Eco-Friendly
1KW Spiral Wind Turbine

Jan. 2016

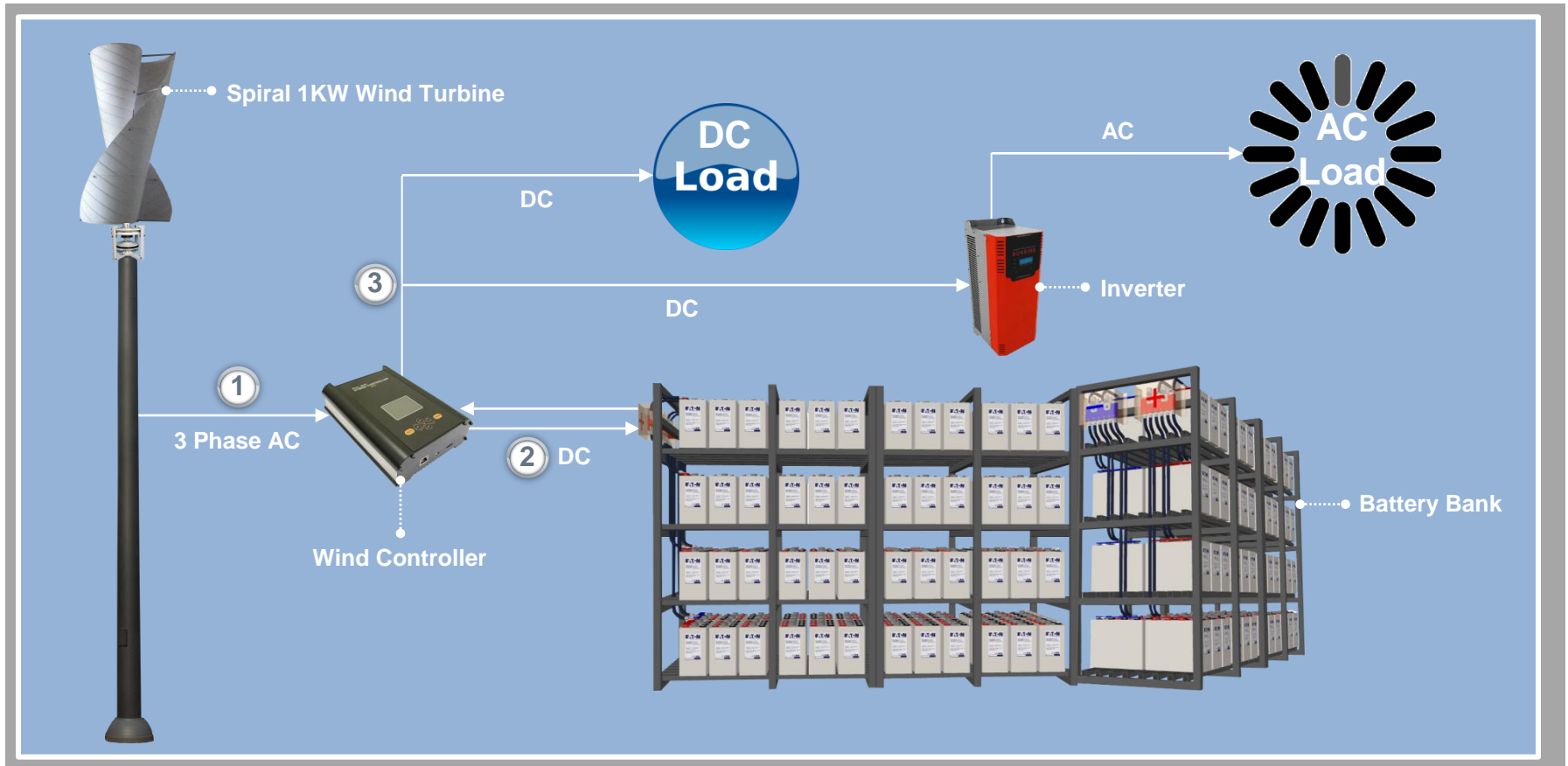# Contents

1KW Spiral Wind Turbine

I. Intro

In the world, various attempts are being tried to reduce the dependence of fossil fuel like oil and coal due to high fluctuation of their price. Furthermore, a diversity of alternative energy sources is being studied and developed to stop acceleration of Environmental Destruction caused by fossil fuel usage as well as to prevent emission of green-house gases. The nuclear energy which is one of alternative energy is useful but could be Extremely dangerous if not controlled properly, as showed in the case of Fukushima, Japan.

Now, GreenPowerCom Co., Ltd presents an eco-friendly Power System which takes advantage of infinite clean energy by Wind Power to provide development and propagation of future energy.
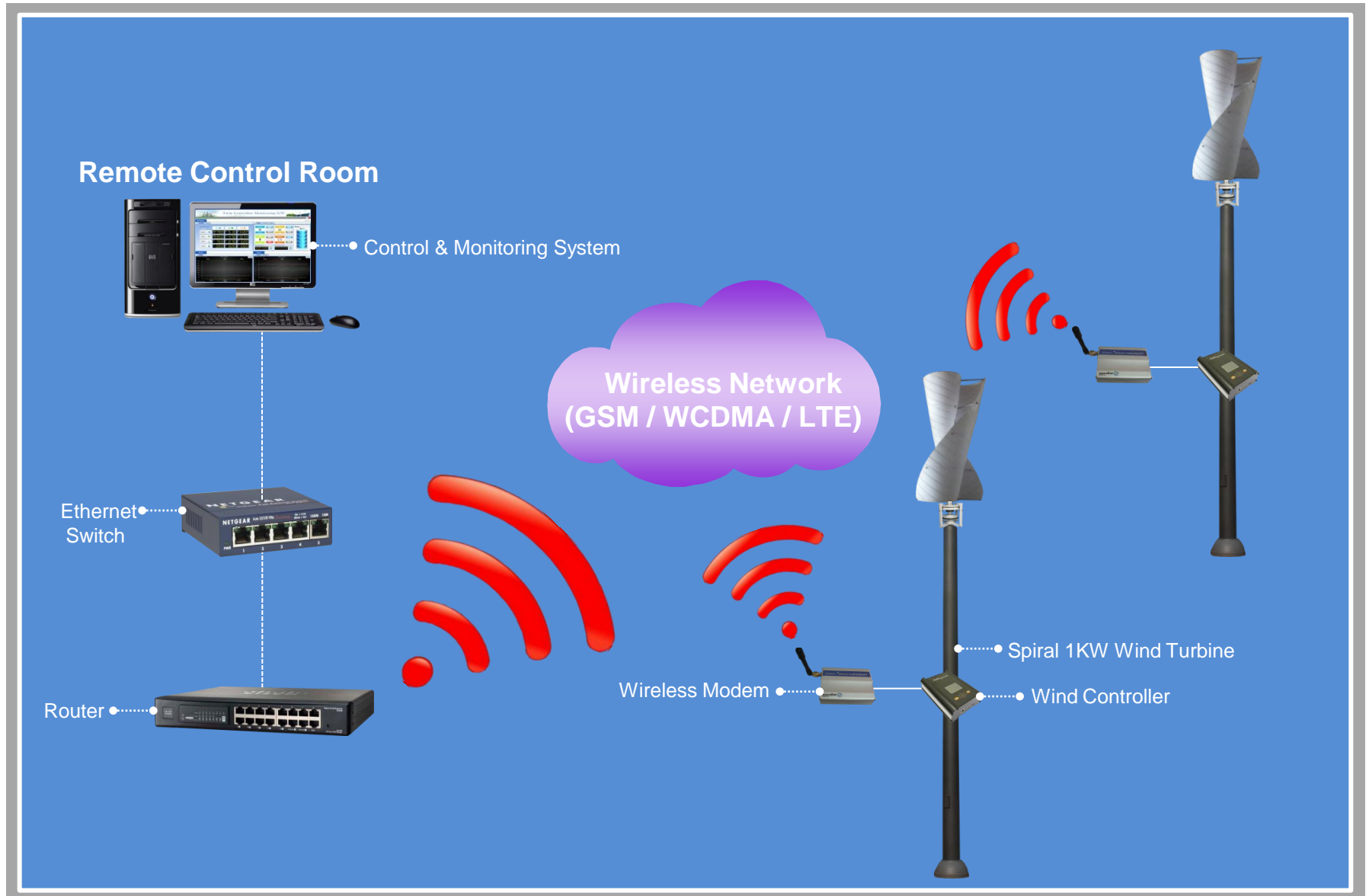
Alternative Energy Development

Renewable Energy Use

Eco Friendly

Energy Saving
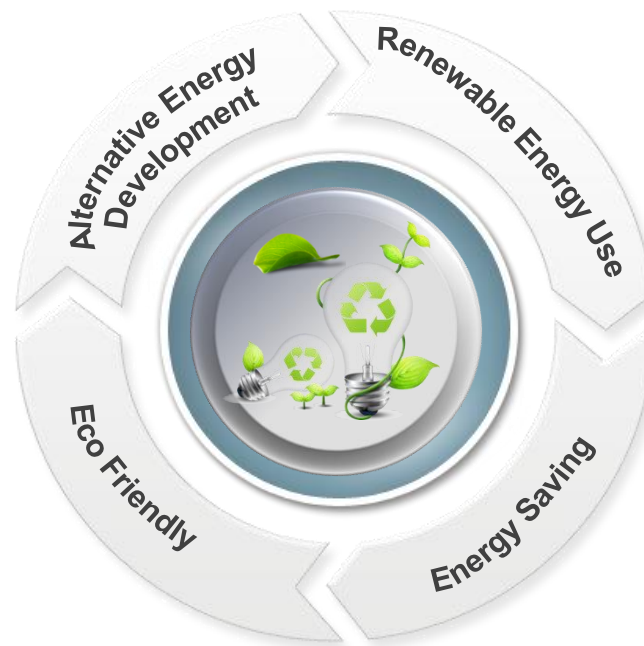
II. Working Flow

1) Generating Power by Spiral Wind Turbine with Maglev Part and Speed Increaser patented

2) Charging generated Power into the Battery Bank by Wind Controller

3) Supplying Power from Battery Bank to AC or DC Load automatically by Wind Controller

Spiral 1KW Wind Turbine

DC Load

AC Load

DC

AC

3

DC

Inverter

1

3 Phase AC

2 DC

Wind Controller

Battery Bank

III. Remote Control & Monitoring

Remote Control Room

Control & Monitoring System

Ethernet Switch

Router

Wireless Network (GSM / WCDMA / LTE)

Spiral 1KW Wind Turbine

Wireless Modem

Wind Controller

IV. Use

1. Top of Building   This is an Image to help your easy understanding .

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IV. Use
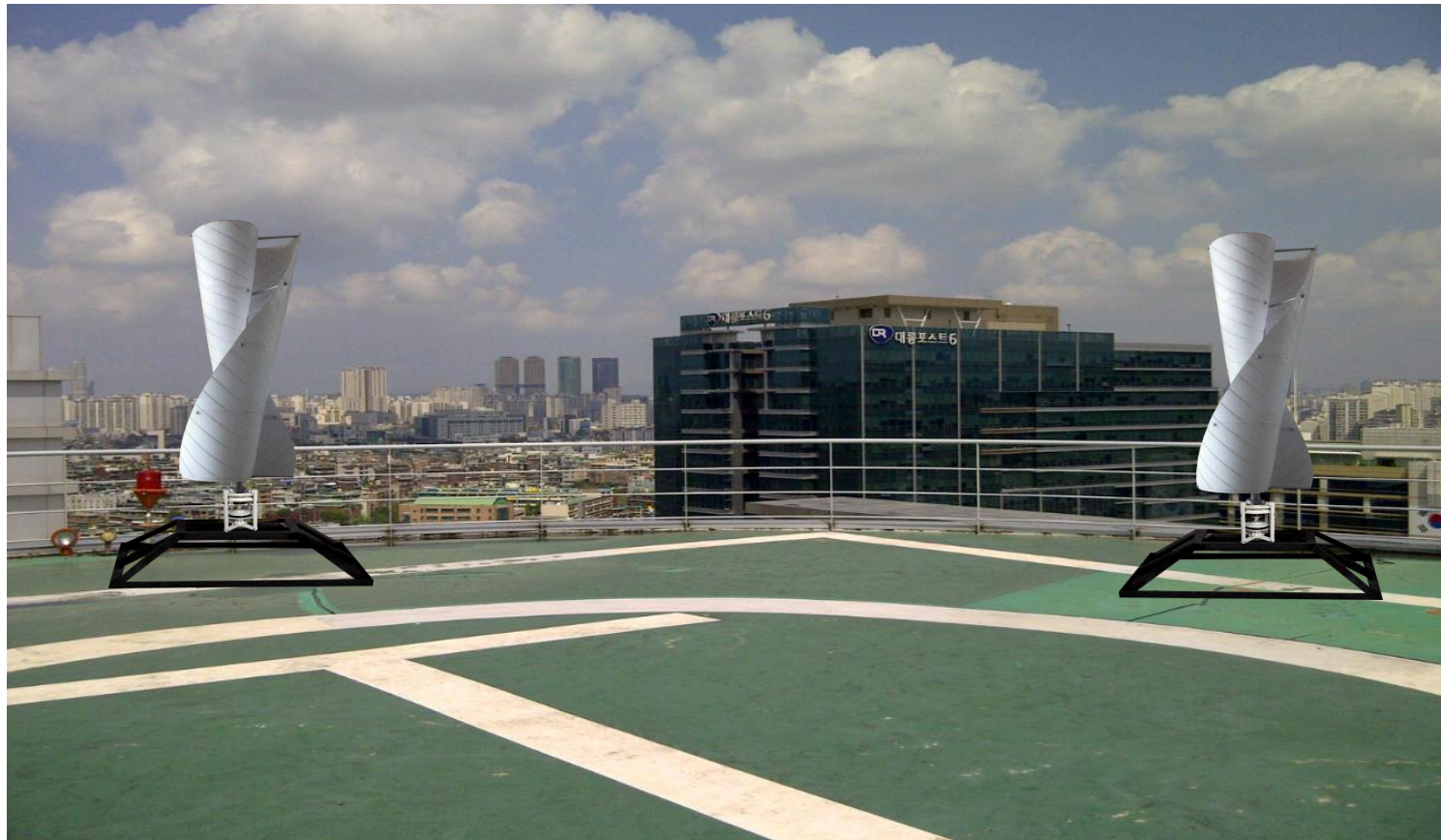
2. Top of Apartment   This is an Image to help your easy understanding .

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IV. Use

3. Mountain This is an Image to help your easy understanding .

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IV. Use

4. Seaside

This is an Image to help your easy understanding .

IV. Use

5. Island

This is an Image to help your easy understanding .

V. Part Features

1. Wind Blade

1) Spiral Type Wind Blade to take all Wind Direction

2) Incorrodible and long durable Material Use for Blade

Item	Specification
Start-Up Wind Speed	1.0m/s
Rated Wind Speed	9m/s
Survival Wind Speed	50m/s
Height of Wind Blade	3,200m/m
Diameter of Wind Blade	1,250m/m
Material of Wind Blade	Flexible CBF

V. Part Features

2. Wind Generator

1) Disk PMG Type

2) 3-Less (Coreless, Brushless and Slotless) Generator with no need to maintain

Item	Specification
Rated Power	1KW
Rated Speed	384rpm
Efficiency	> 90%
Start Torque	< 0.2N/M
Phase	3 Phase AC
Structure	Outer Rotor
Height of Generator	258m/m
Diameter of Generator	430m/m
Weight of Generator	28Kg
Housing	Aluminum (Alloy)

3. Efficiency Enhancer

Air Holes and Reinforcing Ribs

1) Convex Surface of Blade

Basically, Wind on Convex Side which goes down to the bottom side of Convex Surface and causes reduction of Wind Blade RPM due to acting as a resistance on the Bottom of Convex Surface.

2 Lined Air Holes with regularly on the Convex Surface of Blade pass Wind to them to avoid resistance.

2) Concave Surface of Blade

The Reinforcing Ribs on the Concave Surface of Blade stop flow of Wind from lower side to upper side and go out from center to outside.

V. Part Features

3. Efficiency Enhancer
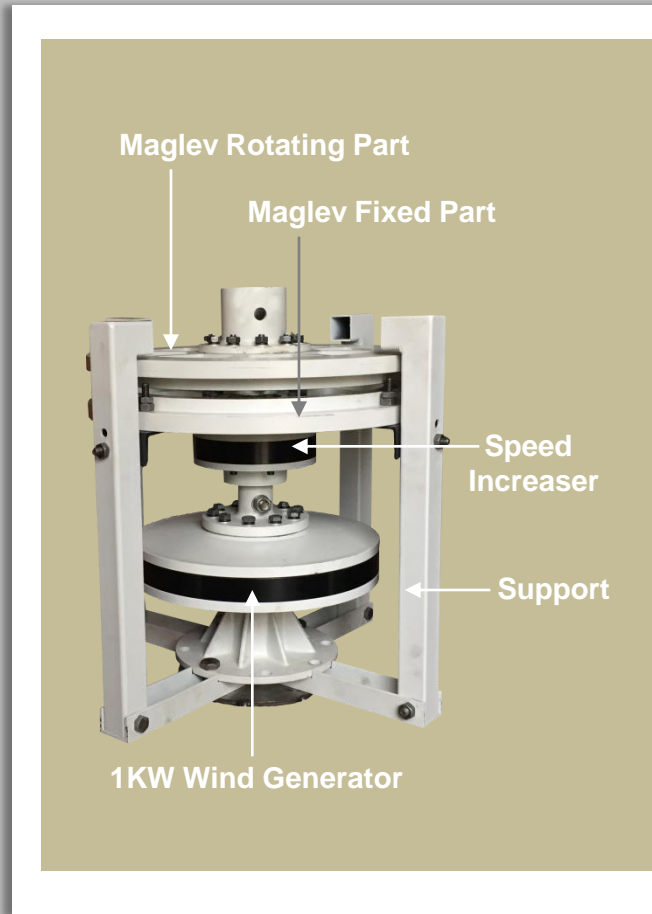
Increaser **Maglev Part** **Support**

Maglev Rotating Part

Maglev Fixed Part

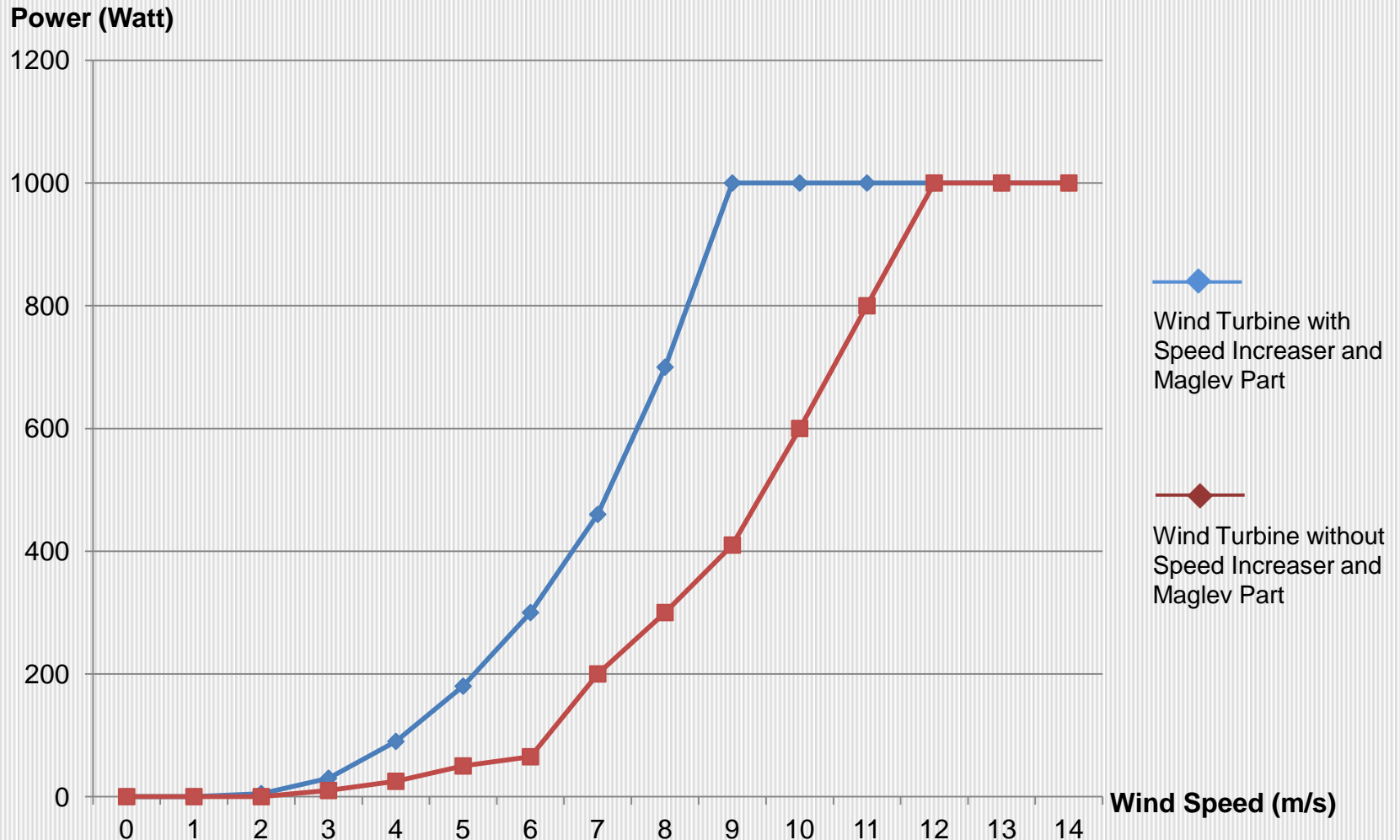Speed Increaser

Support

1KW Wind Generator

1) Speed Increaser & Maglev Part

Maglev Rotating & Fixed Part which has Radial Seriation Magnets and Speed Increaser with Special Planet Gear (4 Gears in it) is as a Multiplying Gear with quadruple times of enhanced effect. When the Wind Blade reaches to 96rpm, Wind Generator makes to 384rpm (Rated Speed) by quadruple times of Special Planet Gear in Speed Increaser.

2) Support

Support gives stable Rotating of Wind Turbine without Swaying or Tilting and reduces the Weight of Wind Blade on Wind Generator.

V. Part Features

Power (Watt)

Wind Speed (m/s)

Wind Turbine with Speed Increaser and Maglev Part

Wind Turbine without Speed Increaser and Maglev Part

V. Part Features

5. Wind Controller

1) MPPT Based and Boost Circuit Embeded for Enhanced Charging Efficiency

2) Protection of Wind Turbine by Constant Speed Control

3) Detection Over-Charging • Over-Discharging and Protection
   for Battery Long Life Span

4) Display Voltage, Current and Wattage from Wind Turbine, Load and Battery's
   Status in Real Time by LCD Display

5) Control Load Output Mode by Software

6) Remote Control & Monitoring by Smart Phone (Android) in Real Time (Option)

7) Remote Control & Monitoring by Wireless Network (Option)

V. Part Features

6. Pole

1) Pole : Steel with Zinc Galvanizing and Powder Coating

2) Component : Pole, Anchor Bolt

Item	Specification
Height of Pole	6M
Diameter of Pole	Ø265
Thickness of Pole	5.8m/m

① Concrete Base has to be supplied in Local.

② Pole's Dimension could be changed by Customer's Requirement.

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Thank you.

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