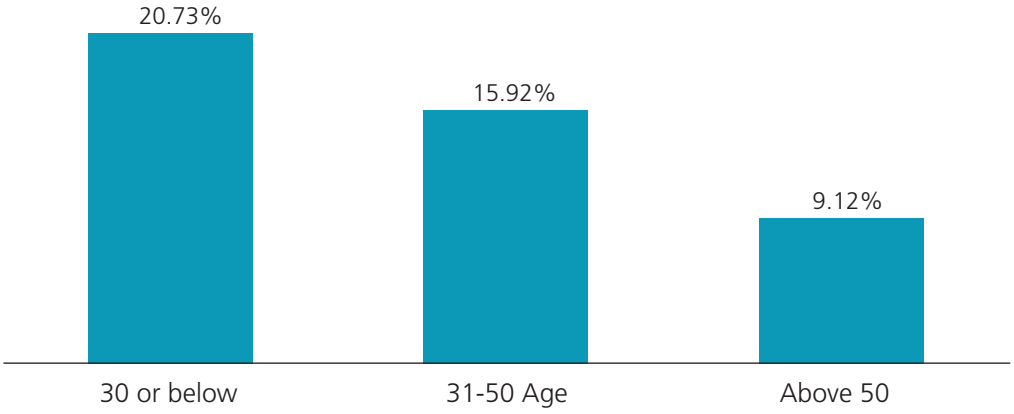
Picture: GCL Technology Rope skipping competition

Picture: Xuzhou Photocoltaic basketball competition

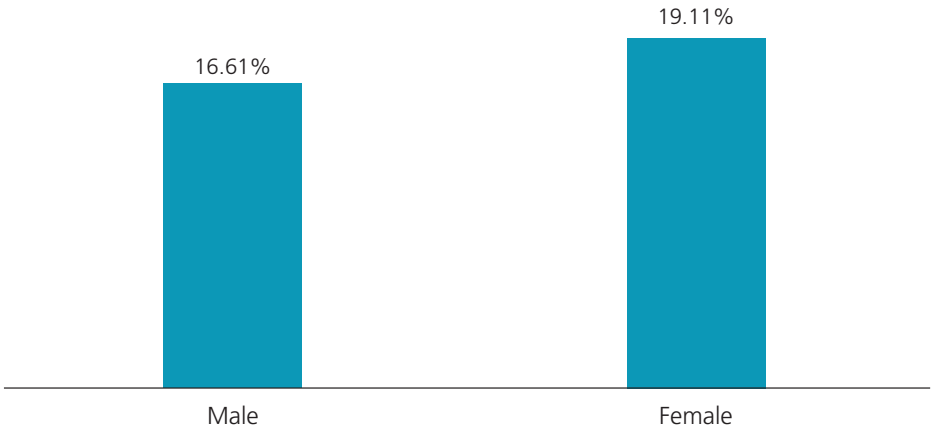
Picture: GCL Technology children's day parent-child activity

Picture: Jurong GCL fun sports day

During the Reporting Period, as talents are highly marketized in the clean energy industry, GCL Technology adheres to the vision of diversified employment and count on talent and provide competitive remuneration package and clear promotion channel with proactive employee incentive plan, so as to facilitate the career development of employees and sound operation of the Company. In addition, we conduct resignation interview with staff who left GCL to understand their reasons of resignation and further review and optimise our talent policies and human resources arrangement. During the Reporting Period, GCL Technology did not experience any material redundancy, our employee turnover rate was only 17.17%, being the lowest of the Group in the past three years. Details of the turnover of our employees is as follows:



Turnover rate of employees by age



Turnover rate of employees by gender

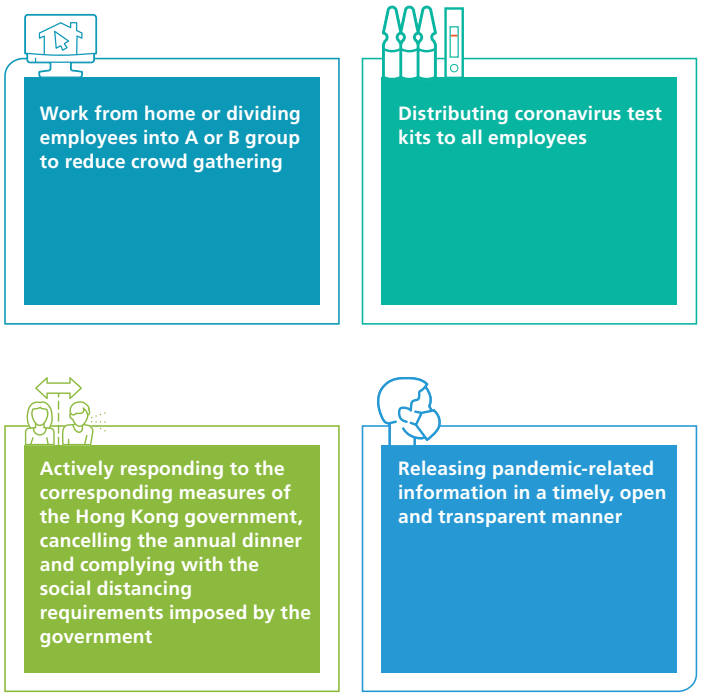
Supporting Prevention and Control of the Pandemic

The Company has always been committed to realizing the mutual coordination between the development of itself and the society, actively fulfilling its corporate social responsibility and contributing the society while providing customers with more professional and quality products and services. Since the outbreak of the epidemic, the Company has always paid attention to the construction of the epidemic prevention and control system of each branch and subsidiary, and actively responded to national policies by organizing its employees to conduct nucleic acid testing and encouraging celebration of Chinese New Year without returning to hometowns, so as to build a health environment together.

Pandemic prevention and control measures of GCL Technology

During the Reporting Period, certain operation of GCL Technology were still affected by sporadic COVID-19 outbreaks. We actively responded to the national policies of public health emergencies. We established pandemic prevention and control leading and working teams, and required local branches to issue measures for pandemic prevention and control according to local conditions. Anti-pandemic materials were distributed to employees and stringent sanitization was carried out at all production sites and offices. All personnel were required to present their health code and check temperature, so to ensure that the health and safety of employees were not affected and the production and operation activities were carried out in an orderly manner.

During the Reporting Period, GCL Technology also actively faced the fifth round of the COVID-19 outbreak in Hong Kong at the end of 2021. The human resources department of the Company had foresighted and formulated strategic measures in advance to actively respond to minimize the adverse impact of the pandemic on the health and safety of its employees and production activities.



Pandemic prevention measures of Hong Kong office of GCL Technology

Case: Emergency drill for nucleic acid testing in Suzhou GCL East Plant

Suzhou GCL always regards social responsibility and employees' health as the top priority of its work, and effectively strengthens the pandemic prevention and control and emergency response capabilities to ensure the life safety and health of its employees.

In order to further improve the rapid response mechanism for pandemic prevention and control, implement the concept of occupational health development, improve employees' awareness of occupational health, and strengthen their knowledge of hazards and prevention of COVID-19 pandemic, Suzhou High-tech Zone organized and carried out a gridded nucleic acid testing emergency drill (stress test) for all staff in the Science and Technology Town on 3 August 2021. Suzhou GCL East Plant was responsible for organizing approximately 200 companies in the 11th Grid to participate in the drill. The safety and environmental protection department and the personnel administration department of the Company appointed five volunteers to participate in the activity, and were responsible for maintaining the order and assisting the information registration of safety leaders and pandemic prevention personnel.

There were 365 participants in the emergency drill at the collection point of Suzhou GCL East Plant. More than 10 employees of the Company took the initiative to participate in the nucleic acid testing. Upon the completion of the drill, the disinfection personnel sterilized the sampling point and assisted in the disposal of waste.

With the active cooperation of the participants and the careful guidance of the staff, the emergency drill was carried out smoothly. It has effectively improved the emergency response capabilities of the Company, improved the pandemic prevention and control system in the region, and provided efficient and comprehensive guarantees for pandemic prevention and control and emergencies.

Case: Encouraging employees by Ningxia GCL to celebrate Chinese New Year without returning to hometowns

The Chinese New Year holidays are a critical period to prevent and control the rebound of the pandemic. Employees face major potential dangers of infection when returning to and going back from their hometowns. In order to reduce the pressure of social pandemic prevention, Ningxia GCL actively respond to the national policy to encourage the celebration of Chinese New Year without returning to hometowns, and implemented related subsidy measures, such as "Chinese New Year and Post-holiday Subsidy" which encourages its employees from other provinces not to return to their hometowns unless necessary.

In order to ensure the daily life and sense of belonging of the festival, the Company provided free dormitory and triple salary for its employees who stay in the factory, and reimbursed round-trip train tickets, air tickets and accommodation expenses for family members of such employees to come to Zhongwei during the Chinese New Year holidays. Function rooms, gymnasium and staff library were made available to its employees and various activities were organized to enrich the cultural and entertainment life of its employees in their leisure time.

The Company also provided subsidies and rewards for its employees who stuck to their posts. From 11 to 13 February, the Company offered a cash bonus and subsidies on holidays and festivals to those who completed shifts for one day or more.

CONTRIBUTING TO SOCIETY

GCL Technology has always been committed to closely linking the promotion of corporate development with social responsibility. While safeguarding its own economic benefits, GCL Technology has strived to fulfill its mission and responsibilities as a corporate citizen. *White Paper on Corporate Citizenship of GCL Technology*, *Guidelines for Corporate Citizenship Construction of GCL Technology* and other relevant policies have been formulated and implemented in order to fully integrate its industrial advantages with public welfare. In addition to improving its economic benefits, GCL Technology is committed to public welfare by conveying great love, actively responding to social needs, driving local economic development with its own growth and helping local people get employment with practical actions. By focusing on public welfare and community construction, it shares its operating results with the society, continuously outputs social value comprehensively in multiple dimensions, realizes the coordinated and healthy development of the Company and the society, and makes outstanding contributions to the stability and prosperity of the society.

The growth and expansion of GCL Technology is inseparable from the strong support of the times and society. As the creator, bearer and beneficiary of social value, GCL Technology has never forgotten its original intention and rooted in social public welfare undertakings. It has continuously improved people's well-being, taken its social responsibility, and given back to the society with a grateful heart. Through organizing employees to learn from Lei Feng's volunteer service, and other activities such as "GCL One Day Donation", "Pairing Up Villages and Enterprises to Build a New Countryside" and planting trees for environmental protection, GCL Technology joins hands with its employees and all sectors of society to practice social responsibilities and promote the sustainable development of public welfare undertakings.

Community building

The Company has always paid attention to the coordinated development of community construction and social enterprises. During the Reporting Period, we organized 217 volunteer service activities to encourage our employees to contribute their talents and learning to society. Employees have been encouraged to deepen understanding of dedication and improve social service awareness, with an aim to become practitioners of socialist ethics and leaders of good social customs, and realize the unity of personal value and social value.

Case: Learning the spirit of Lei Feng and delivering the philosophy of GCL

On 5 March 2021, the 22nd Youth Volunteer Service Day, Jiangsu Zhongneng and the Dahuangshan Youth League Committee organized a volunteer activity of "Learning the spirit of Lei Feng and delivering the philosophy of GCL" in Dahuangshan Experimental Primary School. Youth volunteers delivered stationery boxes, notebooks, pencils, watercolor pens, plasticine and Lei Feng bags to the student representatives of the school, and specially sent rice, milk and other living materials to two children with financial difficulties.

The Company inspired students to live up to their original aspirations and brave the future with warm and kind deeds, supported the government's great vision of revitalizing rural education with practical actions, and promoted the coordinated development of grassroots cultural construction and regional education. Through volunteer activities, while enriching employees' spare time, employees' sense of social responsibility and participation were enhanced, and employees were encouraged to join hands with the Company to fulfill social responsibilities and create comprehensive value.

In addition to creating economic value, the Company always pays attention to the green development. Its subsidiaries have carried out several environmental protection activities such as "Planting Trees to Build Forests", encouraging participants from all sectors to devote themselves to the environmental protection and jointly create a sustainable green community. It has promoted a new ecosystem of green and recycled development with low-carbon consumption, and shouldered the historical mission of building an environment-friendly society.

Case: Practicing ecological governance and creating beautiful mountains and rivers

- On 12 March 2021, Jiangsu Zhongneng organized young volunteers and youth civilization to carry out a tree planting activity, "Planting Trees to Build Forests". Volunteers from the frontline production teams and members of the youth civilization actively joined the planting team to contribute to the construction of the green factory area;

- On 4 June 2021, on the occasion of the 50th World Environment Day, Jiangsu Zhongneng organized more than 40 employees to carry out a World Environment Day activity, "Harmonious Coexistence of Human and Nature", in Jinlong Lake Park. In the activity, knowledge related to Environment Day was shared, and games were organized, such as "Invincible Hot Wheels" and "Environmental Protection Battle", so that its employees can have a deeper understanding and attention to the concept of environmental protection in a relax atmosphere;

- On 29 March 2021, Ningxia GCL organized more than 20 employees to hold a voluntary tree planting activity to optimize the landscape of the factory area and promote the environmental protection;

Case: Practicing ecological governance and creating beautiful mountains and rivers

- On 22 April 2021, Ningxia GCL, Zhongwei Volunteer Federation and other units jointly carried out an ecological protection activity in Yellow River Basin in Zhongwei City. On the 52nd International Earth Day, more than 80 volunteers from various units in Zhongwei patrolled, banned fishing and cleaned the river bank in Yellow River Basin in Zhongwei City.

- On 4 June 2021, Ningxia GCL organized a garbage cleaning-up activity in the areas around its production plant according to local conditions, so that everyone can firmly establish the concept of "harmonious coexistence with nature" and participate in the environmental protection.

Assistance provided by charity

2021 was a victory year for China to win the battle against poverty in an all-round way. Adhering to the concept of "Benefiting the World", GCL Technology has actively responded to the national call for targeted poverty alleviation, and actively participated in the activity of "Ten Thousand Enterprises Helping Ten Thousand Villages". Based on the actual local situation, its subsidiaries cooperated with the local governments to carry out an activity of "Pairing Up Villages and Enterprises to Build a New Countryside", so as to consolidate the achievements of the national poverty alleviation and demonstrate the great love from all sectors.

In addition, GNE (451.HK), a subsidiary of GCL Technology, has built a poverty alleviation solar power station which enabled the implementation of new initiatives for poverty alleviation and further reflected the positive image of the Company in serving and contributing to society. As such, the social value of GCL Technology was fully enhanced.

Case: Pairing Up Villages and Enterprises to Build a New Countryside

- On 23 June 2021, Leshan GCL and Hongjun Village, Zhugen Town, Wutongqiao District, Leshan City formed a paired poverty alleviation group, and held a contract-signing ceremony for the poverty alleviation activity of "Pairing Up Villages and Enterprises to Build a New Countryside". After many on-site investigations and preparations, combined with the local needs, Zhang Xiang, the chairman and commander-in-chief of Leshan GCL signed the "Village-Enterprise Pairing Agreement" with the Secretary of the Party Committee of Hongjun Village, and assigned Wang Yongliang, the general manager, as the executive deputy commander to visit two poor households in the village in the afternoon of the same date and delivered rice, edible oil and other supplies;

- Henan GCL carried out a campaign of "Three Connections, Three Guarantees and Three Promotions" to help the national rural revitalization strategy, and regarded Wangzhuang, Luohe City, Henan Province as a poverty alleviation target. It implemented an employment assistance project for job-seekers aged 40 to 50, which effectively mitigated the unemployment pressure in the region. It also regularly visited orphans and widows to provide any assistance within their capacities.

Donations

It is the responsibility and obligation of the Company to help the development of public welfare. It is the mission and responsibility of the Company to undertake social responsibility, create social value and carry out charity activities. GCL Technology has continued to make efforts in public welfare and charity by establishing GCL Sunshine Charity Fund and organizing "GCL One Day Donation" campaign, which consolidated forces from all sectors to work together for public welfare.

During the Reporting Period, in response to the call of the Red Cross Society in Changji, GCL Technology organized a campaign of "One Day Donation" with a total donation of more than RMB20,000. Henan Natural Disaster Company organized its employees to donate more than RMB100,000, and donated stationery worth more than RMB30,000 to poverty-stricken primary schools in Qitai County.

Case: Donations

- In July 2021, the sudden and continuous rainstorm caused floods in many regions in Henan, seriously affecting the daily life of the people. Funing GCL had always paid attention to the disaster information, and immediately participated in the donation project of "Suzhou Industrial Park to Help Henan" to provide assistances to Zhengzhou. During the event, its employees raised a total of RMB3,163.26;

- On 6 August 2021, Jin Shanming, the chairman of the labor union of Suzhou GCL, and Zhang Feng, the deputy secretary of the general party branch, donated and delivered drinks worth of RMB5,000 to public security officers, urban enforcement officers and traffic policemen on the front lines in the police station in Science and Technology City of the New High-tech Zone, the City Management Administrative Law Enforcement Brigade and the Traffic Police Squadron in Science and Technology City during the hot summer;

- On 6 September 2021, the "GCL One Day Donation" activity of Jiangsu Zhongneng was successfully carried out in the administrative hall. A total of more than 30 management personnel and employees gave their love in the form of cash or mobile phone transfers in the event. In the event, a total of RMB151,949.66 of donations was received, which was remitted to Jiangsu GCL Sunshine Charity Fund in the name of the Company. In addition, Funing GCL also carried out a charity campaign and raised a total of RMB6,620, demonstrating the traditional virtue of the Chinese nation to help the poor and the needy.

SEHK "ESG Reporting Guide" Content Index

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

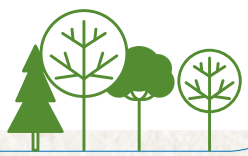
	ESG Aspects, General Disclosures and KPIs	Chapters
Aspect A2	**Use of Resources**	
General Disclosure	Policies on the efficient use of resources, including energy, water and other raw materials. Note: Resources may be used in production, in storage, transportation, in buildings, electronic equipment,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

ESG Aspects, General Disclosures and KPIs		Chapters
	Social	
Aspect B1	**Employment**	
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.	Humanities GCL — Diversified Employment
KPI B1.1	Total workforce by gender, employment type (for example, full- or part-time), age group and geographical region.	Humanities GCL — Diversified Employment
KPI B1.2	Employee turnover rate by gender, age group and geographical region.	Humanities GCL — Heartfelt Care
Aspect B2	**Health and Safety**	
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards.	Humanities GCL — Safety and Health
KPI B2.1	Number and rate of work-related fatalities occurred in each of the past three years including the reporting year.	Humanities GCL — Safety and Health
KPI B2.2	Lost days due to work injury.	Humanities GCL — Safety and Health
KPI B2.3	Description of occupational health and safety measures adopted, and how they are implemented and monitored.	Humanities GCL — Safety and Health

	ESG Aspects, General Disclosures and KPIs	Chapters
Aspect B3	**Development and Training**	
General Disclosure	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities. Note: Training refers to vocational training. It may include internal and external courses paid by the employer.	Humanities GCL — Growing Together
KPI B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	Humanities GCL — Growing Together
KPI B3.2	The average training hours completed per employee by gender and employee category.	Humanities GCL — Growing Together
Aspect B4	**Labour Standards**	
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour.	Humanities GCL — Diversified Employment
KPI B4.1	Description of measures to review employment practices to avoid child and forced labour.	Humanities GCL — Diversified Employment
KPI B4.2	Description of steps taken to eliminate such practices when discovered.	Humanities GCL — Diversified Employment

	ESG Aspects, General Disclosures and KPIs	Chapters
Aspect B5	**Supply Chain Management**	
General Disclosure	Policies on managing environmental and social risks of the supply chain.	Risk Management — Responsible Supply
KPI B5.1	Number of suppliers by geographical region.	Risk Management — Responsible Supply
KPI B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, and how they are implemented and monitored.	Risk Management — Responsible Supply
KPI B5.3	Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored.	Risk Management — Responsible Supply
KPI B5.4	Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	Risk Management — Responsible Supply

	ESG Aspects, General Disclosures and KPIs	Chapters
Aspect B6	**Product Responsibility**	
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	Risk Management — Quality Assurance
KPI B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	Risk Management — Quality Assurance
KPI B6.2	Number of products and service related complaints received and how they are dealt with.	Risk Management — Quality Assurance
KPI B6.3	Description of practices relating to observing and protecting intellectual property rights.	Risk Management — Quality Assurance
KPI B6.4	Description of quality assurance process and recall procedures.	Risk Management — Quality Assurance
KPI B6.5	Description of consumer data protection and privacy policies, and how they are implemented and monitored.	Risk Management — Quality Assurance



	ESG Aspects, General Disclosures and KPIs	Chapters
Aspect B7	**Anti-corruption**	
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.	Risk Management — Business Ethics and Anti-corruption
KPI B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.	Risk Management — Business Ethics and Anti-corruption
KPI B7.2	Description of preventive measures and whistle-blowing procedures, and how they are implemented and monitored.	Risk Management — Business Ethics and Anti-corruption
KPI B7.3	Description of anti-corruption training provided to directors and staff.	Risk Management — Business Ethics and Anti-corruption
Aspect B8	**Community Investment**	
General Disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests.	Humanities GCL — Contributions to Society
KPI B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	Humanities GCL — Contributions to Society
KPI B8.2	Resources contributed (e.g. money or time) to the focus area.	Humanities GCL — Contributions to Society

List of Laws, Regulations and Internal Policies

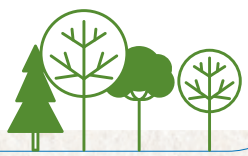
Major Applicable Laws and Regulations:

Company Law of the People's Republic of China
Criminal Law of the People's Republic of China
Anti-Money Laundering Law of the People's Republic of China
Product Quality Law of the People's Republic of China
Standardization Law of the People's Republic of China
Implementing Rules for the Manufacturing License for Industrial Products of the People's Republic of China
Cybersecurity 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
Copyright Law of the People's Republic of China
Implementation Rules of Patent Law of the People' Republic of China
Anti-Unfair Competition Law of the People's Republic of China
Enterprise Intellectual Property Management Standards
Patent Law of the United States
Anti-Monopoly Law of the United States
Anti-Unfair Competition Law of the United States
Trademark Law of the United States
Copyright Law of the United States
Environmental Protection Law of the People's Republic of China
Law of the People's Republic of China on Environmental Impact Assessment
Water Law of the People's Republic of China
Water Resources Protection Law of the People's Republic of China
Water Pollution Prevention and Control Law of the People's Republic of China
Law of the People's Republic of China on Prevention and Control of Environmental Pollution by Solid Waste
Civil Code of the People's Republic of China
Air Pollution Prevention and Control Law of the People's Republic of China
Integrated Emission Standards of Air Pollutants
Emission Standard of Air Pollutants for Boiler
Energy Conservation Law of the People' Republic of China
Electric Power Law of the People's Republic of China
Law of the People's Republic of China on Promoting Clean Production

Renewable Energy Law of the People's Republic of China
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 the Protection of Rights and Interests of Women
Regulations on the Prohibition of Child Labour
Social Insurance Law of the People's Republic of China
Trade Union Law of the People's Republic of China
Production Safety Law of the People's Republic of China
Law of the People's Republic of China on the Prevention and Control of Occupational Diseases
Regulations on the Prevention and Control of Pneumoconiosis of the People's Republic of China
Regulations on Labor Protection in Workplaces Where Toxic Substances Are Used
Measures for the Supervision and Administration of Occupational Health Surveillance at Entities Hiring Employees

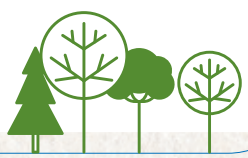
Major Applicable Internal Policies of the Company:

Board Diversity Policy
Principles and Systems of Internal Control and Management
Internal Audit Work System and Normative Guidelines
Comprehensive Risk Management Guidelines
Anti-Fraud and Whistle-blowing Management Standards
Internal News Publicity Management Standards
Press Release and External News Publicity Management Measures
Standards for the Management of Press Spokespersons
Anti-Corruption Regulations
Industrial Information System Security Manual
Information System Security and Media Confidentiality Management Standards
Information Security of GCL Technology
Corporate Standards System
Standard Development Rules
Silane Gas Standards
Solar Grade Polysilicon
FBR-based Granular Silicon
Specifications for Photovoltaic Crystal Silicon Wafers
Science and Technology Work Management Standards
Scientific Research Projects Management Standards
Technological Upgrade Management Standards
Incentive Measures and Reward Standards for Scientific and Technological Achievements
Technological Achievements Incentive Management Measures
Intellectual Property Management Standards
Trademark Management Standards
Patent Management Measures
Trade Secret Management Measures
Intellectual Property Incentive and Accountability Management Measures
Environmental Protection Regulation
EHS Inspection and Hidden Hazard Control Regulations
EHS Accident Management Regulation
Administrative Rules of EHS Education
Regulation on EHS of Projects



Provision of Emergency Management
Contingency Plan for Environmental Pollution Incident
Contingency Plan for Radiological Incident
Management Regulations for Three Wastes
6S Management Standard for Office Areas
Control Procedures of Wastewater Discharge
Control Procedures of Wastewater Discharge in the Plant
Regulations on Energy and Water Conservation
Comprehensive Wastewater Discharge Standard
Management and Control Procedures for Waste and Hazardous Waste
Procedures for Controlling Production Exhaust Emissions
Manual of Energy Regulation
Recruitment Management Standards
Internal Recommendation Management Standards
Salary Management Standards
Benefits Management Standards
Chinese New Year and Post-holiday Subsidy
Employee Reward and Punishment Management Standards
Employee Attendance and Vacation Management Standards
Performance Assessment Management Standards for Functional Personnel
Training Management Standards
Responsibility System for Safety, Occupational Health and Environment Management
Safety Production Assessment Management Standards
Management System of Articles (Appliances) for Labor Protection
Regulations on Management of Work Subject to High Temperature and Heatstroke Prevention and Cooling
Regulations on Occupational Health Management of Radioactive Sources
Occupational Disease Prevention and Control Plan and Implementation Program
Responsibility System for Occupational Disease Prevention and Control
Occupational Disease Hazard Warning and Notification System
Occupational Disease Prevention and Control Publicity Education and Training System
Implementing Maintenance and Repair System for Protection Against Occupational Hazards
Management System for the Monitoring and Evaluation of Workplace Occupational Hazards
Supplier Management System
Procurement Management System

Supplier Management Measures
Procurement Management Measures
Supply Chain Management System
Warehouse Management
Logistics Management
Materials Coding Management Standards
White Paper on Corporate Citizenship of GCL-Poly
Guidelines for Corporate Citizenship Construction of GCL-Poly



Names of Companies Used in the Report

Full name	Abbreviation
Golden Concord Holdings Limited	Golden Concord
GCL Technology Holdings Limited	GCL Technology
GCL New Energy Holdings Limited	GNE
GCL Technology (Suzhou) Energy Limited	GCL-Tech (Suzhou)
Jiangsu Zhongneng Polysilicon Technology Development Co., Ltd.	Jiangsu Zhongneng
Inner Mongolia Xin Yuan Silicon Material Technology Co., Ltd	Inner Mongolia Xinyuan
Leshan GCL New Energy Technology Co., Ltd	Leshan GCL
Suzhou GCL Photovoltaic Technology Co., Ltd	Suzhou GCL
Henan GCL Photovoltaic Technology Co., Ltd.	Henan GCL
Jurong GCL Photovoltaic Technology Co., Ltd	Jurong GCL
Jiangsu GCL Silicon Material Technology Development Co., Ltd	Xuzhou Photovoltaic
Konca Solar Cell Co., Ltd	Wuxi Konca
Funing GCL Photovoltaic Technology Co., Ltd.	Funing GCL
Ningxia GCL Monocrystalline Silicon Technology Development Co., Ltd	Ningxia GCL
Yangzhou GCL Photovoltaic Technology Company Limited	Yangzhou GCL
Xuzhou GCL Solar Energy Co., Ltd	Xuzhou GCL
GCL High Tech Nano Materials (Xuzhou) Co., Ltd.	Xuzhou High Tech