

2018

Sustainability Report



Preserving Blue Skies and
White Clouds for the Future





About the Report

Scope

This report discloses the work of social responsibility carried out by Xinjiang Goldwind Science & Technology Co., Ltd. (hereafter referred to as "Goldwind" or "the Company") from January 1, 2018 to December 31, 2018, as well as its commitment to sustainable development. Some contents where appropriate are traced back to previous years.

The report covers Goldwind and its subsidiaries.

Reporting Frequency

This is an annual report. The report of the previous year was issued on March 23, 2018.

Reporting Reference

The report was compiled basing on Hong Kong Stock Exchange's *Environmental, Social and Governance Reporting Guide*, Shenzhen Stock Exchange's *Social Responsibility Guidelines for Listed Companies*. It also draws extensive reference from the Global Reporting Initiative's (GRI) *Sustainability Reporting Guidelines*, International Organization for Standardization (ISO) *26000: Guidelines for Social Responsibilities (2010)* and other related documents.

Data Specification

All financial data disclosed in the report is obtained from the Company's *Annual Report*, while other data is obtained from the Company's official documents and related statistics. Unless indicated otherwise, any financial data in the report is expressed in RMB.

Reporting Commitment

This Report was examined and approved by Goldwind's Board of Directors. It has been guaranteed that the reported contents do not contain any false information or misleading statement.

Report Availability

This Report is available in both Chinese and English. Should there be any inconsistency between the two versions, the Chinese version shall prevail. The report is published in both printed and electronic formats. To view this report, please visit Goldwind's website at www.goldwind.com.cn, www.cninfo.com.cn, or Hong Kong Stock Exchange's website at www.hkexnews.hk.

CONTENTS

01	About the Report
04	Letter from the Chairman
06	About Us
13	Sustainable Development Management



01

Corporate Governance

- 20 Compliance Management
- 21 Risk Management
- 22 Anti-corruption
- 23 Rights and Interests of Investors



02

Research & Development

- 26 Management Based on Science and Technology Innovation
- 28 Product and Technological Innovation
- 31 Driving the Development of the Industry



03

Products and Services

- 34 Quality and Safety of WTGs
- 36 Providing Reliable Green Power
- 37 WTG Operation and Maintenance Services
- 37 Water Treatment



04

Environment

- 40 Coping with Climate Change
- 41 Utilization of Energy and Resources
- 42 Emission and Waste Management
- 44 Ecological Environmental Protection

70	Prospect
72	Performance Indicators
76	Index
78	Independent Assurance Statement
80	Feedback Form



05

Employees

- 48 Fair and Standard Employment
- 49 Diversity of Employees
- 50 Training and Development
- 52 Health and Safety
- 54 Employee Care



06

Supply Chain

- 58 Responsible Procurement
- 60 Green Supply Chain
- 61 Win-win Cooperation



07

Community and Public Benefit

- 64 Maintaining Relationship with the Community
- 65 Supporting Community Development
- 68 Overseas Charitable Work

Letter from the Chairman

Having strived hard for 20 years, we never give up; having pursued our dream for 20 years, we have not changed our cause.

Born in the era of China's economic reform and the wave of global renewable energy revolution, Goldwind has walked past its 20th year in 2018. In 20 years, Goldwind has been carrying the mission "Preserving Blue Skies and White Clouds for the Future", continuing its innovation in the field of wind power. Its growth from a wind turbine manufacturer and developer to a global, comprehensive solution provider in clean energy, energy conservation, and environmental protection reflected the history of development and transformation of China's wind power industry.

Opportunities or challenges it faces, Goldwind has never changed its initiative and has always devoted to the environment and society. It has always adhered to the goal of improving wind power efficiency, popularizing green energy and serving for human society. By the end of 2018, the Company's accumulative global installed capacity is above 50 GW, with annual electricity generation of 100 billion kilowatt-hours (kWh). The impact is equivalent to annual reduction of 10,236 tons of carbon dioxide emissions when compared to fossil-fuel fired energy generation.

2018 is key to global energy transformation. China has emphasized the policy of green energy development, and is committed to promoting green development and energy transformation through industrial innovation. Within this context, the Company continues with technological innovation, industrial ecology optimization, and integration of advanced technologies such as big data and artificial intelligence. The company launched smart Wind Turbine Generators ("WTG") and accelerated the development of distributed wind power in order to create opportunities for the production and utilization of high-efficient green energy, thereby driving a shift in energy usage pattern and motivating the growth of smart energy globally.

As a global corporate citizen, Goldwind adheres to transparent and regulated operation, interacts with stakeholders through good business practices and focuses on balancing environmental and social needs when developing itself, striving to achieve sustainable development with various parties. The emphasis on environment and social impact management has paved way for the sustainable development

of the Company in the future. In order to reduce energy consumption and emissions of WTG component manufacturers during production process and to propel the transformation of the entire wind power industry, the Company was the first in the industry to launch "green supply chain" project to provide smart energy solutions for its suppliers. Through the construction of energy efficiency management platform and development of distributed clean energy, Goldwind took up a leadership role in assisting suppliers in saving energy and reducing emissions. By the end of 2018, the Company has signed the Green Supply Chain Strategic Cooperation Agreement with 20% of its supply chain corporations and has been widely recognized and supported by suppliers. In the future, the Company will create more sustainable development projects, and further promote corporate social responsibility and sustainable development with its own influence.

Goldwind has always cared for the society. As a corporation originating from Xinjiang, it has assisted in the development of poverty-stricken areas in Xinjiang, supported local education, participated in public infrastructure construction and improved the community environment. Whenever a wind farm is built, the Company carries social responsibility to the local area and brings hope to the community. In addition, the Company has responded to the United Nations Global Sustainable Development Goals(SDGs), combining the aims of the global sustainable development with its own strengths and experience to contribute to the resolution of the world's most urgent and critical environmental issues.

Although there will be unknowns in the future, Goldwind will not back off from its commitments to the environmental and social development. In the trend of global green energy transformation and increasing demand for economical, green and reliable electricity, the Company will keep up with its spirits and enthusiasm. It will continue to create innovative technologies and provide better-quality wind power products and services, bravely embracing the future, accepting challenges, and adding momentum to the global green economy.

20-year is a milestone, also a brand-new start. Let us look forward to the future and pursue our dreams. I also hope that all stakeholders will continue to pay attention to and support the development of Goldwind, and work together with us to create a brighter future.

Chairman
Wu Gang



“

What distinguishes a good enterprise from a great one is that, while a good enterprise can persistently develop high-quality technology and products to create benefits and value for its clients, a great enterprise will strive to make our world a better place in addition to achieving the former.

”

刘翔

About Us



Company Introduction

Xinjiang Goldwind Science & Technology was founded in 1998 in Urumqi, Xinjiang and was restructured into a limited company in 2001. The Company was listed in Shenzhen Stock Exchange (SZEx: 002202) in December 2007 and was listed in Hong Kong Stock Exchange (HKEx: 02208) in October 2010.

The Company is primarily engaged in the development and manufacture of wind power equipment, wind power service, wind farm investment and development, water treatment business, etc.. With its extensive experience in Research & Development (R&D), WTG manufacture and wind farm development, the Company not only provides high-quality wind power systems, but also meets the needs of its clients alongside the industry chain by providing wind power service and wind farm development solutions. While consolidating its core business, the Company actively expands other renewable energy and environmental protection businesses, and is committed in becoming a top runner in clean energy and energy-saving solutions.

The company adopts Permanent Magnet Direct Drive ("PMDD") technology. To meet rapidly-growing and diversified needs of clients, the Company continuously completes and refines its technologies. It now owns a series of 1.5MW, 2.XMW, 2.5MW, 3.0MW(S) and 6.XMW PMDD WTGs that are adaptable to various external conditions, such as high and low temperature, high altitude, low wind speed, and coastal area. By the end of 2018, the Company's cumulative installations in the world are over 50 GW. Its cumulative installations in China are over 48 GW; annual installations are above 6.7 GW; market share is 32% and is ranked number 1 in Chinese market for 8 consecutive years. According to *2018 Global Wind Turbine Market Shares* published by Bloomberg New Energy Finance ("BNEF"), Goldwind was ranked number 2 in global market shares.



RMB **81.4** billion

Total Asset Value



>50 GW

Total Global Installed Capacity





RMB **28.7** billion

Revenue



RMB **3.2** billion

Net Income Attributable to Shareholders



RMB **1.46** billion

Tax Payments



No.2

Market Share Ranking of Global WTG Manufacturers



No.1

Domestic Market Share Ranking



8,753

Total Number of Employees



Business Distribution

Relying on its strong research and development (R&D) capabilities and leveraging on its internationalization strategies, Goldwind provides comprehensive solutions to clean energy, environmental protection and energy-saving to help customers in exploring values in energy, reshaping relevant energy strategies and making it an affordable, reliable and sustainable asset for people worldwide.

10



Equipment Manufacturing Sites

7



Global R&D Centers

52



Water Treatment Plants

6

continents



Business Coverage

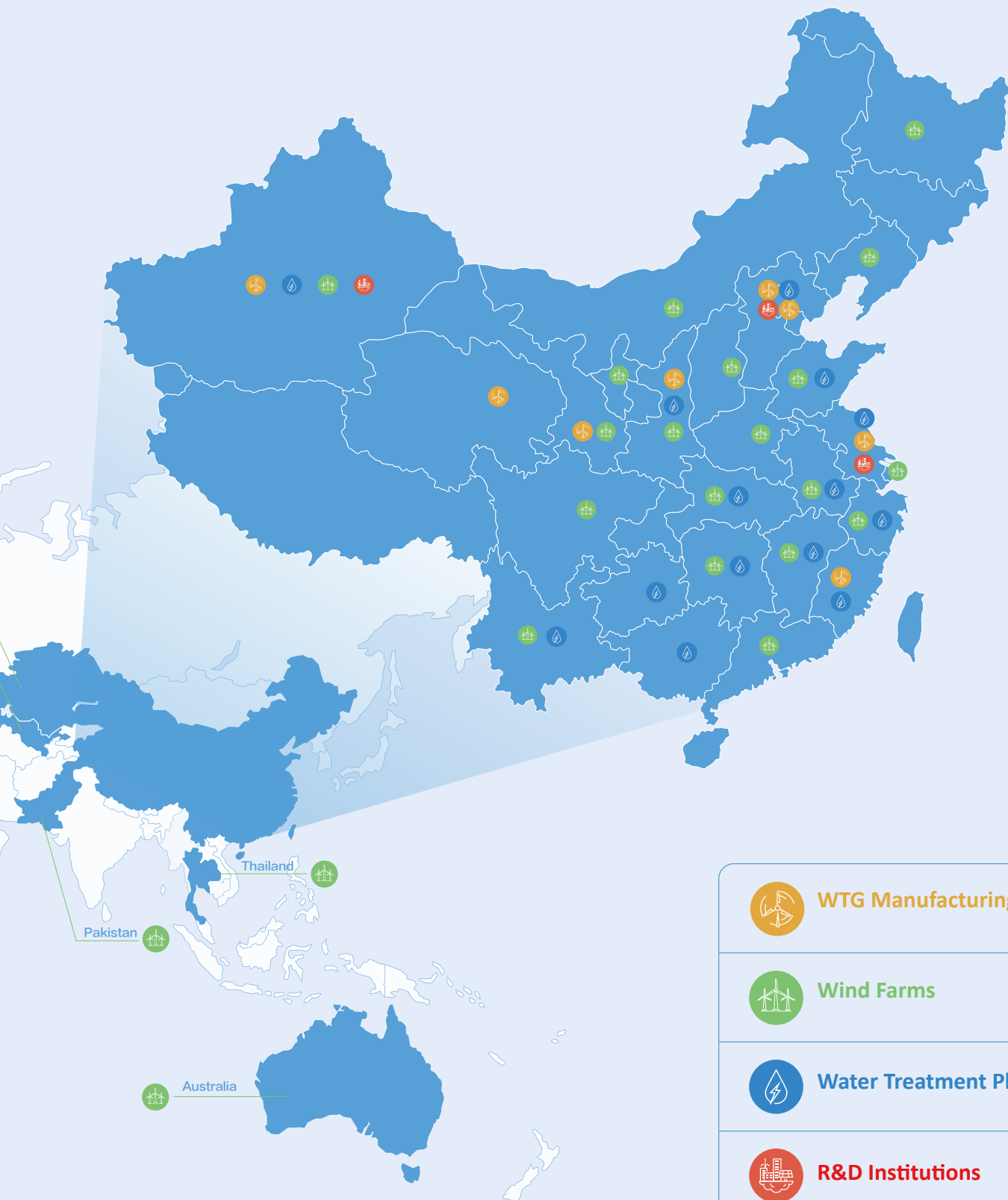
24

countries



Business Coverage

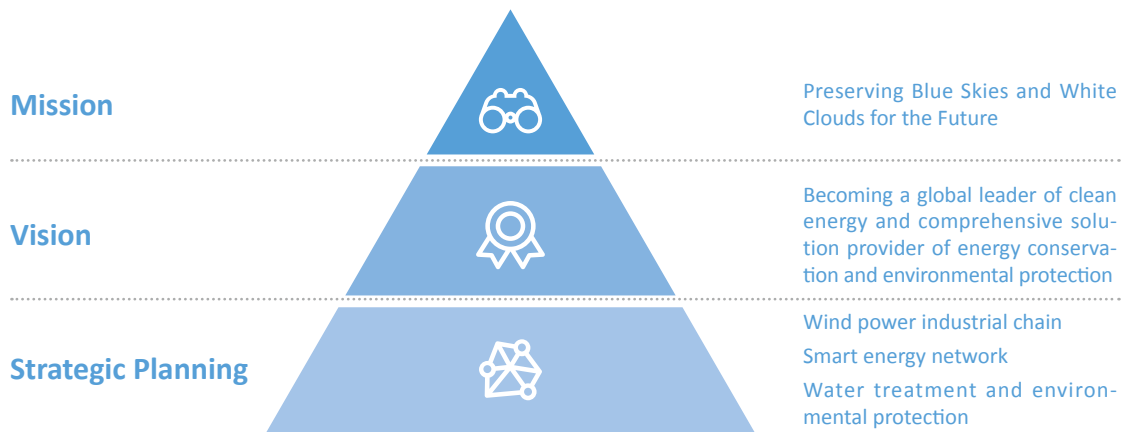




Our Strategy

With its mission “Preserving Blue Skies and White Clouds for the Future”, Goldwind is committed to becoming a global leader of clean energy and comprehensive solution provider of energy conservation and environmental protection. In this critical timing of energy transformation, opportunities and challenges coexist. Whilst building its strategic core business, the Company continues to explore and incubate businesses in new areas, expanding its business to the entire wind power industry chain. It also continues the “offshore and overseas” strategy and forms four major business sectors: onshore wind, offshore wind, overseas wind, and wind

power service, providing a full life cycle solution for wind farm business. In addition, it continues to create the network of “source - grid - load” in the industry chain, providing customers with user-end integrated energy services such as electricity trade, energy management, and energy saving. With its development in water treatment technology, water treatment engineering and Internet of Things (“IoT”) capabilities, it also provides overall smart water treatment solution and operates water treatment assets efficiently.



Strategic Measures





Corporate Culture

Goldwind's corporate culture is the fruit of the Company's accumulated wisdom and the inner force of the Company's steady development. The Company upholds the notion "Creating Values for a Life Achievement" and strives to create an active, healthy and energetic organizational culture. It aims to inspire every Goldwind member to discover and create value in his or her work so as to fulfil both the Company's goal as well as one's own career.



Customer-oriented

Customer focus is fundamental to a company's survival. The Company insists that all employees stay in touch with the market, gain insight into customer needs, work with customers and mature ourselves while helping clients succeed.

Pioneering

The Company encourages making breakthroughs, opening up minds, pioneering, and innovating. It also stimulates the discovery and creation of value through insights from experiences and innovation from practices.

Action Follows Words

The Company disagrees with too much talking but few actions and encourages value-creation through actual practices.

Modesty, Openness and Collaboration

Goldwind people are modest, kind, and open-minded. The Company always encourages its staffs to learn from customers, business competitors, and outstanding enterprises.

Only by being humble can a person face future challenges; only by being open and aspirational can a person make breakthroughs. Goldwind people are aware of their limitations so as to explore possibilities and to grow.

The Company insists on realizing its goals through cooperation with customers. It firmly believes that to help others succeed is to help oneself succeed.

Respect and Trust

Respect lies in the way one treats people. It is our pursuit to let Goldwind people live and work with dignity. Respect is also reflected in Goldwind's adherence to truth and rules and discard of power or hierarchy bias.

The key to successful business is credibility. The Company has always committed to creating a trustworthy work environment through actions so that corporations, employees, suppliers, and customers become a credible and integrated group.



Major Awards and Honors

Awards or Honors	Dispatching organization
2018 Global Challengers 100	Boston Consulting Group (BCG)
Fortune China 500	<i>Fortune China</i> , CICC Asset Management Department
Climate Leader Plants	Energy Foundation
2018 International Clean Energy Enterprise of the Year	International Clean Energy Forum (Macau), China-ASEAN Center, ASEAN Energy Center
Energy Decade: Innovative Equipment Enterprise Award	Energy Magazine
2018 National Excellent Wind Power Equipment and Material Supplier	China Investment Association
Most Honored Company & Best Investor Relations Company in All-Asia (ex-Japan)	Institutional Investor (U.S.)
2018 China Energy Enterprise Innovation List · New Energy Manufacturing	<i>Beijing NengApp</i>
China Quality Award Nomination	State Administration for Market Regulation
Award for Fastest-growing Public Company in New Energy Industry China Top 25 Technological Innovation Public Company Brand Value List	<i>National Business Daily</i>
“SNEC Top 10 Highlights” Gigawatt-level Gold Award	Asian Photovoltaic Industry Association (APVIA), China Renewable Energy Society (CRES), etc.
Outstanding Enterprise Award for Meteorological Services	China Meteorological Service Association
2018 China Offshore Wind Power Industry Promotion Award	China Electrical Equipment Industry Association Wind Power Equipment Branch, China Electrotechnical Society Wind Power Technology Committee, East Wind Power Net
Pilot Business for National Supply Chain Innovation and Application	Ministry of Commerce, Ministry of Industry and Information Technology, Ministry of Ecology and Environment
Clean200™ List	As You Sow (U.S. NGO), Corporate Knights (Canadian market research company)
2018 Golden Wings Award – Company Value Rank of Hong Kong Connect	<i>Securities Times</i>
Top 50 of China CSR Brands	China Association of Social Workers – Corporate Citizen Committee, CCTV, Tencent Foundation
Best Board of Directors, Best New Media Award	<i>Securities Times</i>
2018 Golden H-Share Best Investor Relations Management Public Company	<i>Zhi Tong Cai Jing</i>

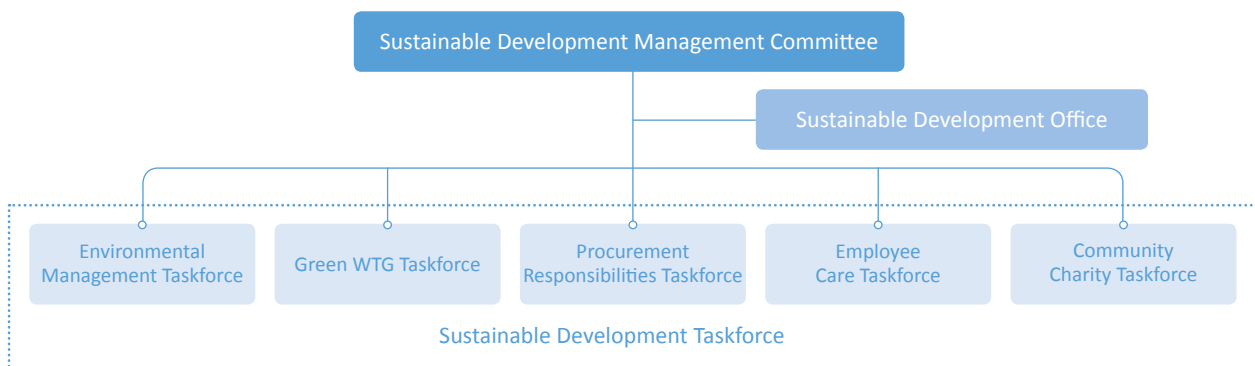
Sustainable Development Management

Goldwind puts its existence and development within the framework of global sustainable development, marching towards businesses that benefit the environment and society. Through wind power equipment R&D, manufacture, wind power services, wind farm investment and development as well as water treatment, the Company is committed to helping community solve energy-related and environmental problems. In this process, the Company effectively manages business decisions and their impacts on the environment and society through transparent and regulated operations. It strives to achieve sustainable development together with its stakeholders, actively utilizing its unique business advantages and resources to contribute to the solutions of global issues such as poverty and environmental degradation.

In order to improve the management efficiency and standard of sustainable development, the Company has established and gradually improved the sustainable development work system. It established the sustainable development organization system, refined relevant mechanisms, initiated internal and external dialogues and capacity-building, and mixed sustainable development concepts with daily business. In 2018, the Company launched 8 new employee social responsibility training sessions that involved more than 800 new employees, spread sustainable development concept within the Company, and guided employees to understand the relationship between sustainable development and their work positions.

Sustainable Development Organization System

Goldwind's sustainable development organization system consists of the Sustainable Development Management Committee, the Sustainable Development Office and the Sustainable Development Taskforce. The Sustainable Development Management Committee is the highest decision-making body of the Company's social responsibility and sustainable development management. It comprises primary leaders of the corporation and is responsible for guiding the Company's social responsibility and sustainable development strategies, solving critical problems of implementations, and ensuring that such strategies and other social or environmental appeals are included into its decision-making process. The Sustainable Development Office consists of department heads whose duties are primarily relevant to the issue, and corporate social responsibility professionals. It provides professional support and action plans for the Company to promote sustainable development. The Sustainable Development Taskforce is set up according to specific projects of concern and is responsible for implementations.



Sustainable Development Communication

In addition to everyday business communication and exchange, the Company also communicates with stakeholders with regard to its own sustainable development work. While broadcasting sustainable development concepts to these stakeholders, the Company at the same time obtains advices and opinions from these external stakeholders, including social responsibility professionals, regulators, etc., in order to improve the quality of work.

- ◆ The Company hosted a research seminar “Power Company CSR Implementation Guide: National Standard Development and Pilot Application”, sharing its experience in management and practice
- ◆ The Company’s 2018 *Sustainability Report* was awarded the “GoldenBee CSR Report - Supplier Information Disclosure Award” at the 11th China Corporate Social Responsibility Report International Symposium
- ◆ The Company compiled the CSR case study “Building A Green Supply Chain and A Green Wind Power Industry Chain” that was included in the *China Electricity Council’s Model Cases of Power Company CSR (2018)*



▲ Goldwind in the 11th China Corporate Social Responsibility Report International Symposium



▲ National Standard Research Group for Power Company CSR visiting Goldwind



In 2018, the Company (H shares: 2208) became a constituent of MSCI ESG Leading Indexes. One of the key global indexes in CSR investment, this index is created by the U.S. company ,MSCI, and constituents are companies with excellent ESG results



The Company became a constituent of Hang Seng Corporate Sustainability Index and the Hang Seng A-share Sustainable Development Index for the second year after September 2017



As one of the 50 best-performing A-share companies in ESG, the Company was included in China’s SGCX ESG50 Index for the second year



Through its long-term development and value creation capability, the Company was admitted by Social Value 99 Index, the social value index jointed published by WIND and China Alliance of Social Value Investment

Stakeholder Engagement

Engaging in stakeholder communication is a crucial part of Goldwind's sustainable development management. The Company accurately identifies stakeholders and communicates with them through meetings, regular visits, surveys, etc., to understand their expectations and demands. Then the Company takes measures and tries its best to meet such demands.

Stakeholders	Major Concerns or Expectations	Response
 Shareholders and creditors	Sustainable profitability Regulation of corporate governance Disclosure of business information Enhance the profitability to reward shareholders	Enhance our business management capacity Strengthen management of debt risk Optimize internal management system of compliance risk Timely disclosure of information Organize shareholders' meeting Reasonable profit return
 Clients	Honour and integrity High-quality products Excellent services Respond to client concerns	Strictly implement requirements set forth in contracts Strengthen management of product quality Offer varied and high quality products Offer excellent services Improve the procedure to handle client complaints
 Employees	Legal interests protection Salary and welfare guarantee Health and safety protection Development platform building	Equal and standard recruitment Set up staff committee 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
 Supplier and other partners	Transparent procurement Honest contract performance and integrity Win-win cooperation	Open and fair purchase Timely payment for goods Support the healthy development of suppliers
 Community	Protection of local environment Support of community development Charity and welfare	Carry out energy conservation and emission reduction actions Protect ecological environment Support public affairs of the community Carry out charity activities within the community
 Government	Follow laws and regulations Drive local economic development Tax payments	Follow laws and regulations Pay taxes according to law Offer job opportunities Drive development of related industries
 Financial institutions, R&D institutions, media, etc.	Common development Information disclosure	Carry out strategic cooperation Strengthen industry, university and research cooperation Organize activities such as visit, meeting, etc.



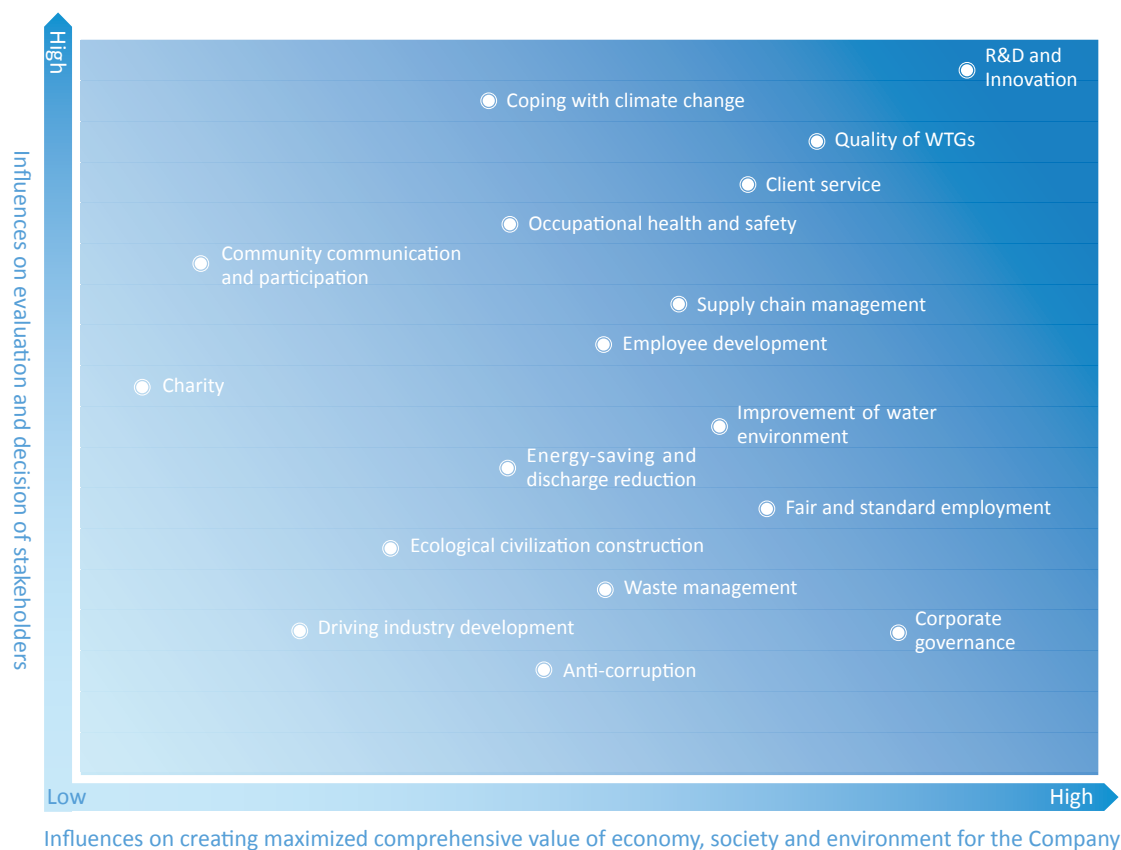
Identification of Key Aspects

On the basis of internal and external stakeholder expectations, its business scope and global sustainable development, and with reference to domestic and international CSR standards, guidelines, initiatives, as well as regulations on the development of wind power industry, a total of 48 topic issues concerning the Company's economic, social and environmental impacts that are of importance to stakeholder decisions were identified. After being reviewed by the Company management and being adjusted according to surveys stakeholders filled out, all the issues to be

disclosed in the *Sustainability Report* were confirmed.

In December 2018, the Company issued to its stakeholders a questionnaire concerning topics to be covered in the Sustainability Report, and received feedbacks and suggestions from investors, customers, employees and suppliers. A total of 100%-valid 114 questionnaires were collected.

Matrix for the material aspects of the 2018 Sustainability Report of the Company





01

Corporate Governance



United Nations Sustainable Development Goals Supported



Goldwind has established a robust anti-corruption system. It spares no effort in raising public awareness against corruption and in expanding its training programs. It has set up complaint channels and strives to create a transparent and healthy work environment. [P22](#)

As a listed company on both Hong Kong and Shenzhen Stock Exchange, over the years Goldwind always upholds integrity, honesty and compliance in its businesses and operations, continuously upgrading its corporate governance and internal management level, and creating values for shareholders and the society sustainably.



8

Board Meetings

3

Shareholders' General Meetings

5

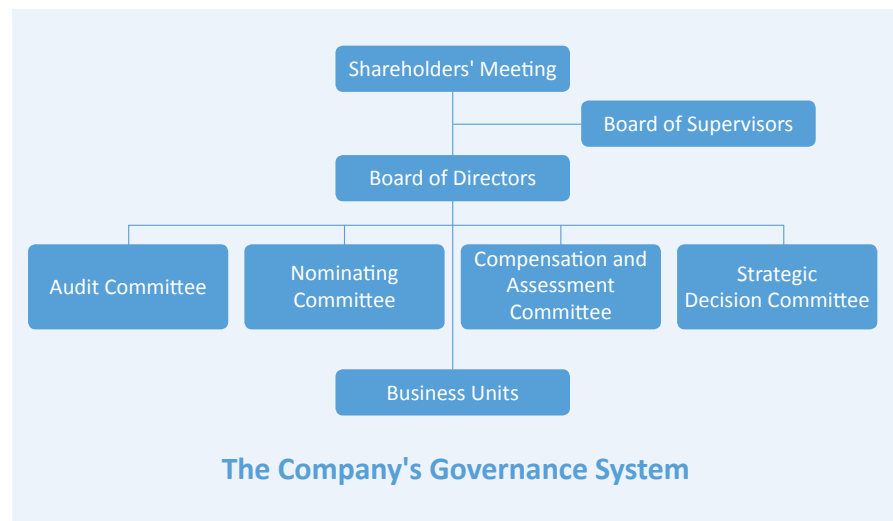
Audit Committee Meetings

Goldwind strictly abides by requirements of laws and regulations and standardized documents such as the Corporate Law, Securities Law, Governance Standards of Listed Company, Corporate Governance Codes, Articles of Association. It works on governance structure, formulates a modern corporate system, and standardizes company procedures to ensure healthy and orderly operations of various production and business activities.

When the Company selects a board member, it considers the diversity of board in terms of various factors such as professional experience, skills, knowledge, age and gender. As of 2018, the Company added 1 female director. Female members accounted for 11% of the total number of board members.

The meetings of shareholders, the Board of Directors, the Board of Supervisors and the Special Committee of the Board are responsible for reviewing major matters related to development of the Company. In 2018, the Company held 8 Board meetings and reviewed 62 proposals including the annual report, profit distribution plan, etc.. The Company held 3 shareholder meetings and reviewed 21 proposals. It also held 5 meetings of the Audit Committee, 1 meeting of the Nomination Committee and 1 meeting of Compensation and Assessment Committee.

Please refer to the "Corporate Governance Report" section of the *2018 Annual Report* (H-shares:2208) or the "Corporate Governance" section (A-shares: 002202) of the report for detailed information about the Company's governance.



Compliance Management

The Company strongly adheres to honesty credibility and compliance. It fulfills the obligations of a listed company and continuously improves its compliance system with daily consultations, major issue assessments, compliance training and inspection, accepting feedbacks and suggestions to improve itself, as well as amending the *Articles of Association*, *Fundraising Governing Mechanisms* in accordance with relevant rules and regulations. It has also revised the Compliance Manual according to rules and practices of Shenzhen and Hong Kong Stock Exchange to provide legal compliance support for its businesses to reduce management risks. In addition, the Company tailor-makes compliance training materials in accordance with different characteristics of subsidiaries, providing them with multiple training sessions and promotional activities throughout the year, thereby enhancing their compliance awareness and capabilities and raising the overall quality of management.

Risk Management

Building on top of the standard management systems of ISO9001, ISO14001 and OHSAS18001, the Company further improves its risk management and internal management systems. It has formulated policy documents such as *Fundamental Governance for Internal Business Operations* and *Risk Management System*, covering different business sectors and management segments. The Company also conducts risk control and major risk management assessments every year, emphasizing efficiency and behavioral compliance. In 2018, the Company compiled the *Risk Management System Plan* and coordinated all-level risk management goals, countermeasures, and assessment criteria to increase risk management capabilities, on top of integrating risk management, standardization management and lean management.



Anti-Corruption

20

Anti-corruption Talks
throughout the Year

700⁺

Employees covered

Under the guidance of the Board of Director Audit Committee, the Company has set up an independent audit department to monitor and tackle corruption. The Company has a robust anti-corruption system which assesses the effectiveness of the regulations in preventing corruption through the internal audit department. It has also set up mechanisms to restrain operations in risky and key areas where corruption is most likely to occur. In 2018, no legal proceedings related to company corruption were recorded.

The Company adheres to the principle of transparency and legal compliance in its operations, regarding credibility, righteousness, integrity and self-discipline as the fundamental ethics of all employees. It has compiled the *Regulations against Bribery in Work*, clarifying the concept and format of bribery, listing preventive measures and mechanisms for reporting and investigating, as well as stipulating corresponding remedies and penalties. It has complied the *Sunshine Convention, Employee Ethics & Code of Conduct* to ensure that staff abide by business ethics, encouraging healthy and orderly interaction between employees and business partners. *Goldwind employee Pledge and Reward & Penalty Management System* helps to guide and regulate employee behavior, preventing corruption from

occurring. The Company also regularly surveys employees' understanding of the compliance culture, collects perspectives on anti-corruption related issues, communicates with industry peers, and improves anti-corruption policies to ensure that it matches up to the level of business development.

In 2018, the Company carried out an in-depth analysis of its business operation to pinpoint the weaknesses in management. It strengthened anti-corruption supervision in terms of procurement, project construction, investment and development etc., and proposed recommendations to raise working standards. It increased the frequency of anti-corruption training and promotion sessions, expanded the scope of training, designed differentiated training contents and activities to cover key management personnel, newly promoted leaders and new employees. Roughly 20 anti-corruption sessions were conducted throughout the past year, covering more than 700 employees.

The Company publishes on its official website, work venues and digital platforms the channels through which complaints and reports can be made. It has designated staff to handle these complaints and reports, and guarantees measures to protect the employees or other personnel who are involved in the investigation.

Goldwind Anti-corruption Hotline: +86-(0)10-67511888-1127

E-mail: audit@goldwind.com.cn

Address:

Audit & Legal Department, Goldwind Science & Technology Co., Ltd.

No. 8 Boxing Yi Road, Economic & Technological Development Zone, Beijing

Post Code: 100176



Rights and Interests of Investors

As a company listed on both the Shenzhen and Hong Kong Stock Exchange, Goldwind has always adhered to the principles of fairness, justice, openness and information disclosure consistency across the two exchanges. It continues to refine information disclosure system and releases company information in a timely, accurate and complete manner. It strictly follows the Rules and Regulations for Listed Companies, conforms its decision-making procedures and protects the rights of investors, striving to create sound business returns for their investment. As of 2018, the Company was rated A (Excellent) in the annual information disclosure assessment for companies listed on the Shenzhen Stock Exchange.

Being part of the new energy business and facing frequent policy changes and fierce market competition, it is difficult for investors to keep abreast of the latest industry developments and the competitive advantages of the Company. Therefore, in addition to online interactive platforms, telephone, mail and on-site communication, the Company actively conducts

roadshows, online results conference, specialized policy briefings and reverse investor roadshows etc. to communicate its business performance, major policy changes and other major events to its investors. It also utilizes new media such as WeChat official accounts to publish corporate news from time to time, bridging communicative platforms with domestic and foreign investors.

In 2018, the Company issued 4 regular reports, 77 A-share announcements and 153 H-share announcements, of which 81 were in both Chinese and English. The Company organized overseas roadshows twice, reverse investor roadshows twice, and online reception day twice. It also participated in five sell-side summits. Throughout the year the Company organized 83 communicational meetings, 6 global conference calls, 2 on-site visits to wind farms, and met with 1,068 investors in total. It responded to all the questions investors have raised via IR platforms, email and hotline.

4

Regular reports published



153

H-share announcements published



100

Investors' questions answered



1,068

Investors attended to by IR officers



02 Research & Development



United Nations Sustainable Development Goals Supported



Goldwind is leading the industry with innovation. The WTGs produced are able to adapt to typhoons, thunderstorms, extreme temperature and other inclement weather. They are also equipped with environmental features such as noise mitigation, bird protection, and light-shadow flickering controls. [P28](#)

Goldwind proactively conducts technological innovation to promote the development of the wind power industry. It integrates technologies such as big data and artificial intelligence to create experience in the production and utilization of efficient green energy, changing the ways humans acquire energy and propelling the continual progression in the world of smart energy.



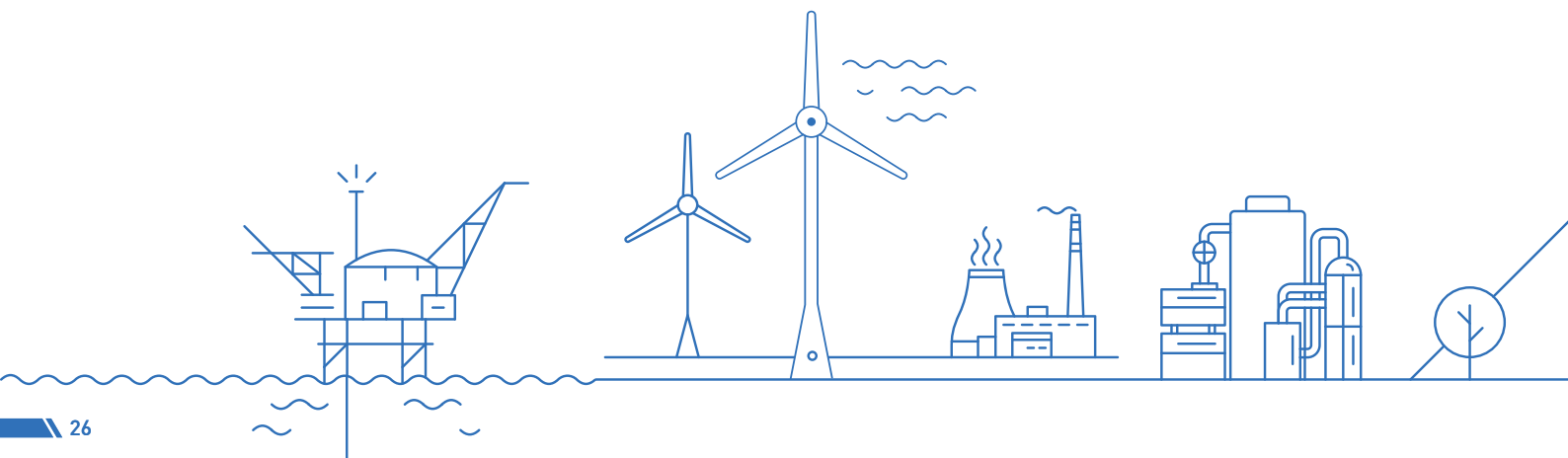
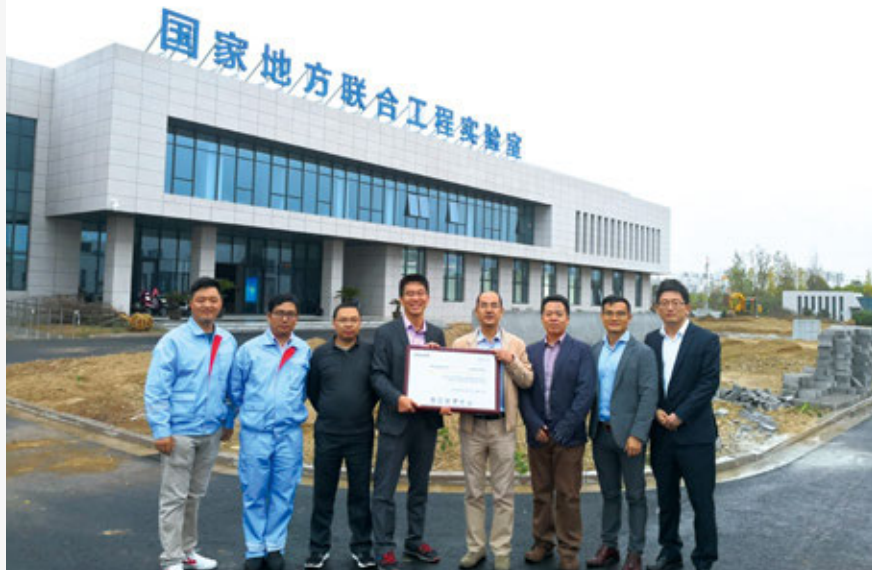
Management Based on Science and Technology Innovation

The Company emphasizes technological innovation. It constantly seeks to improve the current system by exploring and optimizing innovative procedures and approaches in management, striving to enhance its original and integral innovative capability. The Company has always been developing innovative wind power technologies to keep up with market and customer needs in order to provide them with superior products and services. Steered by the Chairman of the Board, the Company comprises a Strategic Innovation Committee which explores and supports innovative businesses, and provides full support and services. The Company adopts an authorization management system consisting of three layers: the corporate level, the unit level and the micro-innovation level. By providing a platform for creative projects and assisting in the incubation and transformation to results, the Company aims to invent

world-class technologies and products with its own intellectual property rights and to lead industry development.

The Company has set up 7 major R&D centers around the world. They are located in Beijing, Urumqi, Yancheng, Wuxi, as well as Denmark, Germany and the United States. These centers are responsible for production and operation support, new product development, technology and test management etc., providing technical support to the Company internally while meeting the needs of industrial development. In order to further strengthen its research and development capability, the Company actively seeks cooperation with research institutes, higher academies or outstanding corporations, soliciting complementary support to jointly conduct activities such as research or results promotion, and the establishment of a global wind power innovation network.

In November 2018, Goldwind Laboratory was approved to join Intertek's Satellite Program. Goldwind is a domestic wind power manufacturer to join this plan in an early stage



7

R&D Centers established



35.78%

R&D personnel as proportion of total employees



In 2018, the Company held the 6th Technological Innovation Awards Conference, evaluating and awarding over 1,555 innovations with RMB 14.45 million bonus.

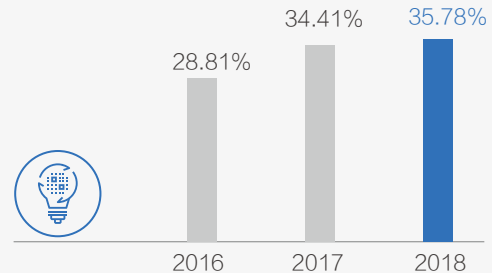
Some collaborative innovation projects

- ◆ Joint research on ultimate wind load with the Technical University of Denmark
- ◆ Joint research with North China Electric Power University on specialized technology of Goldwind's high-power PMDD generators
- ◆ Established long-term collaboration and signed a Memorandum of Cooperation with the University of New South Wales
- ◆ Joint research with Beijing Aerospace Measurement and Control Technology Company on developing portable synchronous WTG equipment
- ◆ Worked with Beijing General Certification to jointly build a high-end laboratory to carry out research on pioneering technology of the wind power industry

Number of R&D personnel



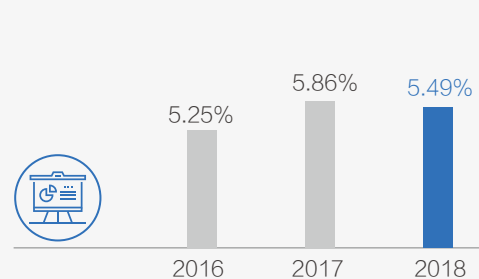
R&D personnel as proportion of total employees



R&D investment (100 million RMB)



R&D investment as proportion of revenue



Product and Technological Innovation

The Company combines innovation with wind power industry and actively researches on key and major R&Ds in the industry. It introduces big data, IoT, cloud computing and other technologies

to drive digitalization and customization of WTGs, and has achieved major breakthroughs in high tower, long blade, and large-capacity and smart-WTGs.



Optimize Levelized Cost of Energy (“LCOE”)

“

In the context where wind power steps towards true parity, Goldwind will continue its competitiveness of the entire industry chain and commit to providing customers with fast, accurate, cost-effective, environmentally-friendly and comprehensive solutions, leading the industry to technological progress while at the same time further enhancing the cost competitiveness of wind power.

”

——Wu Gang,
Goldwind Chairman

As one of the earliest companies in China’s wind power equipment R&D and manufacturing industry, Goldwind has profound knowledge with regard to LCOE. It emphasizes on, and continues to reduce the full life-cycle wind power LCOE. Relying on robust production and supply chain facilities, a highly intelligent manufacturing system, an automated, digitized and standardized management system plus a large logistical and transportation network, the Company manages to de-

liver high-volume and high-quality wind power products within a short period.

Whilst ensuring performance of WTGs in its life cycle, the Company leverages its advantages in R&D and technology to develop independent innovative technology products, enhancing the efficiency of wind power projects in terms of design, construction, and operation, thereby maximizing power production with the least possible cost.

Some innovative technologies

Wind Farm Design & Planning Phase



◆ Mid-Scale Meteorological Data Simulation Technology

Uses big data technology to analyze meteorological data within the wind farm to forecast features such as wind power, temperature, natural disasters etc., ensuring the layout of the WTG can utilize the most of wind resources

◆ 3D High Precision Model Simulation Technology by Drones

Uses drones to make precise 3D models and to accurately identify wind farm landscapes in order to create the most correct and realistic simulations

◆ Surface Object Rapid Identification AI Technology

Uses AI to identify limiting factors such as houses and ponds within the wind farm with precise drone data and high-discrimination satellite data to avoid the layout of turbines not fulfilling the actual scenario

Wind Farm Construction Phase



◆ BIM 7D Dynamic Visualization Platform

Creates 3-dimensional VR pictures to demonstrate the complete construction of the wind farm. The platform possesses the 4 functions of progress, cost, quality and safety management; by determining precise plans with the above factors, it can fine manage production progress, lower project costs and increase building efficiency

Wind Farm Operation Phase



◆ EFarm Laser-Radar Smart Control Technology

Uses laser radar wind speed sensors to precisely predict wind flow data, proactively optimizing the WTG in advance. It can effectively reduce loading of the WTG key parts by 5-10%, increase WTG generation performance, lower project investment and increase returns

◆ The POWERNEST™ System

As the control system of the wind farm, it can manage data and status of various sensors, collaborate on over all control of the wind farm, increase power generation capacity of the entire farm and hence improve environmental friendliness

Smart WTG

With the development of artificial intelligence, big data, cloud computing and IoT, the Company weaves such new technology into traditional WTG to create smart WTGs that can sense the external environment and recognize its own status, thereby exerting control and engaging in collaborative decision making. In other words, it enables WTG to exert a certain degree of “thinking” ability.

Using radar system in windspeed measurement and control technology, the WTGs can accurately detect wind resources in front of the wind wheel rotating plane.

Then through the control system, WTGs issue commands to adjust. By employing advanced sensors and GPS, the Company collects real-time deviation parameters of WTG key components like displacement, inclination, sinking etc. during their operation, providing reference information for the entire control system. Moreover, by integrating new data technologies like big data and cloud computing, Goldwind develops algorithms that can assist in the optimization of WTG and monitoring of potential problems of wind farm.

Smart WTG Features



- ◆ **Detection:** Employ all kinds of advanced sensors to conduct deep perception of external environment and WTG status and behavior
- ◆ **Self-recognition and Control:** Evaluate surroundings, status and performance through acquiring sensor information and further self-adjust, adapt and control
- ◆ **Collaborative Decision Making:** Make collaborative decisions at the levels of single wind farm, wind farm group and energy network to ensure optimal performance of the entire system



The Company continues to increase its innovative investment in 2018. Four smart WTG models were launched: GW168-8MW offshore large capacity unit, GW184-6.45MW offshore large impeller unit, GW168-6.45MW offshore typhoon-adaptive low wind speed unit, and GW155-3.3MW onshore low-to-medium wind speed unit, all equipped with higher power generation capacity and more reliability and grid adaptability.

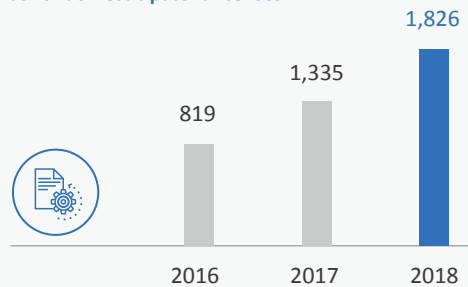


Protection of Intellectual Property Rights

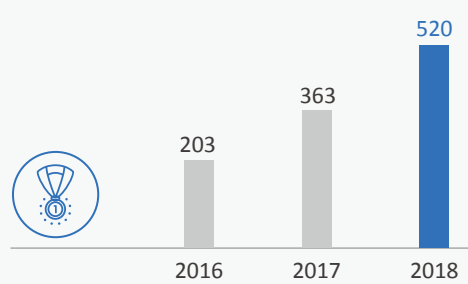
The Company has accumulated profound results of technological innovations in its development. In order to protect these innovations and encourage development of innovative work, the Company has set up an intellectual property management office. It is staffed by intellectual property management personnel who provide information support and intellectual property protection for technological innovations to improve

R&D efficiency. The Company has also publicized the *Intellectual Property Management System* and the *Trademark Management Measures*, regulating work related to intellectual property rights. All these measures seek to protect internal innovations of the Company whilst respecting and avoiding infringement of intellectual property rights of others, minimizing operational risks and creating a desirable atmosphere for innovation.

Cumulative number of domestic patent licenses



Cumulative number of domestic patents for invention



Driving the Development of the Industry

With an open-minded, cooperative and win-win attitude, the Company cooperates with industrial, academical and research fields. Together with these partners it promotes innovations in the realms of new energy, energy conservation and environmental protection.

Strengthens core technologies of R&D, leads technological development in the industry

Actively promotes R&D of key and significant technology, undertakes research of important technological areas and leads industrial progress

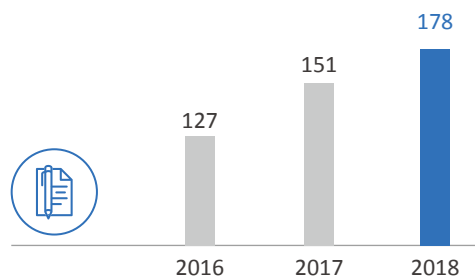
Actively participates in industry exchange activities, shares wind power experience with international peers, explores development trends at the forefront and promotes technological development of the industry



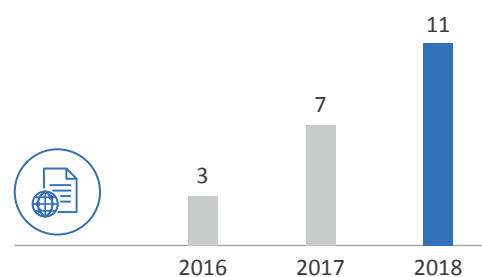
Participates in the compilation of international, national and industrial standards, leading the development of industry standardization

The Company takes part in the formulation of standards of innovative technology, continuously improves industry standards and contributes to its healthy development. In 2018, the Company cooperated with the International Organization for Standardization (ISO) in the revision of international standards as well as the standardization of international wind power pioneering technology.

Cumulative number of domestic standard-setting participated



Cumulative number of international standard-setting participated



Conducts training for customers and suppliers, cultivates talents for the industry

The Company utilizes its advantage of talents and other resources in the industry to provide training and accreditation exams for industry professionals working at heights. It also provides professional personnel training for major clients, identifies, trains and accredits key personnel for its suppliers, as well as educates private wind power developers.

03 Products and Services



United Nations Sustainable Development Goals Supported



Goldwind engages in water treatment business and launches wastewater treatment, water reuse and sludge disposal projects on a larger scale. It integrates water treatment with energy technologies to create a new model of clean energy utilization and smart water plant management. [P37](#)



Goldwind is committed to providing affordable, reliable and sustainable green power to the global community through innovating wind power technology and products, reducing electricity costs, as well as building wind farms around the world to popularize green energy. [P36](#)

Through conducting wind turbine R&D and manufacture, clean energy development and water treatment businesses to cope with energy and environmental problems, Goldwind adheres to the philosophy of serving for the society and the environment and contributes to the future of the mankind.



Quality and Safety of WTGs

As wind farms are mostly distant from urban areas, and the generators are installed several hundred meters above the ground, any quality and safety problem would entail the transport of equipment and maintenance staff, meaning huge costs for both equipment manufacturers and operators. Therefore, the quality and safety of WTGs greatly affect investment returns of the entire wind farm as well as the health and safety of on-site personnel.



Quality Management of WTGs

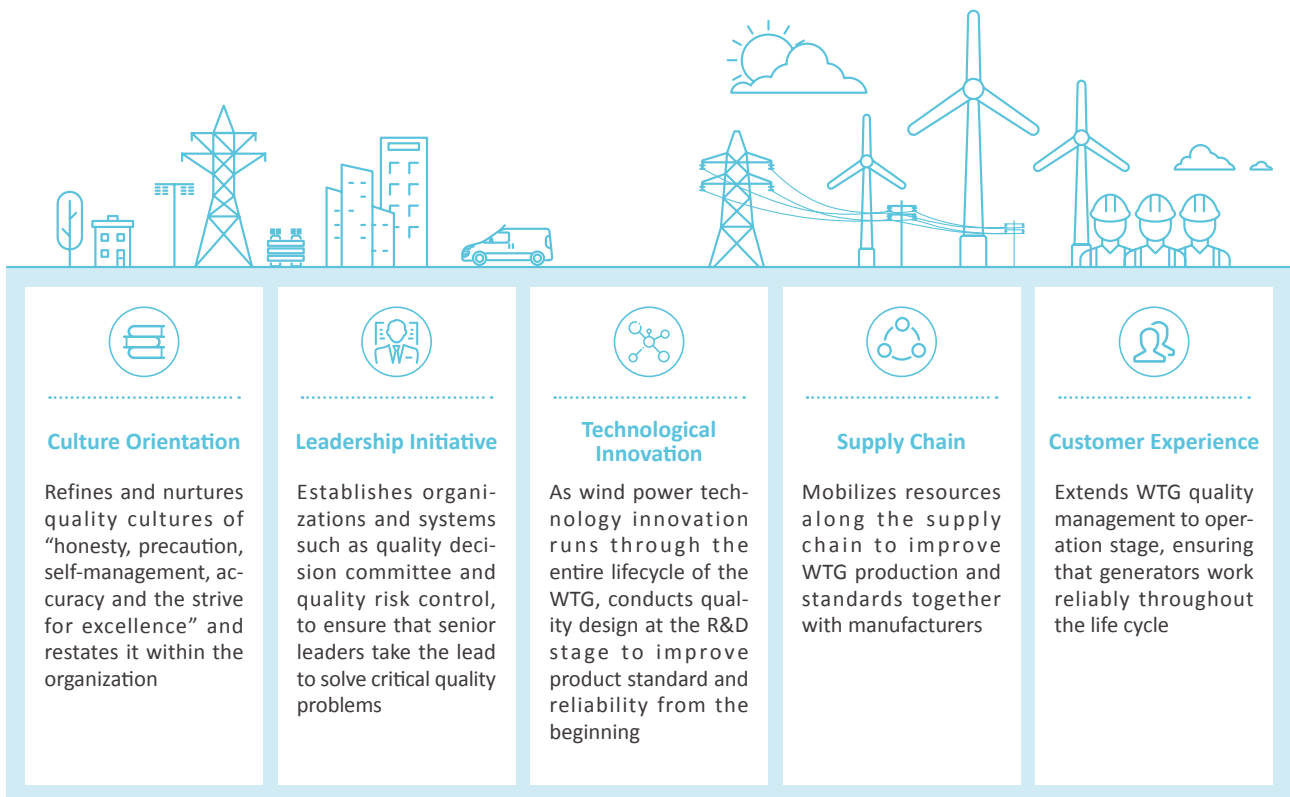
The Company values the product quality of WTGs and outlines strategies with “quality and efficiency” principles. Combining its 20-year experience in WTGs manufacturing, Goldwind explores and formulates its quality management model as a “wind power marathon”. From the five dimensions: culture orientation, technological innovation, leadership initiative, supply chain and customer experience, it guarantees and enhances the quality of WTG products in all aspects.

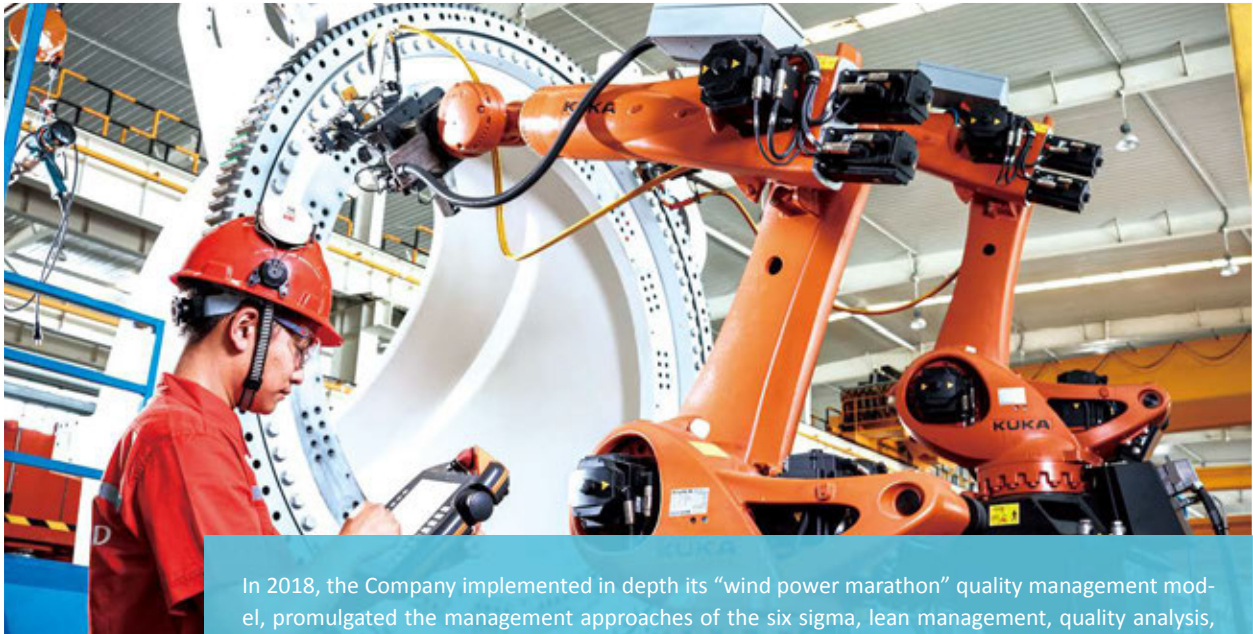


Goldwind has always treated wind power as a marathon, and focuses on creating long-term value for its customers. The Company particularly emphasizes the quality and reliability of its products during the 20-25-year lifecycle of a WTG, and will never undermine these factors because of changes in the market environment.



—— Wu Gang, Goldwind Chairman





In 2018, the Company implemented in depth its “wind power marathon” quality management model, promulgated the management approaches of the six sigma, lean management, quality analysis, continual quality improvement, etc. to improve the operating standards of WTG production. Based on existing optimization procedures, modular production and systematic assembly, Goldwind has employed smart mechanical equipment to implement pipelining operations in the manufacturing process. It has also embedded major functions of the Manufacturing Execution System (MES) into various steps of the production processes, as a means of ensuring product quality.

The Company has compiled policy documents such as the *Equipment Quality Inspection Department Manual* and *Disposal Procedures for Non-qualified Products*, strictly executing quality inspection and disposal for various elements including procured parts, equipment assembly, transportation, on-site installation etc.. The Company has also compiled the *Customer Complaint Handling Process*, standardizing the process for handling complaints in order to collect and analyze information, and resolve them in a timely manner, so as to continuously improve the quality of product and service.

Safety Management of WTGs

The Company strictly implements safety standards during the development and manufacturing of WTGs. According to the procedures “fulfilling health and safety requirements, developing protective devices, providing prompts for safety issues”, it continuously improves protection functions in terms of the electromagnetic radiation and electrical safety of WTGs and ensures the health and safety of installation workers, operation staff and customers as much as possible. In 2018, the Company did not recall any WTG products due to safety and health concern.

The Company has added safety review procedures at various stages of the product development process, ensuring that new products comply with oc-

cupational health and safety design requirements, thereby avoiding or reducing safety and health risks for staff and guaranteeing WTG security. It also employs real-time information technology to monitor, aggregate and control any hidden safety hazards of wind farms across the country, and regularly designs preventive measures to reduce the chance of such hidden hazards from occurring. In 2018, the Company designed the safety compliance standards for offshore WTG units, improved the design of WTG safety signs, prevented possible maloperation and personal injury, and reduced safety risks to make the WTGs more secure and user-friendly.

Providing Reliable Green Power

The demand for energy in modern economic and social development has been increasing. While traditional energy sources are depleting and causing environmental pollution, the development of green power has become a trend in the globe. The Company continuously develops and promulgates clean energy technology and equipment, creating conditions for, as well as facilitating the use of, green energy in the society, changing the ways mankind accesses energy.

The Company has been cultivating carefully in the wind power sector, developing core technologies such as distributed energy, integrated energy supply, advanced energy storage, smart and digital management, etc.. It provides diversified energy products and solutions in network, source, load, storage, control and other aspects.



Distributed Energy

Integrates various types of distributed energy through scientific planning and allocation in correspondence to the energy demand of the users and local clean energy endowment. By realizing optimal allocation of diversified energy, efficient collaborative supply and computerized dispatch, such technology reduces energy costs, increases end-user energy utilization and the clean energy ratio.



Energy Storage System

Separates traditional centralized energy storage systems into electronic storage systems and battery storage systems, then stores or releases energy according to different scenarios. This effectively reduces the operational risks and costs of the system, standardizing its operation and laying the foundation for the local consumption of wind power.



— Qinghai Province Achieves “9 Days of Green Energy” through Ultra Large-scale New Energy and Big Data Platform

China's first mega-scale new energy and big data platform – the Qinghai New Energy And Big Data Innovation Platform jointly developed by Goldwind, the State Grid Qinghai Electric Power Corporation and the Beijing University of Technology Data Innovation Center – managed to provide the entire Qinghai province 9 consecutive days (216 hours) of electricity – From 0:00 June 20 to 24:00 June 28, 2018 – through only clean energy such as hydro power, photovoltaics and wind. As the key unit responsible for planning and construction of the platform, the Company led the creation of advanced applications. For example, the underlying IoT for energy to provide key technologies such as centralized monitoring, centralized power forecast and smart management of equipment. Qinghai's “9 days of green energy” was a trial of zero-emission electricity. It enhanced the practice of clean energy supply by maximizing consumption of new energy while laying foundation for the Company to build a clean, low-carbon, safe and energy-efficient system.

The Company builds wind farms around the world, provides green power, and popularizes its use. By the end of 2018, the Company has cumulative installation of 50 GW in the globe, with its business footprint covering 6 continents and more than 20 countries. It has provided excellent and reliable green power to the society with an annual power generation of 100 billion kWh.

In August 2018, the China Electricity Council announced the results of the 2017 assessment of national wind farm production and operation indicators by surveying the operation of wind farms from five aspects – wind resources, power generation, energy consumption, equipment tracking, and operation and maintenance costs. The Company has received 80 awards for its wind power projects, accounting for more than a quarter of its total awards.

WTG Operation and Maintenance Services

From building wind power service teams, optimizing the network of spare parts distribution, designing wind power service standards and solutions, to applying new technologies such as big data and cloud computing in its operation and maintenance, the Company strives to improve wind power service capability and service quality, to maintain high efficiency of operation, and to increase WTG stability and wind power generation.



Wind Power Service Team

Possesses around 2,000 domestic operation & maintenance engineers with experiences of complex operations such as PMDD technology & double fed multi-systems



Wind Power Management System

Established over 30 standards throughout the entire WTG lifecycle operations including their admission to site, installation delivery, operation maintenance etc., promoting the standardization of WTG operation & maintenance during their service period



Smart Operating & Maintenance System

Established an integral solution which comprises the "online" smart operation system SOAM™ and "offline" efficient execution, swiftly responding to various needs of the wind farm, enhancing operation & maintenance efficiency and benefits of the wind farm



Resource Network Layout

Set up 4 1st-tier archives, 13 2nd-tier archives, 122 3rd tier archives and 18 4th tier archives, forming a 3-dimensional service network coverage with nodes, lines and surfaces



— Building the “iGo” Offshore Wind Power Smart Management Platform to Reduce Offshore Operation and Maintenance Costs

Designed specifically for the offshore wind power business, the Company applies digital and smart technology to build the “iGo” offshore wind power smart management platform. Through the construction of remote dispatching systems, equipment lifecycle archives and defect solution libraries, the Company develops defect surveillance modules based on status monitoring. It coordinates resource allocation for various parties, optimizes plans for marine missions, improves collaborative work efficiency, and reduces power generation loss and the frequency of marine trips. The platform is equipped with various software, hardware and data technologies such as hydrometeorology forecast and analysis, as well as onshore radar, enabling it to accurately respond to on-site emergencies and to implement plans timely, thereby ensuring the safety of outbound maintenance staff.

Water Treatment

In response to the rapid growth of water demand in China and the grave problems of water pollution and shortage, the Company started water supply, sewage treatment and water reuse businesses in 2015. It aimed to improve water use efficiency whilst reducing harmful pollutants to the environment. In 2018, the Company independently developed several techniques in the field of advanced oxidation processes, and established a joint laboratory with research institutes to implement application of the relevant techniques in sludge treatment.

The Company integrates its core new energy business with its water treatment to invent the “W + E” Smart Water-Energy Solution. By accurately and dynamically applying techniques such as distributed energy and

energy efficiency platforms, it implements clean energy utilization and intelligent management for the energy consumption of the entire water plant, reducing the cost of electricity whilst raising the proportion of clean energy use and operation efficiency.

The Company used this solution to assist the Beijing Drainage Group in building distributed photovoltaic project in domestic water business sector, establishing a 36 MW photovoltaic system in addition to configuring an integrated efficiency management platform and setting up an energy control center. It is estimated to generate 36 million kWh of clean energy annually, meeting about 30% of electricity consumption and reducing carbon dioxide emissions by 36,000 tons.

04 Environment



United Nations Sustainable Development Goals Supported



Goldwind regards the wide usage of wind power as an approach to tackle climate change. It actively implements resilient strategies to adapt to climate change. [P40](#)



When utilizing offshore wind power resources, Goldwind concerns about marine protection and avoids causing any adverse effect on the marine ecological environment. [P43](#)



Goldwind establishes an effective system to avoid damage to forests and vegetation during its development and construction of wind farms, thereby protecting wildlife. [P45](#)

Goldwind actively responds to both domestic and international climate change policies and energy strategies. It strives to play an important role in the new energy industry in optimizing energy structures and creating ecological civilizations. At the same time, it tries its best to reduce any adverse impact on the environment during its operations through increasing efficiency of resource utilization, conserving energy, reducing emissions, creating ecological civilizations as well as working in harmony with the environment.



Coping with Climate Change

Global climate change is both an opportunity and a challenge for Goldwind. On the one hand, global climate change has prompted countries to modify energy use patterns and to actively explore and increase the utilization of renewable energy such as wind and hydro power, thereby promoting the growth of wind power businesses. On the other hand, problems caused by climate change such as extreme weather, sea level rise and ocean acidification will affect the efficiency of wind power generation, production and transportation of the WTG components, in addition to posing bigger challenges for the WTG to adapt to the environment.

While popularizing wind power products and services worldwide to reduce greenhouse gas emissions, the Company is gradually setting up and improving its response plans to implement resilient adaptations to climate change. The Company recognizes the impact and risks of environmental changes caused by climate change on its business operations, and continues to enhance the adaptability of wind turbines under harsh environments. The Company's WTG can adapt to typhoons, thunderstorms, high temperatures, and other extreme weather. Through the use of proofing against corrosion, salt erosion and fog, the Company's offshore WTG expands functions related to environment control system and meets the needs of the marine environment.

In 2018, the Company has installed a total capacity of 50 GW of wind turbines around the world, equivalent to reducing 10,236 tons of carbon dioxide emissions by thermal power.

Environmental Benefits Achieved through Company's WTG Products

Compared to coal-fired power, equivalent to

50.00 GW

Cumulative Global Installations

3,078.39 10k tons

Standard coal reduction

10,235.70 10k tons

Carbon dioxide reduction

5,593.28 10k m³

Reforestation

45



Successfully registered Clean Development Mechanism (CDM) projects

Approx 50



Completed verification Recorded China Certified Emissions Reduction (CCER) projects

Approx 25



Recorded China Certified Emissions Reduction (CCER) projects

As a practitioner and advocate of green energy, the Company supports activities like the Beijing Marathon as a new energy sponsor, encourages the public to purchase renewable energy through green power certificates, and promotes the use of renewable energy. It has joined renewable energy organizations or initiatives such as the Chinese RE100 to honor its own emissions reduction commitments.



The 24th United Nations Climate Change Conference was held in Katowice, Poland in December 2018. Representing the Company, Goldwind's subsidiary Tianrun New Energy was invited to attend the China Pavilion, sharing its practical experience of tackling climate change through a one-stop low-carbon green solution, calling on the global community to work towards the goal of keeping global average temperature rise within 2 °C from pre-industrial levels.

Goldwind has been named "Climate Leader Plants" by the Energy Foundation

Utilization of Energy and Resources

Most energy and resources consumed by the Company's operational activities are electricity to power office and manufacture activities, gasoline for business vehicles, diesel for engineering vehicles, and LPG for employee catering. Water consumption is not required in the process of WTG production, and water treatment processes do not consume water from the nature. Water is mainly used for offices and canteens and little water is used on dust suppression and greening in the process of wind farm development and construction.

Amount and Density of Primary Energy or Resource Usage of the Company

Type of energy or resource	2018	2017
Power consumption (thermal, 100 million kWh)	1.05	0.65
Power consumption (wind/solar, 100 million kWh)	2.60	2.20
Gasoline (kL)	908.05	654.53
Diesel (kL)	1,357.45	1,062.69
Liquefied Petroleum Gas (10k m ³) ¹	1.53	1.14
Natural Gas (10k m ³)	50.73	74.88
Overall energy consumption per RMB10k revenue (ton of standard coal/RMB10k)	15.85	12.53
Water consumption (10kt)	40.43	37.07
Water consumption per capita (ton/capita)	46.19	44.28
Packaging materials – wood (ton)	625.29	554.62
Density of wood packaging usage (t/pc)	0.22	0.18

1 Refer to GB/T2589-2008: General Principles for Calculation of the Comprehensive Energy Consumption for the conversion of various energy forms to standard coal equivalents

The Company strictly abides by the laws, regulations and standards related to environment protection, continuously improves the ISO14001 environment management system, and identifies and evaluates various environmental factors. It tracks major indicators for energy and resource usage, pinpoints areas of high energy consumption and inspects operation and maintenance of equipment. Through on-site measurement and collection of recommendations, the Company explores potential opportunities to save resources and to improve resource usage efficiency.

In manufacturing processes, the Company prioritizes the use of mature, low energy and resource consumption technology and equipment. It continuously optimizes procedures, trying to minimize the time of equipment running off-load. In terms of routine office work, it uses energy-saving lights, encourages employees to use double-sided paper in printing so as to save electricity and water, and fosters the replacement of

business travels with phone calls or video conferences.

The smart micro-grids and integrative clean power equipment such as WTG and photovoltaic at the office at Beijing Science and Technology Park (Phase II) can provide 32% of the park's total electricity demand. Moreover, the park has installed the NanoSun sewage treatment system that is able to process 200 tons of drinkable or reclaimed water per day. The park has a water recycling system that collects rainwater through a sunken greenfield and a sunken plaza and also functions as irrigation and reclaimed water recycling.

The Company's office building that is located inside the park area – the Smart Energy Building – utilizes various green building technologies to help realize green planning, energy saving, environmental friendliness, in addition to comfort and efficiency through scientific designs.



Integrated use of solar, natural gas, wind and other clean energy to meet part of electricity demand



Usage of geothermal heat pump system to exchange heat within soil and building in order to meet cooling and heating demand



Establishment of a visual energy management system for office electricity and the building of a smart lighting system to maximize the use of natural light sources and extend the life of lighting equipment



Usage of temperature and humidity control system to control indoor temperature and humidity and reduce energy consumption

Emission and Waste Management

The Company strictly abides by the Law of the *People's Republic of China on Prevention and Control of Environmental Pollution by Solid Waste* and other relevant regulations to reduce waste and emphasize on compliance of waste disposal processes.

On January 1, 2018, the *Environment Protection Tax Law of the People's Republic of China* came into effect. Taxes are levied on corporates according to the appendices, *Schedule of Tax Items and Tax Amounts of Environmental Protection Tax* and *Schedule of Taxable Pollutants and Equivalent Values*. The three pollutants plus noise generated by the Company in manufacturing and operation processes are taxed according to the requirements, strictly fulfilling its tax obligations. While ensuring

that waste disposal complies with the regulations, different waste reduction methods and approaches are constantly sought to reduce the impact of the Company's operations on the environment.

In 2018, the Company started environment information disclosure in accordance with the *Measures for the Disclosure of Environmental Information by Enterprises and Public Institutions* (Order No. 31 of Environment Protection Ministry). It established the "Goldwind Environmental Information Monitoring Platform", publishing environmental information indicators on a daily basis. The monitoring data is simultaneously released on the "Environmental Information Disclosure Platform for Beijing Enterprises and Public Institutions" and is subject to public supervision.

Emissions of Primary Wastes of the Company

Category	Waste	Primary source	2018	2017
Hazardous wastes ¹	Organic wastes (ton)	Factory workshops	38.20	23.42
General solid wastes	Construction wastes from wind farms (ton)	Wind farms	2,082.71	2,111.79

1. Hazardous wastes include category HW06 type organic solvents that are generated during WTG production (e.g. paints), and category HW13 type organic resins (e.g. solidifiers, adhesives)

Greenhouse Gas Emissions of the Company

Emission Scope	Type of energy	Overall emissions (ton of CO ₂) ¹	
		2018	2017
Scope 1	Gasoline, diesel, LPG, natural gas	8,694.49	7,032.00
Scope 2	Electricity	64,788.85	44,514.09
Total		73,483.35	51,546.09

1. Refer to GHG Emissions Accounting Method & Reporting Guidance for Machinery & Equipment Manufacturers for calculation of greenhouse gas emissions. Emissions from purchased electricity for operation of overseas offices are not included.

Density of Waste Generation and Greenhouse Gas Emissions of the Company

Indicator	Emission density	
	2018	2017
Hazardous wastes generated per MW of WTG manufactured (ton/MW)	0.0063	0.0039
Construction wastes generated per MW of WTG installed (ton/MW)	0.3560	0.3434
CO ₂ emissions per RMB10,000 revenue (ton/RMB10,000)	0.0256	0.0205

Waste Discharge Control

The Company generates relatively less waste in WTG manufacturing processes, mainly comprising a small amount of hazardous waste and some general solid wastes produced during the WTG assembly process, as well as some construction wastes generated during the construction of wind farms.

The Company properly handles all types of waste in compliance with the principles of category-divided recycle, centralized management and comprehensive assessment as stipulated by the law.

For general solid wastes, the Company takes the approach of centralized management and recycling. It entrusts a third-party to conduct recycling and disposal. For hazardous wastes, it undertakes storage and disposal in accordance with the *Standard for Pollution Control on Hazardous Waste Storage* (GB18597) and the *Administrative Measures for Hazardous Waste Transfer Manifests* (Order No. 5 of State Environmental Protection Administration). The Company formulates the *Management System for Hazardous Chemicals* to standard-

ize management and control operations such as procurement, usage, storage, custody and treatment of hazardous chemicals, reducing their harmful pollution to the environment. In a pilot trial case in 2018, the Company refined the production process by using bolts with powdered zinc coating in place of cold galvanizing for anti-corrosion treatment, reducing the generation of hazardous wastes amid the process.

In response to the growing offshore wind power business, the Company has established strict mechanisms for obsolete materials and domestic garbage recycling to ensure that all materials can be sorted, recycled and brought back onshore for further processing. It uses containers to replace ordinary packaging in storing slings that are used in maritime transportation and hoisting, making them convenient for reuse. It designs oil storage devices for equipment parts where oil leakage may occur, and monitors parts with high leakage risks to avoid the leakage of hydraulic oil or diesel, which may contaminate the marine environment.

Ambient Noise Control

Different levels of noises will be generated during the processes of WTG production, installation, operation, as well as water treatment. The Company strictly abides by the *Law of the People's Republic of China on the Prevention and Control of Ambient Noise Pollution*, the *Emission Standard for Industrial Enterprises Noise at Boundary* (GB12348), the *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523) and other legal standards to mitigate noise pollution. It com-

bines sound absorption and insulation techniques such as installing sonic panels in workshops, enclosing the plant to constrain noise pollution within the building during operation. For noise generated from installation, it avoids nighttime construction; for noise generated from the operation of the WTGs, the Company selects appropriate positions, sets buffer distances and adopts noise reduction technology according to different WTG characteristics, ensuring that noise emission standards are met.





Ecological Environmental Protection

The National Environment Protection Ministry and the National Development and Reform Commission (NDRC) jointly published the *Technical Guidelines for the Delineation of Red Lines for Ecological Protection* in May 2017, requiring provinces to complete the planning of provincial ecological regions by the end of 2018, and to restrain the development of projects within the designated areas. On the one hand, the Company keeps a close eye on the planning and development of various provincial ecological regions; on the other hand, it further improves mitigation measures and solutions to tackle factors that are identified to cause environmental impacts.



Vegetation excavation

Develops large-capacity WTG models, thereby reducing land use

Formulates specialized transportation plans and deploys equipment from factories closer to the installation sites; uses digital technology for precise engineering; designs optimal routes to reduce transport distance and vegetation excavation

Actively sows grass seeds, sugar cane or other crops after excavation to restore vegetation coverage



Bird protection

Detects bird activities through the comprehensive application of techniques such as video analysis, thermal imaging, sound, radar etc. and then expels them away from the WTG operating areas with bird-repelling technology such as ultrasonic, high-power digital voice, vigorous flash, laser or shock waves



Light-shadow flickers

Calculates shadow ranges according to local solar elevation and the length plus height of the blades, then appends testing devices to minimize the impact of light-shadow flickers by rotating speed control and fan management



Landscape

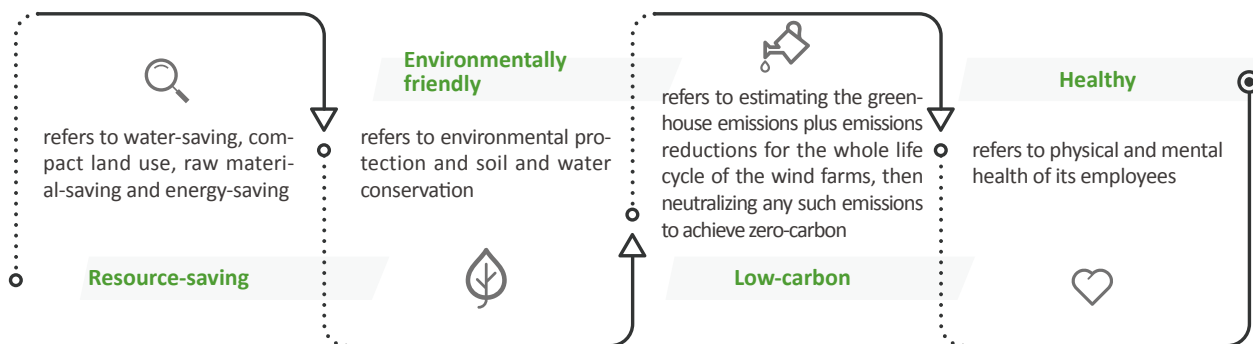
Considers surrounding landscape features and takes initiatives to consult local communities from the early stages of WTG locating and planning and integrates local industry strategies in the construction of wind farms to ensure the impact on the landscape is minimized

Customizes and paints the WTGs to make the industry harmonious with the cultural and natural environment



The Company integrates the environmentally friendly concept of living in harmony with nature into its WTG development, manufacturing as well as the construction process of wind farms. It has compiled the *Management System for Environmental Protection and Water and Soil Conservation* and *Management and Control Flow for Environmental Protection and Water and Soil Conservation* in order to regulate wind farm development and operation and protect the ecology. In 2018 the Company compiled standards for green wind farms.

In addition to complying with national and local rules and regulations, it precisely stipulated the general requirements for environmental protection as well as setting out specific criteria for design, construction, procurement and water conservation during WTG manufacturing and wind farm construction. It pinpointed that the construction of wind farms must meet four criteria: resource-saving, environmentally friendly, low-carbon, and healthy, to avoid or reduce the impact on the environment.

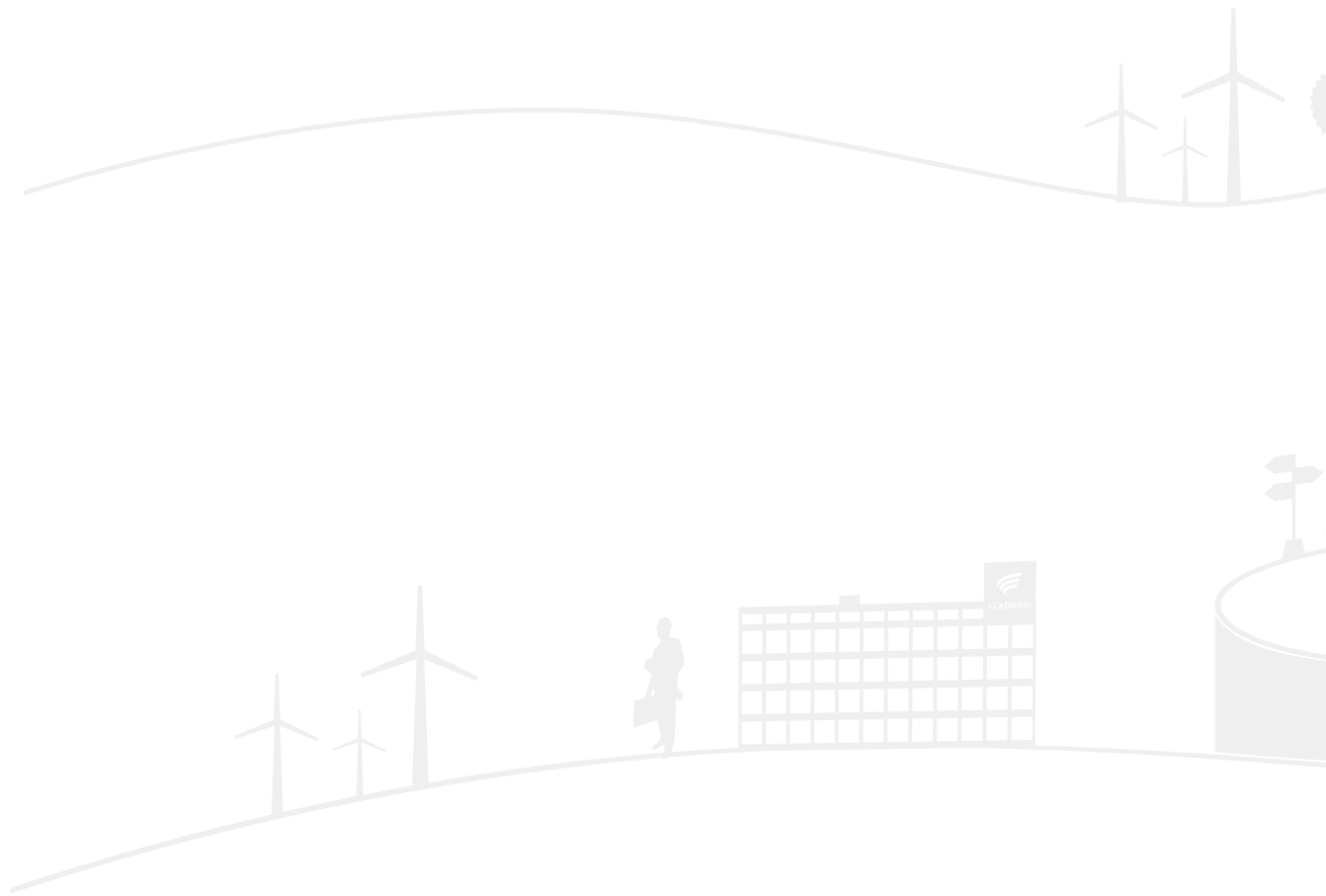


Biodiversity Protection

The Company focuses on the protection of wildlife and their habitats, compiling the *Measures for Sustainable Management of Biological and Natural Resources*. The measures regulate on the division of labor, processes and requirements related to biodiversity conservation during the development, construction and operation of wind farm projects to reduce the impact of the projects on biodiversity.

The Company has introduced a flight monitoring system in the Cattle Hill Wind Farm Project in Australia. Through probes distributed throughout the area, the system can monitor in real time the routes of all birds flying inside the farm. When a bird is predicted to be affected by a WTG, the system automatically issues an emergency command to halt the WTG and avoid harm to the bird.

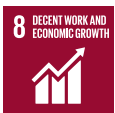
05 Employees



United Nations Sustainable Development Goals Supported



Goldwind advocates and strives to ensure that female employees have equal opportunities to participate in career recruitment, hiring, training and development, safeguarding their rights. **P48**



Goldwind adheres to a “people-first” philosophy. Whilst creating employment opportunities for its employees, it provides them with desirable working and living conditions, cares about their basic needs and spares no effort in giving them full benefits and security. **P55**

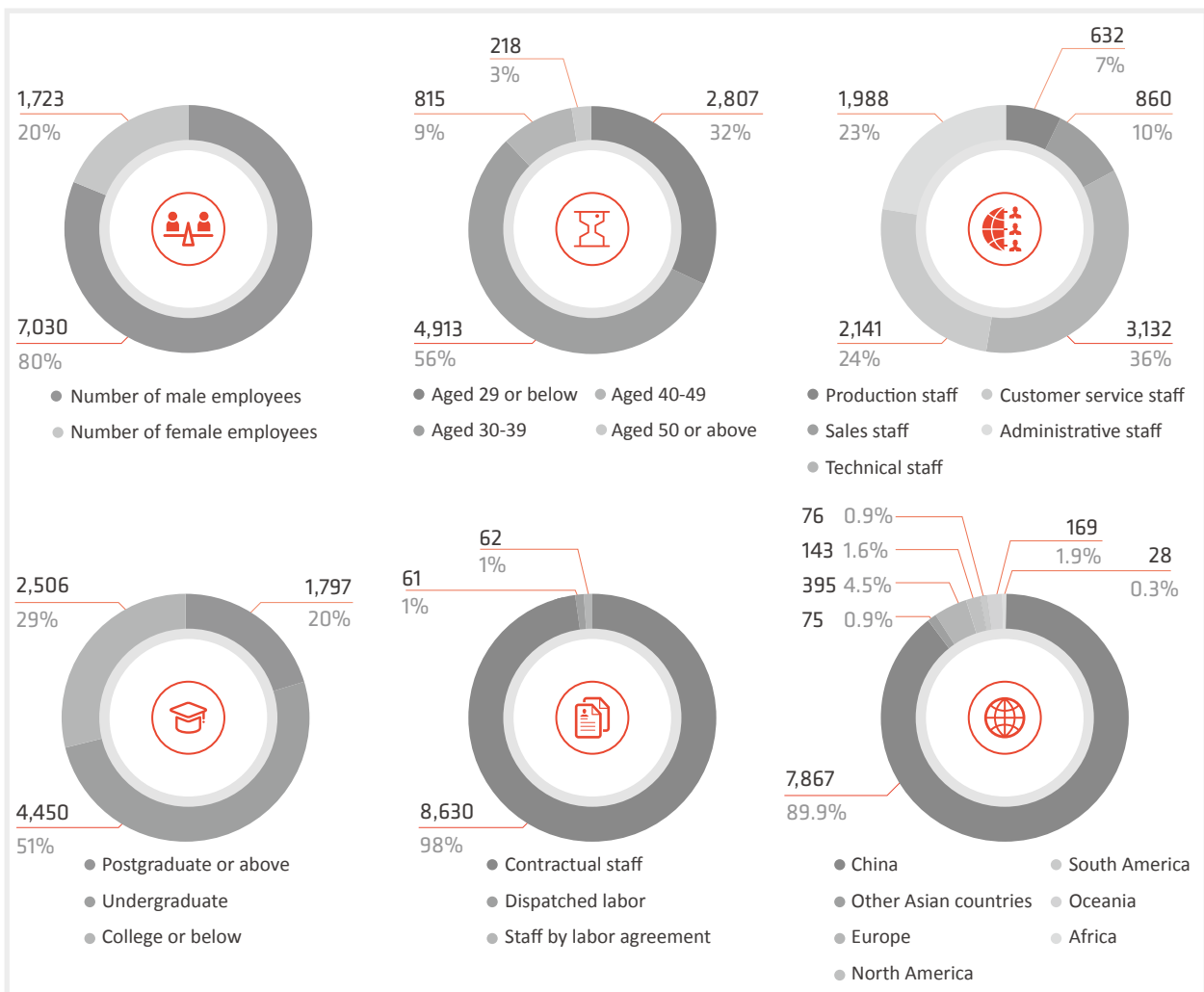
The Company is committed to providing employees with a healthy, safe and humane work environment, creating a diverse and relaxed atmosphere. It provides opportunities and platforms for employees to learn and develop, and helps them realize personal value while promoting the Company's commercial success.



Fair and Standard Employment

The Company strictly abides by the *Labor Law of the People's Republic of China* and *Labor Contract Law of the People's Republic of China*, following international conventions approved by the Chinese government and other relevant local laws, regulations and systems. It implements an equal and non-discriminate employment policy, treating employees of different races, colors, nationalities, genders, ages, religious beliefs and cultural backgrounds fairly and properly, and strictly prohibiting and discouraging any form of child or forced labor. The Company has formulated the *Recruitment Management System* to regulate the recruitment process, guaranteeing that staff employment is conducted in compliance with laws and regulations. During the overseas recruitment of local personnel, the Company actively seeks to understand the labor laws of various countries in addition to international practices, formulating operating mechanisms such as the *Equal Employment System* and *Local Recruitment Process Guidance* to improve the compliance of talent recruitment and management.

By the end of 2018, the Company has a total of 8,753 employees, including 1,723 women, 478 ethnic minorities and 30 employees with disabilities.



Wages

The Company has established a reasonable and encouraging salary system according to the laws and regulations of China, as well as those of other countries or regions in which it operates. It regularly adjusts salaries according to market conditions to justify salary competitiveness. It pays the wages of its employees on schedule, and fully pays five social insurances and one housing fund to protect their legitimate rights. The subsidiaries under Goldwind that operate in various industries and regions have established different incentive mechanisms in accordance with the specific conditions of their businesses and local practices.



Diversity of Employees

Employee diversity helps to enhance the Company's creativity and innovativeness, enriching its culture. The Company actively recruits a wide range of talent, seeks to build a versatile and diversified team, and respects variations in staff personalities, abilities and grown-up experiences. It cherishes people with different backgrounds, talents, insights, experiences and skills, and strives to create an open and inclusive environment that allows every employee to freely exert his or her full potential and to integrate him or herself into the Company.

The Company has specifically compiled the *Foreign Personnel Management System* to stipulate its management principles. It respects the differences in culture and customs of countries, and implements differentiated management procedures for foreign staff where necessary. In order to promote the integration of employees from different cultural backgrounds, in July 2018, the Company invited overseas managers and some local executives to participate in a cultural exchange program in Xinjiang. Under the theme "The Past, the Present and the Future", they visited the Dabancheng Wind Farm, the Xinjiang Wind Energy Company and the past workshop where the first generation of localized WTGs were developed and produced. The visit deepened their understanding of the Company's culture and promoted exchange and mutual communication of staff from different cultural backgrounds.



Training and Development

Goldwind regards staff development as a crucial foundation of sustainable development. Through providing employees with sufficient training, the Company helps them achieve personal growth. It also cultivates a work environment of openness and fair competition, facilitating career development channels for its employees.

Employee Training

With the goals of “Supporting Strategy Implementation, Creating Service Values, Helping Employees Grow and Building a Knowledge Sharing Platform”, the Company has established itself as a learning organization. It leverages on the resources of Goldwind University and its own training and education system to provide diversified programs of various levels and formats to its employees, thereby stimulating positive interactions between the development of the staff and the Company.

In 2018, the Company continued to increase training investment. It enhanced the training system from five aspects: curriculum, instructor, platform, format and hardware, in an organized approach, and provided employees with comprehensive learning opportunities through a mixture of internal/external, online/offline training programs.

As the management body for staff training, and by taking into consideration business planning strategies and the needs of employee development, Goldwind University Learning and Development Center formulates the plans, standards and systems for training. It develops learning programs which essentially cover the four areas: strategic implementation, strategic talent nurture, key position personnel training and general capacity building. Under the guidance and support of Goldwind University, each business unit or functional department of the subsidiaries is responsible for various professional training and staff development plans, providing more detailed and specific learning opportunities.

Training Resource System of the Company



Curriculum

Formed a curriculum of leadership, professional and universality with ideas from executives, professional experience, independently developed materials by Goldwind university as well as the introduction of copyrighted materials



Instructor

Nurtured 379 in-house instructors throughout the year and hired 29 external lecturers from other professional institutes to teach employees



Platform

Established an online learning platform such as the Training Rooms and Cloud Lecture Halls, with a total of 3,209 online courses available



Format

Provided various learning formats including lectures for executives, out-sourced training, outreach training, job rotation, distance learning, on-the-job coaching, practical training, visits, seminars and workshops, etc.



Hardware

Goldwind university has 9 training rooms, 3 conference seminar rooms and 2 multi-purpose halls, capable of simultaneous training or conferencing of over 1,000 people. Its classrooms are equipped with 4K recording and post-recording equipment, meeting the needs for self-made programs, compact courses, interviews. Its library has a collection of 10,000 volumes, covering a variety of subjects from management, social sciences to technology and so on.

Major Internal Training Programs of the Company

Training Targets	Program Name	Training Contents	Training Objectives	No. of Participants
Middle management Lower management New management	Leadership training	Knowledge and skills according to the needs of different management levels such as corporate culture, self-awareness, team management etc.	Widen the horizon and insight of middle and lower- management staff, enhance their overall management and leadership abilities	265
Digital personnel	Digital personnel training project	Digital strategic planning, cloud computing, digital application, energy Internet, digital wind farm, data pool etc.	Trainings specifically designed for digital personnel which aim to converge knowledge and implement digitalization work	91
External developers	Training courses for external developers	Wind farm development trends and policies, wind farm project development, wind resources & solutions, wind power investment costs	Enhance wind power knowledge of external developers and their understanding about Goldwind, promoting their collaboration with Goldwind	123
High-altitude operation	High-altitude operation projects	Climbing, high-altitude escape, ladder rescue, emergency rescue	On-site trainings and accreditations specifically designed for staff engaging in high-altitude operations	580
Agency-recruited employees School-recruited employees	New employee introduction training	Corporate culture, company introduction, industry development, manufactured products, safety production, WTG quality management, work skills and general skills etc.	Help new employees integrate into the Company as soon as possible through concentrated learning, thematic practical tasks, coaching, front-line practicum and other training approaches	1,138

Employee Development

The Company places strong emphasis on the career development of its employees, striving to provide room for them to achieve their values. The Company has compiled the *Career Development Management System* and established a "One Horizontal, Two Verticals" career development system for its employees. "One Horizontal" refers to the three different approaches of secondment, job rotation and transfer. The Company implements internal recruitment for positions, compiles a talent inventory every year and conducts job rotation or transfer in the pool of talents. "Two Verticals" refers to the two career paths open to employees – management and technical specialization. By the end of 2018, the Company has established a position system comprising 8 horizontal

sequences, 40 horizontal sub-sequences and 60 vertical levels. With each position put into a certain sequence and level to form together a position map, the Company establishes a variety of career development paths for employees.

In 2018, the Company established a Talent Development Committee. With the Company Chairman serving as the committee director, and the Chief Personnel Officer serving as the head of the daily operation team, the committee selects, nurtures and transfers talents across organizational boundaries, laying the ground for more open and flexible talent development to inspire creativity and vitality of the staff as well as other professionals.

Health and Safety

The Company strictly abides by, and implements rules and regulations such as the *Work Safety Law and Occupational Disease Control Act of the People's Republic of China*. It continues to improve the occupational health and safety standard of working conditions for employees.

Production Safety

Using the production safety management system as the core, the Company improves existing safety mechanisms, strengthens the responsibilities and awareness of production safety, and regulates employee behavior.

In 2018, the Company focused on the establishment of safety standards and compiled the Implementation Measures for Standardization of Production Safety. By stipulating the division of responsibilities, work requirements, quality control management, rating standards, rewards and punishments, it continuously improved the Company's standardization for overall production safety. It upgraded the emergency response system and established a three-tier emergency management framework that covered the Company's headquarters, its business units/subsidiaries as well as the chief assembly plants, stipulating the types, quantities and categories of the emergency plans. It also continued to organize cultural activities for production safety. It strengthened

security awareness of employees and enhancing production safety through sports games, visual management, security experiences and family activities. In 2018, the Company did not record any occupation-related casualties. Occupational injuries caused a total of 147 days of working day loss.

The Company has established safety qualification training and test center in the category of high-altitude operations in the areas of equipment installation, maintenance and operation. It conducts specialized courses such as three-tier safety education, safety training for specific projects, emergency plans and onsite solution management. Due to the rapid development of offshore wind power, in addition to developing offshore safety packages during the stage of WTG design, the Company has invited external safety consulting agencies to collectively build a safety management platform for offshore projects.



— Establishment of Goldwind Offshore Wind Power Training Center

As the offshore wind power business has grown, the Company has gradually established an ancillary maritime safety management system. As early as 2015, the Company's offshore multi-functional tower testing platform added ancillary equipment such as internal/external ladders and rescue platforms. It has met the requirements for safety training programs including berthing simulation, fall arrester, engine room emergency escape, high-altitude abseiling, offshore platform fire prevention, etc.. In 2018, the Company added an offshore survival training platform that fulfilled the GWO-BST standard. The platform can simulate specific training scenarios such as thunder, lightning, rain, fog and storms, and can perform ship docking, loading and transfer, diving escape, boat operations, helicopter rescue and so on, enhancing employees' capability in self and mutual rescue during offshore operation accidents. This platform has obtained international accreditation. By the end of 2018, it had provided more than 2,000 trainings for customers, suppliers, operation and maintenance companies and schools.



Occupational Health and Safety

Goldwind has passed the Occupational Health and Safety Management Systems certification for the whole Company. It provides employees with labor protection equipment which are in line with the national and industrial standards, develops position matrices of occupational risks, and informs employees of occupational hazards, their consequences, corresponding prevention measures and handling approaches. It also conducts periodic occupational health checks. Every year third-party agencies are invited to conduct regular tests on any occupational hazards and to assess the risk status.

In 2018, the Company formulated the *Environmental, Occupational Health and Safety Insurance Mechanisms* and *Comprehensive Emergency Plans for Occupational Health and Safety Accidents*, clarifying the standard insurance charges, their scope of application and usage, emergency management and response procedures, handling responsibilities and so on, further improving the occupational health and safety system of the Company. The Company has specifically compiled the *Occupational Health and Safety and Environmental Management Manual* for overseas businesses, clarifying im-

plementation standards and processes by considering high-risk activities that are specific to overseas business operations. In the case of employee travel, it has partnered with International SOS to provide employees with comprehensive security plans for travel safety, mental health, physical health and medical support.

Since 2016, the Company has carried out employee health management for three consecutive years. Through cooperating with the Institute of Sports Science of the General Administration of Sport of China, it collects employee health data using modern medical and information technology applications, thereby tracking and evaluating the health status of employees from both physiological and psychological perspectives. Then by research and analysis, the institute prescribes exercise and dietary formulae in order to enhance their physical fitness as well as to maintain their physiological and mental health.

Picture of employee health check



Some health check facility

Employee Care

The Company adheres to its “People-First” philosophy. It actively carries out a variety of cultural and sports activities in order to build work-life balance for employees, help them improve their work environment and quality of life, and enhance their happiness and sense of belonging.

Communication and Exchange

It has always been the goal of Goldwind to provide an open working atmosphere for its employees, allowing them to become acquainted with the business and participate in it. The Company places a strong emphasis on the communication between its leaders and employees. It creates different conditions and opportunities for communication according to different subjects and purposes, and establishes a platform for the exchange of employee information through various forms of communication and sharing activities.

Subjects, Formats and Contents of Employee Communication

Dimension	Subject	Format	Content
Different levels	Middle and senior management	Democratic day, management conference	Business management and strategic planning
	Executives and employees	Assembly meeting, onsite visit by management, WeChat platform, management mailbox, senior management meeting, general manager coffee time, survey	Corporate culture Issues concerning the development of the Company and that of the employees themselves
	Among employees	OA forum, internal newsletter, monthly employee birthday party, sports gala, home Friday, self-service portal	Latest company development Various internal company information
	Foreign employees	Cultural exchange	Corporate culture
Different departments	Among departments	Regular divisional meeting, business operation meeting, technology seminar, experience exchange, production communication conference	Business progress of the Company and various departments Cutting-edge knowledge and techniques
Different regions	Among various regional companies	OA forum, internal newsletter, WeChat platform, inter-regional video conference, survey, staff zone poster	Updated company development Various internal company information

96%

Employee engagement survey participation rate



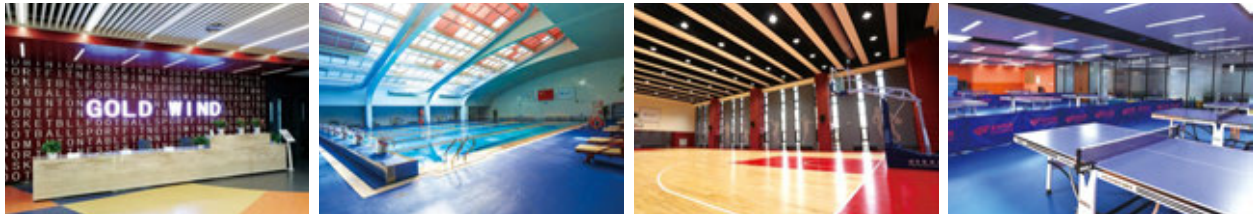
The operational department establishes a mechanism to collect feedback on issues and trace the implementation progress. As one of the managed projects, the Company regularly traces the key problems identified in employee communication, and monitors the progress of meeting employee expectations and demands.

The Company conducts a survey on employee engagement for all the staff every year. It also continuously improves measurement indicators and sample requirements, systematically evaluating their level of satisfaction. In 2018, the Company collaborated with Gallup to identify 7 dimensions - key factors in affecting employee satisfaction and enthusiasm - which were basic needs, management support, teamwork, career development, salary incentive, performance evaluation and corporate culture. The participation rate of the survey was 96%. The Company will incorporate the results of this annual survey in its new year work plan and develop specific measures to improve.



Work-Life Balance

The Company provides fitness facilities, venues and instructors to create opportunities and facilities for its employees to develop interests, cultivate hobbies and learn new skills. It regularly organizes a variety of cultural and sports activities to encourage them to work efficiently while living a happy life.



Multi-purpose Sports Centers

The Company possesses several sports centers for football, basketball, badminton, tennis, swimming, rock climbing, table tennis, gymnasiums and so on, allowing employees to enjoy their sporting hobbies.



Clubs with Professional Instructors

The Company has more than 10 sports clubs including badminton, basketball, football, tennis, table tennis, yoga, swimming and shuttlecock. It also employs retired national athletes and professional instructors to conduct professional coaching, guiding the employees to exercise and train in a scientific manner.



Employee Family Open Day

In 2018, a total of 270 families and more than 900 people participated in the Family Open Day, letting family members of the employees know more about the work environment and duties of their relatives, allowing them to feel the cultural characteristics and care of the Company.



Establishment of the Goldwind Choir

In 2017, some 30 amateurs from the Company were selected to form the Choir. In 2018, the choir represented the Company and won the championship of the choir competition "Singing for a New Era, Embracing the New Future" which was hosted by Beijing Yizhuang Economic and Technological Development Zone.

Employee Welfare

The Company continues to improve the welfare mechanisms, tending and responding to the differentiated needs of its employees. It provides them with a variety of benefits ranging from catering, health, travel to accommodation.

List of Employee Welfare

- ◆ Offers rich breakfast and free, nutritious lunch
- ◆ Provides staff accommodation, public housing, etc.
- ◆ Provides breastfeeding rooms for female employees
- ◆ Offers free medical examination
- ◆ Offers a variety of benefits such as festival, labor union, birthday, marriage and child-bearing benefits
- ◆ Provides employee shuttle buses and business vehicles for special care
- ◆ Provides medical fund in addition to the five social insurances and housing fund
- ◆ Provides 5 days of paid vacation per year in addition to statutory holidays
- ◆ Arranges onsite project employees' family members to visit them

06 Supply Chain



United Nations Sustainable Development Goals Supported



Goldwind incorporates sustainability concepts into procurement processes. It prioritizes the procurement of environmentally friendly products and services, encourages responsible suppliers, implements green supply chain projects and guides suppliers to save energy, reduce emissions and use renewable energy, thereby building a sustainable wind power industry chain. **P60**

When cooperating with its suppliers, Goldwind has always adhered to high moral standards and business ethics. It conducts fair operations, supports the development of suppliers while safeguarding their legitimate rights, and actively assumes the responsibilities of a leading company in the wind power industry. It ensures the sustainable and healthy development of the wind power industry supply chain by driving suppliers to fulfill their social responsibilities through their own influence.



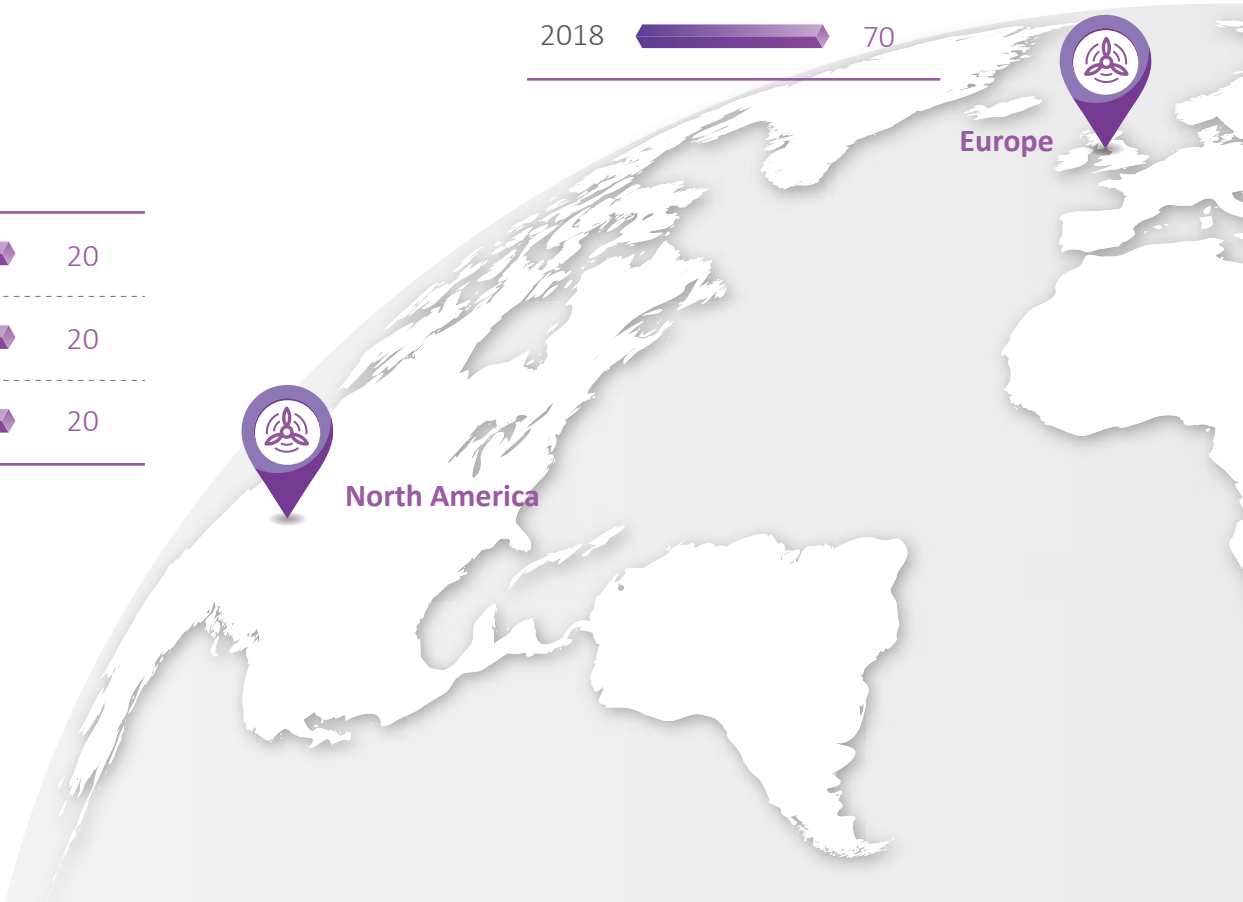
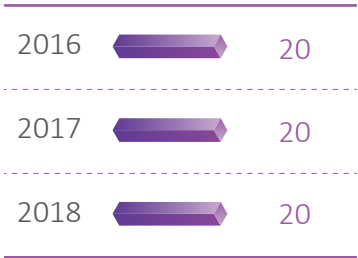
Responsible Procurement

The Company adheres to the concept of transparency and rule compliance along with the principle of fairness, just, and openness in its procurement. It has formulated the *Guidelines for Company Procurement Management*, clarifying the responsibilities of various departments including procurement, sector of demand, technology, audit and legal affairs and so on, stipulating supplier management and procurement approaches, thereby reducing procurement risks and improving management efficiency. The homepage of the Company's supply chain e-commerce portal publicizes policy documents such as the *Sunshine Procurement Pledge*, the *Company Procurement Management Policy*, *Evaluation System for Qualified Suppliers of the Wind Turbine* to ensure suppliers obtain procurement information which helps the Company to scrutinize and promote compliance management of the procurement process.

In 2018, the Company set up the Supply Chain Collaboration (SCC) platform. Suppliers can access the platform through invitation or self-registration to form an online supplier resource pool. The platform has functions of online bidding, inquiry and quotation. The system controls tendering and bidding processes to ensure the openness and transparency of procurement. Technical, auditing and legal personnel can share data through the platform and objectively evaluate suppliers, thereby significantly improving the efficiency of business activities between the Company and its suppliers.

Global Distribution of Goldwind's Suppliers in 2016-2018

The above-mentioned data scope does not include other business except WTG manufacturing





As the Company concerns itself with the compliance and sustainability performance of the supply chain, it integrates the concept of social responsibility into its supplier management process. By requiring suppliers to comply with any applicable regulations and conventional codes of conduct, it encourages them to fulfill their social responsibilities and effectively monitors any such risk of the chain. In 2018, the Company issued the *Code of Conduct for Suppliers*, incorporating social responsibilities such as environmental protection, energy conservation, emissions reduction, labor rights, health and safety, business ethics, etc. into the contents of supplier compliance.

The Company includes social responsibility requirements of the suppliers in its contracts. It requests that the manufacturing activities, products and services of suppliers must comply with the national environment, occupational health and safety regulations, and must meet relevant standard requirements. The Company also requests them to develop safe and environmentally friendly products and services, and to implement effective measures to control their associated environmental or occupational health risks during transportation, installation and operation.

RMB **9.749** billion



Procurement from top 5 suppliers

2016		7
2017		7
2018		7

Other countries in Asia



2016		219
2017		221
2018		237



Green Supply Chain

As a research and manufacturing enterprise for wind power equipment, the energy used and wastes created in the production process by the Company are relatively small in comparison to the impact that the entire wind power industry chain has on the environment. As there is almost no pollution during the process of electricity generation by the WTG, most of the resource consumption and emissions are concentrated in its upstream supply chain businesses. Since 2017, the Company has pioneered the notion “Green Supply Chain” in the industry and put forward system solutions, assisting suppliers in improving their environmental performances and reducing environmental risks, sparing no effort in building a sustainable supply chain.

After two years of systematic construction, the Company has established a green supply chain project management team to train and promote the corresponding notion among its suppliers. It works together with the suppliers to improve their environmental performance through actions, such as designing tailor-made energy-saving and environmental solutions or assessing their environmental performance. As of 2018, 20% of the suppliers had signed cooperation agreements to promote a green supply chain with the Company.



Establishes a green supply chain project management team and develops internal green pilot projects for demonstration

A green pilot demonstration project has been developed at the Beijing office (Phase II) which has adopted energy-saving technologies to transform its energy use. It employs techniques such as distributed photovoltaic, wind power and natural gas CCHP (combined cooling, heating and power) to increase the proportion of clean energy use. It also improves energy utilization by building an information platform for energy control and Key Performance Indicators (KPI) management.



Organizes relevant forums, training etc. to promote the green supply chain concept

For two consecutive years, the Company has introduced green supply chain projects at supplier conferences, and has set up specific sections to promote knowledge of its management. The Company also regularly hosts green supply chain forums, organizes specialized training of its management for suppliers, and communicates with them to jointly solve problems encountered during their green transformation.



Develops energy-saving, environmental technology and products, tailor-makes solutions for the suppliers

The Company has built an energy efficiency management platform for suppliers and implements projects like energy-saving measures, residual heat utilization, smart control and so on to increase the proportion of renewable energy usage. The Company also offers suppliers contracted energy management services, ranging from project design, engineering construction, equipment installation and calibration to personnel training, etc..



Establishes a green information management platform for the suppliers and introduces the “Greenness Index” in their performance evaluation system

The Company has developed a green evaluation standard for its suppliers, measuring their environmental performance in the five aspects of energy utilization, resource usage, environment management, social recognition and economic input. It has also developed differentiated evaluation criteria based on their industry characteristics, establishing complete mechanisms for their green accreditation, selection, auditing, performance management and exit.





The Company established a green supply chain information management platform in 2018 to integrate multiple energy-saving and environmental systems such as smart energy management, sewage discharge, solid waste disposal, atmospheric monitoring, green material management, etc.. By building a comprehensive environmental information management platform, data among various systems were seamlessly connected. This facilitated data collection, integration, analysis and utilization, significantly improving the environmental performance of suppliers.

In 2018, in order to evaluate green development performance the Company developed differentiated evaluation criteria according to the specific industry of suppliers and formulated the *Goldwind Green Supplier Evaluation Code (Trial Version)* in order to comprehensively evaluate their performance in terms of quality, service, cost, resource use and environmental protection. With an overall annual energy consumption of more than 3 million tons of standard coal or its equivalent as the baseline, 30 suppliers were evaluated, of which 6 green suppliers were selected and awarded with green certificates.



The green supply chain project reduces environmental risks of the wind power industry, improves the overall environmental performance of the supply chain, promotes its green transformation, enhances its market competence and drives its steady and healthy development. The Company has received honors such as the “Demonstrative Enterprise of National Green Supply Chain Management” and the “Pilot Enterprise of National Green Supply Chain Applications”.

Win-win Cooperation

151

Suppliers trained



Amid the long-term and stable cooperation with its suppliers, the Company attends to their voices, encourages them to innovate and supports them at all levels, promoting technological advances in the wind power industry together whilst sharing countless business opportunities with them.

Goldwind has many years of experience in building a wholly-excellent industrial chain. It has formed a strong partnership and synergy with its suppliers in terms of quality, cost, technology and coordination. In 2018, the Company continued to cooperate with its supplier, Systex, to demonstrate its advanced concepts and management experience in the wind power industry. By providing technical, informational, personal support and so on for them, it helped to systematically improve their management level. It trained 151 suppliers throughout the year, with content ranging from German & Japanese lean management approaches, the APQP4Wind quality management system, salt and fog test training and NDT personnel upgrade training, etc. A total of 258 people participated in these sessions.

07

Community and Public Benefit



United Nations Sustainable Development Goals Supported



Goldwind insists on “wherever there are Goldwind people, there are Goldwind’s social responsibilities”. Whenever the Company builds a wind farm, it donates teaching materials to local schools and support poor local households. It places emphasis on helping the development of Southern Xinjiang region, adding care and vitality to the area. [P65](#)



Goldwind has been carrying out the charitable project “Nurturing Wind for China” for many years. From donating teaching materials to funding poor college students, from education to training rural teachers, it spares no effort in improving the quality and standard of rural education. [P66](#)

Goldwind manages and safeguards local natural and social resources in a sustainable manner during its operations. In addition, it leverages its business strengths and resources to improve the livelihoods of surrounding communities, maximizing their benefits in its operations and helping communities develop.



Maintaining Relationship with the Community

The Company considers itself a part of the community. It strictly abides by the laws and regulations of the regions and countries in which it operates, maintains good communication with the community stakeholders, respects local cultures, and strives to integrate into the local community.

At the Company's headquarters in Beijing and Xinjiang, the Company regularly invites stakeholders to visit the park and workshops for further communication. During the development and construction phases of the wind farms, workers talk to community residents to identify developmental issues in the surrounding areas that needed to be addressed urgently, and implement measures or conduct activities in response to their reasonable demands. Overseas, the Company has set up a community relationship manager position based on local conditions to coordinate and conducts activities of community development.

For the development and construction of domestic wind farms, the Company has compiled the *Environment and Social Risk Assessment and Action Plan Management*. It has systematically identified 7 major risks, namely labor and working conditions, community health, safety and public security, land acquisition, involuntary migration, ethnic minority and cultural heritage management. There are risk identification

approaches, impact assessment methods and response plans being formulated. In addition, by compiling the *Measures for Stakeholder Consultation and Participation Management*, and *Measures for External Communication and Complaint Mechanism Management*, it regulates communication, coordination and complaint handling with residents, government agencies and other stakeholders, improving communication efficiency.

Apart from complying with the national and local laws and regulations and respecting the customs and culture of ethnic minorities, the Company takes the initiative to meet the requirements of the *Convention concerning the Protection of the World Cultural and Natural Heritage*. It adopts internationally recognized cultural heritage reports, field researches and record archives to identify and protect cultural heritages.

During the early stage of site selection of a wind power project, the Company tries its best to avoid setting up projects in cultural heritage reserves, leaving sufficient safety buffers. It actively seeks to take avoidant or preventive approaches instead of mitigation or compensation measures. When it is inevitable to avoid adverse effects after trying alternatives, any impact will be minimized, and compensations will be given in an appropriate manner.



To integrate the WTG into the natural landscape, the Company created WTGs with patterns on their towers and blades, blending them with the natural landscape and human environment. During the construction process of the Niutouling Wind Farm Project in Tiandeng County, Chongzuo, Guangxi in December 2018, Goldwind's wholly-owned subsidiary, Tian-run New Energy, consulted the local government and cultural scholars. Patterns with local natural characteristics and folk customs such as bronze drums, Zhuang brocades, kapok, danglang dances, etc. are painted on the WTG tower and blades to promote the Zhuang culture, rendering a unique local landscape.

Supporting Community Development


To support the 17 Sustainable Development Goals of the United Nations, in addition to contributing to global sustainable development through its core business, the Company actively supports the society through a wide range of actions. By conducting activities in areas such as poverty alleviation, education support, environmental protection, charity and public health, it ameliorates the community and promotes developments in education, infrastructure and public health to benefit the community. In 2018, the Company donated RMB 7.05 million.

The Company has set up a dedicated volunteer team to motivate employees to use their expertise in social services, providing crucial support for various charitable activities. In 2018, the Company further regulated and enhanced the management capabilities of its volunteers. It enhanced their fundamental knowledge and implementation abilities in social services through training camp activities, promoting the spirit of volunteerism and creating a good atmosphere for social services.



Volunteer training in blind guides

Alleviating Poverty in Communities

RMB **7.05** million 
Charity donations

As a clean energy and energy-saving environmental enterprise originated from Xinjiang, the Company regards Xinjiang as the prime unit of assistance, sparing no effort in supporting the development of poverty-stricken areas in the district over the years – especially that of the poorer southern regions.

In 2018, the Company formulated the Measures for the Implementation of Social Welfare Management. Whilst visiting local people, benefiting them and giving them warmth, it has conducted a survey in conjunction with village officers of the Xinjiang Economic and Information Commission and the Development and Reform Commission on the current standard of living in Southern Xinjiang. By exploring the local peripheries of products and industries in the region, it has formulated correspond-

ing solutions and systematically planned poverty alleviation. In 2018, the Company donated and built a chicken cooperative at Ying'airike Village, Shache County, Kashgar region of Xinjiang, supporting the local villagers to raise chickens and register trademarks. The farmers spent half a year to produce 4 batches of 38,000 chickens and a net income of about RMB 350,000. The Company promoted the model to Wenwutakecun Village, Tumantale Township of Makit County, investing and building a chicken farm for the local community. It also helped to build satellite factories and rearing cooperatives for other villages.

The Company seeks to employ local impoverished residents in Xinjiang. It offered employment to 6 underprivileged people throughout the year.

Supporting Education

The Company focuses on supporting rural education and developing wind power innovative talents and technology. Through improving education facilities, training rural teachers and supporting wind power technology events, it improves the conditions of rural education, cares for future talent cultivation and promotes the development of innovative talents in the industry.



Donation of Educational Materials

The Company donates educational materials and teaching facilities to rural primary and secondary schools. Its contributions cover 16 provinces, including Xinjiang, Jiangxi, Hebei, Henan, Gansu, Qinghai, Guizhou, etc., benefiting more than 21,000 rural teachers and students.

It initiated the campaign "Caring for Southern Xinjiang through Donation", organizing company employees and nearby schools to hold activities for material donations. The campaign collected 28,000 pieces of clothes, toys and learning commodities, which were delivered to counties in Southern Xinjiang such as Makati, Shache, Moyu, Yutian and Pishan, benefiting nearly 20,000 students.



Training Rural Teachers

It undertakes the "Wind for the Future" rural teacher training charity project for three consecutive years, inviting 27 rural teachers from the extremely poor villages among seven counties of Xinjiang's Hotan and Kashgar regions to visit the Company headquarters. They participated in professional teaching and training sessions provided by educational experts and teachers from Beijing, visited the Xinjiang Museum, the Goldwind Dabancheng Wind Farm and the assembly factory to learn advanced teaching methods and expand their horizons.



Supporting Wind Power Technology Events

The Company has jointly held the "Goldwind Cup - Smart Energy Innovation Challenge" with the Beijing Institute of Technology and Tsinghua University, encouraging and cultivating college students to become thinkers and actors for energy revolution. The event built an exchange platform for innovative thinking and incubated new ideas, technology and business projects that drive the revolution.

21,000+



Rural teachers and students benefited

Goldwind Library donated by the Company



The 3rd "Wind for the Future" – Rural teacher training charity project

Environmental Protection

The Company seeks to leverage its experience in renewable energy and water treatment to promote clean energy utilization among communities.

In 2018, the Company invested RMB 1,313,600 for the construction of solar-electricity complementary energy supply projects, alongside pollution-free toilet renovation projects for the Yutian County of Hotan region and the Makati County of the Kashgar region in Xinjiang. It introduced the use of new energy to poverty-stricken areas, hence improved the local conditions of energy distribution and usage. It also improved farmers' sanitary environment and reduced the spread of disease through toilet renovation projects.

Public Health

The Company values and advocates a healthy work and living style, gradually promoting the philosophy of "work efficiently, live happily" from its employees to other stakeholders such as nearby communities. It also organizes internal club teaching resources and sporting venues to open them to public use.

Since 2017, for two consecutive years the Company has supported the Beijing Marathon in the form of green power certificate sponsorship. It has formed a wind power team and conducted various activities such as training camps, leisure and charity running. In 2018, apart from sponsoring the Guangzhou Marathon in the form of green power certificate sponsorship, the Company also held the first wind power industry marathon at Dafeng District of Yancheng, Jiangsu Province – the Wind Power Industry Invitational Marathon. Under the theme "green, environmentally friendly and healthy", the event calls on all citizens to improve their physical fitness whilst at the same time, promulgating the concept of being green and low-carbon. A total of 3,664 athletes from the wind power industry all over the country, plus other amateurs participated in the competition.

3



Marathons participated and organized



Overseas Charitable Work

Goldwind adheres to the belief “localization is the key to internationalization”. It learns and obeys local rules and regulations, respects local culture and practices, actively integrates itself into the society, supports the development of charitable work, and benefits local residents. The Company shares its accumulation of wind power expertise to local communities, increases their understanding of wind power, its relevant technologies, as well as raising their environmental awareness. It also funds the construction of roads, plazas

and other facilities to provide convenience for their travel and recreation.

As the Company's businesses cover over 20 countries in 6 continents, its charity footprint has also spread overseas along with its operations, reflecting its charitable philosophy of “wherever there are Goldwind people, there are Goldwind’s social responsibilities”.



In Thailand, employees planted trees together with local residents in preparation for the rainy season.



In Australia, the Company organized employees to participate in the local traditional “R U Ok” Day.



Australia



In Chicago, U.S.A., the Company organized 5km and 10km walking challenges for employees and their families to support the Lincoln Zoo.



In Panama, employees donated much-needed sporting equipment to the local baseball teams and volunteered to teach the children baseball.



In Ecuador, through local charity foundations the Company's employees donated stationery and toys for primary school students near the wind farms and used their spare time to teach them basic Chinese.



In Chile, the Company donated clothes and learning commodities to surrounding primary schools, supporting local impoverished students.

Prospect

It has always been Goldwind's mission to "Preserve Blue Skies and White Clouds for the Future" through developing renewable energy. By promoting green development and deep energy transformation through industrial innovation, the Company strives to become a global leader in clean energy, energy conservation and environmental protection.

Looking ahead, opportunities and challenges coexist in 2019. The past 20 years of growing experience of Goldwind demonstrated that various challenges, in fact, brought to the Company new opportunities, which were the engines that drove its leapfrogging evolution. The Company will continue its pioneering spirit and further its competitiveness in the areas of technology strategies, product diversity, business models, etc. to start a new chapter of progress.

Whilst grasping the present moment to develop, Goldwind sets its eyes for long-term planning. The Company pursues sustainable operation and long-term success, always sticking to the co-development of economic, social and environmental benefits. In addition, it always takes into account the interests of various stakeholders in the process of business growth, striving to achieve sustainable and prosperous development together with them.

In the future, the Company will continue to improve its sustainable development management system and consolidate its foundation to form long-term mechanisms for its continuous advancement. By integrating the concept of sustainable development into its business strategies and culture, a responsible business model embedded with Goldwind features is born within, rendering the Company an international wind power enterprise that is respected and recognized by the society.





Performance Indicators

Economic Performance

Indicator	Unit	2018	2017	2016
Total asset value	100 million RMB	813.64	727.88	644.37
Revenue	100 million RMB	287.31	251.29	263.96
Net Income Attributable to Shareholders	100 million RMB	32.17	30.55	30.03
Tax Payments	100 million RMB	14.62	17.50	21.00
Total cumulative installed capacity	GW	50.00	44.15	38.00

Research & Development

Indicator	Unit	2018	2017	2016
Number of R&D personnel	Person	3,132	2,881	2,080
R&D personnel as proportion of total employees	%	35.78	34.41	28.81
R&D investment	100 million RMB	15.77	14.73	13.85
R&D investment as a percentage of business revenue	%	5.49	5.86	5.25
Total domestic patent applications	Item	3,542	2,669	1,764
Total domestically invented patent applications	Item	1,990	1,421	909
Total domestic patent licenses	Item	1,826	1,335	819
Total domestically invented patent licenses	Item	520	363	203
Total overseas patent applications	Item	396	160	68
Total overseas patent licenses	Item	77	49	16
Domestic standard-settings participated	Item	178	151	127
International standard-settings participated	Item	11	7	3

Environmental Management

Indicator	Unit	2018	2017	2016
Power consumption (thermal)	100 million kWh	1.05	0.65	-
Power consumption (wind/solar)	100 million kWh	2.60	2.20	-
Gasoline consumption	kL	908.05	654.53	-
Diesel consumption	kL	1,357.45	1,062.69	-
LPG consumption	10k m ³	1.53	1.14	-
Natural gas consumption	10k m ³	50.73	74.88	-
Water consumption ¹	10k ton	40.43	37.07	-
Overall energy consumption per RMB10,000 revenue	Ton of standard coal/ RMB 10k	15.85	12.53	-
Wood packaging materials	Ton	625.29	554.62	-
Hazardous wastes ²	Ton	38.20	23.42	-
General solid wastes –construction wastes ³	Ton	2,082.71	2,111.79	-
CO ₂ Emissions	Ton of CO ₂	73,483.35	51,546.09	-
Scope 1	Ton of CO ₂	8,694.49	7,032.00	-
Scope 2	Ton of CO ₂	64,788.85	44,514.09	-
Hazardous wastes generated per MW of WTG manufactured	Ton/MW	0.0063	0.0039	-
Construction wastes generated per MW of WTG installed	Ton/MW	0.3560	0.3434	-
CO ₂ emissions per RMB10,000 revenue	Ton/RMB 10k	0.0256	0.0205	-

1. Water consumption is not required in the process of WTG production, and water treatment processes do not consume water from the nature. Water is mainly used in the office, and in dust suppression and greening during the process of wind farm development and construction.

2. Hazardous wastes include category HW06 type organic solvents that are generated during WTG production (e.g. paints), and category HW13 type organic resins (e.g. solidifiers, adhesives)

3. Construction waste includes construction waste generated during the development and construction of wind farms

Staff Structure

Indicator	Unit	2018	2017	2016
Total number of employees ¹	Person	8,753	8,373	7,220
By type of employment				
Contractual staff	Person	8,630	8,212	6,922
Dispatched labor	Person	61	105	264
Staff by labor agreement	Person	62	56	34
Interns	Person	337	120	53
By gender				
Female	Person	1,723	1,593	1,294
Male	Person	7,030	6,780	5,926
By age				
Aged 29 or below	Person	2,807	3,702	3,930
Aged 30-39	Person	4,913	3,600	2,562
Aged 40-49	Person	815	849	491
Aged 50 or above	Person	218	222	237
By region				
China	Person	7,867	7,741	6,769
Other Asian countries	Person	75	30	6
Europe	Person	395	337	267
North America	Person	143	111	84
South America	Person	76	15	3
Oceania	Person	169	129	81
Africa	Person	28	10	10
By specialization				
Production staff	Person	632	864	1,292
Sales staff	Person	860	524	332
Technical staff	Person	3,132	2,881	2,080
Customer service staff	Person	2,141	2,227	1,986
Administrative staff	Person	1,988	1,877	1,530
By educational level				
Postgraduate or above	Person	1,797	1,612	1,140
Undergraduate	Person	4,450	3,948	3,278
College or below	Person	2,506	2,813	2,802

1. Interns are not included in the total staff number.

Equal Opportunities and Recruitment Compliance

Indicator	Unit	2018	2017	2016
Labor contracts signing rate	%	100	100	100
Social insurance coverage percentage	%	100	100	100
Female management staff	Person (%)	84 (21.37)	65 (18.26)	-
Employees with disabilities	Person (%)	30 (0.34)	21 (0.25)	-
Ethnic minorities	Person (%)	478 (5.46)	473 (5.65)	-
Foreign staff	Person (%)	752 (8.59)	658 (7.86)	-
Annual paid vacation per capita	Day	8.63	8.14	-

Staff Turnover Rate

Indicator	Unit	2018	2017	2016
Staff turnover rate ¹	%	13.20	10.88	11.60
By gender				
Female	%	12.97	9.76	12.60
Male	%	13.27	11.14	11.40
By age				
Aged 29 or below	%	17.47	14.07	14.60
Aged 30-39	%	11.92	9.17	8.45
Aged 40-49	%	10.16	9.82	9.30
Aged 50 or above	%	12.10	4.08	2.95
By region				
China	%	13.00	11.32	11.60
Other Asian countries	%	6.67	6.67	25
Europe	%	0	0	12.50
North America	%	26.73	4.67	17.85
South America	%	7.89	0	0
Oceania	%	17.75	13.95	6.67
Africa	%	3.57	30	20

1. Staff Turnover rate = number of staff left per annum/average staff number per annum, whereas average staff number per annum = \sum monthly staff number/12

Staff Training

Indicator	Unit	2018	2017	2016
Training hours per capita	Hour	31.87	26.59	-
By staff level				
Senior management	Hour	52.95	16.94	-
Middle & lower management	Hour	73.77	51.38	-
Junior staff	Hour	29.16	25.83	-
By gender				
Female	Hour	43.96	28.24	-
Male	Hour	27.89	26.21	-
Ratio of staff having received training	%	63.01	56.60	-
By staff level				
Senior management	%	72.60	72.34	-
Middle & lower management	%	89.30	85.63	-
Junior staff	%	62.00	54.39	-
By gender				
Female	%	71.72	65.56	-
Male	%	61.06	53.44	-

Occupational Health & Safety

Indicator	Unit	2018	2017	2016
Occupational disease	Person	0	0	0
Major safety incidents	Person	0	0	0
Casualties due to work accidents	Person	0	0	0
Working day loss due to occupational injuries	Day	147	189	169
Safety training sessions ¹	Person	232,987	187,577	-
By category				
Special operation staff	Person	58,452	4,572	-
Safety management staff	Person	8,980	6,977	-
Frontline operators	Person	135,268	159,112	-
New employees	Person	12,768	11,876	-
Persons in charge	Person	10,400	969	-
Business staff	Person	7,119	4,071	-

1.This includes safety training sessions provided for employees who are involved in the work of domestic R&D or operation & maintenance of the WTGs.

Supply Chain Management

Indicator	Unit	2018	2017	2016
Number of major suppliers ¹	Company	334	318	314
By region				
China	Company	237	221	219
Other Asian countries	Company	7	7	7
Europe	Company	70	70	68
North America	Company	20	20	20

1.These are qualified suppliers which provide raw materials or services for the WTGs, including equipment parts, production, tools, equipment, packaging etc.. The qualification consists of over 100 stringent assessments covering business operation, technology, quality, service, safety etc. in accordance with the Company's document, *Development & Management Measures for WTG Equipment Suppliers*.

Community Charity

Indicator	Unit	2018	2017	2016
Total charity donations	10k RMB	705	830	589

Index

Disclosures and KPIs		Page
Scope: Environmental		
A1:Emissions		
General Disclosure		P42-43
A1.1	The types of emissions and respective emissions data.	P42
A1.2	Greenhouse gas emissions in total (in tons) and density (if applicable) (i.e. per unit of production volume, per facility).	P42
A1.3	Total hazardous waste produced (in tons) and density (if applicable) (i.e. per unit of production volume, per facility).	P42
A1.4	Total non-hazardous waste produced (in tons) and density (if applicable) (i.e. per unit of production volume, per facility).	P42
A1.5	Description of measures to mitigate emissions and accomplishment.	P40, P42-43
A1.6	Description of disposal of hazardous and non-hazardous wastes, and measures and accomplishments of reducing their output.	P42-43
A2:Use of Resources		
General Disclosure		P41
A2.1	Direct and indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and density (i.e. per unit of production volume, per facility).	P41
A2.2	Water consumption in total and density (i.e. per unit of production volume, per facility).	P41
A2.3	Description of energy use efficiency initiatives and accomplishment.	P41,P60
A2.4	Description of whether there is any issue in acquiring appropriate water source, and plan and accomplishment of improving water usage efficiency.	P37,P41
A2.5	Total packaging material used for finished products (in tons) and proportion of each manufacturing unit (if applicable).	P41
A3:The Environment and Natural Resources		
General Disclosure		P44-45
A3.1	Description of significant impacts of activities on the environment and natural resources and the actions taken to manage them.	P44-45
Scope: Society		
Employment and Labor Principles		
B1:Employment		
General Disclosure		P48-51
B1.1	Total workforce by gender, employment type, age group and geographical region.	P48
B1.2	Employee turnover rate by gender, age group and geographical region.	P74
B2:Health and Safety		
General Disclosure		P52-53
B2.1	Number and rate of work-related fatalities.	P75
B2.2	Lost working days due to work injury.	P75
B2.3	Description of occupational health and safety measures adopted, and methods of their implementation and supervision.	P52-53

Disclosures and KPIs		Page
B3: Development and Training		
General Disclosure		P50-51
B3.1	The percentage of employees trained by gender and employee category (i.e. senior management, middle management).	P74
B3.2	The average training hours completed per employee by gender and employee category.	P74
B4: Labor Standards		
General Disclosure		P48-49
B4.1	Description of measures to review employment practices to avoid child and forced labor.	P48
B4.2	Description of steps taken to eliminate such practices when discovered.	P48
Operating Principles		
B5: Supply Chain Management		
General Disclosure		P58-59
B5.1	Number of suppliers by geographical region.	P58-59
B5.2	Description of practices related to engaging suppliers, number of suppliers where the practices are being implemented, and methods of their implementation and supervision.	P60-61
B6: Product Responsibility		
General Disclosure		P35
B6.1	Percentage of products sold or shipped subject to recalls for safety and health reasons.	P35
B6.2	Number of products and service related complaints received and how they are dealt with.	P35
B6.3	Description of practices related to observing and protecting intellectual property rights.	P30
B6.4	Description of quality assurance process and recall procedures.	P34-35
B6.5	Description of consumer data protection and privacy policies, and methods of their implementation and supervision.	P15
B7: Anti-corruption		
General Disclosure		P22
B7.1	Number of closed legal cases regarding corrupt practices brought against the issuer or its employees during the Reporting Period and the outcomes of the litigation.	P22
B7.2	Description of preventive measures and whistle-blowing procedures, and methods of their implementation and supervision.	P22
Community		
B8: Community Investment		
General Disclosure		P64
B8.1	Focus areas of contribution (i.e. education, environmental concerns, labor needs, health, culture, sport).	P65-69
B8.2	Resources contributed (i.e. money or time) to the focus area.	P65

Independent Assurance Statement

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

CECEP (HK) Advisory Company Limited ("CECEPAC (HK)" or "We") has been engaged by Xinjiang Goldwind Science & Technology Co., Ltd. ("Goldwind") to conduct an independent limited assurance engagement on the information and data in the *2018 Sustainability Report* ("*Sustainability Report*") of Goldwind.

This independent assurance statement has been prepared in English and Chinese versions. Should there be any discrepancies between these versions, the English version shall prevail.

I. Goldwind's Responsibilities

Goldwind is responsible for the preparation and presentation of the Sustainability Report in accordance with the *Environmental, Social and Governance Reporting Guide* ("*ESG Reporting Guide*") issued by the Stock Exchange of Hong Kong Limited ("SEHK"). Goldwind is also responsible for implementing internal control procedures to ensure that the contents of the Sustainability Report are free from material misstatement, whether due to fraud or error.

II. Assurance Provider's Responsibilities

CECEPAC (HK) is responsible for issuing an independent assurance statement to the Board of Directors of Goldwind. This independent assurance statement applies solely to expressing a conclusion on the assurance work in the specified scope of Goldwind's Sustainability Report, and does not serve any other intents or purposes.

CECEPAC (HK) ensures that all personnel involved in the assurance work meet professional qualification, training and experience requirements, and are demonstrably competent. CECEPAC (HK) also ensures that personnel involved in the assurance work are capable of conducting assurance engagements. All results of assurance and certification audits are internally reviewed by senior staff to ensure that methodologies used in the process are sufficiently stringent and transparent.

III. Assurance Scope

- Adoption of a Type 2 Moderate Level of Assurance to evaluate the nature and extent of the Sustainability Report's adherence to the Principles of Inclusivity, Materiality and Responsiveness (the three AA1000 AccountAbility Principles);
- Assess the extent to which the Sustainability Report aligns with the ESG Reporting Guide issued by SEHK;
- Limited assurance of the reliability and accuracy of three specified performance indicators disclosed in the Sustainability

Report agreed upon and selected between Goldwind and CECEPAC (HK). The selected specified performance indicators are as follows:

- Liquefied Petroleum Gas and Natural Gas Consumption
- Total Number of Patent Applications and Patent Licenses
- Training Hours per Capita
- The scope of the assurance engagement is limited to information disclosed for the 1 January 2018 to 31 December 2018 period, and any information that falls outside this period or any other data that is disclosed in the Sustainability Report are not included within the assurance scope. Therefore, we do not express any conclusions on this information;
- The scope of the assurance engagement is confined to the information provided by Goldwind only. Any queries regarding the content or related matters within this assurance statement should be addressed to Goldwind only;
- The scope of the assurance engagement is confined to data and information in the Sustainability Report that relate to Goldwind and its subsidiaries only, and does not include Goldwind's suppliers, contractors, and data or information provided by other third parties.

IV. Methodology

CECEPAC (HK)'s assurance engagement was conducted at Goldwind's headquarters and Electric Control Factory in Beijing, and the assurance work included:

- Assessing the suitability of Goldwind's stakeholder engagement participation process;
- Conducting interviews with personnel involved with sustainability management, report preparation and the provision of other relevant information;
- Assessing whether the reporting and management approach for the Sustainability Report have been conducted in line with the AA1000AS principles of Inclusivity, Materiality and Responsiveness;
- Reviewing the supporting evidence for qualitative specified performance indicators;
- Conducting random sampling of evidence pertaining to quantitative specified performance indicators;
- Recalculating quantitative specified performance indicators;
- Performing other procedures we deemed necessary.

Assurance work was performed and the conclusions within were based upon information and data provided by Goldwind to CECEPAC (HK), and on assumptions that the information

provided was complete and accurate.

V. 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.

VI. Conclusions

In accordance with the AA1000AS principles of Inclusivity, Materiality and Responsiveness, and the ESG Reporting Guide published by SEHK, our conclusions are as follows:

Inclusivity

Goldwind has identified key stakeholders and has established a database of sustainability issues through various forms of stakeholder engagement. Goldwind has demonstrated that their formulation of policies and daily operations account for stakeholders' expectations and their potential impacts. In our professional opinion, Goldwind adheres to the principle of Inclusivity.

Materiality

Goldwind has accounted for stakeholders' needs and concerned issues, and has disclosed qualitative and quantitative sustainability material issues and key performance indicators based on its unique business characteristics, legal and regulatory requirements, economic and social impacts, etc. In our professional opinion, Goldwind adheres to the principle of Materiality, and has identified material aspects using suitable means and presented these material issues in a matrix format.

Responsiveness

Goldwind has developed multi-faceted means of communication and strengthened communication with stakeholders. In response to stakeholders' needs and concerned issues identified in the materiality assessment, Goldwind has responded accordingly to their needs and issues in their Sustainability Report. In our professional opinion, Goldwind adheres to the principle of Responsiveness.

SEHK (ESG Reporting Guide)

Disclosures for indicators of environmental and social aspects have been provided, in all material aspects, in alignment with the ESG Reporting Guide issued by SEHK. Our observations and recommendations for the Sustainability Report have been adopted by Goldwind before the issuance of this assurance statement.

Specified Performance Indicators

Based on the procedures CECEPAC (HK) has performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the disclosure of the three selected specified performance indicators in the Sustainability Report for the year ended December 31, 2018 is unreliable, inaccurate or not been prepared, in all material respects, in accordance with the basis of reporting for the Sustainability Report.

VII. Recommendations

We recommend that Goldwind consider strengthening the below aspects for future reports:

- Improving the Inclusivity of materiality assessments within the sustainability report by increasing the number of respondents across stakeholder groups;
- Enriching communication channels with stakeholders, further strengthening efforts to collect stakeholders' views pertaining to Goldwind's sustainability performance, and disclosing response measures and outcomes in future sustainability reports.

VIII. Independence and Competence

CECEPAC (HK) was not involved in collecting and calculating data, or in the development of this Sustainability Report. CECEPAC (HK)'s activities are independent of Goldwind. There is no relationship between Goldwind and CECEPAC (HK) beyond the contractual agreement for providing this assurance engagement.



AA1000
Licensed Assurance Provider
259



**CECEP (HK) ADVISORY
COMPANY LIMITED**
中國節能信託(香港)諮詢有限公司

March 27, 2019
Hong Kong

Feedback Form

Dear readers:

Thank you for reading the Sustainability Report 2018 Xinjiang Goldwind Science & Technology Co., Ltd.. We sincerely hope to get your comments and suggestions regarding this report and our work as well. Please send the filled feedback form to us via mail, email after scanning or fax, or call your valuable advice directly. Really appreciate it.

Address: No. 8 Bo Xing 1st Road, Economic & Technological Development Zone, Beijing, China

Post code: 100176

Fax: +86-(0)10-67511983

Email: goldwind@goldwind.com.cn

1. Which of the following stakeholder do you belong to?

- ☐ Shareholder ☐ Employee ☐ Supplier ☐ Customer ☐ Government ☐ Community
☐ Financial institution ☐ Academic institution ☐ Other (please specify)

2. Have you read the Sustainability Report of Goldwind? (If no, please ignore No.3, 4, and 5)

- ☐ Yes ☐ No

3. If yes, do you read a paper version or an electronic version?

- ☐ Paper version ☐ Electronic version

4. Which version do you wish to read?

- ☐ Paper version ☐ Electronic version

5. What is your overall evaluation for this report?

- Readability (i.e. intelligible expression, beautiful design, attractive content, and easy to find the required information)
☐ 3 (good) ☐ 2 (general) ☐ 1 (poor)
- Reliability (The information in this report is true and reliable)
☐ 3 (good) ☐ 2 (general) ☐ 1 (poor)
- Completeness (The report should reflect positive and negative information, and meeting your needs in information)
☐ 3 (good) ☐ 2 (general) ☐ 1 (poor)

6. In addition to the contents that have been disclosed, what kind of information do you wish to read?

March , 2019

Xinjiang Goldwind Science & Technology Co.,Ltd.

No. 107 Shanghai Road, Economic & Technological Development District, Urumqi, Xinjiang

Tel: +86-(0) 991-3767402 Fax: +86-(0) 991-3762039

Post code: 830026

Beijing Goldwind Science & Creation Windpower Equipment Co.,Ltd.

No. 19 Kang Ding Street, Economic & Technological Development Zone, Beijing (first-phase project)

Tel: +86-(0) 10-87857500 Fax: +86-(0) 10-87857529

No. 8 Bo Xing 1st Road, Economic & Technological Development Zone, Beijing (second-phase project)

Tel: +86-(0) 10-67511888 Fax: +86-(0) 10-67511983

Post code: 100176