

## DRIVING OUR RENEWABLE FUTURE







Each one of us is pursuing a more beautiful life, and the power to create it is with each of us. Our focus on transforming the world with renewable energy is the key to realizing this beautiful existence.

— Wu Gang, Chairman of Goldwind



# 01

## Overview



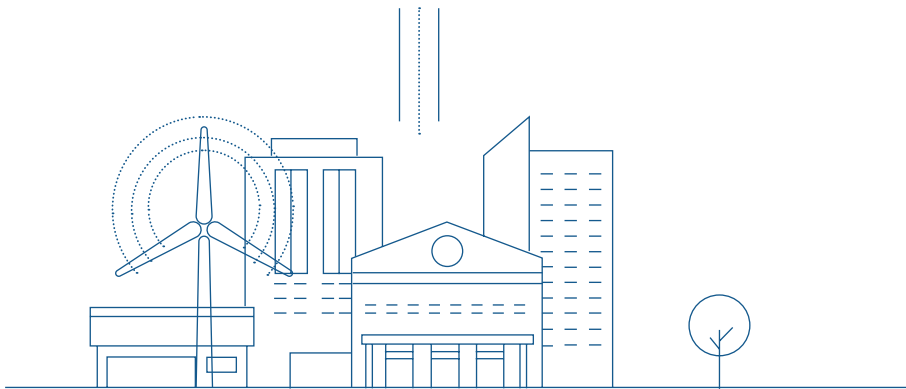


For almost a quarter century, Goldwind has been a leader in sustainable development-committed to driving the renewable transformation of the energy system by providing affordable, reliable and clean energy.

Goldwind is one of the first companies focused on wind power development in China.

Today, with operations in strategic global markets, we are dedicated to leading clean energy development, energy conservation and environmental protection.

Goldwind has been honored several times as one of the “Top 50 Most Innovative Companies in the World”, “Top 100 Global Challengers”, “Best Investor Relations Company” and “China Top100 Employers”. In 2018, Goldwind was awarded as one of the “Most Honored Company in Asia” and enlisted in the “Top 50 Companies with Public Responsibilities”. Additionally, Goldwind was also selected as the “Demonstration Enterprise in Green Supply Chain” and a “Model Company” in Energy Conservation.



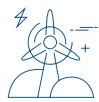




As a pioneer in China wind power industry, Goldwind has 21 years of experience

As of year-end 2018, Goldwind has more than 50GW of installed capacity of wind power, with more than 31,000 wind turbines operating worldwide, over 26,000 of which are Goldwind’s signature permanent magnet direct-drive machines

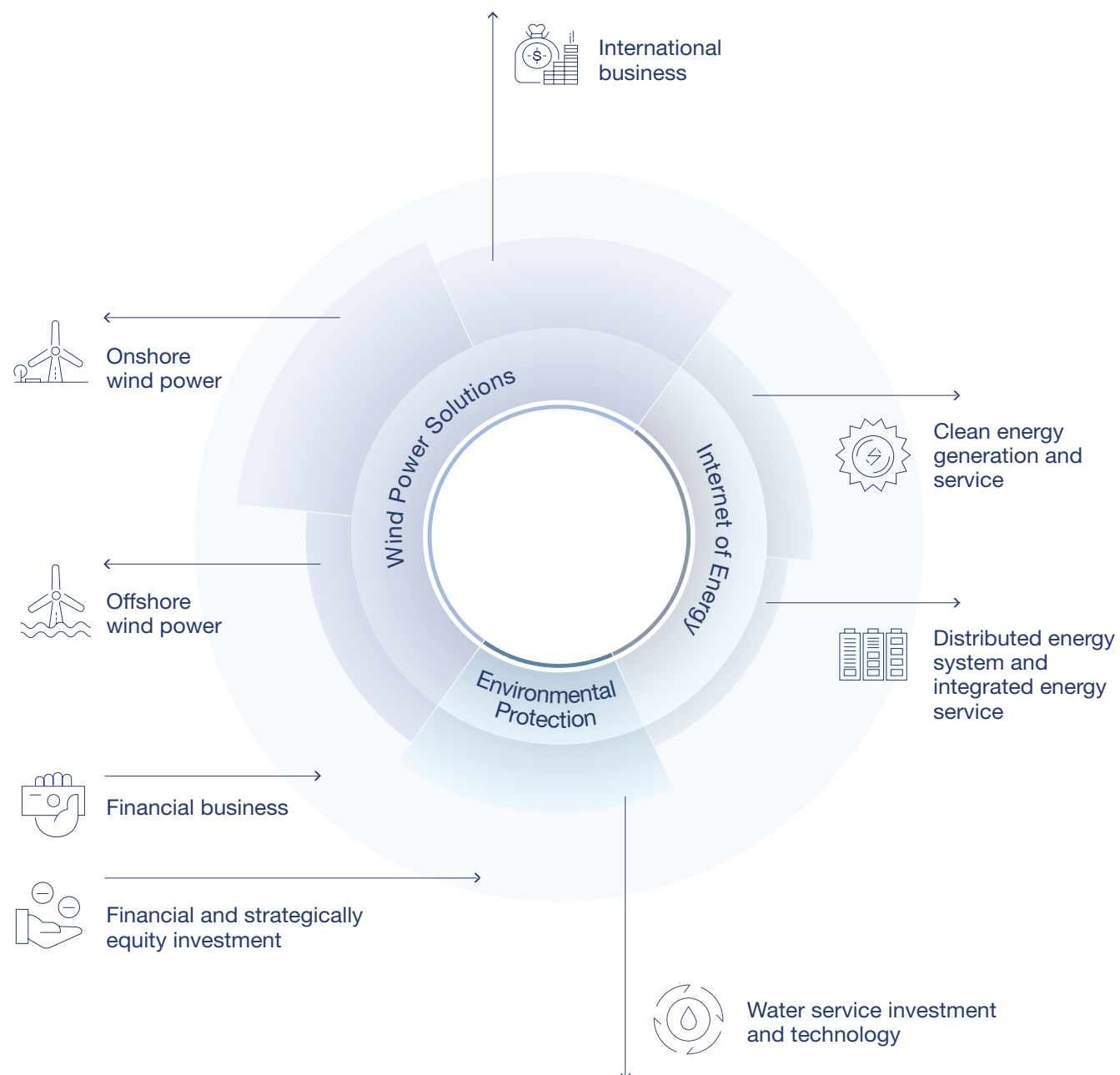
Goldwind operates on 6 continents, in 24 countries, with more than 8,000 employees globally. Over 2,000 of them are R&D engineers and technicians

Dual-listed in Shenzhen (A-share code: 002202) and Hong Kong (H-share code: 2208), Goldwind has got investment grade credit ratings from both S&P and Moody’s, and we are the first enterprise in China who issued green bonds both in domestic and international markets

 <div>21 Years of Experience</div>	 <div>50GW<sup>+</sup> Global Installed Wind Power Capacity</div>
 <div>31,000<sup>+</sup> Wind Turbine Generators</div>	 <div>8,000<sup>+</sup> Employees</div>
 <div>2 IPOs Shenzhen A-share: 002202 Hong Kong H-share: 2208</div>	 <div>2,000<sup>+</sup> Engineers</div>



Goldwind's core business resides in three areas with eight brand units – wind power solutions, internet of energy, and environmental protection.



Our global footprint also includes:

- ◇ 7 R&D centers, leveraging knowledge from around the world
- ◇ Cooperation with 7 globally renowned institutes and universities to explore future energy trends
- ◇ Collaboration with more than 300 suppliers, focusing on global green supply chain
- ◇ Over 3,500 domestically (China) recognized patents, including 1,900 invention patents
- ◇ Co-construction of 20 national and local laboratories and engineering centers to enhance our R&D capabilities
- ◇ 30 national key research projects and implementation of our mission of energy transformation on a global scale

300+ Suppliers

7 R&D Centers around the Globe

3,500+ Domestically Recognized Patents

30+ National Key Research Projects

20+ Laboratories and Engineering Centers





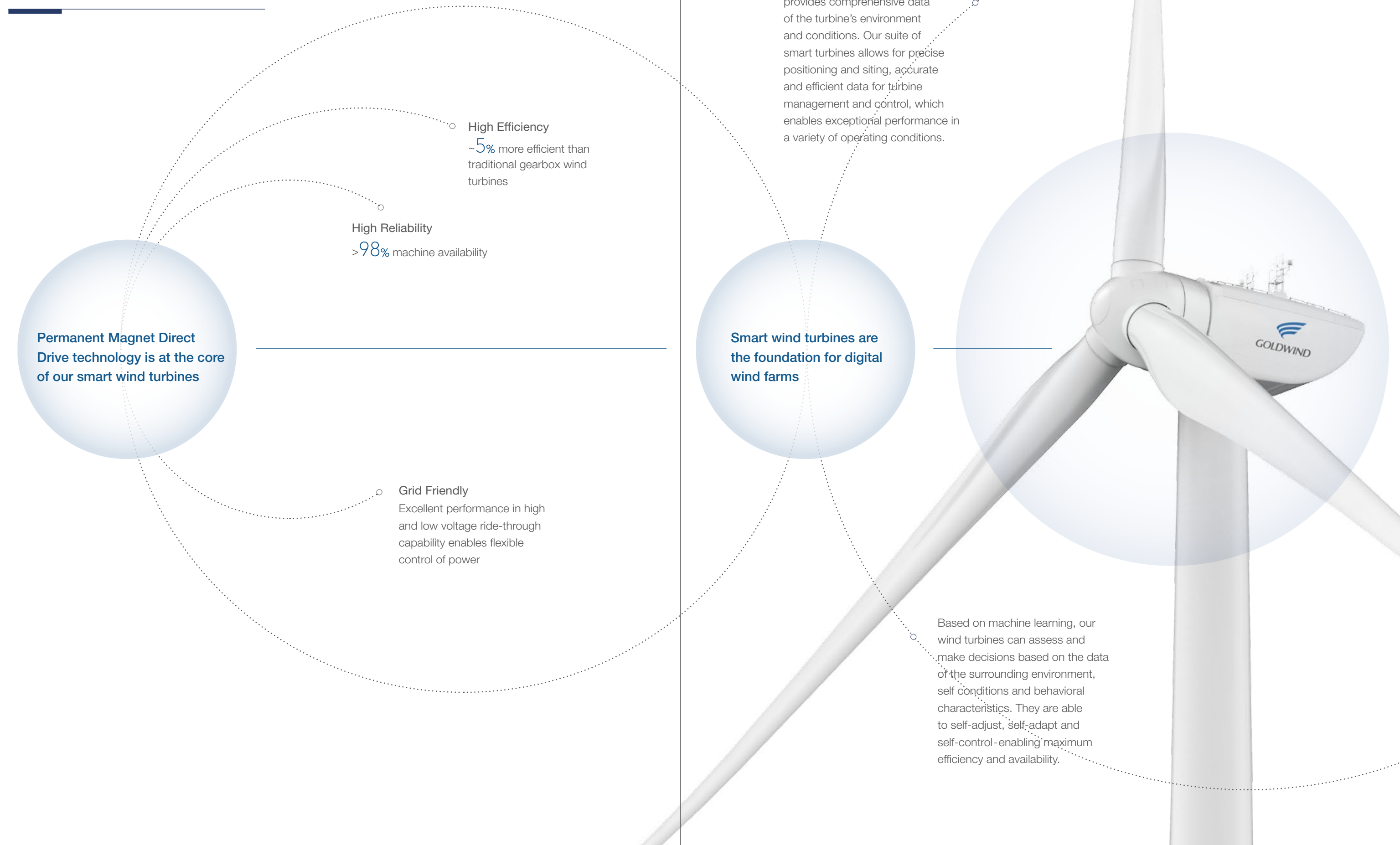
# 02

## Wind Power Business and Digital Transformation





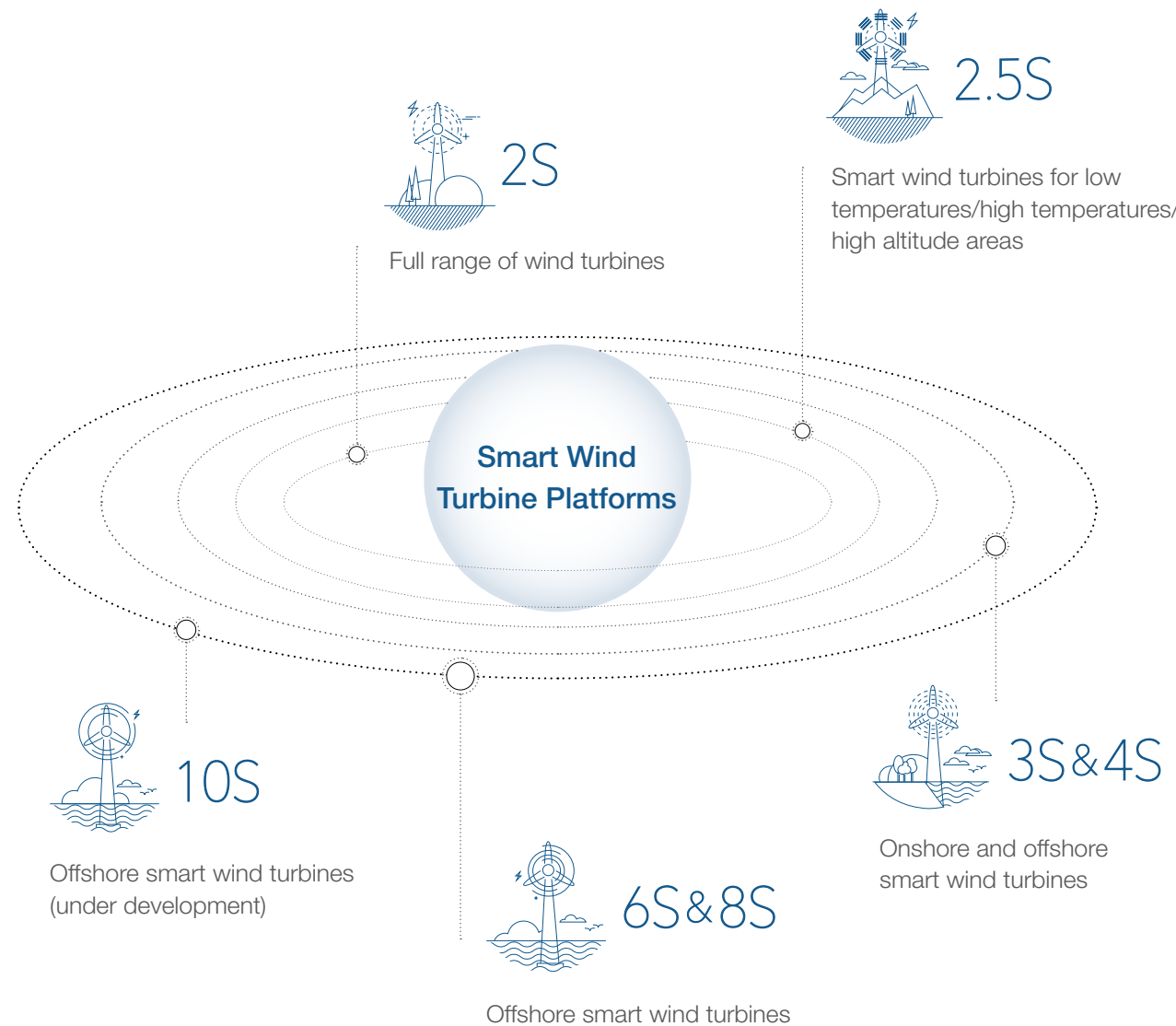
## Goldwind Smart Wind Turbines





With a good command of breakthrough technology trends and development road maps, we strive to cover wider application scenarios.

All of our product platforms hold type-certifications issued by leading certification bodies, including TÜV NORD, Intertek, DNV.GL and China General Certification.



We go where our customers go. Goldwind's wind turbines are suitable for a wide range of operating environments and designed to provide business case certainty for our customers. Our value-added services focus on four key points: maximum resource utilization, highest turbine efficiency, the lowest LCoE, and full-life-cycle asset management.



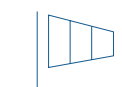
Qinghai · China  
High altitude area  
3,010 - 3,081 meters



Heilongjiang · China  
Extreme cold with  
temperatures as low as  
-30 °C



Guizhou · China  
Extreme weather with  
freezing rains



Shanghai · China  
Ultra-low wind speed regions  
5.56 meters per second



Ecuador  
Earthquake zones  
8.0 magnitude



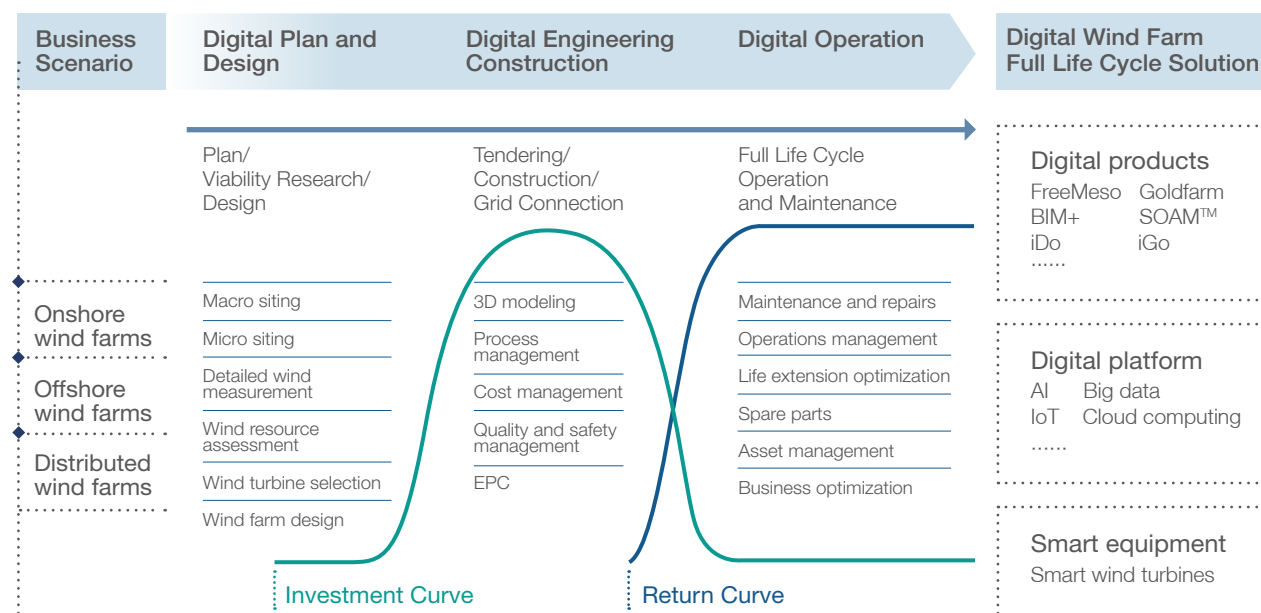
Pakistan  
Extreme hot with  
temperatures as high as  
45 °C

## Goldwind Digital Wind Farms

Our digital wind farms utilize Internet of Things and sensor technology, internet and communication technology, as well as information technology applications and big data analytics to achieve deeper insights, more comprehensive interfacing and more intelligent operations.

Value of digital wind farms yield growth ranging from ~1% to 3%

Power generation increase ~5%–15%  
Construction period reduction ~5%–10%  
Cost reduction ~5%–10%



## Goldwind's New Wind Power Service

By harnessing the power of data, we have redefined wind power services. We conduct deep integration of online intelligent monitoring, offline highly efficient implementation, and service and material networks to upgrade the operation, maintenance, material management and efficiency improvement. We are reshaping the industrial ecosystem to create a new service model for wind power-safe, intelligent and more efficient than ever before.

"New Service" for Wind Power

Online Smart Monitoring

Stabilize the Value and Improve the Efficiency to Realize Innovation and Value Addition

- ◆ With SOAM™ as its core smart operational system (online) and consulting services under intelligent operational system (offline), we help clients to realize the new model of intelligent operation.
- ◆ Online and offline resources and systems will be fully shared. With the one-stop new services, efficiency will be improved and new values created.
- ◆ Technological support, spare part storage and transportation, and human resources will be guaranteed in a timely manner, with the coverage of service and material network.

Offline Highly Efficient Implementation

Service and Material Network



# 03

## Business Innovation and Incubation

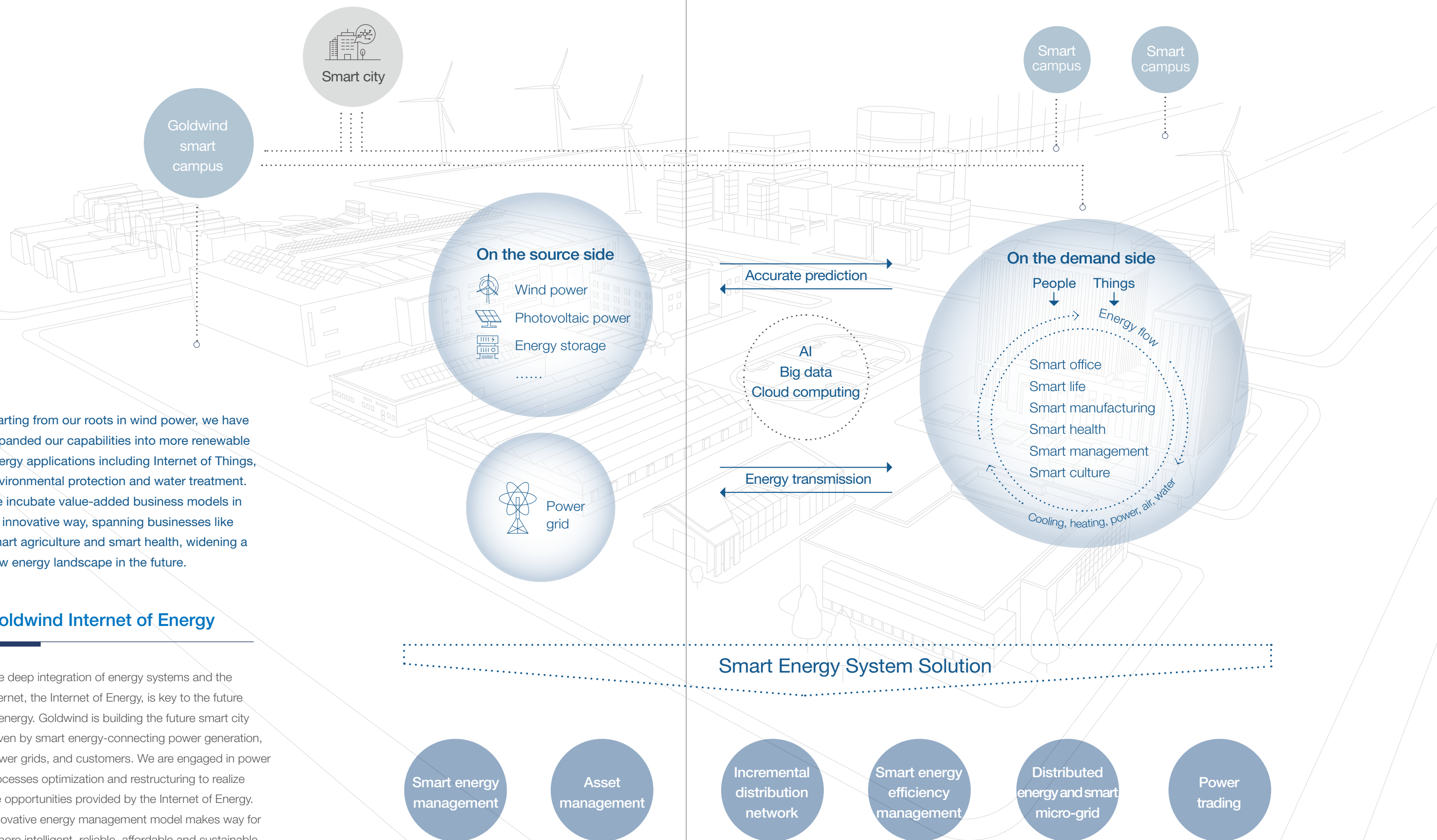




Starting from our roots in wind power, we have expanded our capabilities into more renewable energy applications including Internet of Things, environmental protection and water treatment. We incubate value-added business models in an innovative way, spanning businesses like smart agriculture and smart health, widening a new energy landscape in the future.

## Goldwind Internet of Energy

The deep integration of energy systems and the internet, the Internet of Energy, is key to the future of energy. Goldwind is building the future smart city driven by smart energy-connecting power generation, power grids, and customers. We are engaged in power processes optimization and restructuring to realize the opportunities provided by the Internet of Energy. Innovative energy management model makes way for a more intelligent, reliable, affordable and sustainable energy system.







## Goldwind Smart Environmental Protection and Water Service Business

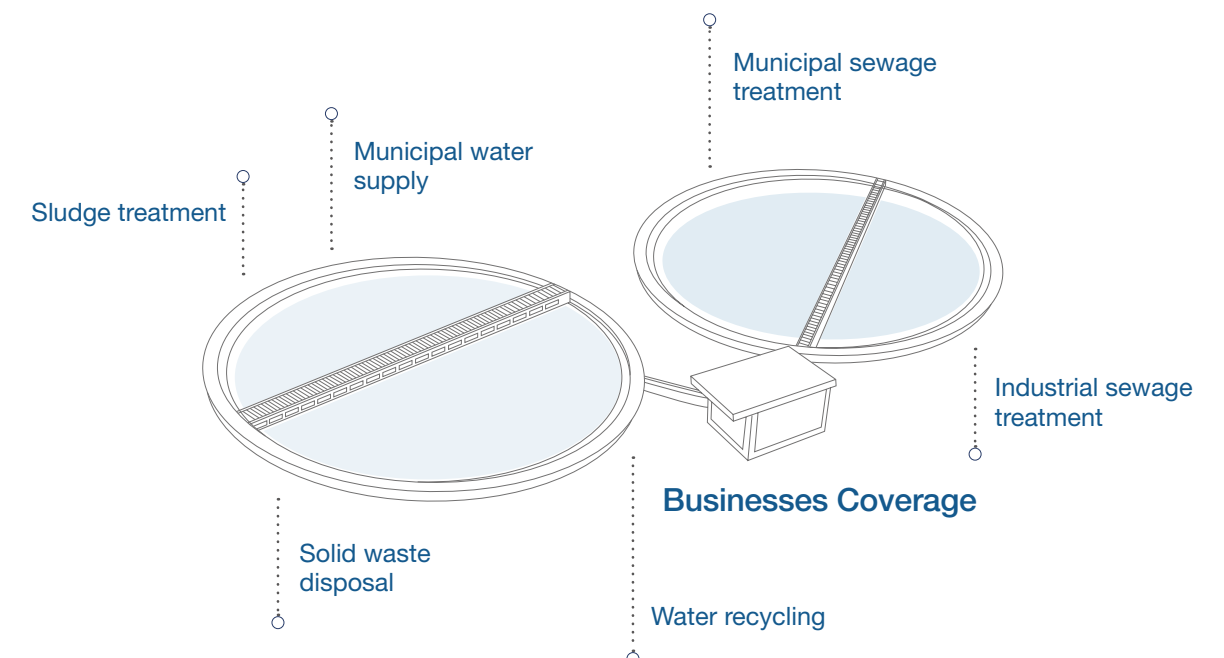
Goldwind's environmental protection and water treatment business focuses on investment and development, construction and operation, and technological innovation in the water treatment industry. We are committed to becoming an industry leader in smart water affairs and an advanced comprehensive solution provider in environment protection. Our businesses cover municipal water supply, municipal sewage treatment, industrial sewage treatment, and water recycling. We are also experienced in the areas of solid waste disposal and sludge treatment. As of the end of 2018, Goldwind had more than 50 water treatment projects, with more than 3 million tons of daily treatment capacities.

50<sup>+</sup>

Water Treatment Projects

3<sup>+</sup> million tons

Daily Capacity of Water Treatment





# 04

## Corporate Social Responsibility





In 2016, under the leadership of Chairman Wu Gang, Goldwind launched the Wind for Future CSR campaign to target five societal areas: poverty alleviation efforts for industries/communities, poverty alleviation through education/culture, employee and client care, and ecology and environment protection. Wind for Future projects have provided support to 10 ethnic minority groups in 20 Chinese provinces, municipalities and autonomous regions. We have supported over 240 teachers and 40,000 students from nearly 100 rural schools across China. Ultimately, our goal is to expand this program and its efforts on a global scale.



 100 Rural Schools

 40,000 Rural Students

 240 Rural Teachers

 20 Provinces, Municipalities and Autonomous Regions



Today, our wind turbines help reduce the emission of 104.32 million tons of carbon dioxide, offsetting the use of 31.78 million tons of standard coal. These numbers are the equivalent of reforesting of more than 57 million cubic meters. Goldwind turbines provide clean energy in 24 countries on 6 continents, facilitating the sustainable development of the economy, society and the environment.



57.01 million steres  
Equivalent reforestation




104.32 million tons  
Annual reduction of CO<sub>2</sub> emissions




31.78 million tons  
Standard coal saving




Based on our strong research capabilities, we rely on an international strategy of integrating technology, human resources, market, capital and management. We help clients around the world to utilize renewable energy solutions that are affordable, reliable and sustainable.

 Our global footprint

 Overseas subsidiaries and global sales offices

- Beijing, China
- Chicago, USA
- Istanbul, Turkey
- Johannesburg, South Africa
- Neunkirchen, Germany
- Sao Paulo, Brazil
- Sydney, Australia

 Global research centers

- Beijing, China
- Wuxi, China
- Urumqi, China
- Yancheng, China
- Neunkirchen, Germany
- Hinnerup, Denmark
- Chicago, USA

Goldwind international business regions

- Goldwind North America
- Goldwind South America
- Goldwind Europe
- Goldwind MENA
- Goldwind Africa
- Goldwind Asia
- Goldwind Australia





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