
RRB
ENERGY
Scaling the green energy
revolution
across the globe.
V39 - 500 kW
with 47m Rotor diameter

Life Beyond Boundaries

Know Us Better

Right now as you read on, more than 2500 Wind Electric Generators (WEGs) manufactured by RRB Energy Limited (RRBEL) are operating worldwide, generating clean and renewable energy for everyday use, benefitting millions of lives.

RRBEL kick-started the wind energy revolution in India by being the first company to produce pitch regulated WEGs. To add on, an infallible track record and proven product performance, across 26+ years of continuous operation, we are all set to create ripples in the wind energy sector across the globe with higher concentration in United Kingdom and United States.

All our WEGs have been developed using proven world class technologies and fine tuned through cutting edge innovation. We provide our customers with simple yet pivotal custom-built turnkey solutions for harnessing wind energy for optimum power generation and maintenance of wind energy.

An ISO 9001:2008 and ISO 14001:2004 certifications from DET NORSKE VERITAS (DNV) now DNV-GL certified, we enjoy respect from both customers and competitors for good quality and ethical business practices.

Vision

A technology driven company aiming to produce world class wind electric generators at an economical cost

Goal

Powering the transition from the ever depleting conventional source of energy to replenishing renewable source of clean wind energy.

We are among the few global companies to offer our customers the complete package. An end to end solution, ranging from manufacturing, to installation and after sales support for more than two decades.

Synergising clean wind energy for holistic living for you and me

Our Key Accomplishments

The First company to produce Pitch regulated Wind Electric Generators in India.

RRBEL's Blade Manufacturing facility is approved by Germanischer Lloyd, Germany.

ISO 9001 : 2008 and ISO 14001:2004 certified company.

In-house production of blades and controllers for the RRBEL product line.

Department of Scientific and Industrial Research certified in-house R&D facility.

Excellent product line viz. V27-225 kW Wind Electric Generator (WEG), V39-500 kW with 47m rotor diameter WEG, PS-600 kW WEG and PS-1800 kW WEG with proven track record.

More than 2500 WEGs working all over the world satisfactorily in varied climate and grid conditions.

For more than two decades, the company has trained, developed and nurtured qualified and experienced professionals who not only provide expert advice on servicing of the WEGs but also they are good at troubleshooting.

The company has built customer confidence over the years by providing state of the art products coupled with effective after sales service in order to ensure minimum 20 years life of the WEGs.

The company has been supporting it's customers by providing genuine spare parts throughout the lifetime of the product.

Reliability driven by Technology.

A step in the right direction

Paving the way with our proven design

Why Us?

1500 machines of 225 kW & 500 kW are already installed and running worldwide. We are the leading Producer of the world's best wind turbines in the 225 kW and 500 kW segment based on Vestas Technology.

The key to any WEGs are its blades and controllers. The best part, we manufacture our own blades and controllers. Thus, providing you turbines with world-class technology and superior quality.

All our WEGs are engineered for high efficiency, greater power, low noise levels and reduced operational cost. In-line with international quality standards, our WEGs have increased safety and reliability in their class and segment.

We lead with 26+ years of wind industry experience in Manufacturing, Quality assessment, Products viz. Pawan Shakthi (PS)-1800kW, Pawan Shakthi (PS)-600kW, V39-500kW with 47m Rotor diameter, V27-225kW and Operation & Maintenance services gives us an edge over many players.

V39-500kW
with 47m Rotor diameter

The leading producer of the world's best 500 kW Wind Turbine segment based on the efficient and innovative Vestas Technology.

V39-500 kW with 47m Rotor diameter is an efficient and robust WEG that offers high energy yield and greater control. The 23m blades with a hydraulic system utilize microprocessor controlled Opti-tip pitch regulation to ensure high performance, durability and reliability in varying wind conditions.

All our V39-500 kW WEGs have state of the art in-built lightning protection system.

Taking into consideration the harsh temperature, weather and weak grid conditions at various sites, we have modified our WEGs for flawless operation. This by default makes our WEGs suitable for any tough Weather or Grid conditions.

The Opti-tip system is the best solution to the often contradictory requirements for high output and low sound levels, depending on the location. All our turbines have 98% availability.

All the turbines are backed by a highly efficient after-sales service regime which ensures increased Turbine lifetime of more than 20 years.

It's more than just a windmill, trendsetting a way of life

Technical Specification

V39-500kW
with 47m Rotor diameter

General Turbine Data	
Rated Power	500 kW
Rated Wind speed	15 m/s
Cut-in Wind speed	4 m/s
Cut-out Wind speed	25 m/s
Survival Wind speed (3 sec. average)	67 m/s
Tip speed	64 m/s
Rotor speed	26 rpm
Hub height	50 m
Rated Voltage	690V
Rated Frequency	50 Hz
Voltage variation	±10%
Frequency variation	-3Hz & +1Hz of nominal value
Design temperature	-20°C to +50 °C
IEC design Class	II and III

Gearbox	
Type	Planetary / Helical
Gear Ratio	1: 58.2 ratio
No. of Stages	3
Type of Oil	ISO VG 320
Type of Oil cooling	Forced Cooling system

Generator	
Rated Power Output	500 kW
Type	Asynchronous Squirrel Cage Induction
Voltage	690 V
Revolutions	1517 rpm
Frequency	50 Hz
Current	475A
No. of poles	4
Insulation class	Class F
Protection class	IP 55
Type of cooling	IC 411

Tower	
Type	Tubular / Lattice
Height	48.1 m
Material	Structural Steel
No. of Sections	4 / 6 sections

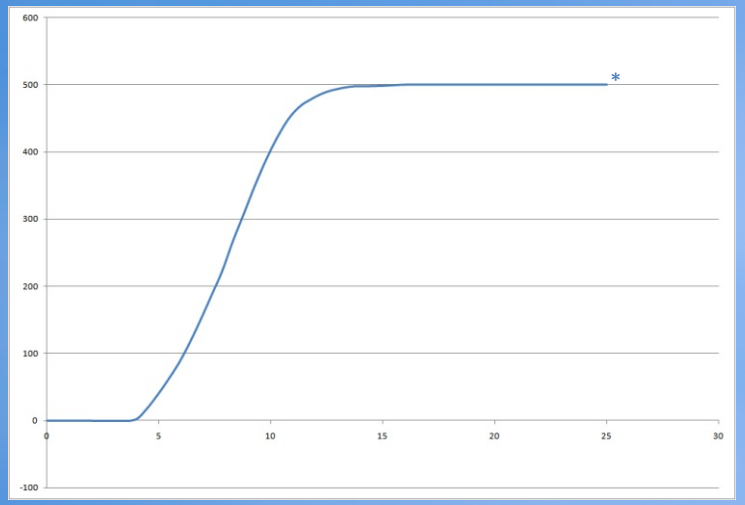
Rotor	
No. of Blades	3
Blade length	23 m
Blade material	Prepreg Epoxy
Diameter	47m
Swept Area	1734 sq. m
Rotor orientation	Upwind
Power Regulation	Hydraulic Pitch Regulated

Brake System	
Aerodynamic brake	Full Feathering of blades
Aerodynamic control	Hydraulic pitching
Mechanical brake	Disc Brake
Disc Brake control	Hydraulic

Yaw system	
Type	Slewing system with Geared Motors
Yaw motor type	Asynchronous Squirrel cage induction
No. of Yaw Motors	2
Turbine Control system	Microprocessor based
Generator-Grid Connection	Thyristor based
Reactive Power Control	Capacitor bank
G59 Protection	Optional
Design Life	20 years

V39-500kW

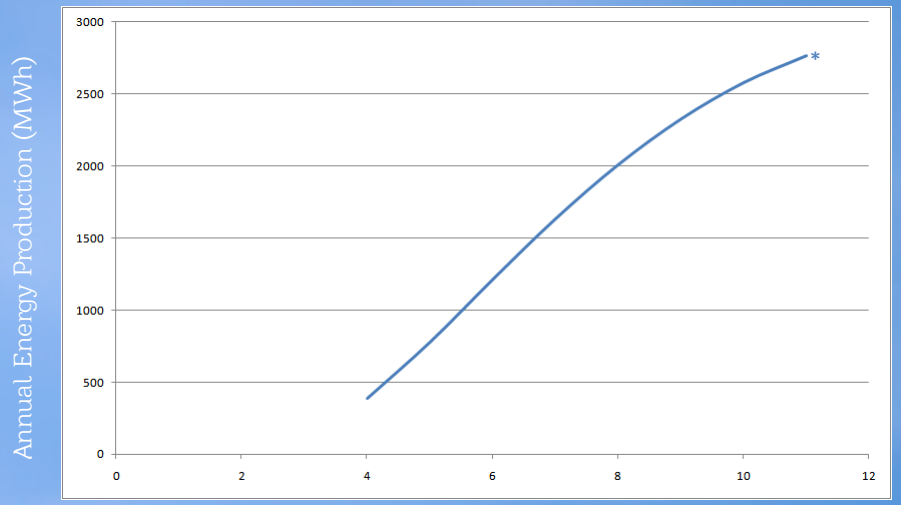
Power Curve



Disclaimer

* Power Curve for V39-500kW WEG with 47m Rotor Diameter for a frequency range of 49.5 Hz to 50.5 Hz and Air density considered: 1.225 kg/m3

Annual Energy Production



Disclaimer

* Annual Energy Production (AEP) by C-WET, as per IEC 61400-12-1, for mean Wind speeds of 4 – 11 m/s at a reference Air Density of 1.225 kg/m3 and Form factor of 2.

Connecting naturally

Reach Us

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