

DRIVING OUR RENEWABLE FUTURE





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Innovating for a Brighter Tomorrow

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Surging Forward

Goldwind is driving the global renewable energy revolution by providing affordable, reliable and sustainable power.

Years of Experience

Global Installed Wind Power Capacity



Wind Turbine Generators

As one of the first companies to develop wind power in China, with more than 19 years of experience in research and development in the wind power industry, Goldwind is China's leading manufacturer of wind turbines. The company has been recognized by MIT as one of the "Top 50 Most Innovative Companies in the World," a "2016 Global Challenger" by the Boston Consulting Group, and a "Chinese Intellectual Property Pioneer" by Intellectual Asset Management. Goldwind continues to strive towards its mission of becoming an international clean energy and comprehensive environmental protection solutions supplier.

Founded in 1998, Goldwind has more than 19 years of wind energy experience.

Goldwind operates wind turbines on six continents and in 17 countries. With over 26,000 turbines, 23,000 of which feature industry-leading Permanent Magnet Direct Drive technology, Goldwind has become a world leader with more than 40GW of installed capacity.

Goldwind employs over 7,000 personnel around the world, including over 1,000 R&D engineers, and is dual-listed: on the Shenzhen (002202.SZ) and Hong Kong Stock Exchanges (2208.HK).

S&P Global Ratings and Moody's both awarded Goldwind with an investment-grade credit rating. Goldwind was also the first company in China to issue green bonds.

R&D Centers Across the Globe

Engineers

Patents

7 R&D centers across the globe: Urumqi, China; Beijing, China; Yancheng, China; Wuxi, China; Chicago, USA, Neunkirchen, Germany; and Copenhagen, Denmark

Goldwind has more than 1,000 international senior R&D engineers and service engineers.

type certifications;

Developed into a world leading wind turbine manufacturer



Goldwind brings together the wisdom of the world through cooperative relationships with seven of the world's top institutions to explore future

- development trends of new energy;
- We work closely with our over 300 suppliers;
- We hold more than 1,800 patents in China;
- More than 33 wind turbine models have industry recognized design and

Strong independent R&D capability has supported the undertaking of nearly 30 nationally sponsored major research projects.

Developed into a world leading international clean energy and environmental protection solutions supplier



Dancing with the Wind

Goldwind Business Segment

Wind Power

Wind Power Equipment Wind Farm Design and Planning Wind Farm EPC Wind Farm Operations Post-Warranty Services for Wind Farm

Tianrun New Energy Investment

Tianrun New Energy is committed to a vision of building a first-class clean energy service sharing platform for clean energy development, engineering, production, operation, sales, technology, and capital operations. Tianrun New Energy works constantly with power grid companies to explore development of centralized delivery, complementary wind and solar energy, complementary wind and hydro energy, complementary wind and thermal energy storage as well as other complementary power supply methods. Tianrun New Energy has gradually extended to innovative businesses, including photovoltaic power generation, smart micro-grid, wind power hydrogen, and concrete-alloy towers.

China Tianyuan New Energy Technology

China Tianyuan New Energy Technology relies on a thorough background in wind turbine manufacturing and years of practical experience in wind farm technology service, integrated with an innovative financial services EPC model, to successfully carry out standardized wind power engineering projects. China Tianyuan New Energy Technology is committed to providing customers with full-life cycle comprehensive service solutions.

Beijing Tianshan High-Tech

Jointly established by Goldwind and the Beijing Construction Engineering Research Institute, Beijing Tianshan High-Tech mainly operates in the field of wind power technology and equipment R&D, technical consulting, engineering design, construction materials, machinery and equipment sales and related general contracting. Beijing Tianshan High-Tech is the first company in China with independent intellectual property rights. hybrid tower design, production and supply chain needs.Beijing Tianshan High-Tech is committed to providing a solid foundation for the construction of wind farms, towers, substations and the primary building structures.

Goldwind International Holding

Goldwind International not only delivers Goldwind's wind turbines to the international market, it also develops wind power projects in the international market, with wind farm construction, long-term operation and maintenance services and other clean energy innovation businesses. Goldwind International has prominent international projects and the ability to conduct international capital operations, with international cumulative export orders totaling more than 2GW.

International Clean Energy and Energy Conservation and **Environmental Protection Solutions Supplier**

Goldwind is focused on wind power system solutions, renewable energy, incubation investment in new business, with business lines that cover scientific and technological innovation and intelligence, industrial investment and financial services. Goldwind is determined to develop three major platforms to strengthen overall competitiveness in international markets.



Energy Internet

Green Power Micro-grid & Distributed Energy Smart Service of Energy Consumption Side Energy Conservation

Beijing TECHWIN Electronics

A pioneer in the Energy Internet space, Beijing TECHWIN Electronics is focused on the use of power technology and product innovation and development based on the energy needs of users to provide system solutions involving smart microgrid and distributed energy, power transaction, integrated energy efficiency management and digital cloud platform. Beijing TECHWIN Electronics' solutions help customers reduce overall energy costs and increase clean energy usage; repositioning the value of energy and creating a green future.

Goldwind Smart Energy Services

Goldwind Smart Energy Services focuses on the fields of new energy Internet of things, software and intelligent services, with a long-term commitment to helping power companies improve overall operating efficiency and optimize operating costs. Goldwind Smart Energy Services is a leading new energy software, data and intelligent services comprehensive solutions provider.

Specialized in equity investment and asset big data and energy internet.



Finance Service

Financial Investment Financial Leasing Financial Platform of Wind Power Industry



Water Treatment & Environmental Protection

Goldwind Environment Protection

Goldwind Environment Protection is engaged in investment, development, engineering construction, and the operation of projects for municipal water supply, sewage treatment, and reuse of reclaimed water.

Goldwind Investment

management, Goldwind Investment handles Goldwind's strategic investments, business incubation. PE investments, and foreign asset management. Managing assets over RMB 5 billion to date, Goldwind Investment's stakes include new energy, new material, energy saving and environment protection, advanced manufacturing,

Developing Towards the Future

Digital Wind Farm Introduction

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.

Full-life Cycle of the Wind Farm Projects

Planning and Wind Resource Assessment Feasibility Study Design and Tendering Construction **Operation & Maintenance**

Full-life Cycle **Digital Wind Farm**

Wind Power Internet Cloud Platform

Wind Power Industry Data Services Analysis Services Data Access General Application Development Platform

10-20% Power Generation can be Increased

5-10% Costs can be Reduced

Solutions

 Digital Planning & Design Wind Farm Macro Site Selection Micro Site Selection Simulation Unit Selection and Wind Farm Design

- Digital Construction 3D Models Cost Assessment Progress Assessment Quality and Safety Management
- Digital Operations Wind Farm Monitoring Management Full-Life Cycle Asset Management Wind Power Business Intelligence

Smart Wind Turbines

Nacelle Blades Generators Towers **Control Systems**

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Wind Power Intelligent Operating Solutions

The integrated IT systems and efficient operating system allows our customersto meet the challenges of wind power operations, through continuous improvement of employee management and equipment performance, for improved operational efficiency and reduced operating costs; through data haring, analysis and prediction, to promote wind farm operation efficiency, transparency, and accuracy.

Integral

Offline

Operations Intelligence 2.0



Smart computer

information systems, intelligent analysis, expert support, knowledge sharing services

Smart operations system SOAM[™]

Products & Key Technology

Goldwind Product Series

Backed by strong R&D capabilities, Goldwind stands at the forefront of wind turbine technology, continuously optimizing its turbines to meet more diversified and ever expanding market demands.







- High-efficiency: 5% more efficient than traditional gearbox wind turbines
- High-reliability: >98% machine availability
- Low-cost: 20% lower maintenance costs directly correlated to gearbox elimination



Excellent Performance Under Different Operating Environments

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 CoE, and full-life-cycle asset management.

Permanent Magnet Direct-Drive

- Grid Friendly: Excellent performance in high and low voltage ride-through capability enables flexible control of power
- Smarter: Smarter operation and farm-level control means more wind
- capture; Smarter monitoring and diagnostics means healthier operation

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To create and lead the future energy system, Goldwind will not only drive wind power's continued development, but will steadily invest in other value-added applications within the space of wind energy, such as energy storage technology, smart grid, distributed power generation, wind energy desalination, water services and environmental protection. Goldwind is leading the renewable energy revolution and striving to become a trulyglobal clean energy, energy conservation, and environmental protection

solutions provider.



Smart Energy, Leading the Energy Transformation

Goldwind's intelligent energy system is based on the intelligent energy management platform. It manages distributed photovoltaic, wind power or (micro) gas turbine and other renewable energy / clean energy power generation methods, to optimize the user-side energy structure. Power generation and energy efficient consumption are matched, with optional energy storage to meet the user-defined power quality requirements and for friendly interaction with the grid. Goldwind's system has reformulated the traditional energy efficiency optimization process, built a new innovative power management model that enables our customers to have reliable, clean, economical, intelligent and efficient integrated power integration solutions.





Flexible Configuration

Standard unit design, centralized/ distributed/ micro-grid environments, compatible with any capacity

Uninterrupted Power Generation

Recognized certification, can operate in unique environments and conditions, high reliability

Low Light Conditions

On rainy days or other low-light conditions, automatic control switching system can boost the efficiency leading to an increase of total power generation by 1% to 2%

Common Spare Parts

General spare parts for different capacity inverters - whether for wind, solar or energy storage mean decreased operational risk

Wind Power Protecting Blue Skies

Powering the World with Clean Energy

Goldwind's total installed capacity worldwide has surpassed 40GW, reduce 81.9 million tons of CO₂ emissions reduced annually, equivalent to the annual preservation of 44.75 million m³ of forest. Goldwind is providing clean energy, innovative, coordinated, green, open and shared sustainable development for 17 countries on 6 continents.

Innovative Environmental Protection & Water Treatment

Investment and development as well as construction and operation of water supply, sewage treatment, and water reclamation projects, pushing the deployment of innovative technology in the field of environmental protection. Goldwind is a leading comprehensive urban environmental services provider and an integrated environmental protection industry service provider.





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GG "Goldwind is a leader in Corporate Social Responsibility."

Goldwind has been extremely active in CSR from hosting events like Australia's Gullen Range Wind Farm's "Community Open Day," and assisting in the construction of a school in Ethiopia. Goldwind has donated to education charities to provide teacher training in rural areas and established a non-profit foundation aiding in the development of clean energy. Goldwind helped the Beijing Marathon become the first 100% green energy powered marathonin Chinafurtherpromoting the continued development of China's new energy industry.



Goldwind provides clean energy, energy conservation and environmental protection solutions based on its strong R&D capability. Ever expanding internationally, Goldwind is helping its customers to extract even more value from their energy resources while reshaping the global energy strategy. Our goal is to continue to provide affordable, reliable and sustainable energy for the whole world.

Goldwind's international strategy focuses on five key areas: technology, human resources, market, capital, and management.

Goldwind turbines are installed in 17 countries on 6 continents. We have 14 manufacturing centers (including 2 production bases under construction) with a combined annual output capacity of over 4,000 wind turbines. 5 foreign subsidiaries, 6 international sales offices and 7 regional centers working together to promote a global strategy.

We provide services to more than 25 Fortune 500 companies around the world, working together to create value in wind power and promote new energy use. International presence in 14 countries allows us to localize management, human resources, and capital.



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