GOLDWIND



DRIVING THE FUTURE.
LIGHTING THE WORLD.



ENERGY IS ABOUT TO BE RADICALLY DIFFERENT

We've seen this coming for nearly three decades. The world is just catching up.

We are advancing into an era where renewable, clean energy will be the norm.

The Paris Agreement signed in 2015 saw 195 countries promise epoch-making reductions to greenhouse-gas emissions in an effort to stop human-caused climate change.

But the environment isn't the whole story. Technology has brought us to a place where the changing nature of energy will reshape our society and our world. Government and business leaders find it easier to agree that renewable energy is the future because it simply represents a better way forward: cleaner, cheaper, more efficient and more beautiful.

At Goldwind, we feel like the world is just starting to catch up with our vision. We began our journey to become a world-leading wind turbine manufacturer, service provider and investor almost three decades ago. Today, we stand exactly where we intended to be: at the leading edge of a rapidly changing energy landscape.

Our customers seek us out because we have established experience and expertise not just in wind turbine engineering and manufacturing, but also in services, solutions, investment and a range of emerging and synergistic technologies. Renewable energy generation capacity isn't just a product: it's a whole industry and ecosystem.

Goldwind isn't in the renewable-energy business because it's the flavour of the moment. We've been here from the beginning—and today we share our capability and expertise with the world.

OUR INTEGRATED APPROACH TO WIND POWER

We deliver extraordinary value through our holistic approach.



Becoming one of the world's largest players in renewable energy takes time and rigorous planning. Established in 1998, from the outset Goldwind aimed to become the fully integrated business that it is today, delivering customer value by uniting investment, sales, service and innovation.

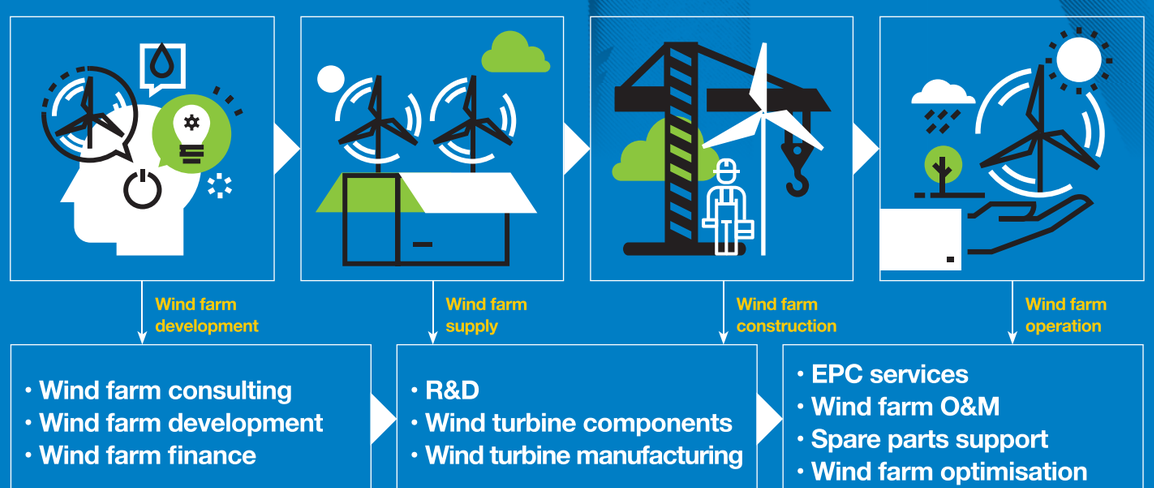
Our journey to that point took us through three milestones.

1. Establishing a wind turbine manufacturing business based on original intellectual property as a foundation on which to innovate.
2. Positioning the firm as a global leader in wind turbine manufacturing.
3. Extending beyond manufacturing to become one of the world's largest providers of clean energy and environmental protection solutions.

Goldwind is now securing the achievement of its third and most pivotal aspiration. On the back of global manufacturing, research and investment efforts, we now serve and partner with our clients throughout the world to drive forward the march of clean energy and transform the future of our planet.

- Since establishing their first wind farm in 1986, our people have spent more than **30 years** as pioneers in the wind energy business.
- Goldwind has more than **38GW** of wind turbine generation capacity installed globally.
- This capacity comes from more than **25,000** installed wind turbine generators, including **21,000** units using the superior permanent magnet direct drive (PMDD) technology that Goldwind is renowned for.
- Goldwind has more than **$9.3 billion** in total assets.
- We have successfully listed on **2** stock exchanges, in Shenzhen and Hong Kong.
- We have over **7,000** employees globally, with more than **1000** in research and development (R&D).
- Goldwind is ranked as one of the **top 5** wind turbine manufacturers worldwide.

OUR BUSINESS MODEL—A PROVIDER OF INTEGRATED SOLUTIONS



OUR JOURNEY TO THE TOP

We've spent the past 30 years building a world-leading wind energy business.



KEY MOMENTS IN GOLDWIND'S HISTORY

1998–2004

Goldwind is established and supported through prescient government policy. This act of foresight gives us an early start in the burgeoning field of renewable energy.

Goldwind develops its own 600kW and 750kW wind turbine generation units, and introduces permanent magnet direct drive (PMDD) technology to China from Germany.

2005–2007

China promulgates the Renewable Energy Law, spurring development of the clean energy industry and boosting demand for wind power equipment.

2008–2010

Goldwind increases annual installation capacity above 1GW and simultaneously establishes an international research capability by acquiring its German partner, Vensys. We bolster international operations by commencing turbine sales to the United States and Cuba, and produce our first 2.5MW generator units.

2013

In China, Goldwind has the largest market share in wind power. Globally, we are now the no. 2 equipment supplier and are recognised for our international offering in integrated solutions.

2015-2016

Goldwind releases multiple new product lines. Pursuing new energy-industry trends, we push forward efforts to integrate the internet of things, cloud computing and big data into our product and service offerings. Our smart microgrid program in Dafeng, Jiangsu, comes online and starts generating power. Our new platform, the Goldwind 3.0MW(S) turbine is released and we install the first prototype in early 2017.

1986 — Goldwind founders set up their first wind farm.

1998 — Goldwind first establishes itself as a wind turbine manufacturer.

2003 — Goldwind identifies PMDD as the core technology for the company's future wind turbines.

2007 — Goldwind makes its initial public offering on the Shenzhen Stock Exchange. Later, in 2010, the company lists on the Hong Kong Exchanges and Clearing Limited.

2008 — Goldwind acquires Vensys, a European pioneer in PMDD technology.

2009 — Goldwind invests in the Uilk Wind Farm in Pipestone, Minnesota—its first in the United States.

2011 — In Ecuador, Goldwind signs its first engineering, procurement and construction contract.

2014 — Goldwind's biggest overseas project (215MW) goes into commercial operation in Panama.

2015 — Goldwind wins its first 15-year maintenance and operations contract in Thailand.

2016 — Goldwind is ranked third in the world for new wind turbine installation capacity, with 6.34GW newly installed during the year.

PERMANENT MAGNET DIRECT DRIVE

Our signature PMDD technology delivers superior performance and efficiency.

Less
mechanical loss

Higher
reliability

Substantially lower
O&M cost

The hallmark of Goldwind's product and service offerings is its use of proprietary permanent magnet direct drive technology (PMDD). We first licensed this technology in 2003 from the German firm Vensys, which we acquired 70% of in 2008.

A 2007 study by Morgan Stanley compared PMDD wind turbines with those based on competing systems, and found numerous advantages.[1] Put simply, PMDD is a superior technology, allowing Goldwind equipment to deliver higher efficiency and reliability at a lower cost while integrating easily with modern energy grids.

HIGHER EFFICIENCY.



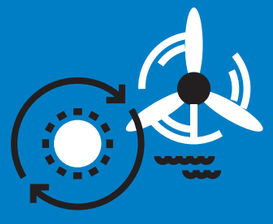
Instead of using a gearbox to increase rotor shaft speed, PMDD turbines convert the full rotor torque into electricity. Goldwind's designs deliver higher efficiency than traditional generators, producing considerable absolute gains across large installations.

LOWER MAINTENANCE COSTS. BETTER RETURNS.



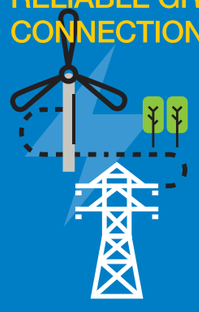
The more streamlined and reliable PMDD design saves on repairs and maintenance, helping to substantially reduce the overall cost of operation when compared to competing systems.

LESS MOVING PARTS = HIGHER AVAILABILITY



By eliminating many of the moving parts involved in traditional designs, PMDD technology reduces equipment failure rates and keeps generation online more reliably. Goldwind generators routinely achieve more than 98% availability.

RELIABLE GRID CONNECTION.



With zero power-grid impact, excellent performance, and low-voltage ride-through capability, Goldwind's wind turbine generators are ready to be a dependable part of any energy grid.

[1] "Direct Drive (Gearless) vs. Geared Turbine," Morgan Stanley Research, June 8th 2010.

INTERNATIONAL R&D

Our global effort to speed innovation.

To excel in the international marketplace for advanced energy-generation technology requires a truly global R&D effort to harness the power of the world's brightest minds.

Goldwind operates a network of six high-tech research centres, employing more than 800 engineers in total. Starting from our original base in Urumqi, Xinjiang, we have branched out to the Chinese capital, Beijing, as well as the coastal city of Dafeng, Jiangsu, where we are experimenting with smart microgrids.

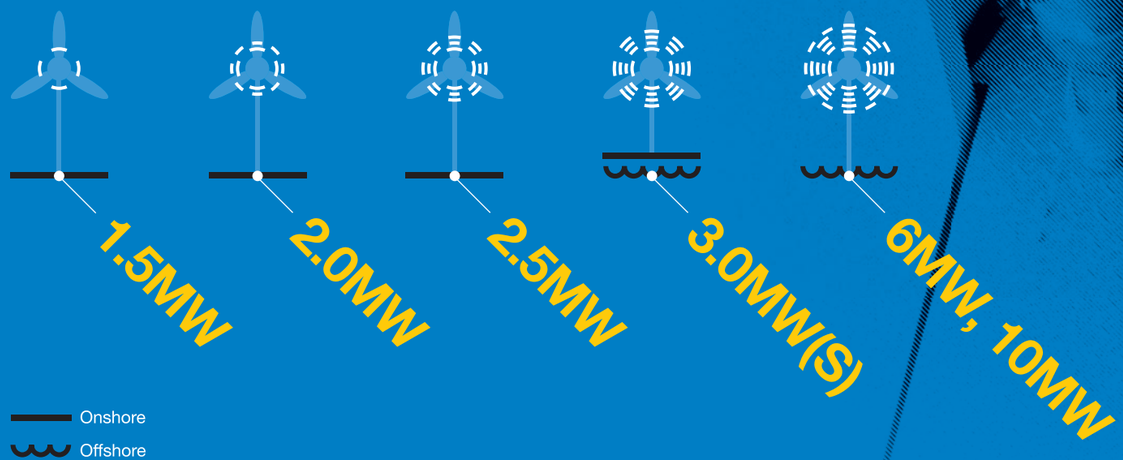
Goldwind's international research effort is bolstered by centres in Chicago, Denmark and Germany. The German facility in Neunkirchen, near the French–German border, is where Goldwind's world-leading PMDD technology was pioneered by Vensys AG, a Goldwind subsidiary since 2008. Today, the Neunkirchen R&D centre employs a large team of skilled engineers who continue to push forward the limits of wind power generation.

In addition, Goldwind maintains working relationships with leading scientific research organisations, universities, and consultancies worldwide, including the Fraunhofer Society, DNV-GL, WindGuard, and Durham University.

PRODUCT RANGE

We offer a suitable wind turbine for every operating environment.

Goldwind produces wind turbine generators at a wide range of sizes and output capacities, to suit various regions, environments and generation requirements. Our offerings are based on decades of R&D and manufacturing experience and continuous improvement.



The differentiated nature of these designs allows us to tailor solutions for wind power generation in a wide range of operating environments. We have equipment to deal with challenging conditions including hot and cold weather extremes, high altitude, low wind speeds, high humidity and offshore installation.

Each model in our range benefits from our integrated approach to delivering customer value. To help foster the growth and profitability of your business, we can consult with you to improve your results in four key areas:

1. Resource utilisation
2. Generator efficiency
3. Energy cost reduction
4. Full life cycle asset management

COMPREHENSIVE SOLUTIONS

Our bespoke products help you meet your unique objectives.

Goldwind delivers a unique value proposition through its full range of offerings across the product life cycle. From the project planning phase, all the way through your turbines' operating life, Goldwind's bespoke products help you, our customer, meet your unique objectives.

GLOBAL INNOVATION FOR A BRIGHTER FUTURE

Our superior permanent magnet direct drive (PMDD) technology allows us to deliver generation capacity that is more efficient and cost-effective than competing options.

But our achievements in innovation don't end there. Goldwind is pioneering new technological trends in the energy business, including the use of smart grids and big data to adaptively optimise output and load.

Our customers achieve superior returns on their investment by being able to generate electricity from wind power at a lower overall cost. With our support, your organisation can operate successfully and profitably even in challenging market, regulatory and environmental conditions.

CUSTOM, INTEGRATED SOLUTIONS

Our support for you begins with the sales effort. Goldwind representatives aim to make your project a success from the outset, helping you choose the most effective equipment for your operating environment.

We also facilitate capital investment and financing, coordinating solutions that ensure your organisation can secure the funds required to realise its vision and objectives.

EFFICIENT, COMPREHENSIVE O&M SUPPORT

Ongoing support from our service and solutions staff is a crucial part of our value proposition. Wind turbine generators are a long-term investment, and need to stay in top operating condition throughout their life.

Goldwind's integrated business allows us to provide you with the full range of operating and maintenance (O&M) services needed to keep your turbine fleet at peak performance, delivering the required output and return on investment.

Our O&M offerings extend for periods of up to 20 years and are tailored to your requirements.

INVESTING IN THE FUTURE OF RENEWABLE ENERGY

In offering products and services to its customers, Goldwind builds on a deep understanding of buyer needs that it has developed through a long history of direct investment in wind power generation.

We use our own products in live power generation facilities in locations across the globe. We know what utilities, industry and government need in wind turbine technology because, as deeply invested players in that business, we need exactly the same thing.

OPERATION AND MAINTENANCE SERVICES

Our equipment and installations last for decades. We'll be there to support you every step of the way.

Goldwind is more than just an equipment manufacturer. Our integrated business offers you the assurance of service and support throughout the whole life cycle of our products—and your projects.

SERVICE CONTRACTS AND WARRANTIES UP TO 20 YEARS

On signing one of our long-term service contracts, our customers can be assured that they will not incur extra costs for maintenance and operation over a period of up to 20 years.

COMPETITIVE WOM COSTS

Goldwind's proprietary PMDD technology creates greater efficiency and reduces wear and tear. This allows us to ensure our equipment's overall cost, including warranties, operation and maintenance (WOM), is highly competitive.

GLOBAL SERVICE AVAILABILITY

We have an established administrative presence and installed capacity on each one of the world's six inhabited continents. Our global service teams are standing by to provide support at any time.

OUR GLOBAL SERVICE FOOTPRINT

Regional Center	Technicians	Warehouses
Africa	8	1
Asia (excl. China)	32	2
Australia	13	2
Europe	15	2
MENA	35	4
North America	66	6
Sorth America	10	1
Total	179	18

To date, our wind power business has taken us to six continents, with more than 40 overseas projects either under construction or operating with our support. We have more than 170 field-service staff in total.

Globally, we have established one international spare parts warehouse, three overseas regional warehouses, and 14 overseas project warehouses. Our multiple overseas logistics and dealer channels provide a highly efficient, fast and safe logistics network that ensures effective and timely supply of spare parts when you need them.

SMART MICROGRIDS

Our revolutionary projects are advancing the future of energy.

The smart microgrid is an extraordinary technological breakthrough that opens up a range of ways to reshape human settlement and industry. Goldwind is pioneering these changes through its innovative solutions.

These systems are perfect for isolated or highly specialised environments where a secure and reliable power supply is required, including:

REMOTE AREAS

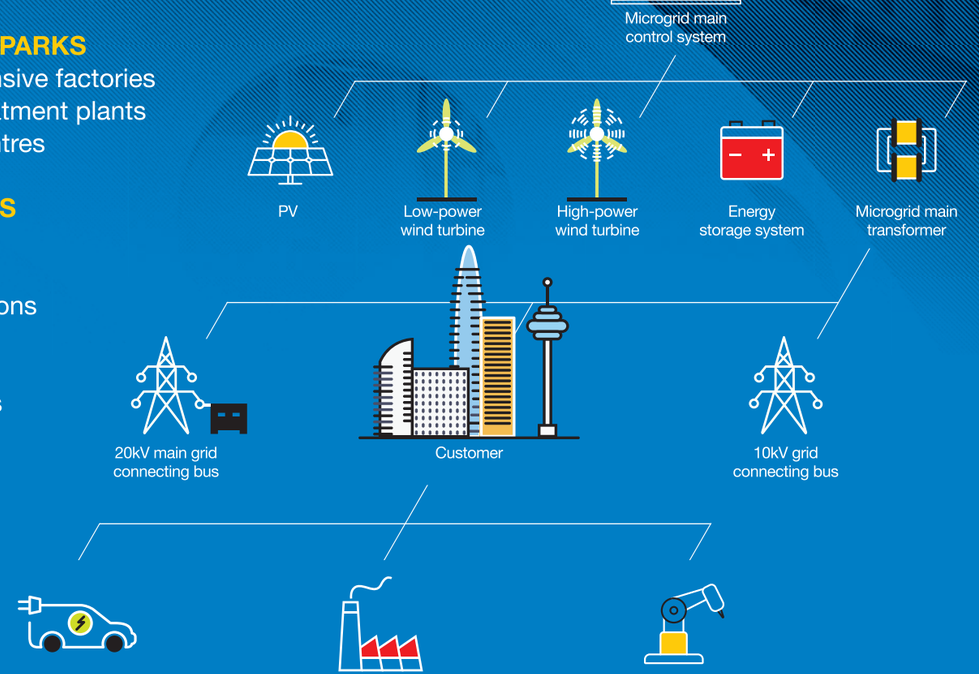
- islands
- border posts
- seawater desalination
- mines and oilfields

INDUSTRIAL PARKS

- energy-intensive factories
- sewage-treatment plants
- big data centres

INSTITUTIONS

- airports
- schools
- railway stations
- hotels
- hospitals
- tourist parks

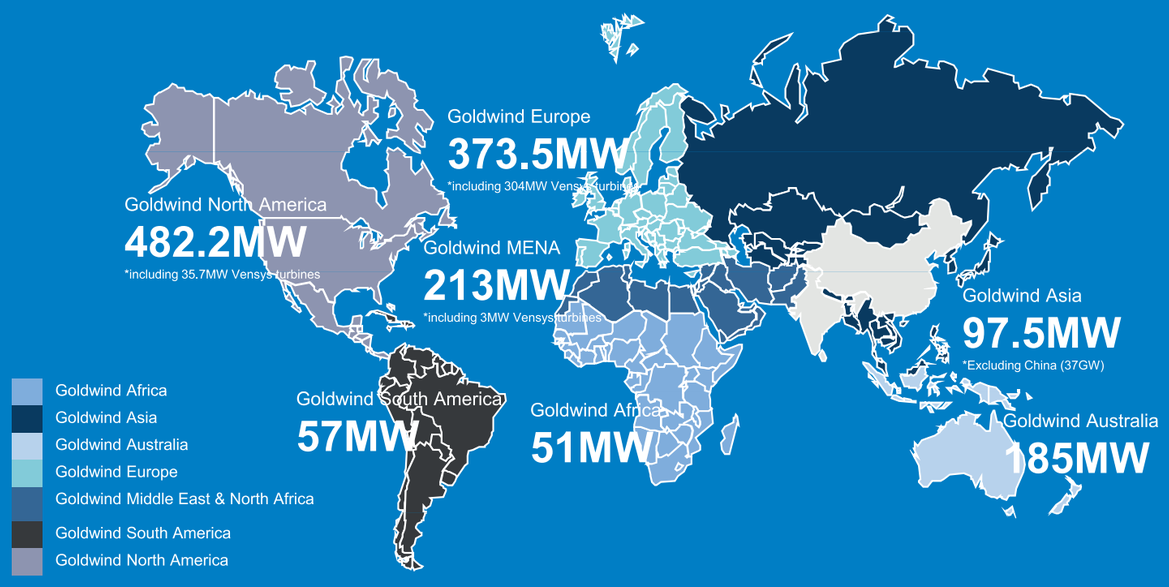


OUR INTEGRATED BUSINESS SPANS THE GLOBE

Wherever you are, there's a Goldwind office or facility in your region.

Goldwind equipment is installed at numerous locations around the world, supported by an international sales, service and R&D effort. Wherever you are, Goldwind has a presence nearby and can support you in building wind power generation capacity.

GOLDWIND HAS A PRESENCE IN MORE THAN 20 COUNTRIES, COVERING ALL 6 CONTINENTS



Goldwind's business spans more than 20 countries. Our 9 manufacturing facilities have a combined production capacity of more than 4,000 wind turbines per year.

Our 7 regional centers provide full global coverage to support our customers on every continent. More than 25 Fortune 500 companies worldwide have used our services to make sustainable investments in wind power generation.

ENVIRONMENTAL BENEFITS

We reduce emissions and restore the environment.

In 2016, Goldwind saved **186,045kWh** of energy at its Beijing office, equivalent to CO_2 emissions of **186 tons**.

Goldwind has **38GW** of installed generation capacity around the globe, saving **77.8m tons** of CO_2 emissions annually.

Goldwind's installed capacity has the same environmental benefit, in reducing the impact of global emissions, as **42m cubic metres** of forest.

WE WALK THE TALK

As befits one of the world's leading players in the renewable energy industry, Goldwind has always placed a high priority on environmental conservation in its pursuit of innovation and corporate development.

In 2016, Goldwind's Beijing office optimised the energy-saving modes of its lighting and central air-conditioning systems, achieving a 27.52% saving in electricity consumption: 186,045kWh in total. This is the yearly equivalent of burning 60.1 tons of standard coal, or CO_2 emissions of 186 tons.

As of December 31st 2016, the total capacity of Goldwind turbines installed around the globe exceeded 38GW. To generate this energy with fossil fuels would take 28.2m tons of standard coal and release 77.8m tons of CO_2 each year.

Goldwind is proud to have contributed to the global fight against climate change by helping fulfil this demand with clean energy. By using its unique blend of technical and business expertise, Goldwind has reduced worldwide CO_2 emissions to a value equivalent to the restoration of 42m cubic metres of forest.

We also continue develop community awareness of the need for environmental protection, and to promote the concepts of clean power and green transport. Goldwind frequently co-hosts seminars on clean energy in conjunction with industry associations of renewable-energy providers and electric-vehicle manufacturers. By bringing together technical experts, business leaders and government officials at these forums, Goldwind harnesses the benefits of collaboration between the private and public sectors to advance the cause of economically sustainable conservation through technological change.

START THE CONVERSATION

Ask Goldwind for an integrated proposal to build your wind power generation capacity.

Goldwind offers its customers the ability to access proprietary PMDD technology that provides greater efficiency and reliability than competing wind turbine generator designs. But our products are just one significant part of the value we supply.

We have built an integrated business whose activity spans every part of the product life cycle, from R&D and manufacture through investment, installation, maintenance and grid connection. Our products are comprehensively supported by a network of international facilities that provide outstanding service around the globe.

Every aspect of the solutions we build around our wind turbine generators is tailored to maximise value not just for our clients, but for the customers and communities that rely on the power they supply.

We invite you to begin a conversation with us about how Goldwind can help your organisation build its power generation capacity. For more information, please contact a Goldwind representative.

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Certified Management System
Quality Management ISO 9001:2015
BS OHSAS 18001
Management System ISO 9001 ISO 14001