



The WindiStar 4500 is indigenously designed & developed and is a high performance, high powered wind turbine. It is available in both off grid and grid tie configurations. The WindiStar 4500 wind turbine provides a peak power of more than 5kW at a much lower rotor speed resulting in quiet and noiseless operation.

It has numerous applications such as in the hospitality sector, remote military bases and island electrification.

It is currently undergoing the type test & certification as per IEC 61400 for power performance & for safety & functional test by NIWE (National Institute for Wind Energy) which was formerly known as CWET (Centre for Wind Energy Technology, India).

KEY FEATURES

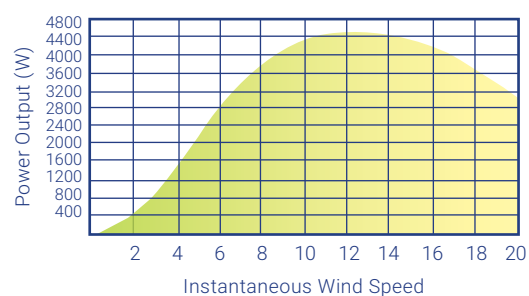
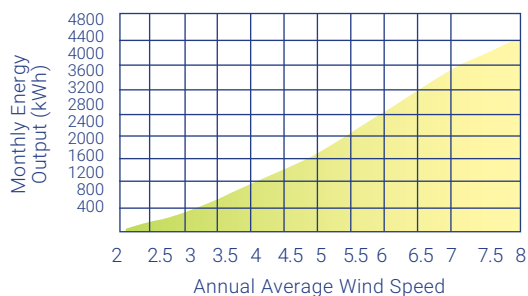
- Low cut in wind speeds
- Lightweight, rugged design
- Suitable for remote locations installations
- International recognition - CE certification; IEC in progress
- Suitable for standalone or multiple parallel module application to suit different power rating.
- Modular construction for easy installation and dismantling
- PWM based state of art architecture providing overcharge protection / load diversion (in auto mode).
- Status monitoring of battery low & battery high - LCD display on front panel.
- Automatic diversion of power to dump load at battery overcharge / very high turbine speed.
- Ambient operating temperature up to 52°C.

APPLICATIONS

- Telecom towers.
- Fuel stations & resorts.
- Rural electrification & farm power and water supply.
- 230V AC mains grid tie roof top installation on high rise buildings.
- Water pumping model is also available (WS4500 with WiSH Energy pump controller can be connected to any 3 phase submersible or surface water pump and can pump water from bore wells of 200/300 ft.)
- Military / Para Military camp power supply.
- Island and lighthouse continuous power supply.

TURBINE SPECIFICATIONS

GENERAL CONFIGURATION			
Model	WindiStar 4500	Rated power	4500 watt @ 12.5 m/s, 600 R.P.M
Rotor diameter	4.6 m	Number of blades	3
Swept area	16.61 m ²	Material of blades	Carbon fibre composite, fibre glass & epoxy bonding
Weight	113 kg (Including blades and tail boom)	Material of body	Powder coated MS with marination treatment
Mount	5 inch mounted	Survival wind speed	55 m/s
Start-up wind speed	3.5 m/s	Over-speed protection	Furling ,dump load & manual brake switch
Rated wind speed	12.5 m/s	Controller	External regulator
Alternator	PM 3 phase alternator	Bearings	Low friction, totally enclosed self-lubricated
Alternator efficiency	90 %	Controller output	Voltage options : 48V DC (LV) 96V, 120V, 240VDC (HV) Rated power: 4500 watts
Magnets	NdFeb N35,Nickel Plating	Max. lateral thrust	420 KGF
Insulation class	Class 'H'		
Voltage configuration (L.V. model)	48 V Nominal		
Voltage configuration (H.V. model)	96V/120V/240V Nominal		



WIND CHARGE CONTROLLER

The WindiStar 4500 charge controller is an intelligent wind charge controller which provides safe, secure and productive wind generator operation. The PWM (Pulse Width Modulation) controller is capable of monitoring various parameters such as battery voltage, battery charging, load diversion and cumulative energy generation. The controller contains a 3 phase full wave bridge rectifier for converting AC power generated from the wind turbine, to DC power. PWM technique is used for diverting excess power to a dump load as required.

CONTROLLER SPECIFICATIONS

- WindiStar 4500 wind charge controller comes in 48V, 96V, 120V and 240V configurations.
- Clear alpha-numeric digital LCD screen with user selectable display options.
- Equipped with advanced micro-controller based technology to provide easy access for monitoring and operation for the user.
- Front panel LCD display with the following features
- Field adjustable battery voltage set points.
- Energy saving back-light operation.
- Controller diverts extra energy to dump load, when batteries are fully charged.
- Battery over voltage protection.

> Displays battery voltage
> battery charging current
> kW and kWh reading
> battery UV
> OV status

Instantaneous / monthly / average wind speed (in m/s) can also be displayed if anemometer is configured in the controller.
> Supervisory password provision.



18 KW WIND SYSTEM FOR A FACTORY

CUSTOMER:
ASIAN PAINTS,
MUMBAI, MAHARASTRA





BACKGROUND





Asian Paints is one of the largest manufacturers of paints in India. One of their manufacturing facility is situated in Shirwal, on the outskirts of Mumbai, surrounded by hillocks. As a manufacturing facility, their energy consumption was significantly high and they were constantly on the look out to reduce it. They had previously explored the use of solar PV as an alternative to power some captive facilities in the plant.

THE NEED FOR MORE

The management at Asian Paints wanted to explore the possibility of utilizing the wind energy potential offered by the high hilltops  surrounding the facility. In addition to further reducing their grid electricity/diesel consumption and increasing the captive consumption of renewable energy, Asian Paints also wanted to reinforce their image as an environmentally conscious “green” company  conscious of its carbon footprint. They were also keen on using their CSR funds towards increasing their renewable energy adoption.

HOW WE DELIVERED MORE

A small wind farm consisting of four WindiStar 4500 turbines  was established on one of the hills surrounding the facility, in a grid-connected configuration used completely for captive consumption and thus minimizing  the electricity consumption from the grid.

MORE POWER

Completed in 2016, the wind farm system generates an average of over 217101010 27,000 units a year, resulted in annual savings of approximately  INR 2 lakhs. This also results in carbon savings of 1.2 million tonnes every year

OTHER APPLICATIONS



SMEs



Wind Farms



Tech/Business
Parks

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