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2023

Sustainability Report

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About the Report

This is the 2023 Sustainability Report of Goldwind Science & Technology Co., Ltd., disclosing relevant information about the Company's fulfillment of its Environmental, Social and Governance (ESG) performance in 2023.



Reporting Scope

This report is mainly about Goldwind Science & Technology Co., Ltd. (hereinafter referred to as "Goldwind", "the Company", "We", or "the Group"), covering Goldwind and its subsidiaries. Apart from certain organizations with particular descriptions, the scope is consistent with the annual report issued by the Company.



Reporting Frequency

This report is an annual report covering the period from January 1, 2023 to December 31, 2023. To ensure the continuity of disclosure, some of the content may go beyond the period listed above.



Reporting Reference

This report is compiled based on relevant requirements of the *Listing Rules of Hong Kong Stock Exchange* Appendix 27: Environmental, Social and Governance Reporting Guide, and the *No. 1 Self-regulatory Guidelines for Listed Companies – Standardized Operation of Companies Listed on the Main Board* of Shenzhen Stock Exchange. It also draws extensive reference from the United Nations Sustainable Development Goals (UN SDGs), the Ten Principles of the United Nations Global Compact (UNGC), and the Global Reporting Initiative (GRI) Sustainability Reporting Standards (GRI-Standards).



Principles of Report Preparation

This report is prepared based on the principles of materiality, quantitative, balance, and consistency to ensure the substance, scientificity, objectivity, and comparability of the report.

Materiality: The Company follows a systematic process of identifying material issues and determines the content and scope of disclosure through such processes as stakeholder communication and management assessment.

Quantitative: The key quantitative performance indicators in this report follow scientific statistical standards, methods, calculation tools, and conversion factors. Important reference sources, calculation methods, and data changes are explained in the report definition.

Balance: This report objectively discloses Goldwind's sustainable development performance during the reporting period and avoids a presentation format that may inappropriately affect the decision-making and judgment of stakeholders.

Consistency: Unless otherwise specified, the statistical methods and basis used in the disclosure of the content and data in this report are consistent with those for previous years.



Notes on Data

The financial data disclosed in the report is obtained from the Company's Annual Report, while other data is from the Company's internal statistics. Unless indicated otherwise, any financial data in the report is expressed in RMB.



Reporting Commitment

All the content and data disclosed in this report have been reviewed and approved by the Board of Directors of Goldwind. To ensure the authenticity and reliability of the report, the Company has engaged SWCS Corporate Services Group (Hong Kong) Limited to carry out independent third-party assurance on some key indicators of this report according to AA1000 Assurance Standard v3 (AA1000AS v3).



Board Statement

This report has been reviewed and approved by the Board of Directors of Goldwind. The Board of Directors of the Company undertakes that the content of this report does not contain any false records or misleading statements, and is responsible for the authenticity, accuracy and completeness of its content.



Report Availability

This report is available in simplified Chinese, traditional Chinese and English. Should there be any inconsistency among the different versions, the simplified Chinese version shall prevail. To view and download this report, please visit www.goldwind.com, www.szse.cn, or www.hkenews.hk.



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Letter from the Chairman

The continuing economic downturn and intensifying climate change worldwide in 2023 made the need for global sustainable development even more urgent for the international community. The 28th Conference of the Parties to the United Nations Framework Convention on Climate Change (hereinafter referred to as "COP28") has for the first time included the commitment to transition away from fossil fuels, and made a stronger call for the increase of global renewable energy production. In 2023, China established the "1+N" policy system for carbon peak and neutrality, pushed forward the implementation of key tasks in various fields, and accelerated the adjustment and optimization of the industrial and energy structures, with new and clean energy development emphasized. This year, Goldwind has firmly aligned its operations with the global pursuit of sustainable development, actively addressing both domestic and international demands for energy transition and supporting China's dual-carbon goal. Committed to an innovation-driven approach, it has empowered the low-carbon transition and expanded its worldwide presence. In doing so, Goldwind's business has not only experienced solid growth but has also contributed significantly to the industry's sustainability and broader societal progress.

We deeply recognize that sustainable development naturally arises from advances of social productivity and technological innovation, and is the "golden key" to solving the current global problems. Goldwind adheres to the mission of "Innovating for a brighter tomorrow", and continues to explore the sustainable development management model with Goldwind's characteristics. Together with our stakeholders, Goldwind will create a sustainable future by integrating the concept of sustainable development with its daily operation.



—Wu Gang,
Chairman of the Board
of Goldwind

This year, we were a trailblazer of innovation and change

Being deeply engaged in wind power for 25 years, Goldwind continues to keep accelerating its independent innovation, so as to deliver premium wind power products and technologies featuring high technological level, high manufacturing standard and more social benefits, setting new heights for China's wind power. In 2023, the world's first 16 MW ultra-large-capacity offshore wind turbine was connected to the grid and generated electricity, setting a new world record for energy production of a single offshore wind turbine with 387,200 kWh produced in a single day; the installation of the first 185-meter wind turbine tower was completed, creating a new world record for the onshore wind turbine tower height, and was conferred DNV A-level design certificate.

In addition, we released a number of new onshore and offshore flagship products and gridforming wind turbines 2.0, providing higher-quality and more reliable products and services under diversified scenarios, and realizing global coverage. We also released the "unmanned" station solution, injecting new momentum into the development of intelligent operation of new energy sources.

This year, we were an enabler of low-carbon transition

In 2023, relying on its mature manufacturing advantages and high-standard quality system, as well as the synergy and support from partners across the industry, Goldwind has achieved an installed capacity of over 100 million kW. Our emerging businesses saw rapid growth, with energy storage shipments achieving a three-fold increase and a six-fold increase in annual green power trading; a long-term green methanol offtake agreement with an annual production capacity of 500,000 tons has been reached, initiating Goldwind's first large-scale wind power hydrogen production project.

Along with the steady business growth, we continue to empower wind turbines with environmentally friendly and low-carbon attributes, while integrating the concept of sustainable development into the full lifecycle of wind farm operation and construction. In 2023, the Company completed the Environmental Product Declaration (EPD) certification of four models of wind turbines on the V12 platform, analyzed the environmental impact factors of wind turbines throughout their life cycle, and explored the potential and opportunities for reducing carbon emissions. It also formulated corresponding management measures for the development, construction, and operation of wind farms, so as to minimize any adverse impacts of wind farm activities on the surrounding environment and the community.

This year, we were a practitioner of sustainable development

We have actively participated in international climate change initiatives and joined hands with various international parties to draw a blueprint for carbon reduction. As the only Chinese wind turbine manufacturer, Goldwind was invited to be an official partner of COP28 in 2023 to share its thinking and practices of Chinese wind power with global partners. In the same year, Goldwind officially joined the RE100 initiative, committing to achieve 100% use of green electricity in its global production and operations worldwide by no later than 2031, in order to address the global climate crisis.

Adhering to the concept of sustainable development, Goldwind takes into full consideration of the expectations and needs of all stakeholders, and strives to achieve win-win results for all stakeholders, including shareholders, clients, employees, suppliers and the community. In 2023, the Company continued its efforts in the five major areas of sustainable development, insisted on honest and compliant operation, and steadily improved its governance level to create value for shareholders and society. By integrating environmental protection into its production and operations, it carried out a full range of energy-saving and consumption-reducing measures, as well as a number of initiatives to deepen environmental protection in project operation sites. The Company continually carried out projects such as the Supplier Social Responsibility Audit and the Green Supply Chain, utilized its own strengths to support the development of our suppliers and the sustainable transformation of the industrial chain. We protected employees' rights and interests, ensured occupational health and safety, offered diverse benefits, and created a diversified, equal, healthy and friendly working environment. In addition, we supported the development of local communities where we carry out businesses, and utilized our business advantages and resources to engage in social welfare activities.



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About Us

Company Profile

As a globally trusted strategic partner in clean energy, Goldwind is committed to promoting energy transformation, bringing affordable, reliable, and sustainable energy to the world, and building a "sustainable and better" future. The Company was founded in Urumqi, Xinjiang, China in 1998, and restructured into a limited company in 2001. It was listed in Shenzhen Stock Exchange (SZSE: 002202) in December 2007, and listed in Hong Kong Stock Exchange (HKEx: 2208) in October 2010.

Since its establishment, Goldwind has experienced and witnessed the vigorous development of renewable energy industry in China. It has taken root in the global market with its comprehensive and in-depth capabilities of internationalization. The Company operates in 38 countries across 6 continents and employs over 10,000 people worldwide, of whom over 3,000 people are R&D and technical staff. We have set up 8 overseas regional centers worldwide, fully materializing the internationalization of capital, market, technology, talent and management.

With a deep focus on wind turbine R&D and manufacturing, wind farm investment and development, wind power operation and maintenance services, and water utility related services, among others, Goldwind has elevated the efficiency of renewable energy to new heights through its strong R&D innovations and best business practices. According to Bloomberg New Energy Finance ("BNEF"), the Company added 15.67GW of domestic installed capacity of wind power in 2023, with a domestic market share of 20%, ranking first in China for 13 consecutive years. By the end of 2023, Tthe Company's global installed capacity exceeded 114 GW00 million kW, being the first wind turbine manufacturer in China to exceed a total installed capacity of 100 million kW. The Company added 16.4GW of installed capacity on a global basis, with a global market share of 13.90%, ranking first in the world.

Our Businesses

R&D and manufacturing of wind turbines



Goldwind adheres to the concept of innovation-driven development. With the help of our medium-speed permanent magnet and permanent magnet direct drive technologies, we have accelerated the technological innovations of our products, and enriched the types of wind turbine platforms, so as to cover a wider variety of usage scenarios. The Company's wind turbines are highly reliable, low-cost, and grid-friendly. They can be applied to many usage scenarios, no matter it's centralized or decentralized, regular-altitude or high-altitude, large-base or offshore.

Annual sold of wind turbine

2,505

Annual capacity sold

13,772.29_{MW}

Wind farm investment and development



Goldwind has established a clean energy development system focusing on wind power for both domestic and international markets, and invested in the construction of its own wind farms.

Newly added grid-connected attributable installed capacity in wind farms at home and abroad

1,792.49_{MW}

Global cumulative grid-connected attributable installed capacity

7,289.04_{MW}

Average generation utilization hours of domestic wind turbines

2,441_{hours}

Power generation at home and abroad accounted for in the consolidated financial statements

14.947_{billion kWh}

Wind power operation and maintenance services



Goldwind develops full-life-cycle services for wind power projects. Moreover, the Company provides intelligent solutions of operation and maintenance services, covering the entire life-cycle of wind turbines for clients and the industry regarding the large-scale and high-quality development of stock assets. Focusing on the value chain of wind energy investment, the Company continues to improve the efficiency of safe and reliable asset operations through digitalization, technologies, and model innovations.

Scale of wind farm asset management services

18,941.6_{MW}

Post warranty projects under operation at home and abroad totaled nearly

31_{GW}

Water utility-related services



The Company has set up the Goldwind Environmental Science & Technology Co., Ltd. to expand its clean water industry chain. It specializes in investment, construction, operation, and technological innovations related to water utility projects, covering municipal water supply, municipal sewage treatment, industrial sewage treatment, and reuse of recycled water, among other fields.

Number of water treatment companies

66

Water treatment volume under the operating agreements

2.8395_{million tons/day}

Other businesses



The Company has developed core wind power technologies such as distributed energy resources, integrated energy supply, advanced energy storage technology, and smart and digital management, and provides diversified energy products and solutions in terms of power grid, power source, power load, power storage, and power control.

Electricity sales business executed approximately

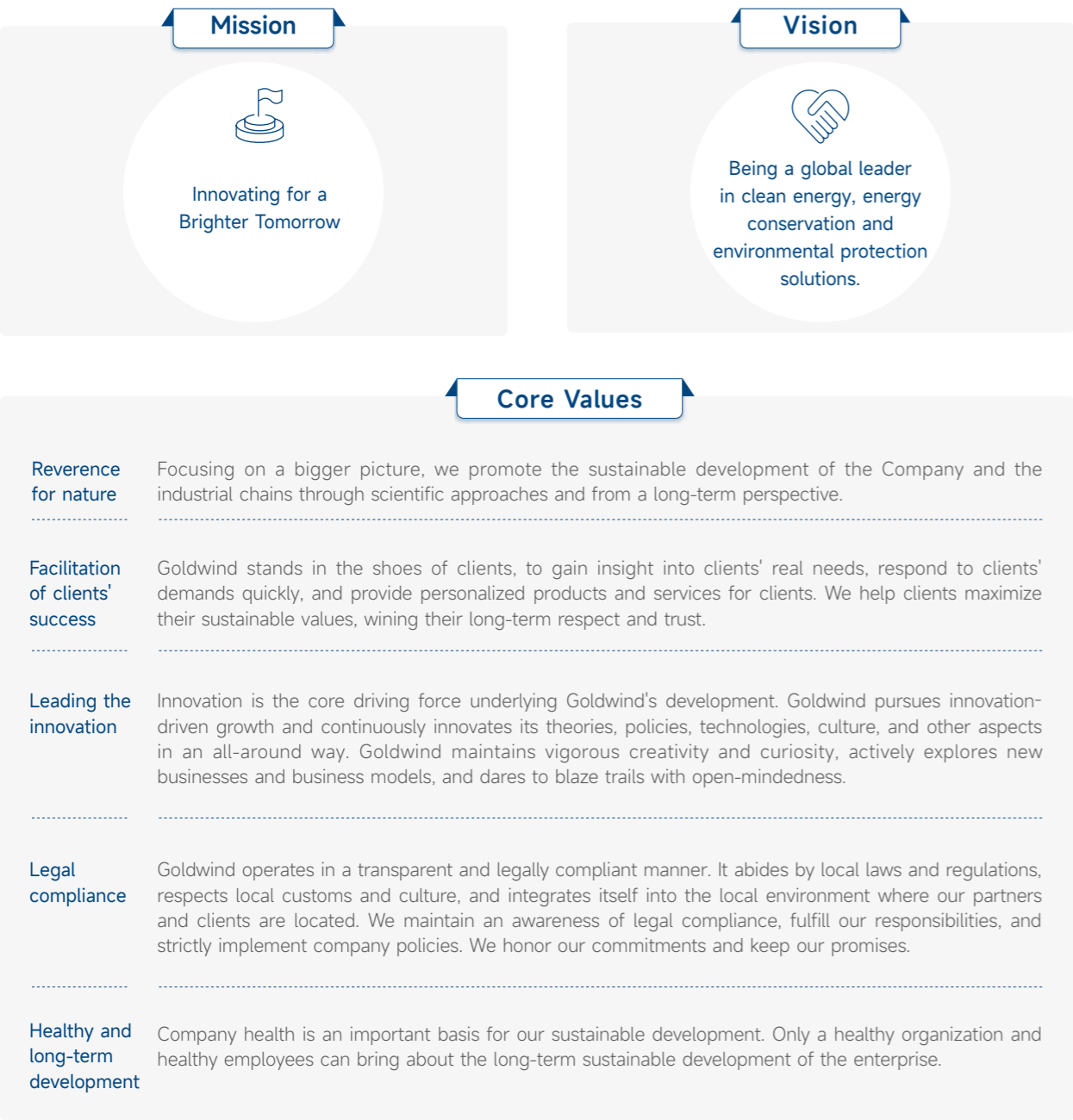
13_{billion kWh}

Cumulative delivery of energy storage systems

5_{GWh}

Corporate Strategy

Goldwind undertakes the mission of Innovating for a Brighter Tomorrow and is committed to becoming a globally trusted strategic partner in clean energy. During the "14th Five-Year Plan" period, Goldwind continues to focus on high-quality development, and closely focuses on China's dual-carbon goal. Based on the values of "Reverence for nature, Facilitation of clients' success, Leading the innovation, Legal compliance, Healthy and long-term development", guided by the "Three Adherences", and centered on the "1231" strategic intent, Goldwind continues to boost the technological innovations of wind power and related products and solutions, so as to lead the balanced development of the industrial chain, and facilitate the realization of dual-carbon goal.



Goldwind's guiding principles: Three adherences



Goldwind's Strategic Intent: "1231"



Major Awards and Honors



Awards and Honors	Awarded by
Fortune China 500 Company	Fortune China
China Top 500 New Economy	China Enterprise Evaluation Association
Forbes China Sustainable Development Industrial Enterprises Top 50	Forbes China
2023 Global Outstanding Enterprise in the Clean Energy Equipment Industry	Organizing Committee of the World Conference For Clean Energy Equipment
Top 30 in the "Corporate Green and Low Carbon Leadership Index"	People's Daily
5-Star Rating on the National On-site Management Sophistication Standard in 2023	China Association for Quality
The 18th National Quality Award, National Excellent Quality Management Team, and Silver Award for QC Team Result Publication	China Association for Quality
"Pace Setter" for National Corporate Standards	China National Institute of Standardization
Shortlisted in the NEA's Major Technical Equipment List	National Energy Administration
The 19th People's Craftsmanship Product Award	People's Daily Online
Award for China Electric Power Quality Project	China Electric Power Construction Association
First Prize for Innovation Achievements of the China Electric Equipment Management Association	China Electric Equipment Management Association
2023 National Quality Project Award	China Association of Construction Enterprise Management
2023 Machinery Industry Science and Technology Award	China Machinery Industry Federation and China Mechanical Engineering Society
Pegasus Award for Investor Relations of Listed Companies in China	Securities Times
New Media Award for Investor Relations of Listed Companies in China	



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Sustainable Development Management

Goldwind has incorporated sustainable development into its strategic culture and management processes. By formulating a strategic plan for sustainable development, establishing a corresponding organizational structure and management system, and continuously carrying out capacity building activities, Goldwind has gradually established a management model for sustainable development with its own characteristics, to keep up its sustainable practices.

Sustainable Development Management Structure

Goldwind continuously improves its organizational system for sustainable development, with a well-defined top-down governance structure and management mechanism in place. In accordance with this structure, the Company rationally allocates resources, comprehensively identifies risks and opportunities, sets goals and follows up on their achievement, thus providing organizational guarantee for Goldwind's sustainable development efforts.



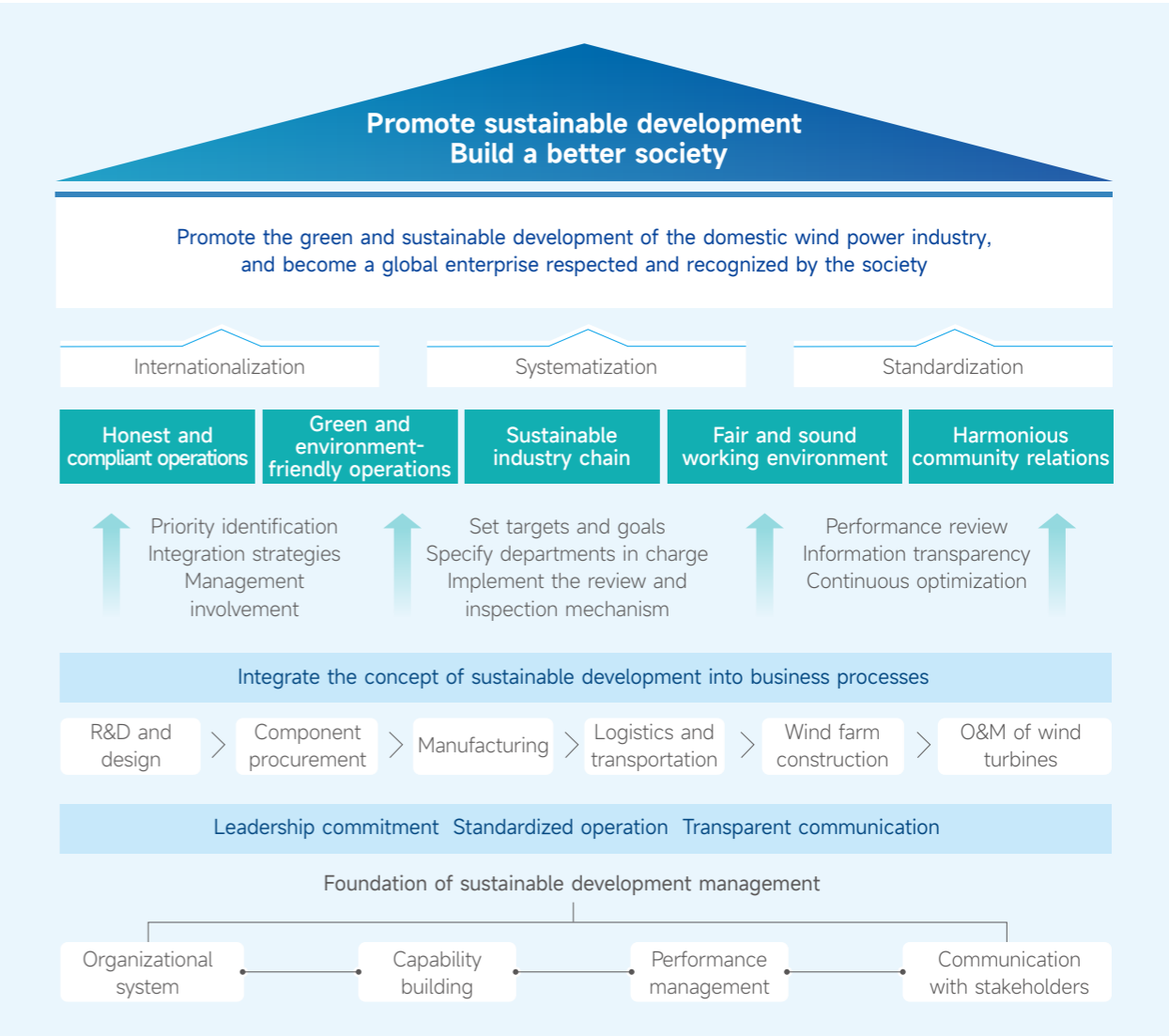
In 2023, the Board of Directors listened to the summary of the previous year's sustainable development work and the 2023 sustainable development plan, and defined the priority and direction for the future work. Throughout the year, the Sustainable Development Management Committee deliberated and approved a number of key sustainable development initiatives, including system documents related to the social responsibility management system, white paper on climate action, and guidelines on anti-modern slavery.

To further improve the level and performance of the Company's social responsibility management, better carry out its social responsibility practices, and fostering the sustainable development of its business, the Company has established and operated its own social responsibility management system by referring to the requirements of domestic and international social responsibility standards such as *ISO 26000 Guidance on Social Responsibility* and *GB/T 39604-2020 Social Responsibility Management System Requirements and Guidance for Use* and by taking into account the status of Goldwind's social responsibility efforts and other management systems.

In 2023, the Company successfully introduced a social responsibility management system covering the entire Group. The Company has established a social responsibility management system, and compiled and released the *Social Responsibility Management Manual*, *Social Responsibility Topics Management System* and *Stakeholder Management System*, providing institutional guarantee for the continuous and effective operation of the Company's social responsibility management system; It has formed a team of internal auditors for the system, and cooperated with external professional organizations to provide specialized coaching and strengthen the capacity building of the relevant personnel. It has guided the whole group to compile system operation documents, and sorted out social responsibility topics, goals and targets, stakeholders, risks and opportunities in accordance with its own functions and scope of business. In addition, it has completed the internal system auditing and management evaluation.

Sustainable Development Strategic Planning

Goldwind plans the sustainable development strategies, and identifies important issues of sustainable development around five major fields: honest and compliant operations, green and environment-friendly operations, sustainable industry chain, fair and sound working environment, and harmonious community relations. On this basis, sustainable development goals and action plans are set up.

























Goldwind Sustainable Development Strategic House



Based on these five major fields of sustainable development strategic planning, the Company identifies priorities and breaks them down into sustainable development projects and targets, and gradually promotes their implementation within the company. In 2023, under the supervision and guidance of the Company's Board of Directors and the Sustainable Development Management Committee, the Company managed to deploy internal and external resources to promote sustainable development projects and improve sustainable development management capacity.

In 2023, the Company's goals in the five major fields of sustainable development are on track. The Company strictly abide by laws and regulations and operation management needs, continuously revises the compliance management system, constantly improves the internal control and risk management system; and create a culture of compliant operation, compliance campaigns were organized for all staff to strengthen the compliance awareness of integrity, honesty and law observance. The Company has stepped up its investment in energy-saving technological retrofit, carried out energy-saving and carbon reduction measures, and achieved substantial reduction of greenhouse gas emissions per unit MW compared with 2020 and carbon neutrality at the operation level

(Scope 1 and Scope 2). The Company gradually expanded the scope of suppliers' social responsibility audit and strengthened the proportion of suppliers' use of green electric which achieved the social responsibility audit rate of major components suppliers of wind turbines (manufacturing) up to 100%, and the proportion of green electricity use of major suppliers in the production of Goldwind products up to 60%. In addition, the Company strictly abides by the labor and employment related laws and regulations in locations where it operates, and respects the basic rights and interests of its employees while banning any discriminatory acts. There were no cases of discrimination, forced labor, child labor, or human trafficking, and ensured that the health management programs covered all employees. The Company values good relationships with the communities where it operates. By the end of 2023, the youth science and technology bases were built in four Goldwind parks in Beijing, Xinjiang, Shandong, and Dafeng of Jiangsu Province and the number of volunteer hours in the company reached 18,677 hours.

Fields of sustainable development		Sustainable development goals	
<div>Honest and compliant operations</div> <div></div> <div>Adhere to the concept of "honest and compliant operations", and continuously improve the corporate governance and compliance management system to implement risk management and internal control, strengthen its internal supervision, inspection and constraint mechanisms, and create a culture of integrity and compliance, so as to ensure the sound development of the Company.</div>		<div><ul style="list-style-type: none">Continuously improve the corporate governance and compliance management system and improve the level of corporate governance.</div> <div></div> <div><ul style="list-style-type: none">Foster a culture of integrity, self-discipline and compliance with the law.</div>	
<div>Green and environment-friendly operations</div> <div></div> <div>Fully recognize and address climate change risks and opportunities, implement comprehensive energy-saving and consumption-reducing measures, strengthen and enhance the efficient use of energy and resources, and strengthen environment-friendly operations, so as to protect the environment and secure the sustainable development of the Company, in an effort to become a global pioneer in combating climate change.</div>		<div><ul style="list-style-type: none">By 2025, the greenhouse gas emissions per MW should be 25% lower than that in 2020.¹By 2025, the hazardous waste per MW generated by the wind turbines manufacture should be 20% lower than that in 2020.By 2025, the water consumption in production and operation should be 15% lower than that in 2020.Since 2022, carbon neutrality at the operational level (Scope 1 and Scope 2) should be achieved.By 2031, 100% use of green electricity in its global production and operation.</div> <div></div>	
<div>Sustainable industry chain</div> <div></div> <div>Integrate the concept of sustainable development into every link of the industrial chain, encourage upstream and downstream enterprises to fulfill their social responsibilities, and guard against environmental and social risks in the supply chain, so as to strengthen the synergy and cooperation on sustainable development of the industrial chain, and lead the sustainable transformation and upgrading of the industry.</div>		<div><ul style="list-style-type: none">By 2023, the social responsibility audit rate of major suppliers of wind turbine components (manufacturing category) should reach 100%.By 2025, the major suppliers of Goldwind should use 100% of green power for manufacturing Goldwind products.By 2040, 100% of wind turbines should be able to be recycled and reused.</div> <div></div>	
<div>Fair and sound working environment</div> <div></div> <div>Strictly comply with relevant laws and regulations and international conventions, to govern the management of employment and employees' rights and interests, and foster a workplace free of discrimination, child labor, and forced labor. Emphasize diversity, equality, and inclusiveness, and care about employees' development and their well-being to enhance employee cohesion and satisfaction.</div>		<div><ul style="list-style-type: none">Build a diverse, equitable and inclusive internal work environment.By 2023, health management programs should cover all the employees.</div> <div></div>	
<div>Harmonious community relations</div> <div></div> <div>Respect and uphold the legitimate rights and interests of stakeholders such as communities, manage and protect the natural and social resources in locations where it operates in a sustainable manner, improve the livelihoods of residents in the surrounding communities as much as possible by leveraging our business strengths and resources, and realize mutual benefits and synergistic development to jointly build a fair and harmonious development environment.</div>		<div><ul style="list-style-type: none">By 2023, the number of Goldwind volunteers should reach 5,000, with approximately 6,000 hours of volunteer work.By 2025, at least 10 youth science and technology practicing bases should be built.</div> <div></div>	

¹ As the decline in the price of wind turbines, the target of "by 2025, the greenhouse gas emissions per RMB 10k revenue should be 25% lower than that in 2020" can not accurately reflect the relationship between business growth and changes in carbon emission intensity, thus the target has been adjusted to "by 2025, the greenhouse gas emissions per MW should be 25% lower than that in 2020".

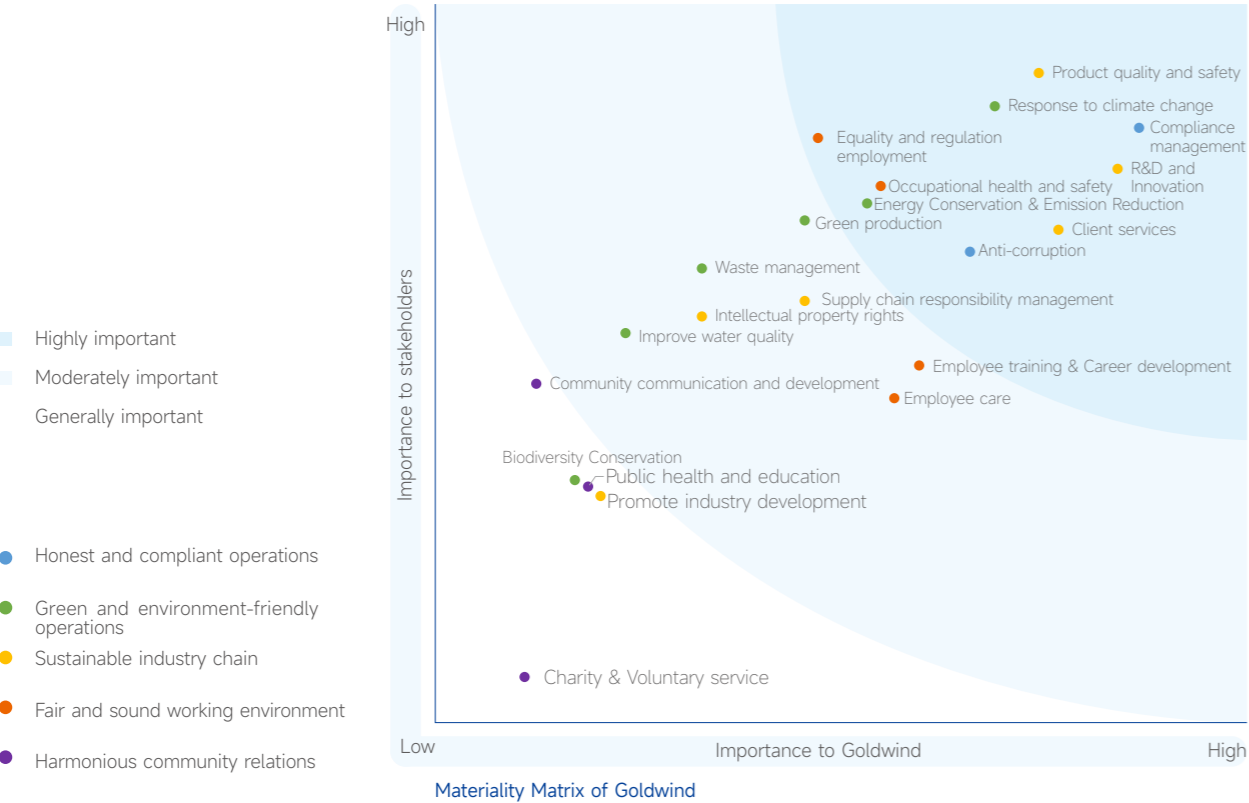
Capacity Building for Sustainable Development

Goldwind takes the initiative to propagate sustainable development-related content on its official website, official WeChat account, and internal Goldwind People newsletter. It also introduces international sustainable development trends, promotes sustainable development knowledge, as well as shares the Company's sustainable development concept and the latest achievements through online and on-site training sessions, in order to deepen employees' understanding and awareness of sustainable development while improving their capabilities. In 2023, Goldwind includes the social responsibility training as a mandatory course for all new recruits, with its coverage remaining at 100%.

Furthermore, in 2023, to advance the implementation of the social responsibility management system across the entire company, Goldwind has established an internal auditor team comprising members from across company functions and business units. Through a combination of online and offline training, including one-on-one coaching sessions, Goldwind has provided specialized guidance to internal auditors. This includes comprehending the objectives and significance of the social responsibility management system, interpreting system standards, introducing the system establishment process, and sharing best practice cases. These initiatives have significantly enhanced the auditors' awareness and proficiency in social responsibility, playing a pivotal role in the construction and advancement of the system.


Materiality Assessment

In light of the global sustainable development background, macro policies and industry characteristics, expectations of all stakeholders, and with reference to domestic and international standards, guidelines and initiatives related to sustainable development, Goldwind regularly identifies, evaluates and selects sustainable development topics based on its development strategy and features. After stakeholder survey and evaluation, the Company has identified 21 key sustainable development topics affecting the Company and its stakeholders, and constructed a matrix for key topics accordingly.



Communication with Stakeholders

Stakeholders' understanding, recognition, and engagement serve as the basis for Goldwind's social responsibility and sustainable development. The Company communicates with its stakeholders on its sustainable development efforts. The Company releases Sustainability Report, engages in external interviews and market research, participates in conferences and forums on sustainable development, and conducts global cooperation and communication on sustainable development, to share information about the Company's sustainable efforts while obtaining feedback from stakeholders on their expectations and suggestions, thereby continuously optimizing sustainable development efforts.

Stakeholders	Major Concerns or Expectations	Responses
 Shareholders and creditors	Enhance Sustainable profitability Regulation of corporate governance Disclosure of business information Rewards to shareholders Improved debt-servicing capacity	Enhance business management capacity Innovate profit models Strengthen debt risk management Optimize the compliance management system Disclose information timely and accurately Organize shareholders' meeting Reward shareholders through profit distribution
 Clients	Honest contract performance and integrity High-quality products Excellent services Responses to requests promptly	Strictly enforce contracts Ensure product quality Promote technological innovation Offer excellent services Improve the procedure to handle complaints Protect client privacy
 Employees	Protection of legal rights and interests Salary and welfare guarantee Health and safety protection Development platform building	Fair and standard employment Appropriate salary and social insurance payments in a timely manner Improve talent development channels Offer competitive salaries Offer diversified welfare Offer healthy and safe work environment
 Suppliers and other partners	Transparent procurement Honest contract performance and integrity Win-win cooperation	Procure in an open and fair manner Make timely payments Conduct supplier training Support suppliers' development
 Community	Protection of local environment Support of community development Charity and welfare	Take actions on energy conservation and emission reduction Protect ecological environment Support of community development Carry out public welfare activities
 Government	Law and regulation observance Promote local development Pay taxes according to law	Comply with laws and regulations Pay taxes according to law Offer job opportunities Drive development of related industries
 Financial institutions, R&D institutions, schools and the media	Common development Information disclosure	Carry out strategic cooperation Strengthen industry, university and research cooperation Organize activities such as visits and meetings

Sustainable Development Ratings and Recognition

In 2023, Goldwind's sustainable development practices and achievements were widely recognized by organizations, media, and rating agencies at home and abroad, winning multiple awards and favorable rating results.

Sustainable development-related ratings



Rating agency	Rating
MSCI	BBB
EcoVadis	Silver Medal
CDP	B
Sustainalytics	26.7
FTSE Russell ESG	3.4
Hang Seng Corporate Sustainability Index Series	A+
SynTao Green Finance	B+
SusallWave ESG rating	AA+

Sustainable development-related honors and awards

Awards and recognition	Awarded by
ESG Zero Carbon Leader	2023 Energy Annual Conference and Global Energy Enterprise ESG Conference
Evergreen Award – Sustainable Development Innovation Award	Caijing Magazine
Best ESG Disclosure Award	New Fortune
ESG Pioneer Practitioner	Securities Daily
Best ESG Practice Award for Listed Companies	Easy Board - Value Online
Listed in ESG Best Practice Cases of Listed Companies in China (2023)	China Association for Public Companies

Industry Engagement in Sustainable Development

Goldwind recognizes that sustainable development requires the cooperation of all parties. Therefore, it actively engages in domestic and overseas organizations and initiatives, committed to promoting the value chain to jointly address the challenges of sustainable development, and facilitating the sustainable development of the industry and society as a whole.

United Nations Global Compact (UNGC)	The Company joined the United Nations Global Compact (UNGC) in April 2021, committing to abide by its ten principles covering human rights, labor, environment and anti-corruption, among others, and continue to promote the Company's sustainable development strategy, culture and operations to be closely aligned with it. Practical actions have been taken to support and fulfill the global commitment to sustainable development.
RE100 Initiative	As a green initiative with global influence and appeal launched by the well-known international organization Climate Group, RE100 brings together more than 400 global companies with outstanding leadership. Goldwind announced its official joining the RE100 in 2023, in an effort to combat the global climate crisis and promote China's energy revolution.
COP28 Partner	At the 28th Conference of the Parties to the UN Framework Convention on Climate Change (COP28) that ended in December 2023, as the only wind turbine manufacturer from China, Goldwind was invited to become an official partner of COP28 and share its thoughts and practices regarding China's wind power with global partners through an exclusive booth.
Global Alliance for Sustainable Energy	Together with 17 influential utilities, global players in the wind power and solar industries, sector associations and innovation partners, the Company jointly established the Global Alliance for Sustainable Energy to launch more strategic and ambitious sustainability development initiatives, thus taking the lead in sustainable development of the global renewable energy industry with a focus on collaboration and innovation.
China ESG Leaders Association	Goldwind officially joined the China ESG Leaders Association in 2019, and it is committed to jointly promoting and practicing values including sustainable development, responsible investment and ESG, improving the overall ESG management efficiency of enterprises, leading the best ESG practices in the industry, and creating the competitive advantages of Chinese enterprises in the field of ESG, together with other outstanding ESG business leaders.
"Mission Innovation" and "Green Powered Future" Initiatives	By joining the "Mission Innovation" and "Green Powered Future" initiatives in 2021, the Company has been committed to continuously facilitating the R&D and engineering promotion of wind power generation technologies, thus contributing to the achievement of 100% renewable energy in different geographical and climatic conditions of the world.



03

Product Service and R&D Innovation

Goldwind is committed to driving company growth through technological innovation, and focuses on the research and development and manufacturing of wind turbines, investment and development of wind farms, wind power operation and maintenance services, water treatment, and other businesses, striving to contribute to the global energy and environmental cause.

Sustainable Products

Product Innovation and R&D

As a type of environment-friendly renewable energy with mature technology and low electricity cost, wind power has been developed and applied on a large scale worldwide, and its proportion in power used in global production is rising year by year. Goldwind continues to invest in technology R&D, explore the application of new technologies and new materials in the field of wind power, develop wind turbines with high power generation rates and high safety and reliability levels, and expand application in large-scale, centralized, decentralized, offshore, and other scenarios to strive to create responsible and sustainable wind power products.

Goldwind continues to promote R&D innovation and industrialization of wind turbines, continuously improve the performance of wind turbine products, and enrich the intelligent wind turbine series products to cover a wider range of application scenarios. A global layout of "1 R&D center + 7 R&D bases" R&D innovation system has been set up, with Beijing R&D center as the headquarters for technological innovation, product development and regional resource management, which radiates and drives the development of R&D bases in Germany, Denmark, Australia, and Xinjiang, Jiangsu (Wuxi and Yancheng) and Zhejiang in China, mainly focusing on key technical problems and prospective issues for the development of the Company and the wind power industry, developing new wind power technologies, new products, new equipment and processes, and improving the Company's innovation capability and core competitiveness for the sustainable development of the Company.

The Company continues to expand its investment in R&D, establish a mechanism for the identification, cultivation and incentive of S&T talents, and cultivate and enhance its independent innovation capability. In 2023, the Company's R&D investment amount is 2.265 billion, accounting for 4.49% of the total revenue; the number of R&D technical personnel is 3,251, accounting for 30.52% of the total number of employees.

The Company actively protects intellectual property rights and the patents for each technical field of the Company's products in an all-round way. In the process of technology introduction and cooperation, the Company takes the initiative to study the development of similar technologies at home and abroad, and respects and avoids infringing others' intellectual property rights. By the end of 2023, the Company had 5,980 patent applications in China, including 3,566 invention patent applications, accounting for 60% of the total. The Company obtained 4,301 patent licenses in China, including 2,021 invention patent, accounting for 47%, ranking first in the industry. The Company had 1,163 patent applications and 593 patent licenses abroad.

2023

R&D investment

2.265billion

R&D investment as a percentage of business revenue

4.49%

R&D personnel

3,251

Proportion of R&D personnel

30.52%

Goldwind actively responds to China's "14th Five-Year Plan" and the "dual carbon targets", aligns itself with market and client needs, and constantly introduces new products and new technologies to promote sustainable development within the wind power industry. In 2023, the Company had multi-platform serialized turbines with a rich product spectrum that cover both onshore and offshore wind power markets. The first prototype of GWH204-6.X on the GWHV12 platform has been successfully connected to the grid, setting a new record for the largest impeller diameter of turbine already in operation in the global onshore low-wind speed area and winning the "Good Example of Green Technology Innovation" award by the China Patent Protection Association and the National Carbon-Neutral Intellectual Property Operation Center. GWH22X-8.X of GWHV17 platform was listed in the "Recommended Directory of Beijing Innovative Green Technologies in 2023 (first batch)", and obtained the design certification issued by an authoritative certification body in China. GWH252-16MW, the "forerunner", as the world's largest single-unit capacity with the largest impeller diameter, and lightest megawatt weight per turbine, has been successfully hoisted off the coast of Pingtan, Fujian Province, successfully overcome the pain point technology such as ultra-long flexible blades, domestic production of large main shafts and bearings, and miniaturization of ultra-large capacity generators.



The first prototype of GWH204-6.X has been connected to the grid



The "forerunner" of V20 platform, a national key project, has completed installation

In 2023, the Company released the grid-forming turbine 2.0, which is the earliest in developing grid-forming turbines in China, and the only complete turbine enterprise in the industry to complete digital verification, stand-alone verification, and field verification. The Company successfully completed the installation of the prototype of the 185-meter wind power tower, obtained the DNV A-Level certification, creating a new record for global onshore wind power towers, and pushing the boundary of efficient development and utilization of wind power resources.

Product Quality and Safety



Goldwind always takes "leading product quality" as the core competitiveness in terms of products, practices the concept of "high quality and reliability", and takes "focusing on quality assurance across all stages for core components, implementing major risk preventive measures, promoting the resolution of historical problems, promoting quality accountability, and improving the safety and environmental protection ability of all employees" as the guiding ideology. The Company achieves excellent quality as it is client-centered, realizes intrinsic safety as it is employee-centered, and practices the strategy of "highly reliable products, trustworthy Goldwind".

In 2023, Goldwind improved the comprehensiveness of planning, the effectiveness of control, the accuracy of measurement, and the traceability of results in the quality system from the three dimensions of product development, manufacturing and field service to prevent major quality incidents and reduce the overall quality loss. In terms of product development, the Company improves the baseline verification mechanism for reliability tests of components and the system. It has established a joint production development feedback mechanism to continuously promote product development. In terms of production and manufacturing, combined with products' technical characteristics, the Company adopts differential control policies for each factory in the manufacturing process of core components to ensure controllable, measurable, traceable quality control program across all stages and improve the factories' ability to prevent major risks. In terms of client experience, the Company manages clients' needs, handles any issues emerging during the process, and steps up its rapid response to continuously improve client experience. In 2023, with remarkable achievements in business performance, quality management, etc., Goldwind won 18th National Quality Award.

Focusing on client experience, the Company conducts real-time satisfaction research in key aspects such as pre-acceptance and handover out of warranty, and regularly investigates the overall satisfaction of clients in terms of the early stage of the project, bidding, engineering construction, operation and maintenance during the warranty period by means of online questionnaires. In 2023, the Company's overall client satisfaction scored 92.5. One client complaint was received throughout the year, and the client complaint handling rate was 100%. The Company has standardized the client feedback and complaint handling procedures to ensure effective handling of client feedback and complaints. The Company has updated the client Feedback and Complaint Handling Measures, and established the client complaint risk warning mechanism. The client complaint management team and the rapid response team can ensure client feedback and complaints are handled promptly and effectively. The Company holds the person who first reports the issue accountable and carries out the cross-departmental collaboration mechanism. The Company sets up special teams to rapidly respond to key issues, summarizes and analyzes the handling processes for complaints, traces the problems in the Company's product chain and makes improvement accordingly to create a closed loop of complaints handling and ensure client satisfaction.

Since the beginning of turbine development and design, the Company has fully considered health, safety, and other elements, and implemented awareness of safety into design. By identifying various risks that may exist in a turbine, we have implemented protective measures in design, including anti-slip, anti-fall, anti-collision, emergency escape, etc. To avoid the frequent fires in the wind power industry in recent years, the fire protection design of the turbines have been strengthened. We have completed the fire risk analysis in a systematic way, and ensured division and isolation, and fire prevention and fire control in design. For risks that cannot be completely eliminated, protective technical measures are taken, such as the implementation of safety guardrails, safety hanging points, shields, and safety doors; for risks that may be easily overlooked and cannot be completely eliminated, safety warnings are provided, and safety signs are displayed at appropriate locations to provide all-round safety protection. During the reporting period, no wind turbines were recalled due to safety or health issues.

Environmentally Sound Wind Turbines

2023

The carbon emission per kWh of V12 turbines certified is about

4_g

The Company carries the concept of environmental protection through the entire process of wind turbine product development and design, procurement, production, installation, operation and maintenance, producing environmentally sound wind turbines by means of technological innovation and process optimization.

The Company continues to carry out Life Cycle Assessment (LCA) of wind turbines to analyze their environmental impact factors throughout their life cycle, identify opportunities to improve their environmental performance at different stages, and explore opportunities to reduce carbon emissions and gradually reduce carbon footprints. The Company has continued to carry out the Life Cycle Assessment of 9 types of turbines, of which the assessment on 4 types were carried out in 2023. All 9 types have passed one of the world most well-accepted environmental product declaration mechanism- EPD Italy certificatio.. Data show that the carbon emission per kWh of 4S turbines is about 8 grams, and the carbon emission per kWh of 5S turbines is 6 grams; the carbon emission per kWh of V12 turbines certified in 2023 is about 4 grams, less than 1% of the traditional thermal power, which fully proves the low-carbon feature of Goldwind's turbines.

Turbine category		Carbon emission per kWh ²
4S wind turbine	Goldwind GW155-4.5MW wind turbine	7.25g
	Goldwind GW136-4.2MW wind turbine	8.04g
5S wind turbine	Goldwind GW165-5.2MW wind turbine	6.25g
	Goldwind GW165-5.6MW wind turbine	5.99g
	Goldwind GW165-6.0MW wind turbine	5.74g
V12 wind turbine	Goldwind GWH182-5.3MW wind turbine	4.41g
	Goldwind GWH182-6.2MW wind turbine	4.05g
	Goldwind GWH182-7.2MW wind turbine	3.82g
	Goldwind GWH182-7.5MW wind turbine	3.72g

In 2023, on top of wind turbine life cycle assessment, the Company led the development of T/ZSA 148-2023 *Product Carbon Footprint Evaluation Rules For Wind Turbines Category*, China's first carbon footprint evaluation standard for wind turbines, independently completed the carbon footprint accounting of medium-speed permanent magnet wind turbines, and obtained the wind turbine carbon footprint and "1 symbol" product certification certificate jointly issued by Zhongguancun Standardization Association and China Standard Conformity Assessment Co., LTD.

The Company also continues to pay attention to and identify the impact of turbines on the environment, and uses the devices for protecting birds, reducing noise, and controlling speed and manage sectors to avoid or reduce impact on the surrounding community environment. The Company offers custom painting of turbines, introduces painted turbines, integrates the turbines into local cultural and natural environment to continue to improve the environmental properties of turbines.

²The data for the carbon equivalent emission per electricity fed into grid of 4S turbines and 5S turbines are based on a 20-year life cycle; the data for the carbon equivalent emission per electricity fed into grid of V12 turbines are based on a 25-year life cycle.

Bird and bat protection:

Video analysis, thermal imaging, sound detection, and radar detection, among other technologies, are comprehensively used to detect bird activities. Ultrasonic technology, high-power digital voice technology, strong flash, laser bird repelling technology, and shockwave explosion repelling technology are used to drive away birds about to fly into the operating area. The hub and blades are painted purple ultraviolet reflection to avoid birds from approaching the wind turbines.

Noise:

For wind farms with noise reduction requirements, the sound pressure level at specified points is controlled by increasing the trailing edge of the blades through prediction based on the sound source model and propagation model, thus reducing the noise of wind turbines and enhancing their environmentally sound performance.

Shadow flicker:

Our wind turbines are equipped with the shadow flicker operation mode, enabling the calculation of the shadow impact range based on rotor length, height and rotation frequency and ambient light intensity, active adjustment of turbine operation status, and control of shadow flicker frequency through rotational speed control and sector management.

Eco-landscape impact:

When selecting the location and laying out wind turbines, the surrounding landscape features are fully considered, and active consultations are held with the local community to build wind farms in conjunction with the layout of local industrial planning, thus minimizing the impact on the surrounding landscape. Painting is customized for wind turbines and multicolored wind turbines are available, so that they are blended perfectly with the culture and the environment.

The Company has developed a variety of bird repellent methods to protect birds around wind farms, including laser bird repellent devices, ultrasonic bird repellent devices, and ultraviolet reflective paintings (painted blades), which can effectively protect birds and the ecological environment. For example, the Cattle Hill wind farm in Australia and Vorreas wind farm in Greece have adopted the bird recognition image system (automatic monitoring system). Through the image recognition technology, the wind farms can identify protected precious birds and carry out strategic shutdown to ensure bird protection and electricity generation at the same time; three wind farms in San Kraal, Phezukomoya, and Coles kop of South Africa have developed strategies to protect bats and analyze bat activity patterns according to environmental conditions, and added wind speed as a variable, which can ideally reduce the mortality of bats by 90%.

Sustainable Wind Farms

Transportation of Wind Turbine Components

The Company runs the concept of sustainable development through the life cycle of wind farm operation and construction, pays great attention to safety management, environmental protection, soil and water conservation and social impact, and constantly improves management to mitigate and avoid the adverse impact of wind farms on surrounding environment and communities.

The Company uses the optimal distance algorithm model, while considering past transportation routes as well as the location of turbines and step-up stations and sensitive collision avoidance areas, and carries out the road survey before the transportation to avoid touching red-line ecological areas, rationally plan transportation routes, and reduce the road development scope.

The Company strictly manages the chain of turbine parts transportation. We have formulated the group standard of *Safety Management Norms for Large Logistics Enterprises* and internal documents such as *Transportation Safety Manual*. The Company strictly follows the "Four Ones" safety rules for turbine transportation, binding and fixing wind turbine parts, putting up warnings, making safety inspections and disclosing necessary information for safe transportation. Transport vehicles must communicate with villages along the way in advance, inform of transport plans and precautions, and set up warning signs on accident-prone sections. When transport vehicles pass through a village, the guide vehicle should warn the village vehicles in advance. The Company implements a technology "double check" mechanism for blades placed upside down to ensure that the transport vehicle matches the blade shape. At the same time, regulations on three-layer blade protection have been formulated based on blade grinding areas and electric shock risks.

The Company attaches great importance to the standardized management of carrier personnel, chooses carriers with environmental protection system certification, requires carriers to select vehicles that meet the emission requirements of all sections on the transport route, and organizes regular safety and environmental protection education and training for carriers.

Wind Farm Construction

In terms of wind farm construction, the Company has formulated the *Management Measures for Environmental and Social Risk Evaluation and Action Planning*, *Management Measures for Cultural Sites*, *Management Measures for Ethnic Minority Affairs*, etc. to regulate the operation activities of wind power projects to achieve business development as well as environmental and social sustainable development.

The Company has formulated the ecological protection plan for wind farms, compiled environmental impact assessment reports and soil and water conservation plans during the development stage, and paid attention to protecting the biodiversity of the sites; we have incorporated environmental protection and soil and water conservation measures/facilities into the construction plan during the design stage; in the construction stage, we focus on the implementation of various environmental protection and soil and water conservation measures/facilities, strictly implement the principle of simultaneous design, simultaneous construction and simultaneous use of wind farms and environmental protection facilities, and at the same time we carry out flood control and drainage, slope treatment, temporary blocking and vegetation restoration; in the acceptance stage, we ensure that all environmental protection and soil and water conservation measures/facilities are put into use simultaneously with wind farms to meet relevant national environmental policy requirements.

In addition, in view of the inevitable slope collapse of wind farms on mountains in the operation and maintenance stage, each wind farm has reserved ecological restoration and treatment costs. Once such a situation occurs on site, the treatment process will be initiated immediately to clean up the site, determine the construction plan, and continue until the treatment is completed.

The Company's distributed wind power project in Huangjinbu of Yugan County has been awarded the Five-Star Green Wind Farm Certificate issued by China Environmental United Certification Center of the Ministry of Ecology and Environment. It is the 5th Five-Star Green Wind Farm of the Company, after the Tiandeng, Lingbi, Yima, and Dunqiu projects. In the future, the Company will continue to adhere to the concept of "conservation, environmental protection, low carbon and health", and build "green wind farms" that meet the standards of green development, design, procurement, construction, operation, and maintenance, so as to ensure high-quality development of the Company.



Smart Operation and Maintenance

With years of experience in the wind power industry and advanced digital technology, the Company continues to explore service innovation in the era of smart energy to ensure more reliable, smarter and more efficient energy services and make green energy the guarantee for sustainability. Relying on industrial chain resources, the Company has formed a service network covering both home and abroad, capable of providing timely on-site operation and maintenance, spare parts supply, component maintenance, and technical improvement and optimization services to ensure the sound and efficient operation of new-energy equipment and increased mean trouble-free operation time. The Company integrates an advanced asset operation and management mode to achieve cost reduction and efficiency increase of new-energy assets.

In view of the problems such as large personnel gap, heavy inspection workload, and difficult safety supervision of new-energy sites, the Company adopts the new-generation cloud-edge collaborative management and control mode, utilizes technologies such as the Internet of Things, big data, cloud computing and artificial intelligence, and integrates information on equipment grid-connection, operation, power trading, resources, business indicators, etc. to achieve optimal resource scheduling and a high-precision algorithm model training mechanism. With efficient data integration ability and powerful computing resources, the Company has remote operation and inspection. The Company provides an open unified algorithm platform for independent training optimization and collaborative management to replace manual inspection with automatic identification by robots, improve the accuracy of robots and facilitate the digital transformation of work stations.

Smart Water Treatment

Goldwind commits its own resources and advantages in the field of energy conservation and environmental protection to the investment and development, construction and operation, and technological innovation of water-related assets. The Company's water-related services cover city water supply, city sewage treatment, industrial sewage treatment, water reuse, etc., providing clean water to more than 10 million people. By the end of 2023, the Company had 66 water and sludge treatment projects, with a contractual treatment capacity of nearly 2.8395 million tons/day of water and sludge assets, covering 13 provinces across China.

In 2023, the Company used the smart water operation management platform to collect real-time data of water plants across the country and receive feedback automatically to monitor the operation status of various projects, timely adjust when problems occur, and ensure the stable output of qualified water from water plants.

In terms of quality improvement, the Company has launched various process package technologies for water treatment, including dual-stage AO biochemical treatment technology (GW-DAO technology) and ozone catalytic oxidation technology, precise dosing technology and carbon-based pharmaceuticals customization technology, improving the removal rate of total nitrogen and phosphorus and lowering COD emission levels to achieve lower emissions in a more economical way.

In terms of energy use, the Company further optimizes the energy use structure of sewage plants through distributed photovoltaics, energy storage equipment and green electricity trading to increase the proportion of green energy use and reduce operational carbon emissions.

In terms of energy saving, by adopting energy-saving equipment such as air-suspended turbines, and energy-saving technologies such as variable frequency regulation and control, and developing stirring paddles with direct-drive permanent magnet at their core, the Company realized energy-efficient operation and management of the system and reduced carbon emission.

Smart Energy Storage

As an innovator aiming at a zero-carbon future, Goldwind uses artificial intelligence and Internet of Things to make products safer, more reliable and more economical through its smart energy storage products and dual-carbon-target energy services to provide users with diversified solutions in terms of power, grid and load.

Based on the smart energy storage E-SaaS (energy storage as a Service) architecture, the Company provides smart power scheduling and energy trading solutions for the power grid and realizes the flexible supply and smart distribution of clean power by optimizing energy scheduling and trading power, making the power grid operation more efficient and stable.

Grid-type energy storage	It has high reliability and strong ability to cope with sudden change in power grid voltage, and can cope with complex grid environment to ensure stable energy supply.
"Bee Communication" technique	Through real-time monitoring and intelligent synchronous control of energy storage equipment, smart control and monitoring of energy storage equipment can accurately detect the status and performance of energy storage equipment, so as to improve the reliability and security of energy storage system.
Early safety warning	Through real-time monitoring and early warning systems, potential security risks are discovered in time and corresponding measures are taken to ensure the safe operation of the energy storage system.
Lightweight battery compartment	Special materials are used to ensure structural strength and reduce the weight of the battery compartment by about 10% compared to the previous one.
Smart liquid cooling temperature control	Based on the AI algorithm, it improves heat dissipation efficiency and reduces auxiliary power consumption. The average comprehensive efficiency of the whole station among the energy storage power stations put into use is 89.1%. This saves the power cost for the owners and users of power stations.
Low-parallel and zero-parallel energy storage system integration	The battery clusters are not parallel or less parallel, and the circulation channels between the battery cells are blocked physically to the maximum extent, so as to achieve a recharge scheme with better performance in safety, available capacity, operating efficiency and utilization.





C4

Honest and Compliant Operations

Goldwind adheres to honest and compliant operations and steadily improves its governance, so as to create value for shareholders and society.

Corporate Governance

Goldwind strictly abides by laws and regulations and standardized documents such as the Corporate Law, Securities Law, Governance Standards of Listed Companies, Stock Listing Rules of the Shenzhen Stock Exchange, and Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong, and establishes an operating mechanism comprising the Shareholders' Meeting, the Board of Directors, the Board of Supervisors, and the management team. Under the Board of Directors, there is an Audit Committee, Nominating Committee, Remuneration and Assessment Committee, and Strategic Committee, with each specializing in its respective field to secure the long-term and stable development of the Company.

The Shareholders' Meeting has ultimate authority. The Company convenes Shareholders' Meetings strictly in accordance with the regulations and requirements of the Rules for the Shareholders' Meetings of Listed Companies, Articles of Association, and the Rules of Procedure of Shareholders' Meetings, engages lawyers and scrutineers to witness the voting results on-site, counts the votes of small and medium-sized investors separately for all the proposals, and discloses to the public the results of voting by small and medium-sized investors, A-shareholders and H-shareholders separately, so as to treat all the shareholders equally and ensure that shareholders are able to exercise their rights to the fullest extent.

The Board of Directors gives full play to the professional capabilities and experience of directors and adheres to the communication and decision-making mechanism with "integrating collective wisdom and making democratic decisions" as its core. Directors fully discuss all proposals and share their views, inform the Company's Management of the potential risks and opportunities in the Company's operations and investment activities, and put forward reasonable suggestions. The Board of Directors consists of nine directors, including two female directors, with diversity in terms of gender, age, culture, educational background, professional experience, as well as skills and knowledge.

The Board of Supervisors, the Company's permanent supervisory body, examines the Company's financial status according to law, and supervises the Company's internal control, risk control, information disclosure, and review of major issues. It is responsible for supervising the Board of Directors and its members. The Board of Supervisors also oversees the Company's senior managers such as the President, Vice President, and Chief Financial Officer to prevent them from abusing their powers or infringing on the legitimate rights and interests of shareholders, the Company, and employees.

The Shareholders' Meetings, the Board of Directors, the Board of Supervisors and the professional Committees of the Board are responsible for reviewing major matters related to corporate development according to their respective responsibilities and authorities.

In 2023, the Company held 3 shareholders' meeting and deliberated 18 proposals. The Company held 11 board meetings and deliberated 67 proposals including annual reports and profit distribution plans. It also held 7 meetings of the Board of Supervisors, 8 meetings of the Audit Committee, 4 meetings of the Nomination Committee, 3 meetings of the Remuneration and Assessment Committee, and 1 special communication meeting for independent directors.

Please refer to the "Corporate Governance" section of the 2023 Annual Report (A-shares: 002202) or the "Corporate Governance Report" section (H-shares: 02208) of Goldwind Science & Technology Co., Ltd. for detailed information about the Company's governance.

Rights and Interests of Investors

Information Disclosure

Goldwind adheres to the principles of factual, accurate, complete, fair and timely disclosure as well as strict disclosure with consistent information in both exchanges in accordance with the listing rules of Shenzhen and Hong Kong. In light of the Company's business operation and development, it has formulated internal documents such as the Information Disclosure Management System and the Material Information Reporting Management and Accountability System to regulate and continuously improve the process of reporting, decision-making and disclosure on important matters. We continuously follow up on material matters that have been disclosed, and disclose their progress in a timely manner. Depending on important matters of concern to domestic and foreign regulators, case analysis reports are formed to provide guidelines for further improving the quality of information disclosure.

In 2023, the Company issued 4 regular reports, 80 A-share announcements, and 173 H-share announcements, among which 89 announcements were in both Chinese and English. The Company has been awarded Class A rating for 7 consecutive years in the annual information disclosure assessment by Shenzhen Stock Exchange.

Investor Relations

In 2023, the Company adopted a variety of methods to carry out in-depth communication, in response to the different needs of investors. The Company held 4 global results conferences in both Chinese and English throughout the year to introduce the Company's operating results and business expansion to investors. In-depth good communication with institutional investors has been maintained through such activities as results roadshows, analysts' meetings, offline investor surveys, and reverse roadshows. Meanwhile, the Company has maintained smooth communication with small and medium-sized shareholders by regularly updating the official website, answering investor hotlines, and providing 100% replies on the interactive platform. Through the new media platform, the Company delivered to investors the latest progress of policies, industry, and the Company's business to enhance its transparency in the capital market. In 2023, the Company received a total of more than 1,700 investors.

The Company also actively responded to the demands of ESG investment organizations by carrying out ESG-themed exchanges and inviting investors to visit our wind farms, assembly plants, and engineering laboratories; meanwhile, key concerns of our shareholders such as thematic surveys on human rights, supply chain, and sustainable development were also arranged.

Profits for investors

The Company pays attention to the long-term and sustained profits and returns for investors. Through steady operation and scientific management, the Company continuously improves its profitability and rewards investors with good operating performance. For consecutive years, the Company has adopted favorable, stable cash dividend policies the allows investors to fully enjoy the benefit of the Company's development and its continuous earnings. Since its listing, the Company distributes profits every year, with the cumulative amount of cash dividends exceeding 10.5 billion up to now, accounting for more than 30% of the net profit attributable to its shareholders. In 2023, the profits attributable to owners of the Company is about 1.331 billion, and the basic earnings per share is about RMB 0.29.

Compliance Management

"Upholding the concept of honest and compliant operations", the Company has established and continuously improved its compliance management system, formulated relevant management systems, compliance manuals, laws and regulations and compliance evaluation management processes, and integrated compliance requirements into various business and management processes, to regulate various production and operation management activities, and strictly investigate and deal with non-compliance issues. The Company emphasizes and continuously fosters a culture of integrity and compliance. The Goldwind Professional Ethics and Code of Conduct requires employees to strictly abide by national laws and regulations, the Code of Business Conduct and the Company's rules and regulations; it explicitly prohibits bribery and money laundering, and proposes fair competition and opposition to monopoly, respect for suppliers and other business partners, lawful and compliant business practices with governments, opposition to discrimination and harassment, the guarantee of information security, as well as respect for and protection of intellectual property rights and social morality; it also requires employees to actively identify and prevent compliance risks, refuse illegal acts, assume responsibility for their own behavioral compliance, and take the initiative to report violations.

We regularly organize training and exchanges, and conduct all-round compliance training for managers, key position employees and new employees through various forms, so as to guide them to practice compliance concepts and comply with compliance requirements consciously.

Internal Control and Risk Management

The Company continues to improve internal control and risk management, and gradually develops a stable risk management structure and operation procedures to guarantee the Company’s sustainable development.

In terms of risk management planning, we have used the risk management work plan for 2021-2023 as guidance to promote the continuous implementation of various tasks in accordance with the established schedule while formulating the risk management work plan for 2024-2026.

In terms of building the internal control and risk management system, we have optimized the overall management structure of risk control and compliance work in accordance with the COSO *Enterprise Risk Management Framework* and ISO31000 *Risk Management Guidelines*, comprehensively identified, analyzed and evaluated business risks based on changes in the external market and the internal corporate environment, and integrated risk response into the target planning system, institutional processes and responsibility system, so as to continue to improve the management system and business processes and effectively prevent and control business risks.

In terms of risk management culture, risk compliance events that occurred in the past have been summarized to form the *Risk Tips for Executives* and the *Compliance Commitment Letter for Employees*, and the risk awareness of the whole staff has been enhanced through various forms such as frontline visits, culture manuals, and surveys and interviews.

In terms of special risk governance, we have sorted out 8 key risk areas and 8 types of sensitive positions in investment, engineering, procurement, sales, assets, finance, litigation and human resources, and focused on special risk governance, thus establishing a risk checklist mechanism to safeguard our business legitimacy and compliance.

Anti-Corruption and Anti-Money Laundering

Anti-Corruption

Led by the Board of Director Audit Committee, the Company has set up an independent Audit and Supervision Department to carry out audit and supervision work, with a particular emphasis on anti-corruption management. It sets up anti-corruption behavior and ethical standards, and optimizes related supervision, inspection and restriction mechanisms, to continuously improve its anti-corruption system, and to create an environment where everyone is unable and unwilling to be corrupt, thus preventing the occurrence of corruption. During the reporting period, no corruption-related lawsuits were filed against the Company.

The Company has formulated policy documents such as *Anti-fraud Regulations*, *Goldwind Professional Ethics and Code of Conduct*, *Dining & Entertainment Expenses Regulations*, and *Transparent Cooperation Agreement*, to clarify the concept and types of bribery and corruption, management structure and responsibilities, absolute prohibitions, reporting and investigation of corruption cases, and remedial measures of corruption cases, among others. In 2023, the *Anti-fraud Regulations* was revised to clarify the type of fraud described as "false statements in violation of financial regulations", to improve the description of "misappropriation or embezzlement of corporate assets", and to add the time requirement for the declaration of "interest".

The Company has developed a reporting and investigation procedure, made available channels such as complaint and reporting phone lines and mailboxes, and arranged for dedicated personnel to record and handle them in a timely manner. In case of a report or a complaint, the Company promptly informs the whistleblower and all persons receiving the report that the matter is being handled, and cooperates with relevant departments and external experts to carry out investigations and take the initiative to provide feedback to the parties concerned and the whistleblower on the progress of the investigations. The investigation team summarizes the results of the investigations and implements subsequent penalties and remedial measures in accordance with the law.

2023

Anti-fraud training sessions for the entire Group

22

Covering

4,105 participants

Rate of declaration

100%

Anti-Money Laundering

The Company encourages all employees and insiders to report violations of anti-corruption rules. It has published the hotline and email address for complaints and reporting in places such as its official website and office areas, and even sets up complaint boxes to facilitate stakeholders' reporting of actual or suspected corruption incidents.

In 2023, the Company carried out various and extensive theme-based training activities. Throughout the year, it organized 22 anti-fraud training sessions for the entire Group and its business units, frontline project sites, newly appointed executives, and newly recruited employees, covering 4,105 participants. It organized all employees to carry out "Declaration of Interests" to avoid potential conflicts of interest, with a 100% rate of declaration. Employees were also instructed to study and fill in the 2023 Anti-Fraud and Code of Ethical Conduct Quiz. Moreover, activities such as the Auction for Fighting Fraud were organized, to continuously build up the awareness of integrity across the Group.

Hotline for anti-corruption reporting:
+86-(0)10-67511888-1127

Email:
audit@goldwind.com.cn

Address:
Audit and Supervision Department, Goldwind Science & Technology Co., Ltd. No.8 Boxing Yi Road, Economic & Technological Development ZONE, Beijing, China 100176



Goldwind strictly complies with the laws and regulations related to anti-money laundering and anti-terrorist financing. It has set up an anti-money laundering risk management structure with a sound organization, complete structure and clear responsibilities, fully incorporating the anti-money laundering laws and regulations and supervisory requirements into its internal system and working mechanism. By strengthening the building and management of risk control capabilities and carrying out internal and external guidance and training, the Company has comprehensively improved its risk prevention and control level regarding anti-money laundering.

The Company has revised the *Management Measures for Anti-Money Laundering and Counter-Terrorist Financing*, the *Management Measures for client Identification and Retention of Client Identity Information and Transaction Records*, and the *Management Measures for Reporting Large-value and Suspicious Transactions*, to clarify the responsibilities of the director, supervisors and officers of the Group's financial company as well as the functional departments in respect of anti-money laundering. It has also refined the measures and processes for client identification, to clarify the reasonable period for updating the validity period of clients' identity documents, so as to ensure that information on beneficiary owners is complete, accurate and up-to-date. The screening criteria for anti-money-laundering suspicious transactions and the specific processes for their identification, analysis and reporting are clearly defined in the relevant systems of the Company. Real-time monitoring is conducted on the lists of terrorist organizations and persons involved in terrorist activities. For clients or transactions from high-risk countries or regions, the Company adopts due diligence and necessary risk management measures in light of the risk status of the business relationship and transactions.

During the reporting period, the Company did not have any litigation cases related to money laundering, nor any money laundering cases or major violations.



C5

Green and Environment-friendly Operations

Goldwind has been committed to clean energy for more than 20 years, and integrated green environmental protection into its production and operation, thus contributing to the fight against climate change, and boosting the realization of carbon peak and neutrality goals. Meanwhile, it strengthens its own environmental management, and actively applies technological innovation and low-carbon and digital technologies to realize green and sustainable development.

Response to Climate Change

Climate change is one of the major challenges facing human society today. To respond to this climate crisis, it has become a global consensus to accelerate green and low-carbon actions and cooperation with active measures.

As a renewable energy source with mature technologies, low-carbon nature and low cost of energy (COE), wind power plays a vital role in mitigating climate change. As a leading global wind turbine manufacturer and provider of integrated wind power solutions, Goldwind takes climate change mitigation as its responsibility and vigorously promotes wind power generation products and services globally, thus facilitating low-carbon transformation and green development of the whole society. By the end of 2023, the Company has achieved a cumulative installed capacity of over 114GW around the globe, with an annual energy production of about 255.0 billion kWh, reducing about 210 million tons of CO₂ equivalent emissions per year³.

In 2023, Goldwind released its first white paper on climate actions at the China Wind Power, demonstrating to the whole society its positive actions and outstanding contributions to addressing global climate change, promoting energy transition and sustainable development ahead, as well as actively sharing its carbon neutrality action path.

By the end of 2023

Cumulative installed capacity globally

114GW

Reducing CO₂ equivalent emissions per year about

210million tons

Risks, Opportunities and Countermeasures

The Company is an active practitioner of the concept of sustainable development, with addressing climate change as an important topic in its 14th Five-Year Plan. Goldwind attaches great importance to climate risks, including physical risks posed by changing weather conditions and extreme weather events, and transition risks arising from national dual-carbon goal, climate change and energy transition-related policies. While we fully recognize these risks, we are also aware of the new opportunities that climate change presents for our business growth.

The Company has identified and analyzed the possible impacts of climate change on its business in terms of both physical and transition risks, with effective measures in place to adapt to and mitigate the impacts of climate change on its business operations and sustainable development.

³ According to the China Electric Power Industry Annual Development Report 2023 of the China Electricity Council, the domestic CO₂ emission per unit of thermal power generation is about 824g/kWh.

Main risks of climate change faced by the Company and countermeasures

Type	Risk category	Risk drive	Existing or potential impact on the Company	Countermeasures
Physical risk	Urgent	Increased severity of extreme weather (typhoons, floods, extreme temperatures, etc.)	As extreme weather conditions become more frequent and intense, they will have an impact on the Company's production and operations, such as plant production and operation, transportation of wind turbine equipment, and smooth operation of wind farms, thus raising its operating costs. A mild consequence will be wind power equipment failure, resulting in reduced power transmission efficiency, while a serious consequence can be severe accidents such as wind turbine toppling, threatening the safety of personnel and property.	The Company has taken into account extreme weather and other related risks in its product design and planning. By adopting high-level model simulation methods, the Company has simulated more accurately the load and stability of the wind turbine against typhoon conditions. The Company has also strengthened the design of key components such as blades and towers, so that its wind turbines can adapt to such special environments as typhoons and thunderstorms. Meanwhile, taking into full consideration of factors such as the environmental condition of the wind farm site, wind direction and speed, the Company has conducted safety assessment and adaptability assessment of the on-site wind conditions of each wind turbine in accordance with the national standards, including assessment of structural safety, load adaptability, and component adaptability to ensure that the wind turbines can operate safely and stably even in extreme weather conditions. Goldwind also develops the meteorological prediction and early warning information system, and builds the meteorological early warning analysis model based on comprehensive meteorological disaster information, wind turbine equipment status, equipment disaster-proof ability, and historical data of disasters. It keeps monitoring and providing early warning of each wind farm, and provides meteorological risk prompts on a full-cycle basis, to enhance the wind turbines' disaster prevention capacity and ensure the safety of equipment and personnel. Goldwind has formulated the Preventive Measures for Major Safety Risks in Special Working Conditions of Goldwind Wind Turbines and corresponding contingency plans to cope with cold waves, typhoons, and extreme weather conditions (including high or low temperatures, extreme precipitation, hailstorms, windstorms, thunderstorms, and tropical cyclones) encountered during the operation and maintenance of wind farms.
		Constantly rising average temperatures	As global temperatures continue to rise, companies need to invest more in power and equipment costs to maintain a comfortable production or office environment, with implications for high-temperature field operations.	The Company has set energy-saving and carbon emission reduction targets and regularly analyzes the status of target fulfillment. It continues to promote the use of renewable energy, and increase the proportion of green power usage to reduce its carbon emissions.
Transformation risks	Policy and legislation	Tightening regulatory requirements	As climate-related issues become increasingly severe, governments have become more stringent in their regulatory requirements for climate compliance, such as responsible investment, use of green and low-carbon products, green buildings, and phasing out of high energy-consuming products, which will result in higher costs for companies' production and operations.	Goldwind has formulated a sustainable development strategy that incorporates ESG factors into the entire investment life cycle. In addition, it continues to strengthen the construction of zero-carbon digital factories, green wind farms, and smart water plants to reduce compliance risks.
		Rising carbon prices in the carbon trading market	Launched in 2021, China's national carbon trading market is gradually expanding to include a wider range of enterprises. With the gradual expansion of coverage and the progressive tightening of emission quotas, the cost of corporate compliance increases. The inclusion of the steel and building materials industry in the national carbon market in the future may increase the cost of raw material supply and engineering construction.	Goldwind tracks the progress of the carbon market, with emphasis on managing subsidiaries/branches that are included in the carbon market. We analyze the trend of carbon prices, and purchase carbon quotas or carbon offset when appropriate, so as to control the cost of compliance. We have launched the Green Supply Chain Project to strengthen management of suppliers' social responsibility, environmental compliance and green power usage.
		Pressing international carbon policies	The Carbon Border Adjustment Mechanism ("CBAM") Act of the EU came into force in 2023, which is a carbon tariff levied by the EU on the carbon emissions of certain imported goods.	The EU CBAM will initially cover five industries, namely cement, electricity, fertilizer, steel and aluminum, with little impact on our export business to Europe in the short term. However, in the long term, if the CBAM expands to cover the full life-cycle carbon emissions of all imported products, it might have impact on us.
Transformation risks	Market	Changing client requirements	Client become more conscious of low carbon, with higher concerns and expectations for green and low carbon products. Increased requirements for managing corporate own climate risks and low-carbon practices lead to increased investment in R&D, management adjustments and industrial transformation.	We continue to monitor the carbon footprint of our wind turbines, with product life cycle assessment (LCA) being performed since 2019 and wind turbine environmental product declaration (EPD) certification being completed. Our certified wind turbines have better carbon footprints than the industry average. Based on its advantages in the main business of wind power, Goldwind has increased R&D investment in low-carbon and low-emission wind turbines, and kept strengthening the carbon footprint accounting and related capacity building of its personnel.

Climate change presents opportunities along with the risks. Goldwind focuses on transformation opportunities presented and strives to incorporate these opportunities into its daily operations and strategy.

Main opportunities of climate change faced by the Company and countermeasures

Type	Opportunity category	Existing or potential impact on the Company	Countermeasures
Transformation opportunities	Market opportunities	China has issued policies to support the development of new energy industries such as the wind and photovoltaic power.	Oriented on growing market demand, we firmly ensure proper R&D and manufacturing of wind power equipment, to improve the power generation efficiency and reliability of wind turbines, and upgrade our intelligent services. We adhere to high-quality development and expand our presence across the global industry chain.
	Product and service opportunities	<p>Strengthening the environment friendliness of the Company's products and services is conducive to gaining clients' recognition.</p> <p>Dual-carbon goal spurs growth of our integrated energy services business.</p>	<p>We carry out full life cycle assessment (LCA) of our products in accordance with relevant standards and complete the Environmental Product Declaration (EPD) certification of wind turbines. In addition, we manufacture environmentally friendly wind turbines, develop new products and services, and provide low-carbon products and services to meet clients' preferences.</p> <p>Faced with the increasing demand for green power such as wind power from high-energy-consuming and high-emission industrial enterprises, Goldwind leverages its accumulated experience and advantages in the field of wind power to actively develop client-side comprehensive energy services and expand new energy application scenarios with wind power as the backbone, providing green and low-carbon energy technologies and integrated solutions for industrial parks.</p>

Carbon Emissions Reduction and Carbon Neutrality

The Company continues to optimize the carbon emission data collection and accounting system and strengthen personnel capacity building. The self-developed Goldwind Carbon Account Platform can regularly, efficiently and accurately collect carbon emission data, and understand in real time the dynamic changes in its carbon emissions and the distribution of emissions. On the basis of a comprehensive review of its carbon emission data for 2023, and upon verification by a professional third-party certifying company, its greenhouse gas emissions for 2023 are as follows:

Greenhouse gas emissions⁴

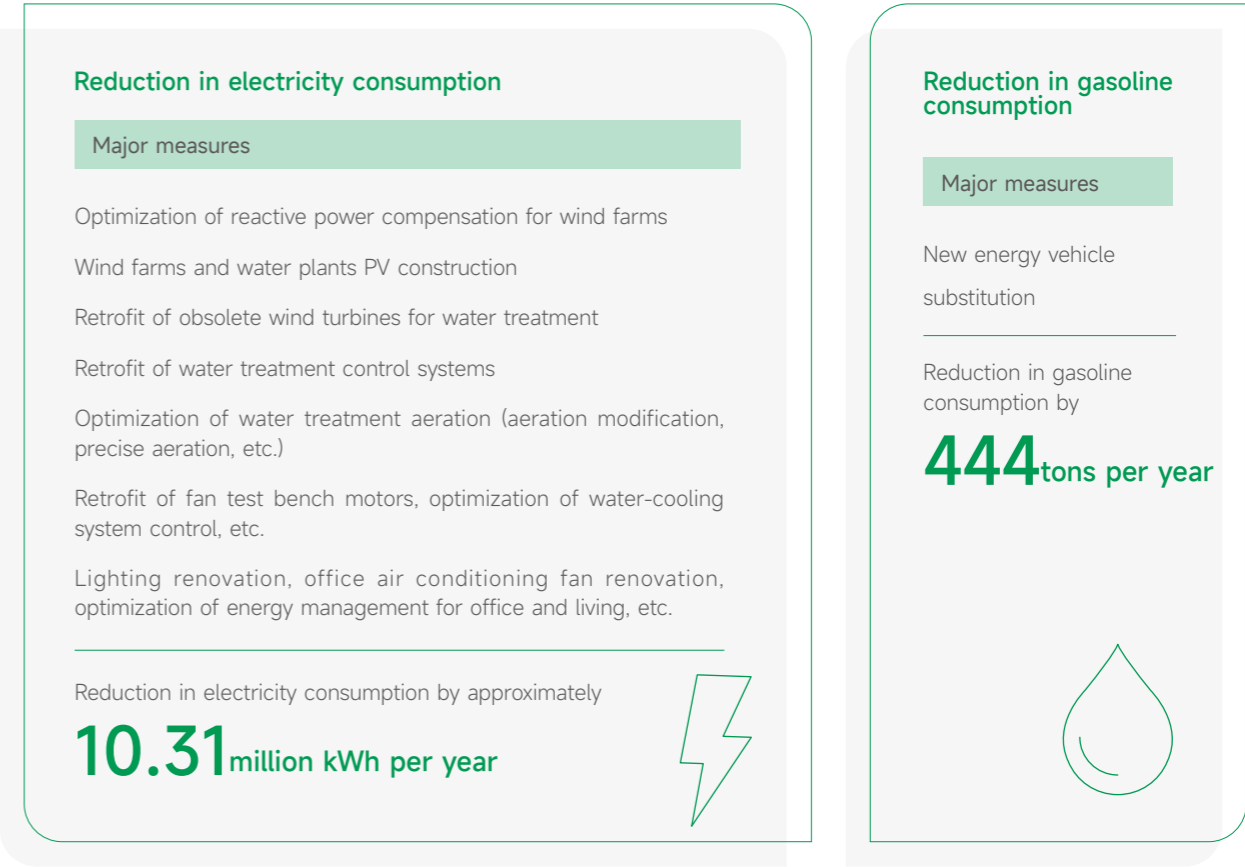
Indicator	Unit	2023	2022	2021
Scope 1	ton of CO ₂ equivalent	20,006.67	18,746.01	17,481.36
Scope 2 ⁵	ton of CO ₂ equivalent	1,193.18	1,251.27	203,087.68
Greenhouse gas emissions	ton of CO ₂ equivalent	21,199.85	19,997.28	220,569.04
Greenhouse gas emissions per MW	ton of CO ₂ equivalent/MW	0.1864	0.1896	0.7232
Greenhouse gas emissions per water treatment capacity	ton of CO ₂ equivalent/10k tons	0.0088	0.0152	2.4748

⁴ The Company's greenhouse gas statistics are verified based on the *GHG Protocol Corporate Accounting and Reporting Standard* and *ISO14064-1: 2018 Greenhouse Gases – Part 1: Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*. Technical documents such as the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* and its revised version in 2019, and *Notice on the Work Related to the Reporting and Verification of Greenhouse Gas Emission for Enterprises in the Key Industries in 2023-2025* by the Ministry of Ecology and Environment were referred to when deciding on the emission factors.

⁵ The significant decrease in Scope 2 emissions from 2022 is due to the direct purchase of green electricity and the purchase of green electricity certificates.

In response to China's dual-carbon goal, Goldwind has stepped up its investment in energy-saving technological retrofit in recent years, and carried out energy-saving and carbon reduction measures in all aspects, thus achieving certain results accordingly. In 2023, the Company further reviewed its energy consumption usage and dug deep into its energy-saving potential, and implemented over 40 energy-saving and carbon reduction measures, including the PV construction for new water plants, precise aeration, and new energy-vehicle substitution, thus reduce electricity consumption by approximately 10.31 million kWh per year and carbon emissions by approximately 7,057 tons per year.

Major energy-saving and low-carbon measures taken by Goldwind in 2023



2023

Commitment to achieve at the operational level (Scope 1 and Scope 2)

Carbon Neutrality

As a provider of clean energy and energy-saving and environmental protection integrated solutions, Goldwind fully utilizes its own advantages, and actively promotes the construction of green wind farms and zero-carbon factories internally by virtue of its mature green power product and service system and extensive practical experience. In 2023, Goldwind consumed 699 million kWh of electricity, with 355 million kWh coming from on-site facilities such as wind farm and solar farm. Goldwind's self-generated green power accounted for 51 percent of its total electricity consumption.

The Company has continued to honor its commitment to achieve carbon neutrality at the operational level (Scope 1 and Scope 2) since 2022. In 2023, besides energy saving and green power usage, we achieved carbon neutrality at the operational level (Scope 1 and Scope 2) by purchasing emission offsets, and obtained professional certification from a third-party certification institute authorized by the China National Accreditation Service for Conformity Assessment (CNAS).

Green Production and Operations

As a pioneer in green development, Goldwind attaches great importance to the environmental impact of its operations. The Company strictly complies with the *Environmental Protection Law of the People's Republic of China* as well as relevant laws and regulatory requirements of the locations where its overseas wind farms operate, and has formulated a number of internal policies for full life-cycle management. During the reporting period, the Company has continued to improve its environmental management system, regularly conducted identification and evaluation of environmental factors, and continually promoted environmental compliance management and improved the environmental management skills of its personnel. By the end of 2023, the main business units of wind turbine R&D and manufacturing, wind farm investment and development, wind power operation and maintenance services, and water utility related services were all accredited with the ISO14001 environmental management system certification.

Utilization of Energy and Resources

The main energy types used by the Company in the production and operations are electricity for office and production, gasoline for business vehicles, diesel for construction vehicles, and natural gas and liquefied petroleum gas for staff catering, among which electricity is the primary energy consumed. Water is used mainly in such scenarios as office work and living, wind farm construction, and water utility related services. During wind farm construction, only a small amount of water is used for construction, dust control and plant watering. In water utility related services, water is mainly used for processes such as pharmaceutical preparation.

Amount and Density of primary energy and resource usage⁶

Indicator	Unit	2023	2022	2021
Total electricity consumption	100 million kWh	6.99	6.87	5.87
The self-generated electricity consumption of wind and solar	100 million kWh	3.55	3.64	3.14
Gasoline consumption	kL	3,809.33	2,958.10	2,554.30
Diesel consumption	kL	1,974.01	1,648.69	1,651.56
Liquefied petroleum gas consumption	ton	134.99	160.36	107.77
Natural gas consumption	10,000 m³	77.62	77.86	84.67
Overall energy consumption per MW	ton of standard coal/MW	0.54	0.59	0.65
Overall energy consumption per water treatment capacity	ton of standard coal/10k tons	0.48	0.46	0.41
Water consumption	10k tons	89.59	82.85	76.85
Water consumption per capita	tons/capita	51.11	55.81	57.23
Density of water consumption for production and operations	ton/ thousand tons of water treatment capacity	0.50	0.70	0.72
Packaging materials of wood	ton	620.68	887.21	1,283.54
Density of wood packaging usage	ton/unit	0.068	0.28	0.45

Goldwind has gradually improved its energy management system building in recent years, with comprehensive and systematic efforts to promote internal factory energy audits, energy management system certification, green factory certification and PV construction. In 2023, the Company carried out special energy audits on Zhangjiakou Turbine Assembly Plant, Dafeng Lingang Assembly Plant, Dabancheng Assembly Plant, and Dafeng R&D and Experiment Center. It has continuously improved its energy management system and strengthened the daily supervision and management of key energy-consuming equipment. By the end of 2023, eight plants of the Company have already established their energy management systems and passed the ISO50001 energy management system certification; 4 plants have obtained the national certification for green factories, and four plants have obtained the provincial certification for green factories. Taking into account the features of each business segment, the Company carries out site-specific planning and actively develops on-site PV construction at manufacturing assembly plants and water treatment plants to increase the proportion of green power usage. By the end of 2023, Goldwind has installed PV power generation systems in eight manufacturing plants, one of which was also equipped with a wind power smart microgrid. It has installed PV power generation systems in eight water treatment plants.

⁶ Refer to the GB/T2589-2020: General Principles for Calculation of the Comprehensive Energy Consumption for the calculation of various energy and resource consumption.

Goldwind was included in China Top 100 Benchmark Smart Plants



In September 2023, Goldwind's zero-carbon digital plant in Darbancheng was included in the 2nd Top 100 Benchmark Smart Plants in 2023, and Goldwind's "smart manufacturing" capability has been further recognized. While realizing low-carbon and energy-saving production, the zero-carbon digital plant in Darbancheng also enables digital and intelligent production, and carries out a number of innovative applications from both software and hardware ports. Compared with the wind power assembly plant with the same capacity and using a fixed production mode, producing the one-station cycle time for one set of nacelle and rotor has been shortened from 6 hours to 3.5 hours, and the production cycle time has been shortened from 5 days to 4 days.

The Company attaches great importance to the conservation and management of water resources. It strictly follows relevant laws and regulations including the *Water Law of the People's Republic of China* and the *Water Pollution Prevention and Control Law of the People's Republic of China*, strengthens the water conservation management throughout the water intake and consumption processes, and enhances its employees' awareness and ideas of water conservation. In 2023, we actively carried out various forms of water recycling and reuse at our wind farms and water treatment plants, such as utilizing water for landscape watering, and increased water use efficiency through the renovation of the domestic water power system and the strengthening of domestic water consumption management.

Waste Management

The Company generates relatively little waste during the process of wind turbine manufacturing, wind farm construction and operation and maintenance. General solid waste mainly includes construction waste generated during wind farm construction, as well as domestic waste and food waste generated by daily office work. Hazardous waste mainly includes waste organic solvents and waste containing organic solvents, waste mineral oil and waste containing mineral oil, organic resin waste, and others. Air pollutants such as nitrogen oxides and sulfur oxides are barely generated during the Company's operational activities.

Goldwind strictly regulates the classification, collection and treatment process of hazardous and general solid waste, and applies for the transfer of hazardous waste in accordance with national and local laws and regulations, with continuous follow-up on its transportation and treatment to ensure closed-loop management. For general solid waste, it takes the principles of reduction, recycling and harmless treatment as the principle. For the recycling of general solid waste generated by engineering construction, Goldwind refers to the *Technical Planning for Recycling Waste Generated by Engineering Construction*.

Emissions and Density of primary waste

Indicator	Unit	2023	2022	2021
Construction waste of wind farms	ton	268.61	397.89	1,231.17
Wind power business hazardous waste	ton	83.25 ⁷	73.95	73.24
Hazardous waste generated per MW of wind turbine manufactured	ton/MW	0.0035 ⁸	0.0067	0.0071

In view of the latest regulations related to hazardous waste control implemented in the past two years, such as the *GB18597-2023 Standard for Pollution Control on Hazardous Waste Storage* and *HJ1259-2022 Technical Guideline for Deriving Hazardous Waste Management Plans and Records*, we carry out end-to-end hazardous waste management training to promote the standardized management of hazardous waste storage rooms, graphic marking, and hazardous waste archiving.

⁷ The main reason for the increase of wind power business hazardous waste in 2023 is that the international operation and maintenance units reach the coolant replacement life in this year.

⁸ The main reason for the decrease in hazardous waste generated per MW of wind turbine manufactured is that the Company carried out the replacement of gearbox oil drums in the manufacturing center, replacing the gearbox oil packaged in the original iron drums with the one in reusable tonne drums to achieve the weight reduction of hazardous waste contaminant.

Hazardous Chemicals Management

The Company has established a hazardous chemicals management system, including material audit management, hidden danger investigation and identification, management risk operation assessment and early warning, emergency management and handling, and safety management organization. A corresponding safety management information system and risk management mechanism have been set up to enable the management of hazardous chemicals with all elements, processes and personnel, in a dynamic and information-based manner, so as to achieve substantial safety.

The company has formulated the *Guidelines for the Selection of Chemicals for Wind Turbines*, which stipulates the classification, selection principles, identification, and substitution of harmful chemicals, and preventive measures against chemical hazards for wind turbine chemicals. In order to select chemicals more safely in the wind turbine design and production, the Company has sorted out its list of hazardous chemicals, and identified and classified the hazards of these listed chemicals, thus guiding the use of chemicals.

In order to govern the full life-cycle management of chemicals, prevent chemical accidents or incidents, ensure employee safety, and reduce environmental pollution, the Company formulated the *Regulations on the Safety Management of Hazardous Chemicals* in 2023 to guide company-wide chemical procurement, use, storage and disposal.

To further reduce the discharge of volatile organic compounds during the production process and promote the substitution of solvent-based materials in chemicals, our manufacturing plant successfully conducted the actual production test of replacing non-environmentally friendly materials with water-based materials (water-based top coating, water-based cold zinc spray, silane modified glue, water-based cleaning agent & dish-washing liquid) in 2023, passing the internal quality control. Moving ahead, we will continue to promote the use of water-based materials to avoid environmental compliance risks and reduce employee health risks.

Resource Recycling

Wind Turbine Recycling

With years of experience in wind farm services, Goldwind has gradually established a wind turbine recycling and reuse system, and has set up a recycling network of "collection, transfer and transportation". Leveraging on its internal and external resources, the Company has established sales channels for refurbished equipment, forming a closed loop of obsolete wind turbine recycling and re-manufacturing. In addition, the Company is capable of repairing and re-manufacturing more than 200 types of wind power components, and has independently designed and developed over 30 system-level inspection and maintenance platforms, with applications for 24 national patents. As for the manufacturing of electronic control components, its "wind turbine converter maintenance capability assessment" has obtained five-star certification from a third-party authority.

Goldwind has established a subsidiary with renewable resource recycling license. Currently, there are three recycling directions for decommissioned wind turbines, namely, reapplication of complete wind turbines, remanufacturing of components, and disposal of scrap.

Reapplication of complete wind turbines

We make full use of the salvage value of wind turbines; and distribute them in high-energy-consumption industrial parks and towns, on training platforms, or in carbon-neutral parks.

Disposal of scrap

For solid waste with high residual value (towers, cables, and transformers), solid waste with low residual value (electrical components and structural components), and blades, among others, we follow the principle of solid waste reduction, recycling, and harmless treatment, to maximize their residual value and revenues.

Remanufacturing of components

The core components of wind turbines such as gearboxes and generators can be recycled through remanufacturing, and used for replacement in the post-service repair market and O&M market. This improves the reuse of component resources, maximizes the residual value of resources, and reduces client investment in O&M spare parts. Based on the recycling needs for large components and spare parts, we further classify and reuse those remanufactured components, leveraging on the existing repair capabilities of large components and electronic control components in the remanufacturing product line to increase the residual value of the components.

Recyclable wind turbine blades successfully tested and rolled off the production line



Facing the industrial pain point of recycling decommissioned wind turbine blades, Goldwind has been committed to the R&D of green blades to address this recycling challenge from the root and realizing the sustainable development goal of 100% recycling of wind turbines by 2040. In 2023, Goldwind joined hands with blade plants and material plants in the development of Arkema thermoplastic resin and biodegradable epoxy resin. Goldwind has completed the material evaluation and blade design for EzCiclo, a recyclable thermosetting resin developed by Swancor, and Arkema thermoplastic resin. As of the end of the reporting period, the trial production of the 100-meter blade and full-size static test of Arkema resin were successfully completed; the resin is expected to enter into the stage of industrialization and application in 2024.

2023

Reduction in the weight of plastic packaging for large parts of wind turbines per kilowatt per year in 2023 compared to 2022

14%

Logistics Packaging Recycling

Goldwind works with the technical departments of manufacturers to carry out the recycling of pallets used in the production of nacelles, impeller, and transmission chains of wind turbines. On the basis of recycling the five major pallets for nacelle structural parts, electric teeth of transmission chains, bearing housing, casing, and main shaft in 2022, Goldwind continued to expand the recycling of pallets for other bases and nacelle platforms in 2023, thus expanding the recycling scope and improving the recycling efficiency of the pallets. Meanwhile, the Company also cooperated with manufacturers to improve the processes of manufacturing wooden pallets such as hubs and bases, optimize the quality and size of pallets, thereby reducing the use of wooden pallets and cutting down resource and energy consumption.

To reduce the use of packaging for large parts of wind turbines, the Company achieved a 14% reduction in the weight of plastic packaging for large parts of wind turbines per kilowatt per year in 2023 compared to 2022 by applying rigid packaging made of biodegradable plastic materials to the packaging of large parts of the GWHV12 platform model, applying partial packaging to all the onshore wind turbines, and simplifying the packaging protection of internal components of large parts, so as to avoid over-protection.



Ecological Protection

The Company strictly follows domestic and international laws and regulations such as the *Law of the People's Republic of China on Environmental Impact Assessment* and the *Regulations on the Administration of Construction Project Environmental Protection*, extending the concept of eco-protection across the entire project life-cycle, with a number of initiatives taken to deepen the eco-environmental protection of project sites.

For the design, development, construction and operation of wind farms, we have established a comprehensive environmental protection system, including the *Management System for Environmental Protection and Soil and Water Conservation*, the *Measures for Assessment, Reward and Punishment of Environmental Protection and Water Conservation*, and the *Measures for the Management of Soil and Water Conservation Facilities and Environmental Protection Acceptance on Completion of Projects*. The system provides systematic management from the development, design, construction to the operation and maintenance of wind farms throughout the life cycle, covering such aspects as the management mode, responsibilities, planning, requirements and objectives, risk identification and control, accident investigation and handling, rewards and penalties, supervision, inspection and improvement, environmental information management, and inputs for environmental protection and soil and water conservation.



Biodiversity Protection

The Company has formulated the *Measures for Sustainable Management of Biological and Natural Resources*, which addresses biodiversity protection in the process of project development, construction and operation, with a focus on the impacts of habitat loss, ecosystem degradation and fragmentation, invasive alien species, overexploitation, hydrological change, eutrophication and environmental pollution on biodiversity.

In light of such requirements, the Company has identified the impacts of wind farms on biodiversity during their development, construction and operation, and formulated corresponding countermeasures.

Type of wind farm	Impact on biodiversity	Countermeasures
Onshore wind farm	Wind farms generate direct and indirect impacts on biodiversity during their construction, operation and maintenance. Transmission lines, meteorological towers, substations, roads, and lamps may also affect biodiversity, including collision-induced bird and bat mortality, bat mortality due to potential pneumatic stress injuries, wildlife migration, habitat transition and degradation, and disruption of bats' and birds' day-to-day activities (e.g., from feeding to roosting or breeding sites).	<p>When selecting sites for wind farms and during their development, early screening of biodiversity issues has been carried out in the macro-siting of wind farms to determine whether a project is adjacent to an area with high biodiversity value. In micro-siting, a biodiversity survey has been carried out within the site, and baseline biodiversity information is obtained as well. If nature reserves, rare plants and animals, or areas prone to soil erosion are involved when applying for approval documents such as environmental assessment and water protection, adjustments will be made to the wind turbine locations.</p> <p>During wind farm construction, the Company has formed a mechanism to review and confirm the location of wind turbine sites to ensure that all types of risk points that threaten biodiversity are avoided. It is prohibited to build artificial landscapes in wind farms that attract birds and bats, such as water areas, roosting or nesting areas, new feeding areas, and staging and roosting areas.</p> <p>During the O&M of wind farms, biodiversity monitoring has been carried out to protect the distribution of wildlife, birds and plants through such initiatives as counting the distribution of protected plants and properly treating household waste, so as to promote the harmony between man and nature.</p>
Offshore wind farm	As offshore wind farms become larger, their development and construction scales are increasing, resulting in greater impacts on the marine ecosystem. Noise and vibration during the transportation of wind turbine components may affect the hearing and behavior of fish. The construction and installation process of wind turbines may damage marine water quality, seabed topography and marine organisms, such as destroying coral reefs and seagrass beds. Underwater piling and submarine transmission cable laying are the major stages affecting marine ecology. During the operation of offshore wind turbines, the blade rotation may affect the birds' habitat and migration or hurt them by collision.	<p>When transporting wind turbine parts, the Company mitigates negative impacts on the marine ecological environment by strictly controlling pollutant emissions from lifting vessels, charting reasonable transportation routes to avoid existing marine bio-protection zones, and taking low-noise, low-vibration transportation means. Before the shipment of offshore wind turbines, we plan the transportation routes by using digital technologies to avoid fishery breeding zones and marine protection zones. Meanwhile, we select carriers with certified environmental protection systems, and request them to choose lifting vessels that meet the emission requirements of the sea areas along the transportation routes, so as to minimize environmental damages. During transportation, we also adopt such measures as damping cushion and speed reduction to minimize the impact of noise and vibration on the marine life.</p> <p>While constructing offshore wind farms, the Company adopts fine construction, as well as technologies such as digital simulation and optimized interspersing of highly time-consuming processes, to significantly reduce the installation time, and prevent the damage of undersea terrain and marine life caused by multiple, large-scale and long-time construction.</p> <p>During the operation of wind farms, the Company employs an intelligent monitoring system to set up an air-sea 3D monitoring network by means of hundreds of intelligent sensors and video surveillance spread throughout the entire turbines, for real-time monitoring of the activities of birds and marine organisms close to the periphery of the turbines, so as to minimize the negative impacts of wind turbine operation on the normal activities of the biological populations.</p>

Moving forward, the Company will continuously promote the investigation and monitoring of biodiversity in accordance with laws and regulations on the impact of wind turbines on biodiversity, and enhance the protection of biodiversity throughout the life cycle of project development, construction and operation and maintenance. We are also committed to promoting the engagement of all relevant parties in biodiversity protection, and continue to strengthen the publicity and popularization of biodiversity protection laws and regulations, scientific knowledge, and typical cases.



C6

Sustainable Industrial Chain

Goldwind integrates the concept of sustainable development into the whole industrial chain, from R&D and design, procurement, manufacturing, installation and operation and maintenance to after-sales services, and guides its suppliers to honor their environmental and social responsibilities, thereby boosting the transformation of the entire industry towards sustainable development.

Responsible Procurement

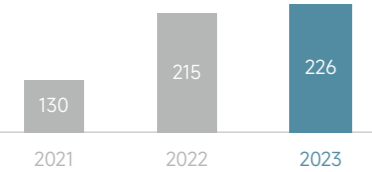
Goldwind follows the procurement principles of "openness and transparency, fair competition, compliance with laws and regulations, and honesty and trustworthiness", and continuously improves the supply chain management system. It has formulated such management rules as the *Procurement Management System* and the *Supplier Approval Management System*, which clearly define the procurement management methods and requirements for exploring new suppliers, so as to avoid potential risks in the supply chain, and ensure fair, just and open cooperation with suppliers.

In order to improve the digital management of suppliers, the Company continues to optimize its supplier lifecycle management platform, to undertake the procurement in accordance with uniform standards, thereby realizing the digital management of the entire lifecycle of supplier registration, exploration and approval, authentication, evaluation, complaint, rectification, withdrawal and sustainable development, and ensuring the compliance, transparency and fairness of the supplier management process.

During the reporting period, the platform strengthened the development of suppliers' social responsibility management and organized suppliers to sign the *Social Responsibility Commitment Letter* and the *Transparent Cooperation Commitment Letter*, requiring suppliers to be committed to complying with such social responsibility requirements as workers' rights and human rights, health and safety, environment, and business ethics.

Supplier Social Responsibility Management

Number of suppliers audited for social responsibility



Goldwind continues to promote the social responsibility management scheme of the supply chain. By constantly optimizing the system of supplier social responsibility management, conducting internal and external social responsibility audits, and strictly implementing corrective measures, Goldwind guides its suppliers to improve their own management and lower their social responsibility risks.

In accordance with the Code for Social Responsibility Evaluation of Suppliers of Wind Turbine Components and the Code of Conduct on Social Responsibility for Suppliers, Goldwind has set up a unique supplier social responsibility evaluation system to comprehensively evaluate suppliers' compliance with laws, employees' rights and interests, health and safety, environmental protection, and business ethics. The audit criteria cover three categories of issues: zero-tolerance issues, priority issues, and common issues. Zero-tolerance issues include unacceptable issues such as forced labor, child labor, inhumane treatment, corruption, and fatal safety accidents, which, if found, will lead to the immediate termination of all cooperation. Priority issues include 57 mandatory corrective actions, which, if found, must be completed within a specified period of time. Common issues involve suggested corrective actions, which suppliers can decide whether to complete according to their own situations.

The Company expands the scope and number of supplier social responsibility audits year by year leveraging on its experience in this regard, gradually extending its social responsibility ecological chain. In 2023, the Company engaged an independent third party with the auditor qualification of the Association of Professional Social Compliance Auditors (APSCA) and completed audits of 226 suppliers, covering 100% of major suppliers of wind turbine components (manufacturing category), of which 212 were rated as Grade A suppliers (accounting for 93.81%), and 14 as Grade B (accounting for 6.19%), without any unqualified suppliers.

2023

Association of Professional Social Compliance Auditors (APSCA) and completed audits of

226

covering major suppliers of wind turbine components (manufacturing category)

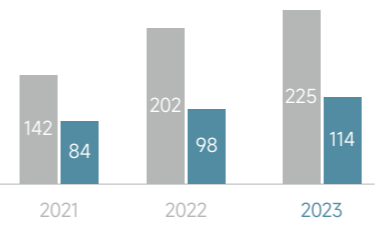
100%

Rated as Grade A suppliers

212

Green Supply Chain

■ Number of green suppliers evaluated
■ Number of suppliers rated as 3-star or above



Goldwind has taken the lead in implementing the Green Supply Chain Project in the industry since 2016. Based on standard building and comprehensive evaluation, Goldwind helps suppliers establish and improve their management systems, enhance their awareness and ability of green development, and obtain resources for comprehensive zero-carbon solutions by means of publicity, guidance and targeted assistance, so as to improve the green performance of the industrial chain along with suppliers.

In 2023, the Company released the updated corporate standard *Green Supplier Evaluation Standard*, adding the indicator of "carbon emission reduction" to further respond to China's dual-carbon goal. Throughout the year, 225 suppliers were audited, including suppliers of large components such as nacelles, rotors, generators, and towers, covering 100% of the major wind turbine component suppliers. Among them, 21% of suppliers were rated as 4-star or 5-star suppliers with the best performance, and 51% of suppliers were rated as 3-star or above suppliers.

Goldwind has proactively led companies along its supply chain to use renewable energy resources such as green power, with wider coverage of green power and higher proportion of green power used for manufacturing Goldwind's products year by year. In 2023, the major suppliers of Goldwind used 60% of green power for manufacturing Goldwind products. For suppliers with a higher proportion of green power used for manufacturing Goldwind products, Goldwind prioritizes them in order purchases with corresponding preferential policies, to encourage them to continuously increase the use of green power.

Meanwhile, relying on the "three-side carbon reduction and one-platform", Goldwind provides suppliers with zero-carbon power sources such as wind and solar power, energy and carbon management platform with optimal operation and control capabilities, as well as carbon emission reduction management such as green power trading and carbon trading, so as to promote the green, low-carbon and sustainable development of the whole industrial chain. In 2023, Goldwind provided integrated zero-carbon solutions for more than 50 suppliers, including distributed wind power, solar power, energy carbon management platform, and green power and green certificate trading, all of which would reduce nearly 80,000 tons of CO₂-equivalent emissions annually when connected to the grid, thereby vigorously accelerating the green and low-carbon transformation of the industrial chain.

Support Suppliers' Development

As a core player in the supply chain of wind power equipment manufacturing, Goldwind integrates its advantages as a leading wind power company both domestically and globally, and actively promotes sustainable development. Through multi-dimensional communication methods such as organizing supplier conferences and attending international exchange exhibitions, Goldwind engages in exchange with other players in the industry on the paths and approaches to sustainable development. In addition, it regularly recognizes supply partners with outstanding contributions, to motivate those with excellent sustainable development practices, and reach consensus on green, low-carbon and social responsibility, so as to jointly promote sustainable development along with its supply chain partners.

To enhance suppliers' production capacity and management level, our internal R&D, quality and supply chain personnel have been deployed at suppliers' sites or provide professional training, so as to empower suppliers with our experience and abilities for quality enhancement and delivery assurance. Moreover, by integrating the advantageous resources of our Company and suppliers, we have collaborated to make breakthroughs in key technological fields and solve challenge of key technological monopolies in the industry, so as to significantly enhance the competitiveness in the market.



Chairman Wu Gang delivered a speech at Goldwind's 14th Supplier Conference in 2023



C7

Fair and Sound Working Environment

Goldwind is committed to creating a diverse, fair and inclusive workplace climate, protecting the basic rights and interests of employees, safeguarding their occupational health and safety, providing extensive career development space and resources, respecting employees' aspirations and providing diversified employee benefits, so as to create a reassuring and pleasant working environment for employees.

Fair and
Standard
Employment

The Company strictly abides by the *Labor Law of the People's Republic of China*, the *Labor Contract Law of the People's Republic of China*, the *Employment Promotion Law of the People's Republic of China*, and other applicable laws and regulations related to employment in the countries and regions where the business operations take place, and supports various international human rights conventions ratified by the Chinese government. It has issued a number of internal system documents such as the *Recruitment System of the Group* and the *Employee Management System of the Group* to ensure equal and regulated employment. In 2023, there was no child labor, forced labor, bonded labor or human trafficking.

The Company strictly implements national and local social security regulations, and pays the wages of employees and their social insurances in a timely manner. In 2023, the labor contract signing rate of employees was 100%, and the social insurance coverage rate was 100%.

2023

Labor contract signing rate of employees was

100%

Social insurance coverage rate was

100%



Rights and Interests
Guarantee

The Company issued the *Management Measures on Employee Rights and Interests* which prohibit and resist any form of child labor and forced labor, forbid forcing employees to work or restricting employees by means of violence, threat or illegal restriction of personal freedom, prohibit corporal punishment, intimidation, harassment, abuse and any act of discrimination against employees, and stipulate that employees' rights to freedom of assembly and association according to law should be respected. This has laid the foundation for the protection of employees' rights; It also clarify the meaning of different types of discrimination and ensure fair and equitable treatment of employees of different races, colors, ethnic groups, genders, ages, religious beliefs and cultural backgrounds.

At the same time, the Company has clearly defined the remedy rules for violations of child labor and standardized the channels for employees to file complaints. In case of accidental recruitment of child labor, it is necessary to report and verify as soon as possible, and escort the relevant personnel home and provide appropriate financial assistance; if a violation of the rights and interests of employees is revealed, the violator will be disciplined in accordance with the *Group's Reward and Punishment Management System*, and the victim will be offered counseling and timely compensation.

In 2023, on the basis of the existing rules to protect the rights and interests of employees, guided by the United Nations Convention and the International Labor Organization Convention, the Company issued the *Anti Modern-Slavery Guidelines*, which clearly defines the principle of zero tolerance for modern slavery and the freedom of employees to complain. This has strengthened the values in Goldwind's global human rights protection.

Employee Communication

The Company sees labor unions as a bridge and a link to communicate with employees, respects employees' right to establish labor unions on their own initiative and continues to improve the democratic management approach based on labor union consultation. The labor union committees negotiate and sign with the Company the *Collective Contract*, *Wage Agreement*, *Occupational Safety and Health Agreement* and *Protection of Female Employees' Rights and Interests Agreement* on behalf of employees, effectively safeguarding the legitimate rights and interests of both parties in the labor relations. The labor union participates in the evaluation of the rules related to employee benefits and supervises the democratic disclosure procedure of the rules related to employee benefits to implement democratic management. In 2023, the labor union representatives reviewed 33 rules and completed consultation procedures. In order to establish smooth employee communication channels, the labor union has set up an employee comment box to collect the needs and opinions of employees and understand the aspirations of employees.

Additionally, the Company continues to conduct employee satisfaction and engagement surveys to gain a comprehensive understanding of employee needs, focusing on management improvement to develop improvement plans and deliver ongoing improvements, so as to enhance employees' experience and satisfaction. In 2023, the Company surveyed 8,236 employees in the form of online questionnaire. The Company was rated 4.38 points (5-point scale) in employee engagement, with an increase of 0.20 points over the previous year, and 4.32 points (5-point scale) in employee satisfaction, with an increase of 0.19 points over the previous year.

2023

(5-point scale) in employee engagement

4.38

(5-point scale) in employee satisfaction

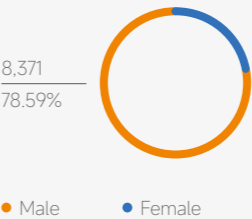
4.32

Overview of Employee Composition⁹

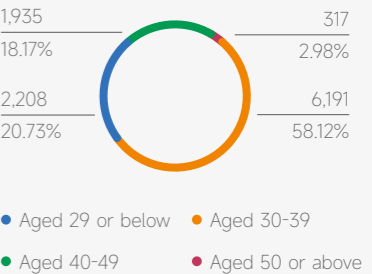
Total number of employees

10,651

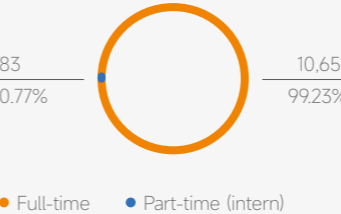
Number and proportion by gender



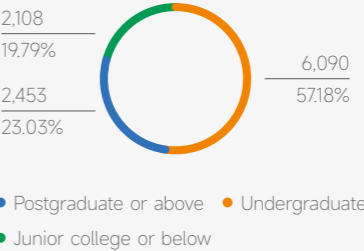
Number and proportion by age



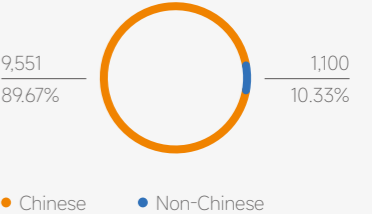
Number and proportion by employment type



Number and proportion by education level



Number and proportion by nationality



⁹The total number of employees includes only full-time employees while excluding part-time employees (interns) in the statistics of all categories, except for the number of part-time employees (interns) in the category of employment type.

Employee Training and Development

Employee Training

Goldwind actively provides employees with diversified learning, training and career development opportunities, while designing targeted and sustainable skill development solutions and career development paths to help employees realize personal value and broaden their career development channels.

The Company aims to "cultivate excellent value creators of new energy". Since the establishment of the first corporate university in China's wind power industry in 2011 (now renamed Goldwind Learning and Development Center), the Company issued the Training Management System and improved its training system. By accumulating and sharing knowledge and experience, and building a curriculum system and learning platform, the Company provides employees with specialized and customized learning and development solutions.

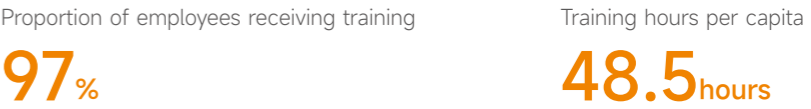
The Company continues to deepen the accumulation of wind power knowledge and experience, forming a knowledge tree of wind power containing more than 1,300 proprietary courses, and exploring diversified and multi-channel learning methods. Relying on the online learning platform, it expands the coverage of training, broadens the breadth of learning, and enriches the learning content to provide in-depth support for business and meet the needs of employees strengthen technical knowledge and basic professional skills.

In 2023, the Company continued to improve employee training, designed and organized various training programs covering leadership, expertise and general competence, and settled and solidified a number of classic training and talent development programs for new hires and new managers.



Main Group-level Learning & Development Programs in 2023			
Training program name	Training target	Main training content	Number of trainees
Development of leadership and management skills			
Training for New Managers	New managers, front-line managers	Equip them with the management knowledge and tools they should have and help them inherit the Goldwind culture and reshape the consensus of cadres, so as to realize the role change from individual contributors to team managers.	A total of 3 batches, covering 97 participants
Hundred Talents Project	Frontline backbone employees and technical backbone employees in the Group	In-service education for the Group's frontline business backbone and technical backbone employees, a strategic talent reserve project aiming to improve employees' professional and technical capabilities.	4 new participants
Development of professional skills			
Enhancement of marketing ability	Marketing channel	Focusing on the core backbone employees in professional channels, empowering employees accurately, enhancing their professional skills, and improving their performance.	A total of 2 batches, registering 578 times of participation in the marketing channel
Goldwind Lectures	Multi-specialties channel	Focusing on employees in professional channels, focusing on business development issues, empowering employees accurately, enhancing their skills, and improving their performance.	A total of 12 batches, covering 1,015 participants
Development of general skills			
Basic Training	Employees	Introducing the up-to-date basic knowledge of the Company to employees and informing them of the basic code of conduct, as general knowledge training for Goldwind employees.	Multiple batches, with a cumulative coverage of 98%+ in 3 years
Training for New Hires	New hires	Helping new hires quickly give full play to their value on the Goldwind platform and cultivate Goldwind members with customer-oriented and frontline-driven values, including intensive training for new hires from social recruitment and those from "Zero Carbon Training Camp", Goldwind's campus recruitment.	A total of 10 batches, registering 625 times of participation
Training of internal trainers	The Company's internal trainer	According to the hierarchy for internal trainers empowerment, focusing on training intermediate-level internal trainers, and taking course development and experience accumulation as the training core to produce trainers with course development ability, and finally transforming knowledge and experience within the Company into business achievements to effectively promote the sharing and inheritance of knowledge within the Company.	A total of 3 batches, registering more than 100 times of participation, with 17 newly certified internal trainers
Online Live Courses	Employees	Paying attention to business pain points, providing specialized training, focusing on the general skills required of all employees, popularizing professional knowledge, continuously accumulating independent intellectual property and producing instructors with specialties.	A total of 16 live broadcast sessions, with 1,117 participants

Overview of Annual Employee Training



Goldwind is deeply engaged in global markets, focusing on the employment of local people as management and staff teams, and giving play to the value of local talents. In order to build teams of local wind power professionals, the Company continues to expand its local talent training and build a diversified, customized, effective and cross-cultural talent training model according to business needs in each country and region where it operates overseas, supporting the growth of local employees.

Global New Hires Training Program

The Company continues to improve the life cycle management of new hires, provide different stages of empowerment counseling for new overseas employees, help employees master the necessary knowledge and skills, and shorten their adaptation period.

Professional Empowerment Program

The Company builds job competency models based on business scenarios, defines training standards, and creates learning maps to help overseas employees more clearly understand job competency requirements and development paths

Train the Trainer to Train Program

The Company cultivates a team of foreign internal trainers who can teach and disseminate knowledge within the region, and promotes experience accumulation and exchange between different regions

Wisdom Sharing Program

The Company regularly invites core personnel and foreign backbone employees to discuss and exchange views on business priorities, and provides employees with opportunities to gain professional experience

Global Wind Energy Organization (GWO) professional training

The Company obtained its first GWO certification in Pakistan. The Company's Pakistan branch provides professional GWO training for internal employees and clients to make local wind power related work more compliant and better align to international standards. By the end of 2023, a total of four people have obtained the GWO instructor capability.



Career Development

Goldwind believes employees' personal interests and expertise should be combined with the Company's development needs. A complete job qualification system has been set up to clearly define the qualification standards for different job categories and levels, so as to guide talents to move towards higher-level positions.

The Company provides two career paths, namely the professional path and the management path, sets up eight promotion channels, trains personnel in various professional fields, provides employees with a stage for career success and lifelong personal growth, encourages cross-channel job rotation, builds a well-designed talent echelon, and enlarges the room for employees' career development. At the same time, the Company absorbs global talents, allocates local employees to core management teams and important positions in several countries, strengthens local human resources reserves, and provides equal career development channels for foreign employees.

In accordance with the relevant laws and regulations of China and the countries/regions where it operates, and adhering to the principle of equal compensation for male and female employees, the Company has established a salary system that balances external competitiveness and internal fairness to attract and retain talents, and creates a good working environment, development opportunities and value system for employees.

Measures to enhance employee stability

- The Company has created necessary working conditions for employees by establishing smooth internal communication channels, solving problems concerned by employees, and providing necessary support for employees' work through the Company's system.
- The Company has established a "more work, more pay" salary system and mechanism by setting higher salary for core key positions, making employees understand their effort will pay back in the form of higher income, strengthening incentives and giving more acknowledgment, and motivating staff to work hard.
- The Company has laid smooth personal career development paths by regularly assessing the competency of management staff and allowing both job promotion and demotion, so that ambitious employees know their career development paths.



Occupational Health and Safety

The Company strictly abides by the *Production Safety Law of the People's Republic of China*, the *Occupational Disease Prevention and Control Law of the People's Republic of China* and other laws and regulations, and has formulated the *Rules on Environmental and Occupational Health and Safety Policy, Target Indicators and Programs, Hazard Identification, Risk Assessment and Control Management* and other rules. By shaping a safety culture, managing safety risks, conducting safety education, facilitating safety innovation, strengthening safety management of related parties, ensuring the safety of offshore wind power and implementing occupational safety and health management for all employees, the Company promotes the close integration of safety system construction and business, striving to build an intrinsically safety-oriented enterprise. In 2023, the number of employee deaths due to work is 0, the number of major safety accidents is 0, and the number of occupational disease onset is 0.

Shaping a Safety Culture

The Company constantly innovates the ways and forms of creating safety culture, and continues to promote safety culture. In terms of determining safety responsibility, through the signing and implementation of the letter of responsibility for achieving annual safety goals, the Company clarifies the annual safety production goals and tasks of each job post to ensure that each post will perform safety responsibilities, implements the safety production accountability system, and protects the life and property safety of employees. In 2023, the Company passed assessment and maintained the title of "Beijing Safety Culture Construction Demonstration Enterprise".

In terms of safety culture publicity, in 2023, the Company released 521 safety articles throughout the year on topics such as accidents, risk warnings, regulations and standards interpretation, emergency response knowledge popularization and activities, with 106,000 views, so that employees can know the latest safety information and requirements anytime and anywhere; at the same time, diversified safety cultural activities such as knowledge competition, discussions on safety, safety-themed articles writing, cartoons drawing and video filming are held to stimulate employees' enthusiasm for acquiring safety knowledge and create safety culture.

Conducting Safety Education

2023

Total annual safety training hours

450,480hours

The Company has formulated the *Rules on Safety Production Training* and conducted safety training through both online and offline learning to guarantee employees' safety production and improve employees' safety awareness and skills. The Company has sorted out the health, safety and environment (HSE) capability matrix of key positions, and established an online HSE training course library according to the capability requirements of different positions, so as to build up an HSE knowledge system with Goldwind characteristics, further improve the safety awareness of employees and enable them to master the necessary safety knowledge and skills. In 2023, the total annual safety training hours are 450,480 hours.

In addition, the Company organized various emergency drills such as fire fighting, electric shock, first aid, response in limited space, and sea rescue, improving the Company's emergency response system and shortening response time through several simulation drills. The Company jointly developed 35 video emergency training courses covering 11 categories such as earthquake, fire, drowning, electric shock, CPR, AED, bleeding, fracture, airway foreign bodies, heatstroke and frostbite to comprehensively improve the Company's emergency rescue capabilities.

Facilitating Safety Innovation

In 2023, the Company developed a "safety information management platform" covering safety early warning, accident management, safety hazards management, hazard management, hazardous operations, occupational health, safety rules, related party management, protective supplies and other functional modules, and uploaded more than 2,300 pieces of valid data to realize dynamic safety early warnings, monitor and analyze important hazard sources and major hidden dangers, manage safety risk, report and analyze hidden dangers, monitor occupational diseases, and digitalize files, etc., providing corresponding data analysis support for the management staff and safety management agencies at all levels, and realizing the digital transformation of safety management.

Safety of Interested Party

The Company adheres to the principle that "related party safety management is a part of the Company's business and managing security is necessary when running business", and includes related party safety management into the Company's integrated management. The Company has formulated the *Environmental and Occupational Health and Safety Management System for Group-Related Parties*, and conducts access verification on related parties through digital means in the aspects of safety qualification, operation planning, safety education, tool and equipment safety, insurance, safety protocol, etc. In terms of process safety management, the Company carries out process supervision according to standards and norms, and implements safety assessment every year to urge related parties to rectify in a timely manner. In 2023, no casualty to the degree of serious injury or worse happened in related parties.

Occupational Health and Safety

2023

Occupational health examination rate of employees is

100%

The Company strictly implements the occupational health and safety management system. By the end of 2023, ISO45001 occupational health and safety management system certification has covered all branches of the Company.

To protect the occupational health and safety of every employee, the Company has set up detailed occupational health records and employee health monitoring files. Besides, the Company inspects and evaluates the risk factors of occupational diseases and examines hazards on a regular basis. When signing labor contracts with employees, the Company informs them of the risk factors of the positions in advance, and strengthens occupational health and safety education and training during the onboarding training of new hires.

The Company takes protective measures against occupational disease hazards, provides employees with appropriate labor protective gears, puts warning labels and instructions in conspicuous places for equipment and chemical materials that may induce occupational diseases, and regularly checks and repairs protective facilities and equipment. For employees working in special environments such as high-altitude regions and offshore environment, the Company customizes the physical examination which focuses on cardiovascular and cerebrovascular diseases and rheumatism diseases. In 2023, the occupational health examination rate of employees is 100%.



Offshore Wind Power Safety

The Company strives to upgrade its safety management and emergency support while developing offshore wind power projects. In 2013, the Company set up the offshore wind Power Training Center, the first offshore wind power survival training platform in China, which is the only offshore wind power talent training base that covers all eight mainstream course modules of the Global Wind Energy Organization (GWO). The Company requires that all offshore workers receive GWO basic safety training and skill certifications, and rescue equipment be equipped on offshore transportation ships, in order to quickly and effectively conduct rescues.

Employee Care

The Company shapes an open, harmonious, and healthy work environment, listens to employees' needs, pays attention to the physical and mental health of employees, and continuously optimizes work conditions, thus enhancing employees' cohesion and sense of belonging.



Employee Health

"Long-lasting health" is one of Goldwind's core values. Only a healthy organization and healthy employees can bring about the long-term sustainable development of the enterprise. The Company actively promotes employee health, builds an employee health management system with Goldwind characteristics, and carries out a large number of employee health management activities to help employees establish health awareness and encourage employees to stay optimistic.

Medical Checkups for All Employees

The Company analyzed the results of last year's general physical examination report and the prevalence of diseases, and the employee welfare physical examination package was upgraded to a flexible package (CT/ liver screening/cancer screen/stomach screening/COVID recovery package); the free physical examination for frontline employees and the occupational health examination are effectively combined, and physical examination packages are customized for employees working on plateaus and coastal areas.

Health Lectures and Consultation Services

A number of live online and offline health-themed activities were organized throughout the year, such as "Gaining Knowledge of Traditional Chinese Medicine for a Healthy Autumn" and "Prevention and Treatment of Influenza and Mycoplasma Pneumoniae Infection" to popularize health knowledge for employees.

Setting up Employee Art and Sports Clubs

A team of professional coaches is hired to customize annual plans and provide coaching, and various clubs for sports such as ball games, gymnastics and yoga are established for employees and their families. By the end of 2023, there are nearly 1,000 members in the art and sports clubs.

Implementation of Employee Health Management

The Employee Health Management Committee was established to build an employee health management system and conduct regular physical testing. Health records for all staff have been set up to ensure health management for all staff.

Creation of a Matrix of Featured Health Products

The Company continues to carry out various health management activities such as "Daily Morning Exercise", "100-Day Exercise Clock-in for 1,000 People", "21-Day Health Run" and "0-Carbon Diet Camp". In 2023, more than 3,000 people have lost weight, and the body mass index (BMI) of more than 30% of employees moved to a band below.

Carrying Out a Series of Sports Events

The "Windchaser Cup" sports events have been held consecutively for 11 years, featuring a variety of competitive events and fun games for front-line employees, with 1,000 participants.

Paying Attention to Mental Health Care for Employees

In 2023, the Employee Psychological Assistance Program (EAP) was launched on the enterprise's wechat, and this program is available to all employees. Employees can participate in psychological assessment, stress relief classes, meditation and other activities to build up inner energy and relieve pressure.



11th "Windchaser Cup" Badminton Competition



"21-Day Health Run"



Training Camp for Muscle Building and Fat Loss



Publicity began for the Employee Psychological Assistance Program (EAP)

Employee Welfare

Valuing humanistic care, on the basis of protecting the statutory benefits of employees, the Company has established a complete welfare security system to provide rich and diversified welfare security for all employees, provide convenience for employees' work and life, and offer as much help as possible for employees' personal and family life, so as to facilitate their work and life, and enable them to devote more passionately to their work and life.

Goldwind Employee Welfare Overview

Statutory Benefits	Non-Statutory Benefits		
<ul style="list-style-type: none">• Statutory holidays, days off, annual leave, sick leave, marriage leave, prenatal check-up, maternity leave, paternity leave, mourning Leave.• Social insurance, including basic endowment insurance, medical insurance, unemployment insurance, work-related injury insurance, maternity insurance• Housing provident fund• Other statutory employee benefits in the local area	<ul style="list-style-type: none">• Paid leave• Accommodation benefit• Catering benefit• Cultural benefit• Meal allowance• Travel allowance• Commute shuttle bus• Merchants in parks• Cultural and sports venues	<ul style="list-style-type: none">• Cultural and sports training course• Employee activity center• Diverse cultural activities• Employee health checkup• Commercial medical insurance for employees• Commercial medical insurance for employees' families	<ul style="list-style-type: none">• School admission assistance for employees' children• Cultural and sports activities for employees' children• Employee assistance program• Employee permanent residence registration• Solatium for childbirth/illness/injury• Other benefits

Cultural Exchanges

The Company is committed to creating an open and transparent working environment, establishing multiple communication channels for different ranks, different departments and different cultural backgrounds. In order to further promote cross-cultural communication and bonding, enhance the sense of belonging and cross-team collaboration of local employees, help local employees fully understand the Company's business, and enhance employees' understanding of Goldwind culture, the Company holds a variety of cultural activities with local characteristics, and regularly invites local backbone employees to the Beijing headquarter for visits, sharing and discussions.



Cartoon drawing contest on culture and values



Cultural tour for local employees



Day care for employees' children



Open day for employees' families





08

Harmonious Community Relations

During business operations, Goldwind engages in the development of the communities where it operates with the concept and approach of sustainable development, strengthens community communication, supports community development, boost public health and education, provides volunteer and public welfare activities, leverages its own business advantages and resources, and cooperates extensively so that community stakeholders may benefit from the Company's business operations.

Community Communication and Development

The Company attaches importance to maintaining good relationships with the communities where it operates, pays attention to the rights and interests of the communities, strengthens community communication, and solves the needs of the communities. At the same time, the Company organizes and participates in a variety of local cultural activities to build positive and harmonious relationships between the company and the local communities, and works with the communities to promote sustainable development.

The Company respects the rights and interests of the communities where it operates. It has established *Management Measures for Stakeholder Consultation and Participation*, stipulating the principles governing the business operation activities of wind power projects and establishing a working mechanism for communication, consultation and engagement with stakeholders such as community residents and government agencies. The Company publicizes the latest progress of projects, collects the appeals of all parties to the Company and responds to them so as to achieve joint development of business and local communities.

The Company continues to communicate with the local communities where it operates, sets up exhibition centers in parks for external visitors to learn about the Company's history and acquire knowledge of renewable energy, regularly organizes public lectures and other knowledge popularization activities, allows other enterprises, schools, residents and journalists to visit the Company, and builds a communication bridge for the public to understand the development of the new energy industry and the measures for energy conservation and environmental protection so as to deepen people's understanding of renewable energy and enhance people's awareness of sustainable development.

Visiting parks for field research and exchange

In 2023, Goldwind provide field research sites for many schools near the Beijing headquarter, inviting students to enter the parks for learning and exchange. Nine delegations from six schools visited Goldwind throughout the year, with a total number of 1,385 visitors.



Supporting Education

2023

Time of training to students in partnering colleges and universities across the country

722hours

Goldwind is fully aware that education for all is necessary for building a country with high education levels. As a leading company in new energy in China, the Company is committed to providing intellectual output to society around new energy technologies such as wind power and facilitating development of public education.

Goldwind makes full use of the advantages of hardware and software resources in its own parks and manufacturing bases, opens up its resources, and builds knowledge popularization bases for teenagers. By the end of 2023, Goldwind has built knowledge popularization bases in four of its parks in Beijing, Xinjiang, Shandong and Jiangsu. The Xinjiang park has been awarded the "National Popular Science Education Base". The Beijing park has been awarded the "Social Classroom Resource Unit for Primary and Secondary School Students in Beijing Economic and Technological Development Zone", and the Shandong Water Plant has been awarded the "Provincial Environmental Protection Education Base".

The Company makes full use of its own talents and knowledge resources in the wind power industry to empower vocational education through the development of learning platforms, offering practical training to teachers, giving practical courses to partnering colleges and universities, compiling teaching materials, and providing industry certification. In 2023, the Company provided 722 hours of training to students in partnering colleges and universities across the country, completed the orientation training of smart wind turbine manufacturing for 60 vocational college students, and completed the first edition of *Wind Turbine Fault Handling*, the textbook for the wind power engineering and technology specialization in August.

Goldwind's "Rural Teacher Training Camp"

Since 2016, Goldwind has launched the public welfare project, "Growth Camp for Rural Teachers in China", to support the growth and development of rural teachers by providing training and empowerment. By 2023, eight consecutive sessions have been held, and the more than 1,200 participating teachers have come from more than 600 rural schools in 27 provinces, autonomous regions and municipalities, and nearly 100,000 rural students taught by these teachers have also benefited from the training.



Education cooperation for personnel training

In 2023, Goldwind and the Kyrgyz Ministry of Energy signed a memorandum of cooperation aimed at strengthening and improving cooperation between the Ministry of Education and Science of the Kyrgyz Republic and Goldwind in vocational education to train and retrain engineering workers who meet the requirements of the relevant industries.



Spreading the Health Concept

The Company knows that national health is an important foundation for the vision of Healthy China, and promotes the concept of "long-lasting health" to the public. By taking advantage of its own health management success, the Company supports and sponsors high-quality sports events centered around local culture, zero carbon emissions and championship spirit, and calls on more people to become "forerunners in green development and good health". At the same time, through sports-themed public welfare activities such as "Run for Track", Goldwind strives to realize the athletic dreams of rural children, passing on the concept of green development and sports spirit to more people and setting a new trend in keeping health.

Promoting green, zero-carbon culture and creating high-quality sports events



In 2023, Goldwind undertook and operated a number of events such as Xinjiang Sayram Lake Marathon, Xinjiang Mori Half Marathon, and New Energy Sail Setting Cup Elite Match for Table Tennis and Badminton (in Qinhuangdao). Together with industrial chain partners, Goldwind fully integrates its resources in renewable energy and sports to promote the green, healthy, and optimistic concept and culture.



Run for love, build a dream for the future - donating plastic tracks to rural elementary schools



In 2023, Goldwind partnered with foreign companies to donate plastic running track and related sports facilities for Yagoushui Primary School in Baiyin City, Gansu Province. On this basis, a long-term partnership between Goldwind's local subsidiary and the school was established to continuously support the school's physical education, and boost rural revitalization through boosting rural education.



Before the track construction in the rural elementary school



After the track construction in the rural elementary school

Volunteering and Public Good

Volunteer services are an indispensable source of motivation that enables employees to cultivate indigenous innovation capabilities and promote social innovation. The Company has established and continuously operated the Volunteer Service Association, and regularly organized volunteers to participate in public welfare activities, encouraging and supporting employees to contribute their knowledge and skills in volunteer services.

To establish and improve the volunteer management system, the Company has formulated the *Volunteer Management System*, and implemented relevant management for registered volunteers. In 2023, the Company and the Foundation reasonably deployed volunteer resources, planned various volunteer services, and organized three themed training sessions to improve the professional skills of volunteers.

Since the Company initiated and funded the establishment of Beijing Goldwind Public Welfare Foundation in 2019, the Foundation has carried out internal governance, public welfare projects, volunteer services, financial statements, and information disclosure in accordance with relevant laws and regulations such as the *Charity Law* and the *Regulations on the Administration of Foundations*. In 2023, the Foundation spent on public welfare projects, mainly to fund education for children in remote areas, improve rural infrastructure and living environment of residents, popularize knowledge on protecting the biodiversity, prevent and mitigate disasters, and provide emergency relief.

Feng Shang Garden



The Feng Shang Garden project protects the ecological environment by building a micro-ecosystem, and guides the public to practice biodiversity conservation through activities such as nature observation, urban science and parent-child education. In 2023, the Feng Shang Garden project was replicated in Yizhuang Experimental Middle School. Under the guidance of the Foundation, more than 20 teachers and students volunteers participated in the construction of the garden.



Prospect

Rise to all difficulties and prosper in the next year. 2024 will be a key year for further deepening the energy revolution and accelerating the development of a new energy structure and a new power system. Goldwind will adhere to the mission of "Innovating for a brighter tomorrow", abide by the business philosophy of integrity and compliance, pursue green and low-carbon development, promote the sustainable transformation of the industrial chain, create an equal and inclusive working environment, attach importance to coexistence with local communities, and persist in innovation and high-quality development. At this new starting point, the Company will take its sustainable development efforts to a new level.

Performance Indicators

Research & Development

Indicator	Unit	2023	2022	2021
Number of R&D technicians	person	3,251	3,455	3,239
R&D technicians as proportion of total employees	%	30.52	30.85	30.04
R&D investment	100 million RMB	22.65	22.22	22.37
R&D investment as a proportion of revenue	%	4.49	4.78	4.42
Cumulative number of domestic patent applications	applications	5,980	5,469	4,896
Cumulative number of domestic invention patent applications	applications	3,566	3,192	2,819
Cumulative number of domestic patent licenses	applications	4,301	3,918	3,429
Cumulative number of domestic invention patent licenses	applications	2,021	1,737	1,446
Cumulative number of overseas patent applications	applications	1,163	1,066	713
Cumulative number of overseas patent licenses	applications	593	467	317
Number of domestic standard-setting and standard-revising participation	applications	465	361	284
Number of overseas standard-setting and standard-revising participation	applications	31	31	31

Environment Management

Indicator	Unit	2023	2022	2021
Total electricity consumption	100 million kWh	6.99	6.87	5.87
Self-generated electricity consumption of wind and solar	100 million kWh	3.55	3.64	3.14
Gasoline consumption	kL	3,809.33	2,958.10	2,554.30
Diesel consumption	kL	1,974.01	1,648.69	1,651.56
Liquefied petroleum gas consumption	ton	134.99	160.36	107.77
Natural gas consumption	10 km ³	77.62	77.86	84.67
Overall energy consumption per MW	ton of standard coal/MW	0.54	0.59	0.65
Overall energy consumption per water treatment capacity	ton of standard coal/10k tons	0.48	0.46	0.41

Indicator	Unit	2023	2022	2021
Water consumption	10k tons	89.59	82.85	76.85
Water consumption per capita	ton/capita	51.11	55.81	57.23
Density of water consumption for production and operations	ton/ thousand tons of water treatment capacity	0.50	0.70	0.72
Packaging materials of wood	ton	620.68	887.21	1,283.54
Density of wooden packaging usage	ton/unit	0.068	0.28	0.45
Wind power business hazardous waste	ton	83.25	73.95	73.24
Hazardous waste generated per MW of wind turbine manufactured	ton/MW	0.0035	0.0067	0.0071
Non-hazardous waste: construction waste	ton	268.61	397.89	1,231.17
Greenhouse gas emissions	ton of CO ₂ equivalent	21,199.85	19,997.28	220,569.04
Scope 1	ton of CO ₂ equivalent	20,006.67	18,746.01	17,481.36
Scope 2	ton of CO ₂ equivalent	1,193.18	1,251.27	203,087.68
Greenhouse gas emissions per MW	ton of CO ₂ equivalent/MW	0.1864	0.1896	0.7232
Greenhouse gas emissions per water treatment capacity	ton of CO ₂ equivalent/10k tons	0.0088	0.0152	2.4748

Employment

Indicator	Unit	2023	2022	2021
Total number of employees	person	10,651	11,200	10,781
By employment				
Full-time	person	10,651	11,200	10,781
Part-time	person	83	173	146
By gender				
Male	person	8,371	8,927	8,603
Female	person	2,280	2,273	2,178
By age				
Aged 29 or below	person	2,208	2,814	2,773

Indicator	Unit	2023	2022	2021
Aged 30-39	person	6,191	6,394	6,179
Aged 40-49	person	1,935	1,679	1,403
Aged 50 or above	person	317	313	426
By region				
China	person	9,551	10,188	9,801
Other Asian countries	person	144	106	93
Europe	person	362	404	399
North America	person	101	99	111
South America	person	200	178	152
Oceania	person	228	199	198
Africa	person	65	26	27
By specialization				
Production staff	person	1,576	1,634	1,831
Sales staff	person	1,279	1,324	1,213
Technical staff	person	3,251	3,455	3,239
client service staff	person	2,143	2,364	2,236
Administrative staff	person	2,402	2,423	2,262
By education level				
Postgraduate or above	person	2,453	2,502	2,409
Undergraduate	person	6,090	6,302	5,966
Junior college or below	person	2,108	2,396	2,406

Fair and Standard Employment

Indicator	Unit	2023	2022	2021
Labor contract signing rate	%	100	100	100
Social insurance coverage	%	100	100	100
Number and proportion of female managers	person (%)	109 (19.89)	94 (18.76)	90 (21.13)
Number and proportion of the disabled	person (%)	75 (0.70)	73 (0.65)	71 (0.66)
Number and proportion of ethnic minority employees	person (%)	559 (5.25)	577 (5.15)	512 (4.75)
Number and proportion of foreign employees	person (%)	1,100 (10.33)	1012 (9)	980 (9.09)
Number of annual paid vacation days per capita	days	8.7	9.88	9.86

Employee Turnover Rate

Indicator	Unit	2023	2022	2021
Employee turnover rate	%	16.51	12.56	11.19
By gender				
Male	%	17.27	12.05	11.63
Female	%	12.42	11.81	11.64
By age				
Aged 29 or below	%	21.58	14.23	13.11
Aged 30-39	%	16.58	11.94	11.10
Aged 40-49	%	8.00	8.45	8.20
Aged 50 or above	%	14.76	9.45	11.52
By region				
China	%	16.19	12.24	11.41
Other Asian countries	%	12.80	7.29	7.22
Europe	%	2.19	10.71	1.49
North America	%	8.00	18.10	3.16
South America	%	11.11	9.09	10.63
Oceania	%	19.67	27.92	22.98
Africa	%	13.19	18.87	34.89

Employee Training

Indicator	Unit	2023	2022	2021
Training hours per capita	hours	48.5	46.0	35.7
By job level				
Senior management	hours	30.6	23.3	21.9
Medium and primary level management	hours	31.3	29.8	26.0
Junior employees	hours	54.7	47.6	36.3

Indicator	Unit	2023	2022	2021
By gender				
Male	hours	57.4	52.9	38.9
Female	hours	17.3	20.1	23.0
Proportion of employees receiving training	%	97.0	99.1	93.0
By job level				
Senior management	%	100	100	92.1
Medium and primary level management	%	100	99.1	92.7
Junior employees	%	95.9	99.0	92.6
By gender				
Male	%	97.7	99.2	88.0
Female	%	94.3	98.6	93.7

Occupational Health and Safety

Indicator	Unit	2023	2022	2021
Times of onset of occupational diseases	times	0	0	0
Times of major safety accidents	times	0	0	0
Number of work-related fatalities	person	0	1	2
Lost days due to work injury	days	334	213	578
Safety training hours	hours	450,480	388,547	354,931
By employee category				
Special operation employee	hours	9,657.5	24,514	12,869
Safety management employee	hours	18,384.5	11,127	17,085
Front-line operation employee	hours	35,1297.8	290,945	241,799
New employee	hours	47,058.0	53,106	71,790
Persons in charge	hours	12,045.4	10,767	11,389

Supply Chain

Indicator	Unit	2023	2022	2021
Number of wind turbine parts suppliers ¹⁰	suppliers	455	374	355
By Region				
China	suppliers	386	318	295
Other Asian countries	suppliers	5	5	6
Europe	suppliers	50	42	44
North America	suppliers	7	9	10
South America	suppliers	7	/	/

Social Benefit

Indicator	Unit	2023	2022	2021
Total charitable donations	10k RMB	269	988	978
Volunteer served hours	hours	18,677	5,840	2,284

¹⁰ The qualified suppliers who provide components, production and services, tools and consumables, equipment, packaging and other raw materials or (and) services in accordance with the Management Measures for the Development of Wind Turbine Component Suppliers, which have been evaluated and approved through over 100 strict indicators in business, technology, quality, service, and safety, among other dimensions.

Third-Party Verification Report

To the Board of Directors of Goldwind Science & Technology Co., Ltd.:

SWCS Corporate Services Group (Hong Kong) Limited ("SWCS", "we") has been engaged by Goldwind Science & Technology Co., Ltd. (Goldwind) to conduct an independent limited assurance ("Assurance Engagement") on the information and data disclosed in the 2023 Sustainability Report (the "Report") of Goldwind. SWCS conducted the Assurance Engagement on the Report of Goldwind in accordance with the AA1000 AccountAbility Assurance Standard v3 ("AA1000AS v3"). Moreover, SWCS has also been engaged to conduct the Assurance Engagement on the reliability and accuracy of selected performance indicators disclosed in the Report.

I.Independence and Competence

SWCS was not involved in collecting and calculating data involved in the Report, or in the development of the Report. SWCS's activities are independent of Goldwind. There is no relationship between Goldwind and SWCS beyond the contractual agreement for providing this Assurance Engagement. SWCS has been recognized by AccountAbility. The assurance team of SWCS has extensive experience in the industry and has received professional training of standards related to sustainable development, including the Global Reporting Initiative Standards (GRI Standards), the AA1000AS v3, the Environmental, Social and Governance Reporting Guide ("ESG Guide") issued by the Stock Exchange of Hong Kong Ltd. ("the Stock Exchange"), etc. The assurance team has sufficient understanding and capabilities of implementation of the AA1000AS v3, and the Assurance Engagement related to sustainable development issues is carried out in line with SWCS's internal assurance protocol.

Scope	Indicators	Type of Information
Social	Employee satisfaction survey	Quantitative
	Knowledge and skill development training system	Qualitative
	Training content of employee anti-corruption and business ethics standards training	Qualitative

SWCS's assurance work was with respect to the information from 1 January 2023 to 31 December 2023. We do not express any conclusions on any information that falls outside this period or any other data disclosed in the Report not included within the assurance scope. The scope of the Assurance Engagement is based on and confined to the information provided by Goldwind. Any queries regarding the content or related matters within this assurance statement should be addressed to Goldwind only.

II.Goldwind’s Responsibilities

Goldwind is responsible for the preparation and presentation of the Report in accordance with the ESG Guide published by the Stock Exchange. Goldwind is also responsible for implementing relevant internal control procedures to ensure that the contents of the Report are free from material misstatement, whether due to fraud or error.

III.Assurance Provider’s Responsibilities

SWCS is responsible for issuing an independent assurance statement to the Board of Directors of Goldwind in accordance with the AA1000AAS v3. This independent assurance statement applies solely to express a conclusion on the assurance work in the specified scope of Goldwind's Report, and does not serve any other intents or purposes. All results of assurance are internally reviewed by professionals to ensure that methodologies used in the process are sufficiently stringent and transparent.

IV.Assurance Scope

The scope of the Assurance Engagement does not include Goldwind's suppliers, contractors, and information or data provided by other third parties. A Type 2 Moderate Level of Assurance of the AA1000AS v3 was adopted by SWCS to evaluate the nature and extent of Goldwind's adherence to the four principles (Inclusivity, Materiality, Responsiveness and Impact) in accordance with the AA1000AS v3. The following specific performance indicators disclosed in the Report were agreed between Goldwind and SWCS to be selected for assurance:

V.Methodology

SWCS conducted Assurance Engagement only within Goldwind's office in Beijing, and the assurance works conducted include:

- Conducting interviews with management and relevant departments that are responsible for collecting data on selected indicators, and documentation reviews;
- Understanding the processes and methods of Goldwind in identifying and collecting feedbacks from stakeholders;
- Assessing whether the reporting approach of the Report has been conducted in line with the principles of Inclusivity, Materiality, Responsiveness and Impact as defined in the AA1000AS v3;

- Reviewing Goldwind's sustainable development management and conducting sampling of selected indicators to understand its management system;
- Conducting random sampling of selected indicator information, assess the reliability of data collection, and understand the management system used to ensure data quality;
- Assessing whether the statement in the Report is consistent with the conclusion;
- Performing other procedures deemed considered necessary.

Assurance work was performed and the conclusions within were based upon the information and data provided by Goldwind to SWCS, and on assumptions that the information provided was complete and accurate.

VI.Limitations

The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, measures and measurement techniques and can affect comparability between entities.

VII.Conclusions

Based on the Report of Goldwind and information provided, nothing has come to our attention that causes us to believe that the Report is not prepared, in all material respects, in accordance with the four principles of AA1000AS v3.

Based on the procedures implemented and the evidences obtained, we have not found anything that put us in doubt of the reliability and accuracy of the selected performance indicators for the Assurance Engagement in the Report.

VIII.Key Observations

SWCS summarizes key observations of the Report against the principles of Inclusivity, Materiality, Responsiveness and Impact of AA1000AS v3 as follows:

Inclusivity
Goldwind has developed a comprehensive system to effectively identify key stakeholders, and continuously communicates with different stakeholders through a variety of channels such as publishing sustainability reports, participating in interviews and surveys from external organizations, engaging in external sustainability conferences and forums, and undertaking international cooperation and exchanges on sustainable energy, in order to understand and identify the issues of concern to different stakeholders, and to collect stakeholders' expectations and key concerns on material issues, and to negotiate with parties that may be impacted by Goldwind's operations. This Report has covered the environmental, social and governance aspects that Goldwind and its stakeholders are concerned about, and has collected views from key stakeholders to assist in reviewing the applicability of identified material issues. In our professional opinion, Goldwind adheres to the Principle of Inclusivity.

Materiality
Goldwind has continuously collected, considered and analyzed comprehensive and balanced information. To continuously monitor the changes in the market and business environment, Goldwind has established a stable risk management structure and work systems,

which helps Goldwind understand the needs, benefits and priorities of their own business and their stakeholders. Based on the results of materiality assessment, Goldwind has also identified issues that are material to the Company and stakeholders based on the materiality assessment, and incorporated the results into sustainable development strategic planning, ensuring that the necessary capacity and resources are provided to apply the results of the materiality assessment, with the Board of Directors overseeing and determining the Company's overall approach to sustainability and ensuring the work focuses are in line with the material issues concerned by the stakeholders. In our professional opinion, Goldwind adheres to the Principle of Materiality.

Responsiveness
Goldwind continuously optimizes and improves the level of its sustainability efforts based on stakeholders' expectations and recommendations to the Company. Goldwind has developed relevant mechanisms or measures to respond to the concerns of key stakeholders and develops strategic planning for sustainable development, sustainable development goals and action plans based on sustainable development material topics. Goldwind identifies key priorities through its sustainable development strategic planning and allocates sufficient resources to respond to material topics and their associated impacts and stakeholders in a comprehensive, accurate, timely, objective and well-considered manner. In our professional opinion, Goldwind adheres to the Principle of Responsiveness.

Impact
Goldwind has identified its material impact on operations, and formulated relevant policies to improve its operational impacts on society and the environment through effective communication with stakeholders. For instance, Goldwind has policies in place to manage the environmental risks of construction projects and to standardize the environmental protection and soil and water management processes for wind farm development projects, with management measures in place to reduce the adverse impacts of wind farm project activities on the surrounding environment and communities, from the development of the wind farms, through construction, to the operation of the wind farms. In our professional opinion, Goldwind adheres to the Principle of Impact.



Index

The content index of Environmental, Social and Governance Reporting Guide issued by Hong Kong Stock Exchange

Subject Areas, Aspects, General Disclosures and KPIs		Location
A: 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.		P44-49
A1.1	The types of emissions and respective emissions data.	P44、 P46
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).	P44
A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	P47
A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	P47
A1.5	Description of emissions target(s) set and steps taken to achieve them.	P19
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.	P19、 P47
Aspect A2: Use of Resources		
General disclosure: Policies on the efficient use of resources, including energy, water and other raw materials.		P46-P47
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).	P46
A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility).	P46
A2.3	Description of energy use efficiency target(s) set and steps taken to achieve them.	P46-P47
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.	P19、 P47
A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	P48
Aspect A3: The Environment and Natural Resources		
General disclosure: Policies on minimising the issuer’s significant impacts on the environment and natural resources.		P50-P51、 P59-P61
A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	P50-P51、 P59-P61
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.		P42-P44
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.	P42-P44
B: Social		
Employment and Labor Guidelines		
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.		P58-P59、 P68
B1.1	Total workforce by gender, employment type (for example, full- or parttime), age group and geographical region.	P59
B1.2	Employee turnover rate by gender, age group and geographical region.	P81

Subject Areas, Aspects, General Disclosures and KPIs		Location
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.		P64-P65
B2.1	Number and rate of work-related fatalities occurred in each of the past three years including the reporting year.	P82
B2.2	Lost days due to work injury.	P82
B2.3	Description of occupational health and safety measures adopted, and how they are implemented and monitored.	P64-P65
Aspect B3: Development and Training		
General disclosure: Policies on improving employees’ knowledge and skills for discharging duties at work. Description of training activities.		P60-P63
B3.1	Proportions of trained employees by sex and job level (e.g. senior management, medium-level management).	P81-P82
B3.2	The average training hours completed per employee by gender and employee category.	P81-P82
Level 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.		P58
B4.1	Description of measures to review employment practices to avoid child and forced labour.	P58
B4.2	Description of steps taken to eliminate such practices when discovered.	P58
Operating Practices		
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General disclosure: Policies on managing environmental and social risks of the supply chain.		P54-P55
B5.1	Number of suppliers by geographical region.	P83
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.	P54
B5.3	Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored.	P54-P55
B5.4	Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored.	P55
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.		P58
B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	P58
B6.2	Number of products and service related complaints received and how they are dealt with.	P58
B6.3	Description of practices relating to observing and protecting intellectual property rights.	P26-P27
B6.4	Description of quality assurance process and recall procedures.	P58
B6.5	Description of consumer data protection and privacy policies, and how they are implemented and monitored.	P58
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.		P38-39
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.	P38
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B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	P72-P75
B8.2	Resources contributed (e.g. money or time) to the focus area.	P75、 P83

The content index of GRI Indicators and United Nations Sustainable Development Goals (SDGs)

Goldwind has reported the information cited in this GRI content index for the period from January 1, 2023 to December 31, 2023 with reference to the GRI Standards.

GRI Standard and disclosure	Location	Sustainable Development Goals (SDGs)
GRI 2: General Disclosures 2021		
The organization and its reporting practices		
2-1 Organizational details	P08-P11	
2-2 Entities included in the organization's sustainability reporting	P02	
2-3 Reporting period, frequency and contact point	P02-P03	
2-4 Restatements of information	P02-P03	
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2-6 Activities, value chain and other business relationships	P08-P11、P54-P55	
2-7 Employees	P58-59、P80-P81	SDG8、SDG10
2-8 Workers who are not employees	P54-P55	SDG8
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2-10 Nomination and selection of the highest governance body	P36	SDG5、SDG16
2-11 Chair of the highest governance body	P16、P36	SDG16
2-12 Role of the highest governance body in overseeing the management of impacts	P36	SDG16
2-13 Delegation of responsibility for managing impacts	P16、P36	
2-14 Role of the highest governance body in sustainability reporting	P16、P36	
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2-22 Statement on sustainable development strategy	P15	
2-23 Policy commitments	P02-P03、P15-P17	SDG16
2-24 Embedding policy commitments	P02-P03、P15-P17	
2-25 Processes to remediate negative impacts	P21-P72	
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GRI Standard and disclosure	Location	Sustainable Development Goals (SDGs)
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GRI 201: Economic Performance 2016		
201-1 Direct economic value generated and distributed	P78	SDG1、SDG8、SDG9
201-2 Financial implications and other risks and opportunities due to climate change	P42-P45	SDG1、SDG13
GRI 203: Indirect Economic Impacts 2016		
203-1 Infrastructure investments and services supported	P72-P75	SDG1、SDG5、SDG9、SDG11
203-2 Significant indirect economic impacts	P72-P75	SDG1、SDG3、SDG8
GRI 205: Anti-corruption 2016		
3-3 Management of material topics	P20	
205-2 Communication and training about anti-corruption policies and procedures	P38-P39	SDG16
205-3 Confirmed incidents of corruption and actions taken	P39	SDG16
GRI 302: Energy 2016		
3-3 Management of material topics	P20	SDG7
302-1 Energy consumption within the organization	P46-P47	SDG7、SDG8、SDG10、SDG13
302-3 Energy intensity	P48-P49	SDG7、SDG8、SDG10、SDG13
302-4 Reduction of energy consumption	P46-P47	SDG7、SDG8、SDG10、SDG13
302-5 Reductions in energy requirements of products and services	P59-P65	SDG7、SDG8、SDG10、SDG13
GRI 303: Water and Effluents 2018		
3-3 Management of material topics	P20	
303-3 Water withdrawal	P46-P47	SDG6
303-5 Water consumption	P46-P47	SDG6
GRI 304: Biodiversity 2016		
3-3 Management of material topics	P20	

GRI Standard and disclosure	Location	Sustainable Development Goals (SDGs)
304-2 Significant impacts of activities, products and services on biodiversity	P50-P51、P59-P65	SDG6、SDG14、SDG15
GRI 305: Emissions 2016		
3-3 Management of material topics	P20	SDG3
305-1 Direct (Scope 1) GHG emissions	P44-P45	SDG3、SDG12、SDG13、SDG14
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