



PRODUCT BROCHURES

PITCH CONTROL WIND TURBINE

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山东格林风新能源科技有限公司 青岛格林风新能源设备有限公司
SHANDONG GREEF NEW ENERGY TECHNOLOGY CO., LTD. QINGDAO GREEF NEW ENERGY EQUIPMENT CO., LTD.

Company Introduction

GREEF NEW ENERGY is global supplier which focus on Wind, Solar and Hydro generation system solution .

We provide customized system solution which suitable for off-grid , grid-tied and hybrid system for renewable energy system. GREEF own our own factory manufacture permanent magnet generator from 300W to 5MW. Wind turbine Blades until 200kw, grid-tied wind turbine controllers until 2MW and own patent control system for controllers .

Our solar&wind turbines are installed all over the world. 50% staff in our engineer team have 12-20 years' experience in the field, we can help clients to customize overall system solution with strong flexibility and competitive capabilities, our service that can be delivered include but are not limited to: overall design plan, principle drawing, 3D renderings, sample physical, bulk product delivery, quality control, and after-sales service. With a fast service system, we can assist our customers to save cost and time.

GREEF Products have been export to all over the world, like Europe, South America, North America and other countries. All products have CE approvals with 3 to 5 years warranty, the quality and on-time delivery are guaranteed by Alibaba.

Since the start of the company, we have been passionate believers in our mission to provide cheaper, reliable electricity through the power of renewable energy. Your support and belief in what Greef lives for, starting with our motto "Power the world with green energy", has allowed us to rapidly innovate and become a responsible supplier in distributed renewable energy.



Why Choose Us



Bureau, SGS, TUV Verified Supplier



Top 3 suppliers of generators products with all 5-star on Alibaba.com



Products quality and on time delivery are guaranteed by Alibaba.com



11 years' experience engineer & QC team



Focus on after-sales service



One-stop customized system solution



Trade experience with more than 60 countries



CE, RoHS certificated



OEM,ODM are accepted

Pitch Control Wind Turbine Series



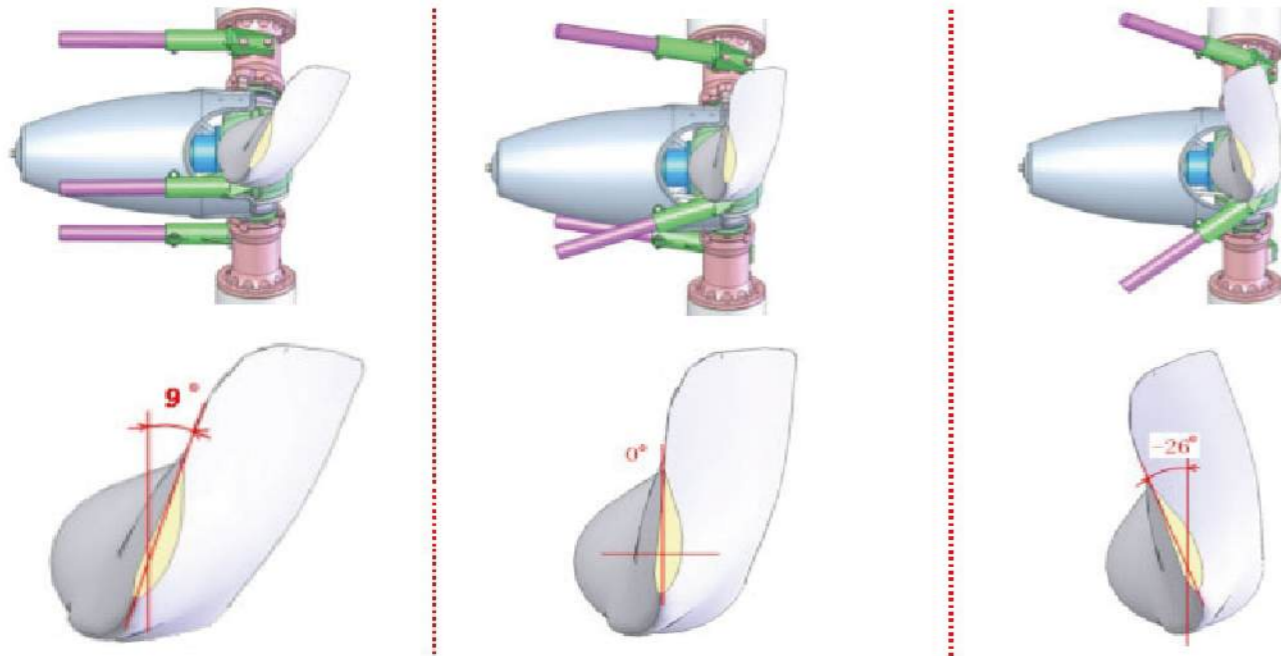
Scan The QR Code
AH Products Introduction



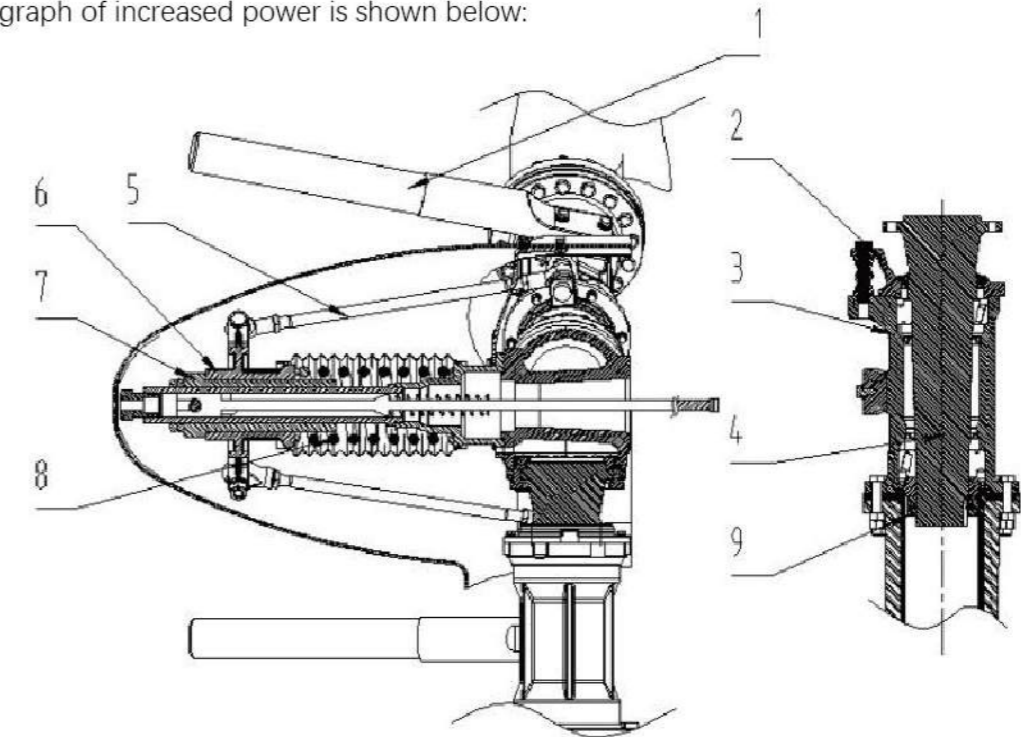
- Leading technology—intelligent control, strong system scalability.
- High security—continuous operation around the clock to achieve pitch control, high-efficiency unattended operation.
- A lot of power generation—variable pitch control, high-efficiency output, power generation up to 30%.



Product Showcase



The use of variable pitch technology has greatly improved the efficiency of wind turbine power generation. The graph of increased power is shown below:



- | | | |
|----------------------|-------------------------|-----------------|
| 1. Fly rod | 2. Blade flange cover | 3. Blade flange |
| 4. Blade fixed shaft | 5. Synchronous lever | 6. Sync disk |
| 7. Guide sleeve | 8. Speed control spring | 9. Round nuts |

Using the world's leading mechanical centrifugal variable pitch technology the average annual power generation is **30% more**.

Excellent

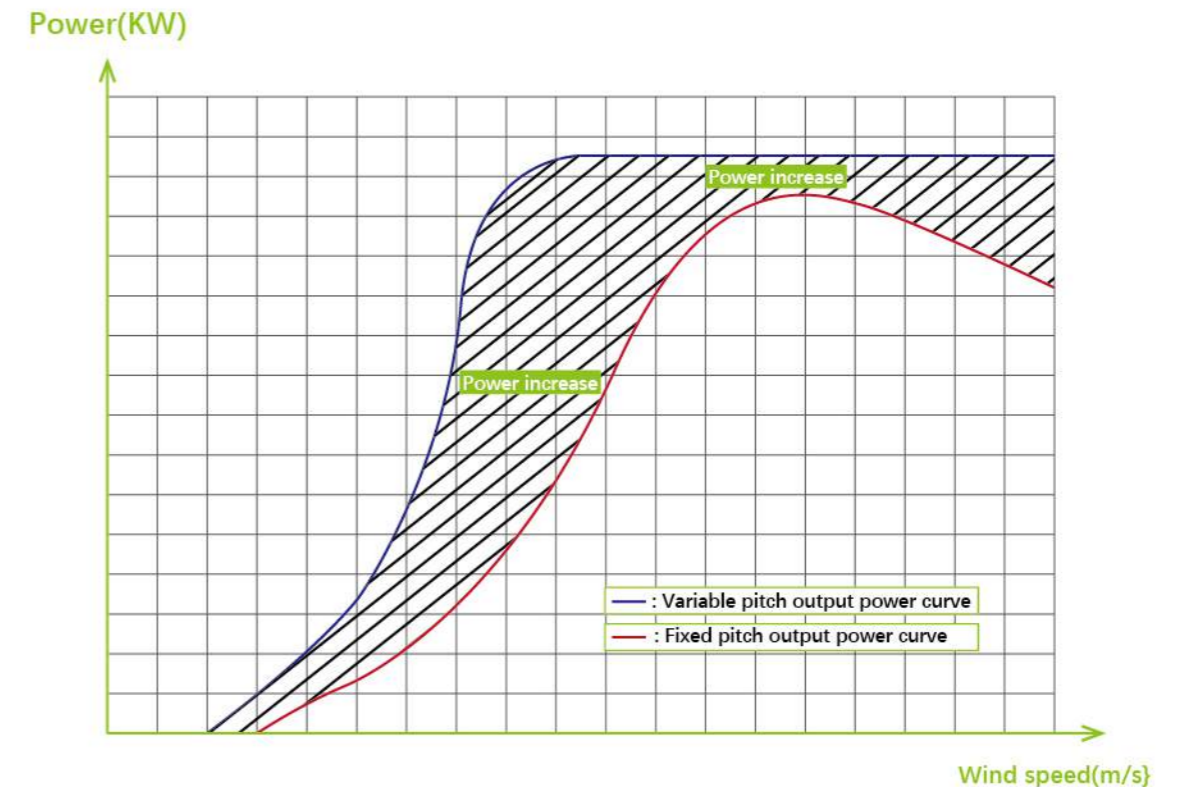
Large initial blade angle (+9°), excellent acceleration performance, start at low wind speed of 2.5m/s;

Efficiently

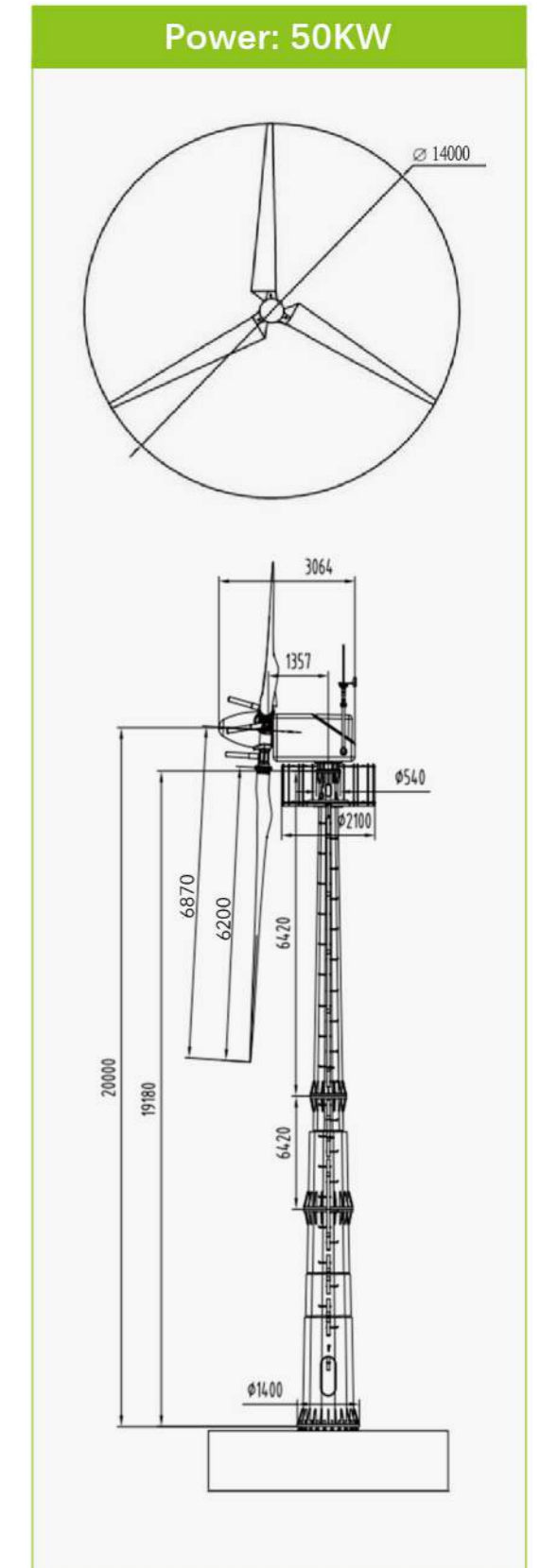
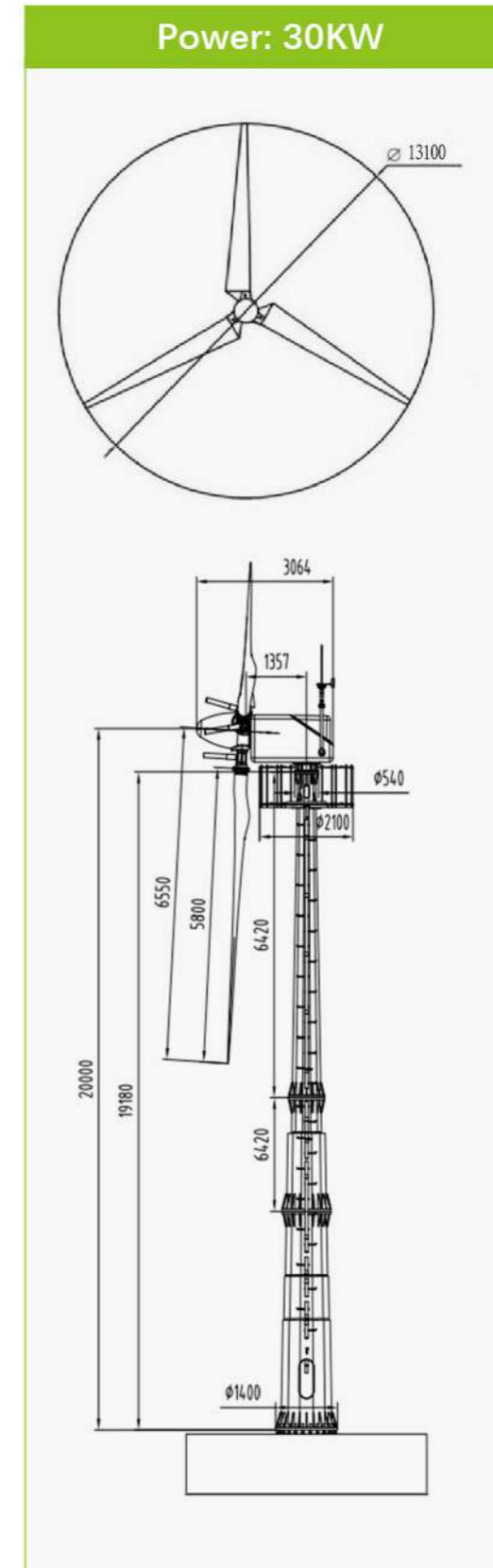
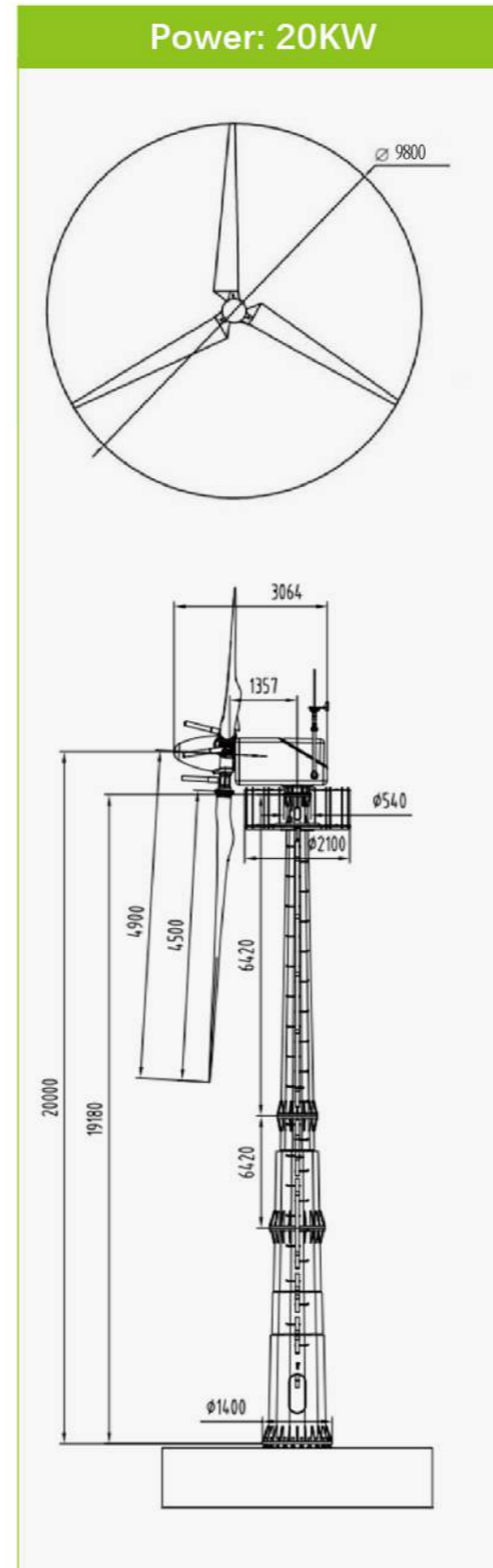
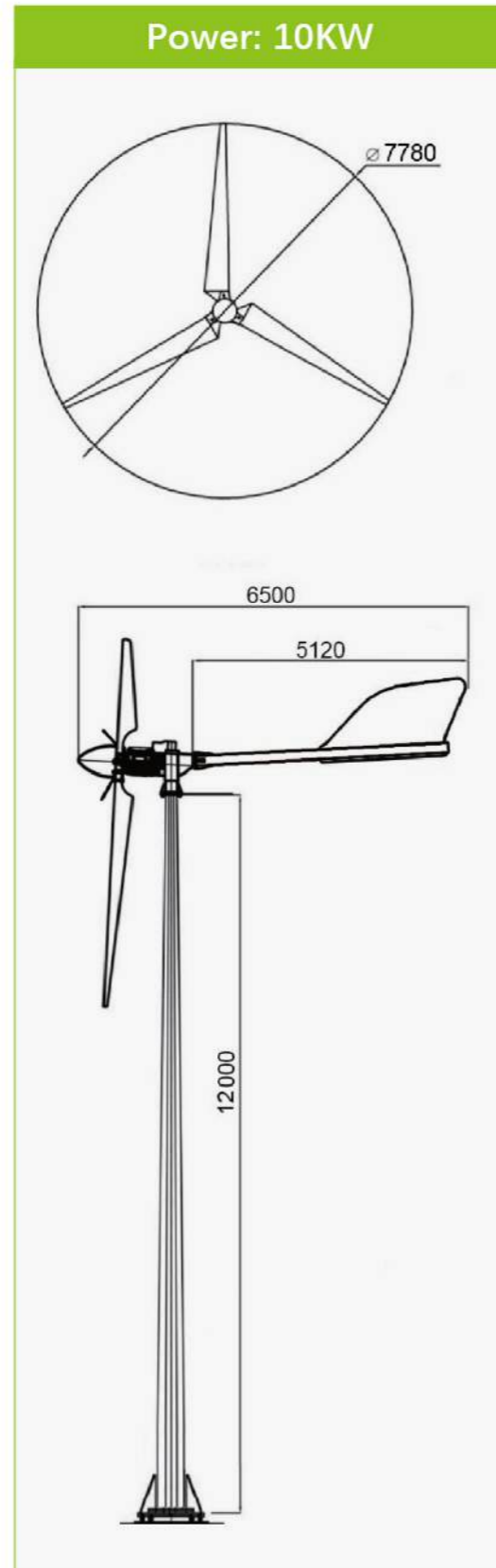
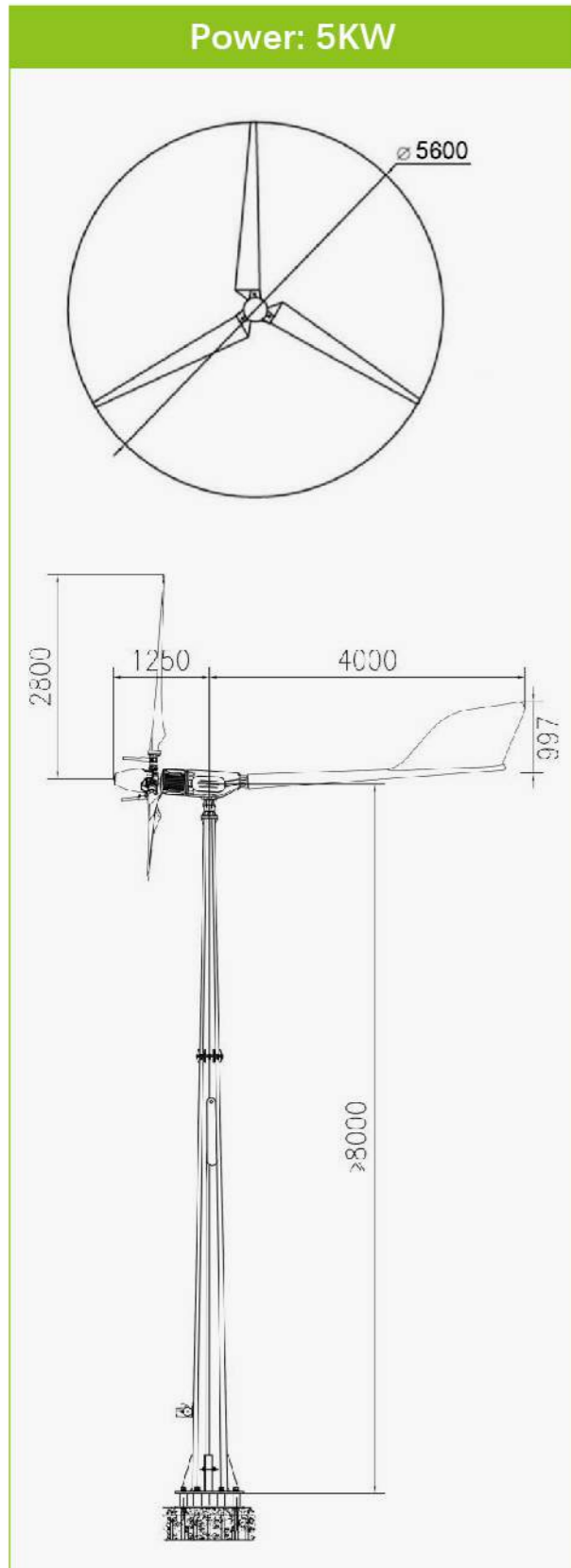
Below the rated wind speed, the wind turbine outputs efficiently;

Stable

Above the rated wind speed, adjust the pitch angle so that the rotor speed is maintained near the rated speed and the power output is stable.



Product Structure



MODEL: AH-5KW

HOT!



Model	AH-5KW	Swept Area	24m ²
Rated Power	5KW	Tower Height	≥8, Hot Dip Galvanized
Max Power	6KW	Generator Parameters	
Start Wind Speed	2.5M/S(5.59MPH)	Rated Speed	240RPM
Rated Wind Speed	10M/S(22.37MPH)	Rated Working Voltage	DC400V/DC240V
Working Wind Speed	3-30M/S(6.71-67.2MPH)	Start Torque	<0.3N.M
Safety Wind Speed	60M/S(133.8MPH)	Generator Type	Three-phase Permanent AC Magnet Generator
Physical Parameters		Wind Answering Method	Up Wind+yawing
Blades Length	2.5M(8.2FT)	Stop Method	Pitch Brake+Active Yaw
Blades Rotor Diameter	5.6M(18.37FT)	Speed Mode	Pitch+Active Yaw+Electromagnetic Brake
Blades Material&quantity	FRP/3PCS	Protection Grade	IP54
Mill Weight	400KG	Working Temperature	-20- +50°C

MODEL: AH-10KW



Model	AH-10KW	Swept Area	47.5m ²
Performance		Tower Height	≥12, Hot Dip Galvanized
Rated Power	10KW	Generator Parameters	
Max Power	12KW	Rated Speed	180RPM
Start Wind Speed	2.5M/S(5.59MPH)	Rated Working Voltage	DC400V
Rated Wind Speed	10M/S(22.37MPH)	Start Torque	<0.3N.M
Working Wind Speed	3-30M/S(6.71-67.2MPH)	Generator Type	Three-phase Permanent AC Magnet Generator
Safety Wind Speed	60M/S(133.8MPH)	Wind Answering Method	Up Wind+yawing
Physical Parameters		Stop Method	Pitch Brake+Active Yaw
Blades Length	3.6M(11.8FT)	Speed Mode	Pitch+Active Yaw+Electromagnetic Brake
Blades Rotor Diameter	7.78M(25.2FT)	Protection Grade	IP54
Blades Material&quantity	FRP/3PCS	Working Temperature	-20- +50°C
Mill Weight	550KG	Life Time	20Years

MODEL: AH-20KW



Model	AH-20KW	Swept Area	75.39m ²
Performance		Tower Height	≥20, HOT DIP GALVANIZED
Rated Power	20KW	Generator Parameters	
Max Power	22KW	Rated Speed	175RPM
Start Wind Speed	2.5M/S(5.59MPH)	Rated Working Voltage	DC280V/DC450V
Rated Wind Speed	10M/S(22.37MPH)	Start Torque	<0.3N.M
Working Wind Speed	3-30M/S(6.71-67.2MPH)	Generator Type	Three-phase AC Permanent Magnet Generator
Safety Wind Speed	60M/S(133.8MPH)	Wind Answering Method	Up Wind+Yawing
Physical Parameters		Stop Method	Pitch Brake+Active Yaw
Blades Length	4.5M(14.8FT)	Speed Mode	Pitch+Active Yaw+Electromagnetic Brake
Blades Rotor Diameter	9.8M(32.1FT)	Protection Grade	IP54
Blades Material&quantity	FRP/3PCS	Working Temperature	-20- +50°C
Mill Weight	1210KG	Life Time	20Years

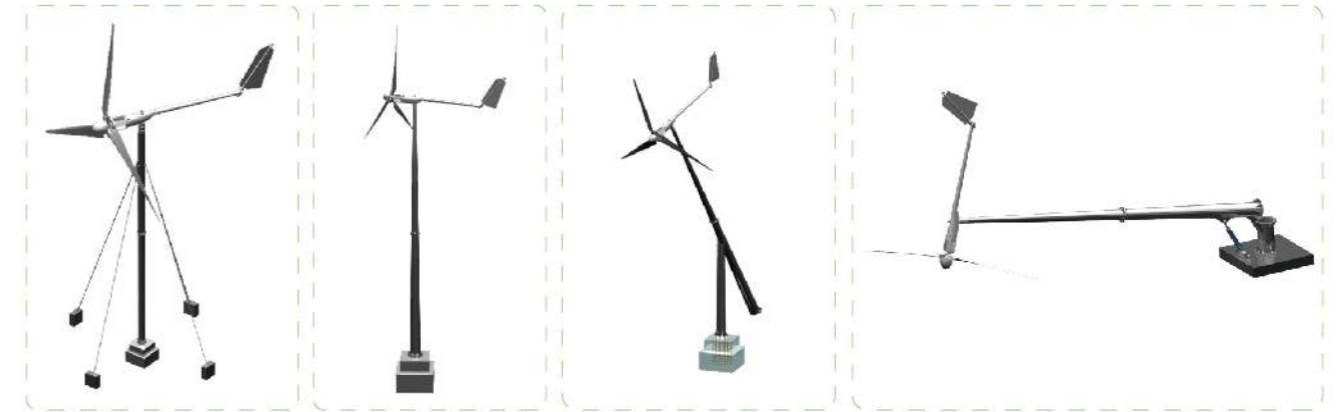
MODEL: AH-30KW



Model	AH-30KW	Swept Area	132m ²
Performance		Tower Height	≥20, Hot Dip Galvanized
Rated Power	30KW	Generator Parameters	
Max Power	34KW	Rated Speed	105RPM
Start Wind Speed	2.5M/S(5.59MPH)	Rated Voltage	400VAC
Rated Wind Speed	10M/S(22.37MPH)	Start Torque	<0.3N.M
Working Wind Speed	3-30M/S(6.71-67.2MPH)	Speed Regulation Method	Auto Yawing+Pitch-controlled
Safety Wind Speed	60M/S(133.8MPH)	Wind Answering Method	Up Wind+Yawing
Physical Parameters		Stop Method	Auto Brake
Blades Length	5.8M(19.02FT)	Gale protection	Smart Control+Unattended
Blades Rotor Diameter	13.1M(42.97FT)	Protection Grade	IP54
Blades Material&quantity	FRP/3PCS	Working Temperature	-20- +50°C
Mill Weight	2800KG	Life Time	20Years

MODEL: AH-50KW

Tower



Guy Wire Tower

Free Stand Tower

Folding Tower

Hydraulic Tower

Blades



Model	AH-50KW	Swept Area	148.2m ²
Performance		Tower Height	≥20, HOT DIP GALVANIZED
Rated Power	50KW	Generator Parameters	
Max Power	55KW	Rated Speed	105RPM
Start Wind Speed	2.5M/S(5.59MPH)	Rated Working Voltage	400Vac
Rated Wind Speed	12M/S(31.32MPH)	Start Torque	<0.3N.M
Working Wind Speed	3-30M/S(6.71-67.2MPH)	Generator Type	Three-phase AC Permanent Magnet Generator
Safety Wind Speed	60M/S(133.8MPH)	Wind Answering Method	Up Wind+Yawing
Physical Parameters		Stop Method	Pitch Brake+Active Yaw
Blades Length	6.2M(20.34FT)	Speed Mode	Pitch+Active Yaw+Electromagnetic Brake
Blades Rotor Diameter	14M(45.93FT)	Protection Grade	IP54
Blades Material&quantity	FRP/3PCS	Working Temperature	-20- +50℃
Mill Weight	3000KG	Life Time	20Years



OFF-GRID SYSTEM

Independent operation without relying on public power grid

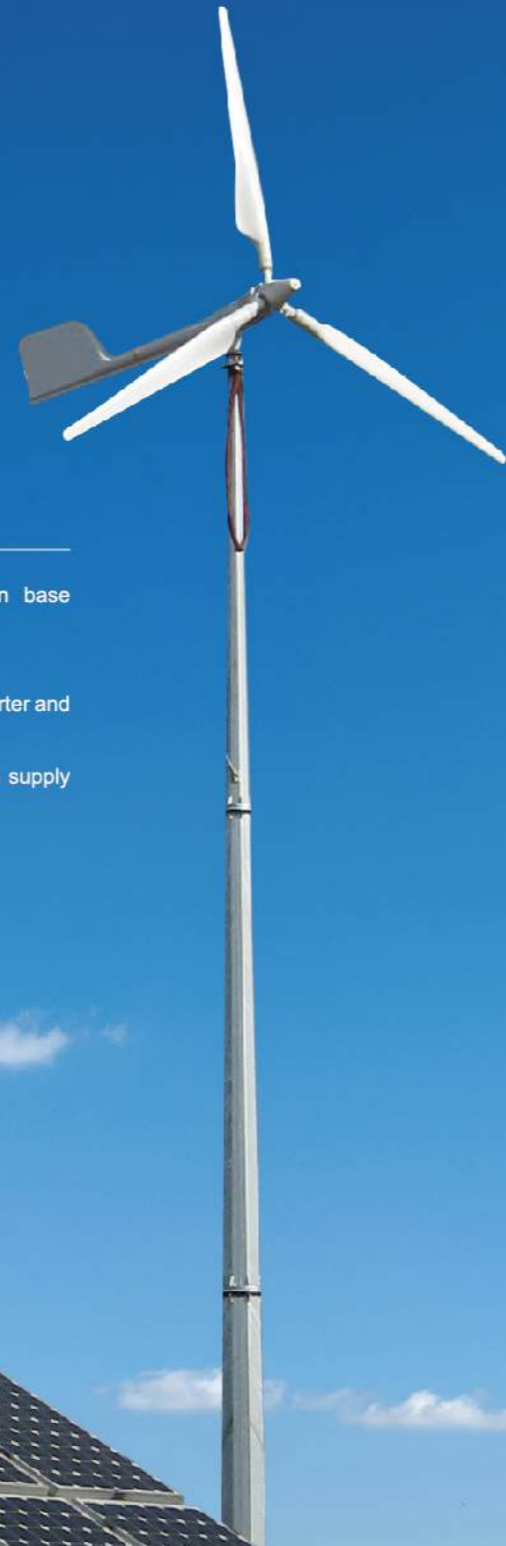
Applications

Remote mountainous areas, powerless areas, islands, communication base stations, street lights, etc.

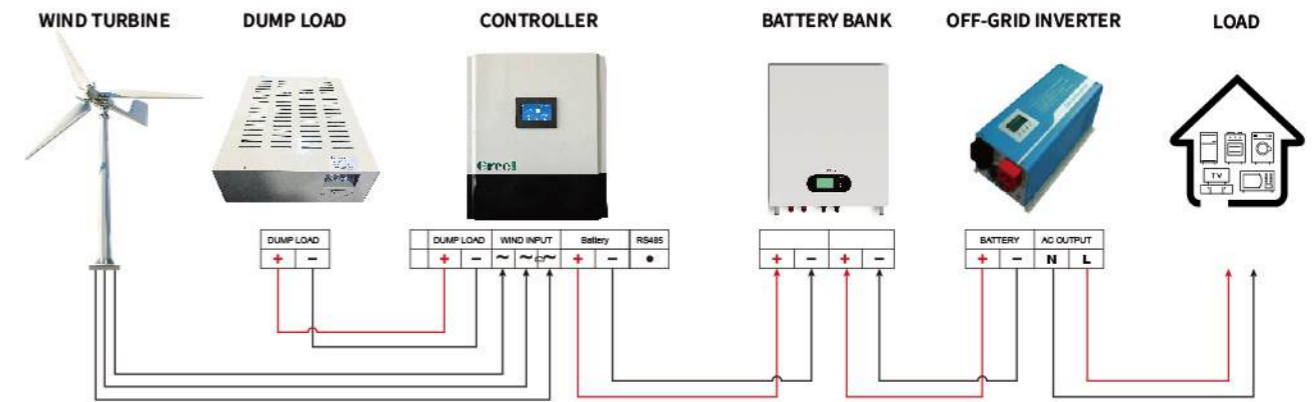
Working Process

When there is sunshine and wind, power is supplied to the load through inverter and the battery is charged at the same time;

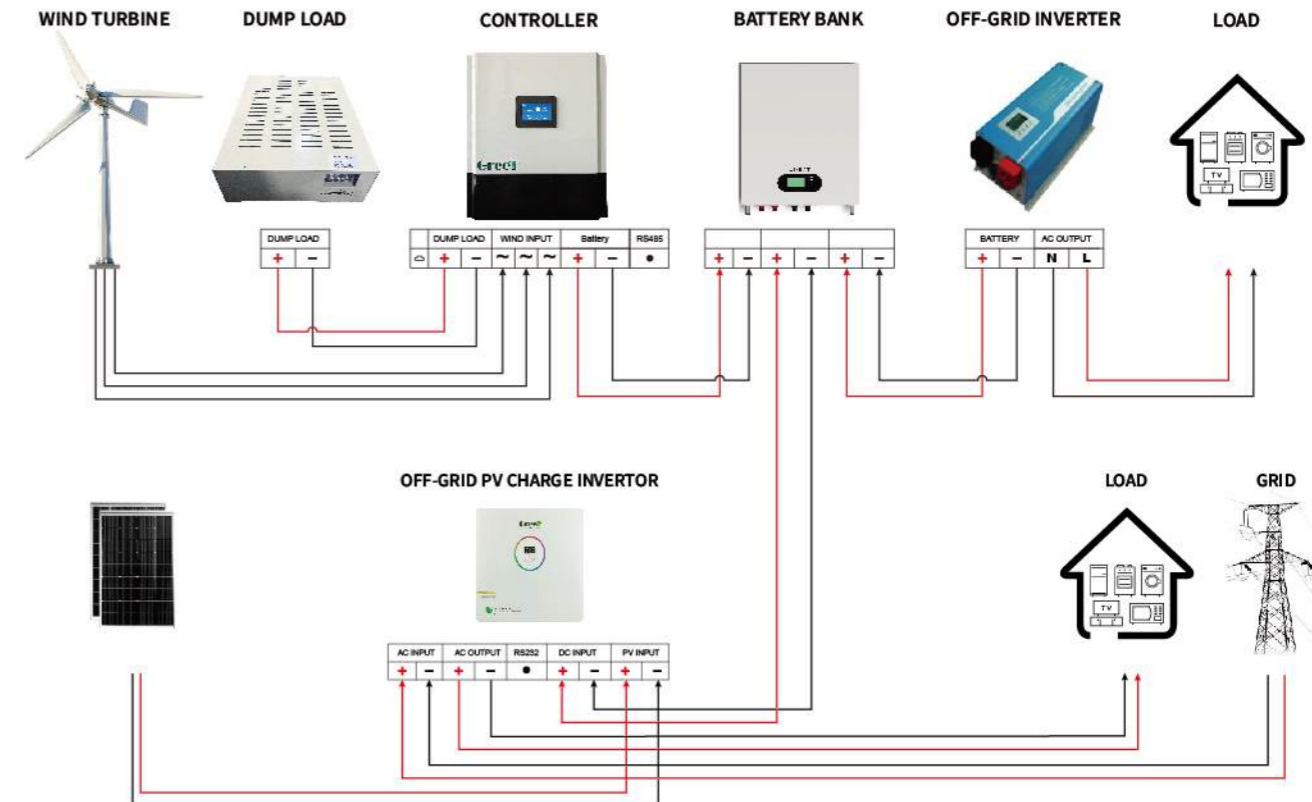
When there is no sunshine and wind, the battery controls the inverter to supply power to the load.



Off-grid Wind Turbine System



Off-grid Solar Wind Turbine System





Grid-connected system

On-grid Operation

It is a system that utilizes wind power generation or solar power generation to transmit the generated electricity to the local power grid in order to receive the grid sale revenue and to offset the electricity bill.

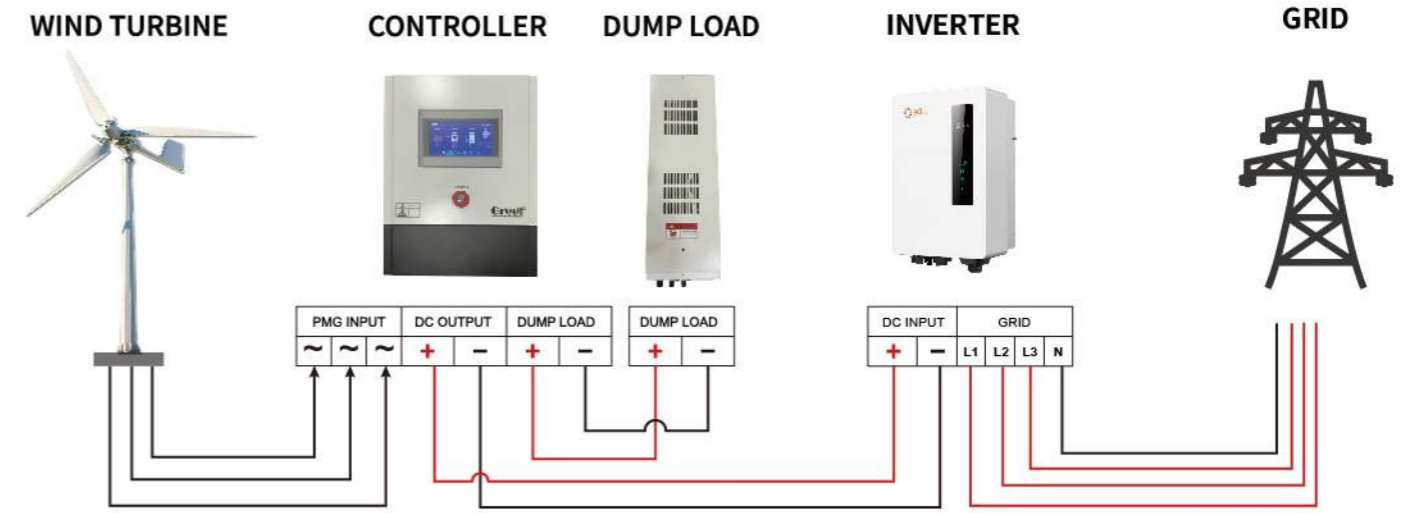
The system is widely used in project areas such as family farm island business investment.

Conditions of use

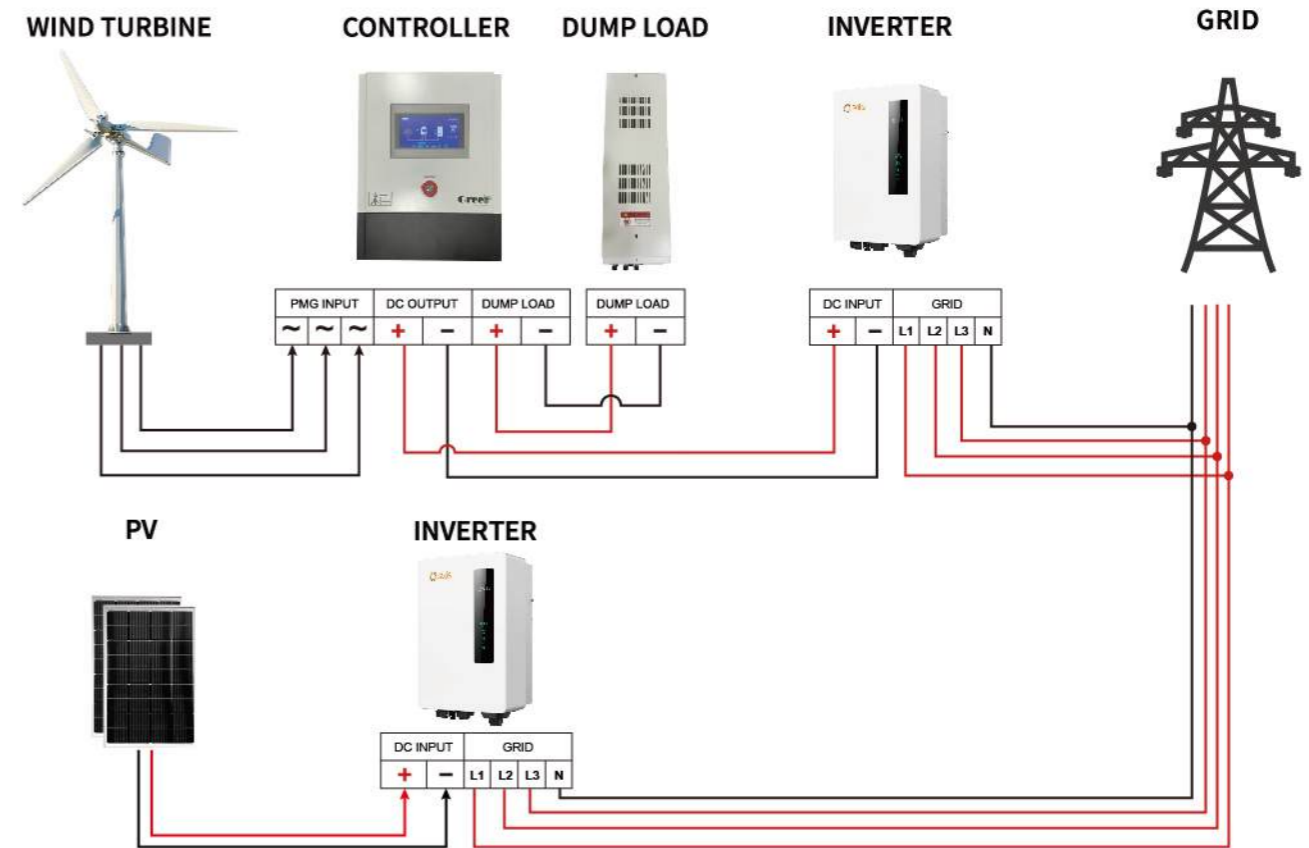
The power grid must be stable, and the system will be automatically disconnected if the power grid is disconnected.



On-grid Wind Turbine System



On-grid Solar System





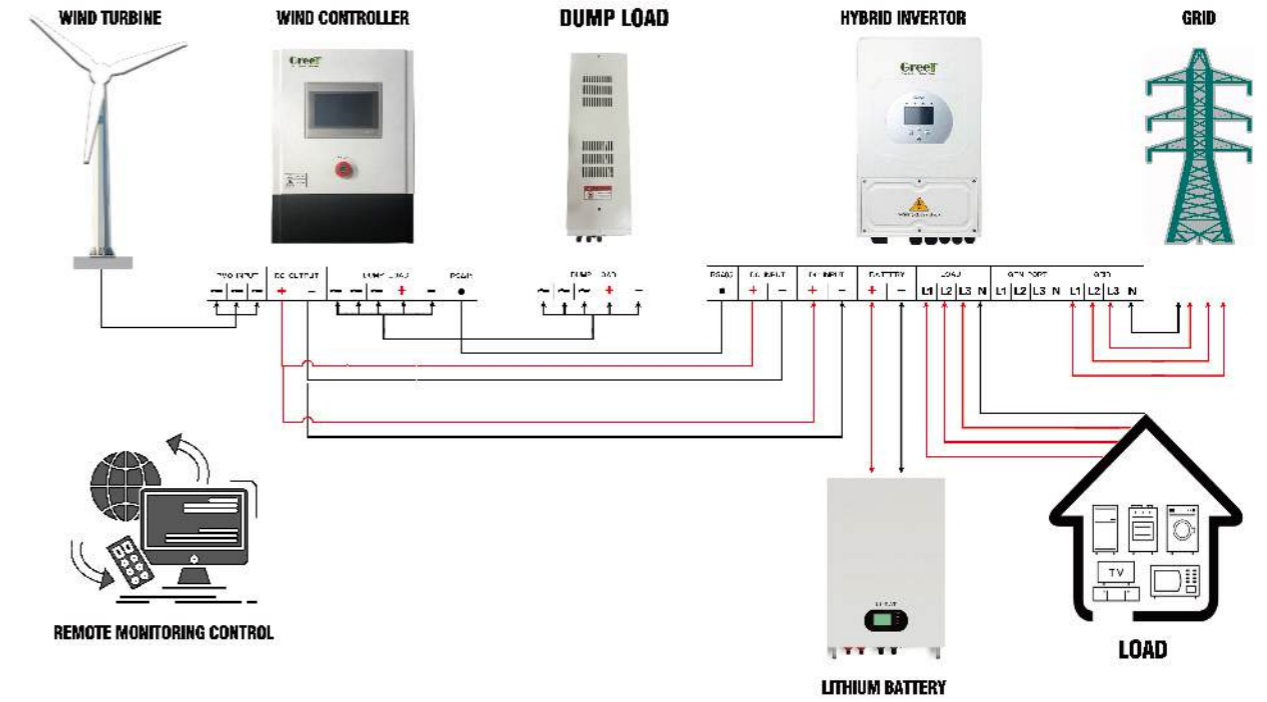
Hybrid system

Off-grid&On-grid hybrid

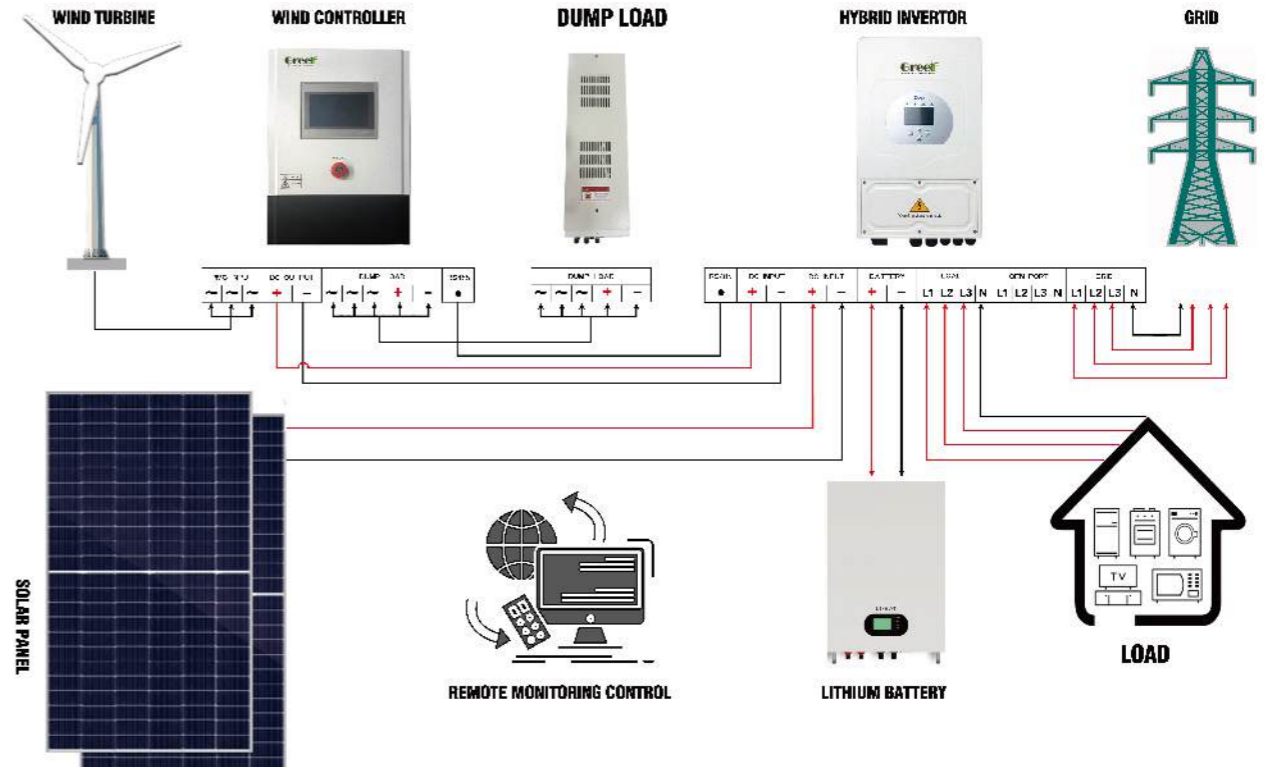
Converts decentralised energy into electricity for local loads in the vicinity
 With perfect energy management system, it can realise
 Grid-connected operation; off-grid operation;
 Grid-connected to islanded; islanded to grid-connected;
 Black start function, flatten the fluctuation of power grid, peak shaving and valley
 filling
 Grid-friendly relationship, etc.



Hybrid Wind Solar Solution



Hybrid Solar Wind Solution



Product Showcase



GREEF WIND TRACKER CONTROLLER

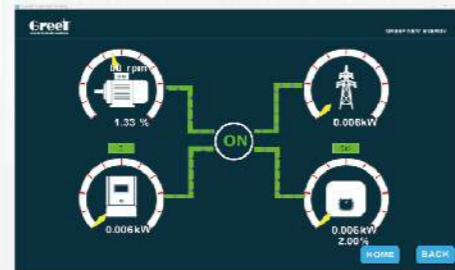
Product Overview



Grid-Tied Controller is technologically the most important component in wind generator on-grid systems, which convert Three AC current from wind turbine into DC current then send to the grid-tie inverter.

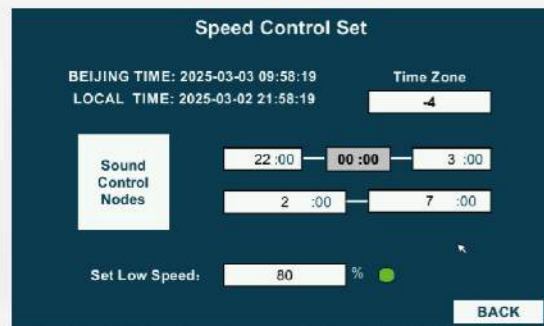
GT-PCTC series wind professional grid-tied controller which have Double safety control systems: PWM constant voltage system and three-phase dump load brake system, This innovative solution also interfaces with solar inverters from brands like Growatt, Deye, Solis, and Ivet, enabling solar inverters to adapt to wind turbine operating conditions.

LCD Touch Screen



- Power curve control function
Speed vs Power
- Monitoring of Wind Speed,
Wind Turbine Speed
- Braking Systems
PMW & Dump Load & Manual

Remote Control



- Supports remote monitoring on
PC & APP
- Communication with
Solar Inverter
- Noise period** control function



HYBRID CONVERTOR

- EMS smart energy management system
- Multiple configurable operating modes: off-grid, grid-tied, and grid charging
- Double LCD smart touch Screen Display
- Generator power curve tracking technology
- AC/DC dual backup for auxiliary power supply
- Control Technology for Unbalanced Loads
- Standard RS 485 modbus RTU protocol
- PMW dump load over voltage over speed protection function (optional)
- Water gate motor control function (optional)
- WIFI/ LAN Remote monitoring and control app available (optional)
- Support customized sensor control function (optional)
- Support add Static Transfer Switch (STS) for Grid-Tie/Off-Grid Applications (optional)

Product Overview

GREEF ENERGY Hydro Grid-tied Converter integrates the capabilities of AC-to-DC rectification for Permanent Magnet (PM) generators, DC-to-AC inversion, and an intelligent energy management system. Equipped with a configurable dual LCD touchscreen, it utilizes advanced converter technology to control output power in real-time based on turbine rotational speed, achieving precise voltage/frequency regulation for Permanent Magnet Synchronous Generators (PMSGs).

The system now incorporates an intelligent water gate control function and integrates multiple sensors (including water level, flow, pressure, etc.) to establish a comprehensive safety control system, ensuring secure and stable operation. For grid connection, it supports direct grid-tied operation, enabling grid charging and energy feedback functionalities.

Technical Specifications

Rated power(kW)	100/125/150/200/250/300/500/600/700/800/1000
Optimal generator rated voltage(Vac)	400/450
Input voltage range	180V -550Vac
Rated grid voltage(V)	400
Permissible grid voltage range(v)	300-460
Rated grid frequency(Hz)	50/60
Power factor	> 0.99
Power factor range	-1~1
Protection level	IP54
Display	LCD SMART Touch Screen
Communication mode	Ethernet, RS485, WIFI



Waterproof Container



After-sales Service

Thank you for choosing "GREEF" new energy products. We always provide a comprehensive range of services before, during and aftersales. "GREEF NEW ENERGY guarantee as follows:

I. Warranty period:

Pitch Control Wind Turbine is Three years warranty.

OFF-GRID controller & inverter & converter is Two years warranty.

ON-GRID Wind inverter is Two years warranty.

Battery is Four years warranty.

(1) The warranty period is start from the date of on the guarantee card.

(2) During the warranty period, the cost of maintenance services caused by our product's quality problems, be borne by our company, do not charge a fee from customers; if any maintenance outside the warranty period, our company will charge a fee from customers.

(3) During the warranty period, the freight of maintenance service caused by our product's quality problems, be borne by our company, do not charge a fee from customers; if not under warranty or not quality problem, all the freight charges by the customer.

II. Warranty:

We will provide the approved products for all customers to provide maintenance services. But in order to enable the two sides can enjoy fair Treatment, for the following reasons for failure or damage, we will not provide free warranty.

(1) When beyond the warranty period;

(2) Disasters, leaving damage to the product caused by accident;

(3) The user-transport, carrying, falling, collision and damage caused by the failure;

(4) The product as user-modification, and other failures caused by improper use and damage;

(5) The users' un-normally operation, like test with other equipment, and caused by the failure;

(6) Customer open and repair device without our guide and cause damage.

III. Maintenance services implementation:

(1) If your machine meet any problems, please take photos and videos send to our service department and explain the details of the problems. or send to the sales which you contact before.

(2) Our engineers will check the problem, and give you suggestion to solve the problem. Most of the small problem can be solved after engineer guide.

(3) If we find that any parts need to be replacement, we will send the parts to customers. Quality problem we afford all the charge within warranty period.

(4) If a major problem in our products, we will send engineers to provide appropriate support.

IV. Fees:

During the After-sale process, if we need charge fee form customers, the fees = replacement parts + technical service fees + freight + labor costs, we will provide timely material Price (cost).

