Sales sales@greefenergy.com
+86-1986146 5785 +86-532-67731422

After Sales service@greefenergy.com
Mobile:+86-15166057722

www.greefenergy.com | greefenergy.en.alibaba.com | qd-greef.en.made-in-china.com

Global Marketing Center: No. 6 Changcheng South Road, Chengyang District, Qingdao City, Shandong Province, China.
Factory: No.2 Aoshanwei Street Industial Park, Jimo District, Shandong Province, China

GreeF

POWER THE WORLD WITH GREEN ENERGY

PRODUCT BROCHURES

VERTICAL AXIS WIND TURBINE

山东格林风新能源科技有限公司 SHANDONG GREEF NEW ENERGY TECHNOLOGY CO., LTD.

青岛格林风新能源设备有限公司 QINGDAO GREEF NEW ENERGY EQUIPMENT CO., LTD.

Company Introduction

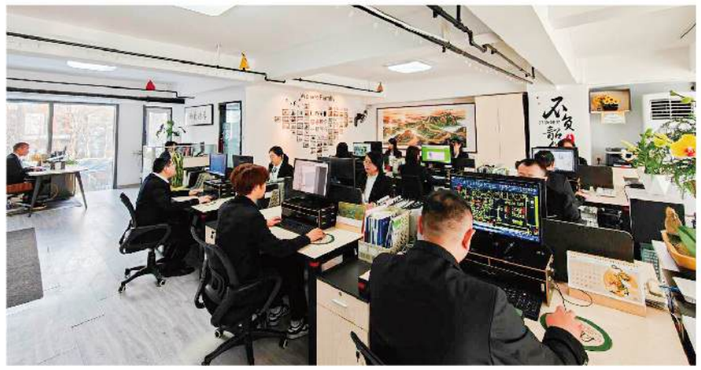
GREEF NEW ENERGY is global supplier which focus on Wind, Solar and Hydro generation system solution .

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 control-lers .

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 render-ings, 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 approv-als 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

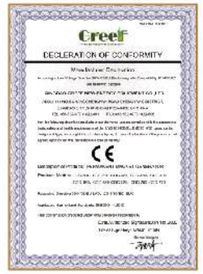
- Bureau, SGS, TUV Verified Supplier
- Top 3 suppliers of generators products with all 5-star on Alibaba.com
- Products quality and on time delivery are guaranteed by Alibaba.com
- 11 years' experience engineer & QC team
- Focus on after-sales service
- One-stop customized system solution
- Trade experience with more than 60 countries
- CE, RoHS certificated
- OEM,ODM are accepted











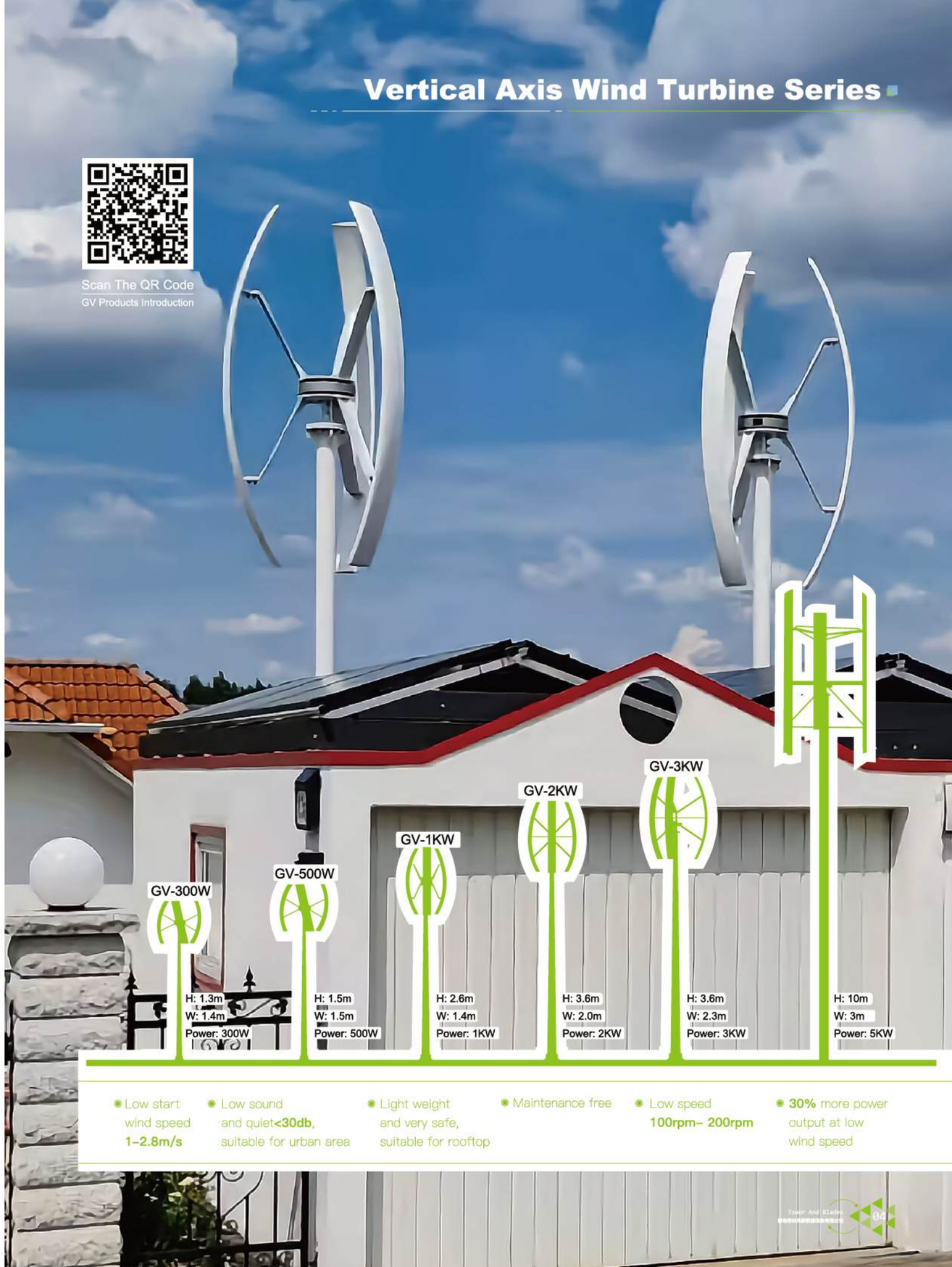






Vertical Axis Wind Turbine Series

Scan The QR Code
GV Products Introduction



- Low start wind speed **1-2.8m/s**
- Low sound and quiet**<30db**, suitable for urban area
- Light weight and very safe, suitable for rooftop
- Maintenance free
- Low speed **100rpm- 200rpm**
- **30%** more power output at low wind speed

MODEL: GV-300W/500W

Model	GV-300W	GV-500W
Performance		
Rated Power	300W	500W
Max Power	400W	650W
Start Wind Speed	1M/S(2.24MPH)	1M/S(2.24MPH)
Rated Wind Speed	10M/S(22.4MPH)	10M/S(22.4MPH)
Working Wind Speed	1-25M/S (2.24-56MPH)	1-25M/S (2.24-56MPH)
Safety Wind Speed	50M/S(112MPH)	50M/S(112MPH)
Physical Parameters		
Blades Length	1.3M(4.264FT)	1.5M(4.92FT)
Blades Rotor Diameter	1.4M(4.592FT)	1.5M(4.92FT)
Blades Material&quantity	FRP/3PCS	FRP/3PCS
Mill Weight	50KG	64KG
Swept Area	1.82㎡	2.25㎡
Tower Height	6m(19.68ft)	6m(19.68ft)
Generator Parameters		
Generator Type	Axial Flux Coreless Outer Rotor Disc Permanent Magnet Direct Drive Generator	Axial Flux Coreless Outer Rotor Disc Permanent Magnet Direct Drive Generator
Rated Speed	200RPM	200RPM
Start Torque	<0.1N.M	<0.1N.M
Option Voltage	12-24V	12-24V
Protection Method	Electromagnetic Brake+PWM	Electromagnetic Brake+PWM
Protection Grade	IP54	IP54
Working Temperature	-40- +50℃	-40- +50℃
Life Time	20Years	20Years

MODEL: GV-1KW

Model	GV-1KW
Performance	
Rated Power	1kW
Max Power	1.5kW
Start Wind Speed	2.8M/S(6.27MPH)
Rated Wind Speed	11M/S(24.64MPH)
Working Wind Speed	3-25M/S(6.72-56MPH)
Safety Wind Speed	50M/S(112MPH)
Physical Parameters	
Blades Length	2.65M(8.69FT)
Blades Rotor Diameter	1.4M(4.6FT)
Blades Material&quantity	FRP/3PCS
Mill Weight	175KG
Swept Area	3.71㎡
Tower Height	6m(19.68ft)
Generator Parameters	
Generator Type	Axial Flux Coreless Outer Rotor Disc Permanent Magnet Direct Drive Generator
Rated Speed	150RPM
Start Torque	<0.3N.M
Option Voltage	24-220V
Protection Method	Electromagnetic Brake+PWM
Protection Grade	IP54
Working Temperature	-40- +50℃
Life Time	20Years

MODEL: GV-2KW

Model	GV-2KW
Performance	
Rated Power	2kW
Max Power	2.5kW
Start Wind Speed	2.8M/S(6.27MPH)
Rated Wind Speed	11M/S(24.64MPH)
Working Wind Speed	3-25M/S(6.72-56MPH)
Safety Wind Speed	50M/S(112MPH)
Physical Parameters	
Blades Length	3.65M(11.97FT)
Blades Rotor Diameter	2.3M(7.54FT)
Blades Material&quantity	FRP/3PCS

Mill Weight	285KG
Swept Area	8.395㎡
Tower Height	6m(19.68ft)
Generator Parameters	
Generator Type	Axial Flux Coreless Outer Rotor Disc Permanent Magnet Direct Drive Generator
Rated Speed	160RPM
Start Torque	<0.3N.M
Option Voltage	24-380V
Protection Method	Electromagnetic Brake+PWM
Protection Grade	IP54
Working Temperature	-40- +50℃
Life Time	20Years

MODEL: GV-3KW

Model	GV-3KW
Performance	
Rated Power	3kW
Max Power	4kW
Start Wind Speed	2.8M/S(6.27MPH)
Rated Wind Speed	12M/S(26.88MPH)
Working Wind Speed	3-25M/S(6.72-56MPH)
Safety Wind Speed	50M/S(112MPH)
Physical Parameters	
Blades Length	3.65M(11.97FT)
Blades Rotor Diameter	2.3M(7.5FT)
Blades Material&quantity	FRP/3PCS

Mill Weight	300KG
Swept Area	8.1㎡
Tower Height	8m(26.24ft)
Generator Parameters	
Generator Type	Axial Flux Coreless Outer Rotor Disc Permanent Magnet Direct Drive Generator
Rated Speed	160RPM
Start Torque	<1N.M
Option Voltage	48-380V
Protection Method	Electromagnetic Brake+PWM
Protection Grade	IP54
Working Temperature	-40-50℃
Life Time	20Years

MODEL: GVH-5KW

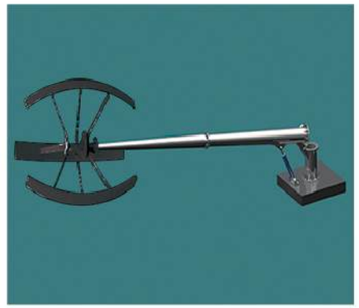
Model	GVH-5KW	Mill Weight	670kg
Performance		Swept Area	13.5㎡
Rated Power	5kW	Tower Height	10m
Max Power	5.5kW	**Generator Parameters**	
Start Wind Speed	2.5m/s(6.27mph)	Generator Type	Axial Flux Coreless outer rotor disc permanent magnet direct drive generator
Rated Wind Speed	11m/s(24.64mph)	Rated Speed	100RPM
Working Wind Speed	3-25m/s (6.72-56 mph)	Start Torque	<1N.M
Safety Wind Speed	50m/s(112mph)	Option Voltage	48-500V
Physical Parameters		Protection Method	Electromagnetic Brake +PWM
Blades Length	4.5M(19.68ft)	Protection Grade	IP54
Blades Rotor Diameter	3M(13.12ft)	Working Temperature	-40- +50℃
Blades Material&quantity	Aluminium Alloy /3PCS	Life Time	20 Years

Tower

Guy Wire Tower

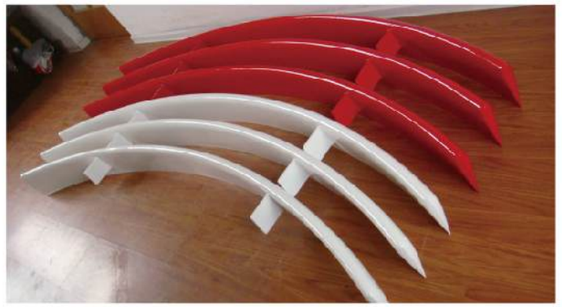
Free Stand Tower

Folding Tower



Hydraulic Tower

Blades



OFF-GRID SYSTEM

Independent operation without relying on public power grid

Applications

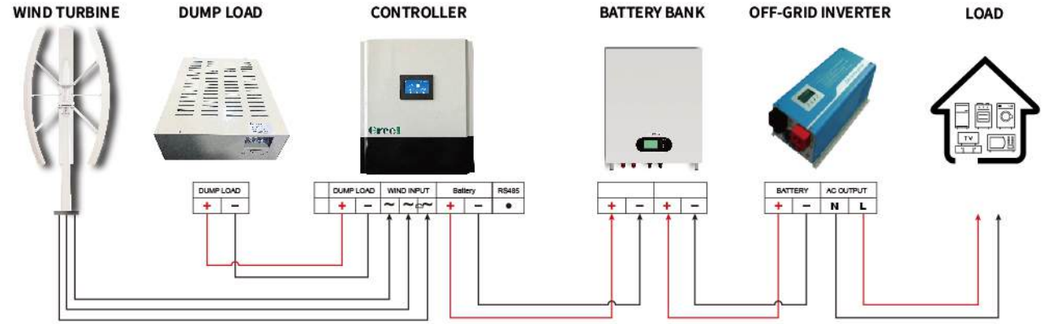
Remote mountainous areas, powerless areas, islands, communication base stations, street lights, etc.

Working Process

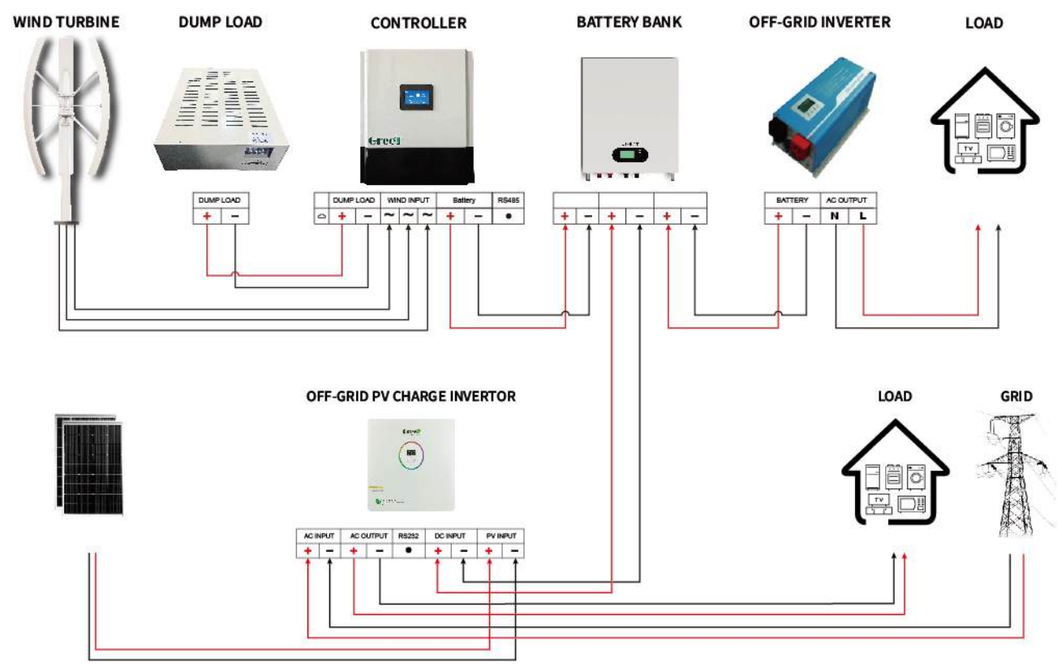
When there is sunshine and wind, power is supplied to the load through inverter and the battery is charged at the same time;

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

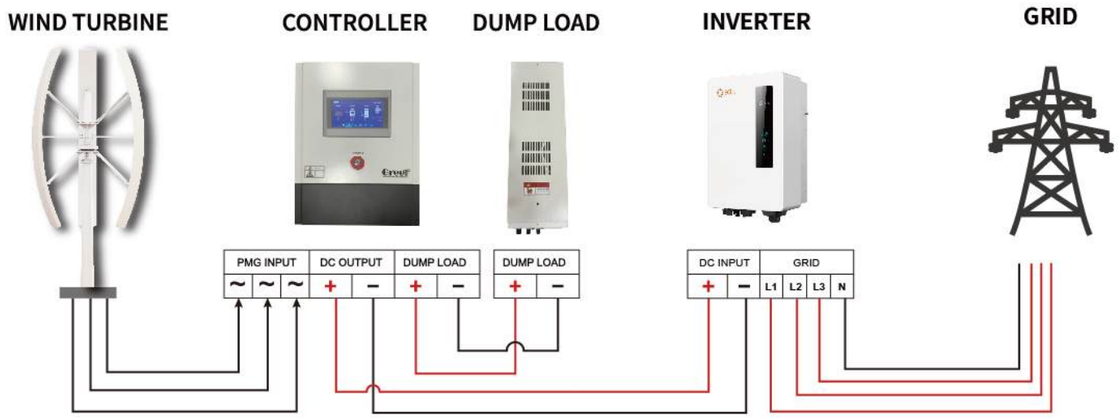
It is a system that utilizes wind power generation or solar power generation to transmit the generated electricity to the local power grid in order to receive the grid sale revenue and to offset the electricity bill.

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

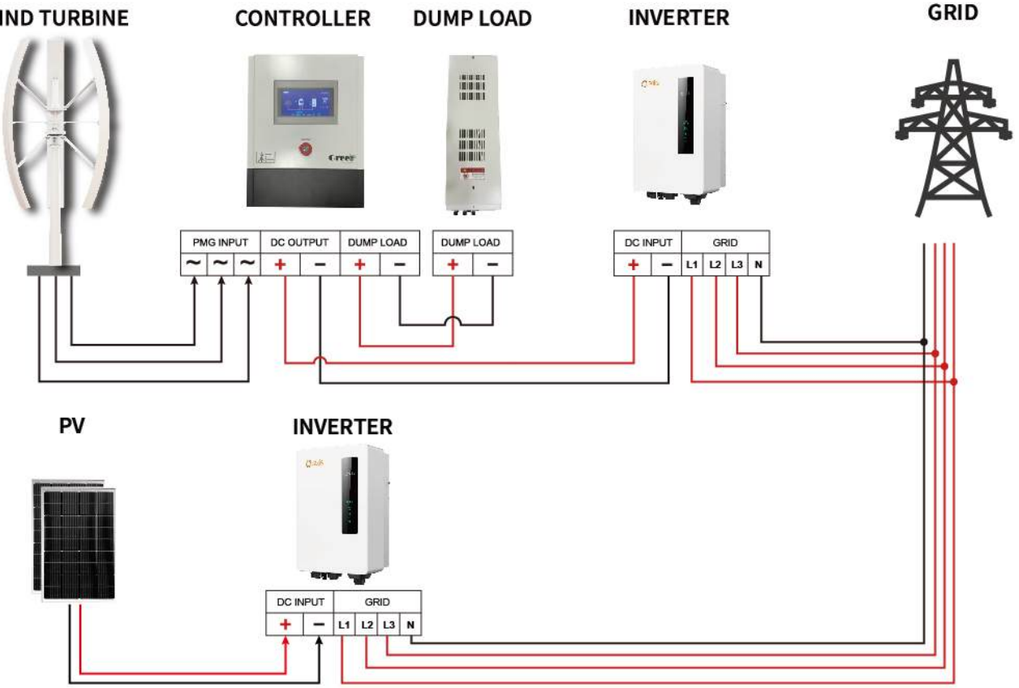
Conditions of use

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

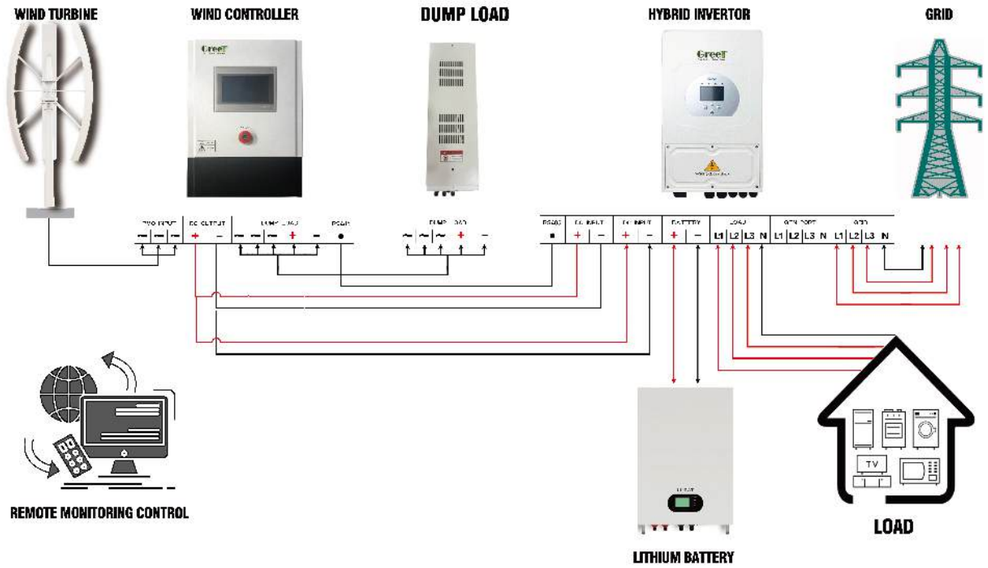
Grid-connected operation; off-grid operation;

Grid-connected to islanded; islanded to grid-connected;

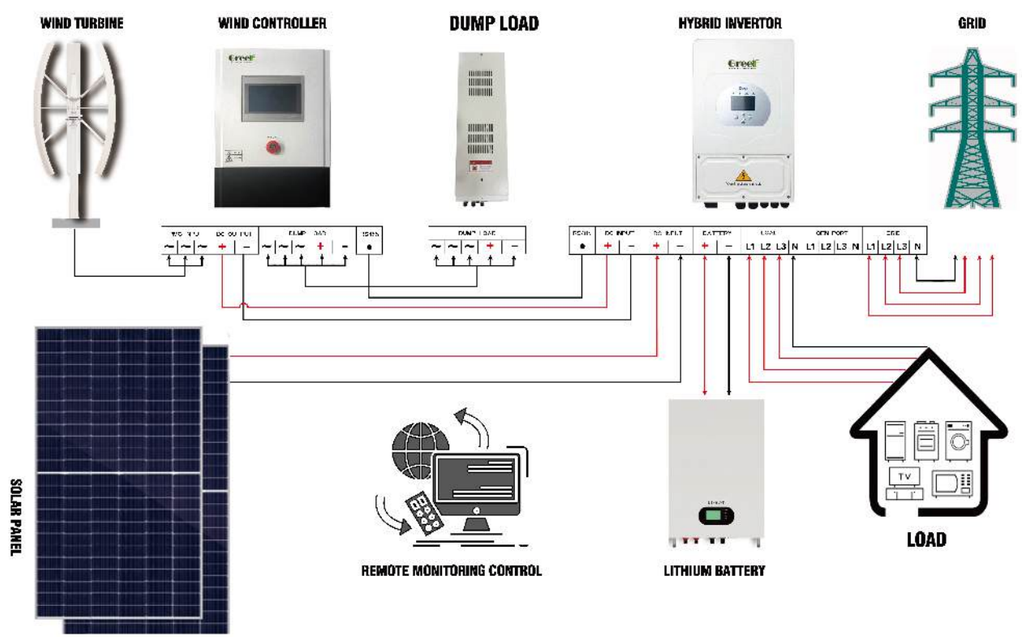
Black start function, flatten the fluctuation of power grid, peak shaving and valley filling

Grid-friendly relationship, etc.

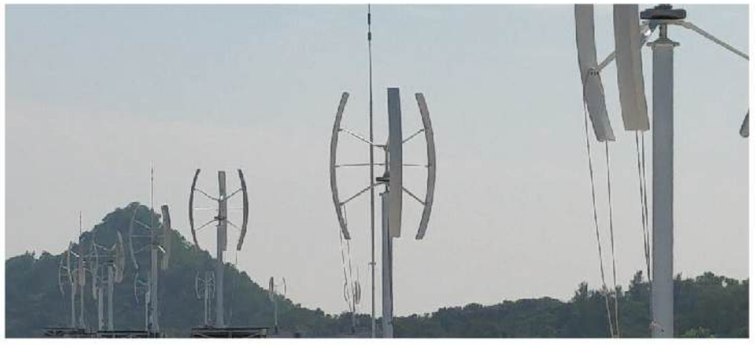
Hybrid Wind Solar Solution



Hybrid Solar Wind Solution



Product Showcase



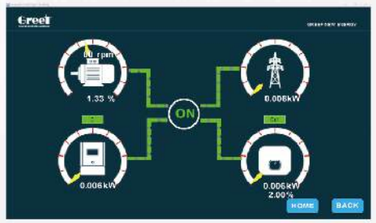
GREEF WIND TRACKER CONTROLLER

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 invertor.

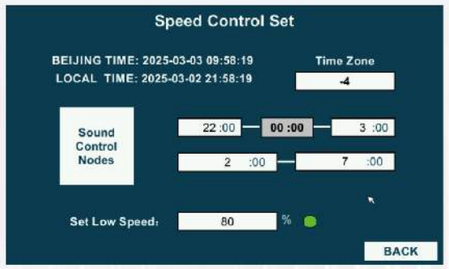
GT-PCTC series wind professional grid-tied controller which have Double safety control systems: PWM constant voltage system and three-phase dump load brake system, This innovative solution also interfaces with solar inverters from brands like Growatt, Deye, Solis, and Ivet, enabling solar inverters to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

LCD Touch Screen



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

Remote Control



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

Can work with following brand solar invertor:

GROWATT Deye solis invt

H Y B R I D 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
- Stardard RS 485 modbus RTU protocal
- 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	Ethemet, 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:

Vertical Axis Wind Turbine is Three years warranty.
OFF-GRID controller & invertor & convertor is Two years warranty.
ON-GRID Wind invertor 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).

NOTICE

To our valued clients and partners,

We would like to provide clear guidance regarding the application and performance characteristics of our vertical-axis wind turbine (VAWT) product line. While these units offer distinct aesthetic advantages, it is crucial to understand their technical limitations.

Primary Application: Decorative & Landscape Use

Our vertical-axis turbines are meticulously designed to serve as **architectural art pieces**—graceful spirals that dance with the wind, silent sentinels of sustainability, and modern sculptures that blend form with function. They are best suited for urban landscapes, public gardens, and commercial developments where visual appeal, silent operation, and artistic design are prioritized over energy production. They function effectively as kinetic sculptures that symbolize environmental awareness.

Critical Performance Note: Generation Capacity

It is a well-documented engineering fact that vertical-axis turbines suffer from **low aerodynamic efficiency** and lower starting torque compared to horizontal-axis designs. Consequently, the actual power generation of these units is often minimal and inconsistent. Therefore, **we do not warranty or guarantee the power generation** of these specific models. They are not intended to be primary or reliable sources of electricity.

Recommendation for Energy Projects

If your project requires a substantial and stable power supply, or if your primary metric for success is kilowatt-hour output, we strongly recommend that you select a **horizontal-axis wind turbine (HAWT)**. Horizontal-axis technology remains the industry standard for efficient energy harvesting and is the only viable choice for serious renewable energy generation.

We urge you to select the appropriate technology based on your project's specific goals.
Sincerely,

Qingdao Greef New Energy Equipment Co,ltd.

Wind Turbine Selection Guidelines

Core Selection Reference

Vertical-axis wind turbines: **Unique design, suitable for landscape display**

Can intuitively convey the concept of environmental protection and highlight the ecological attribute of the project

Core Demand Adaptation

If the goal is efficient, **stable power generation and realizing investment returns**

Horizontal-axis wind turbines are a mature solution verified by the global market

Principle Explanation

When vertical-axis wind turbines operate, nearly half of the blades move against the wind

Generate resistance rather than power, l**eading to low power generation efficiency**

Selection Conclusion

Landscape display/concept communication: Vertical-axis wind turbines are optional.

Power generation for **income/cost saving/stable returns**: Horizontal-axis wind turbines are the only economically feasible choice.

Our Commitment

Provide solutions that balance aesthetics and value.

Help achieve a win-win situation of ecological and economic benefits.