

V82-1.65 MW

Creating more from less



Optimised for low and medium winds

With its large rotor and powerful generator, the V82 is an excellent performing turbine for sites with low and medium wind conditions. Our hydraulic Active-Stall® technology ensures that the rotor gathers the maximum power from the prevailing wind, while minimising loads and controlling output. Active-Stall® provides failsafe protection in all conditions and, above its rated wind speed, maintains a steady output of 1.65 MW. With the V82, we have designed a wind turbine that offers unparalleled performance at a cost-effective price.

Grid compliance

As wind turbines capture more of the electricity market each year, they have an increasingly significant role to play in grid management. Fortunately, the V82 meets most grid demands, and with the installation of our advanced grid compliance system, the V82 will actually help stabilise the grid. The turbine can run at full capacity during grid disturbances. Vestas grid support features full load and static phase compensation to enhance reactive power regulation and thus keep the power factor in range. Moreover, our grid support provides continuous active and reactive power regulation to maintain voltage balance in the grid, as well as fault ride-through in the event of disturbances.

High reliability

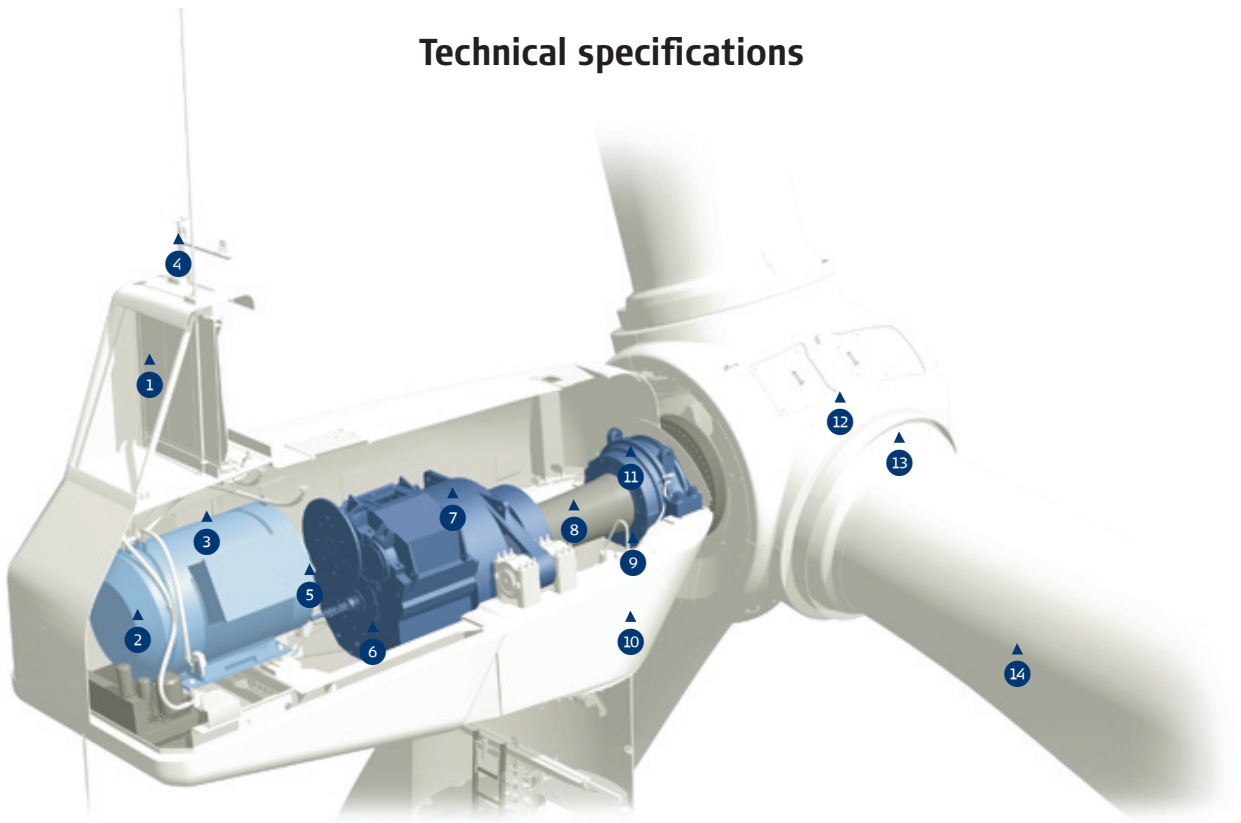
Det Norske Veritas (DNV) has certified the V82 as meeting the strictest standards in the wind industry. Aided by a simple design, which makes service and maintenance easier than most other turbines in the megawatt class, it has a high degree of operational availability. In addition, the nacelle is based on the thoroughly tested design of previous models. To date, more than 1,400 wind turbines featuring this platform design have been installed on sites with conditions ranging from arctic to tropical.

Proven Performance

Wind power plants require substantial investments, and the process can be very complex. To assist in the evaluation and purchasing process, Vestas has identified three factors that are critical to wind turbine quality: energy production, power quality and sound level.

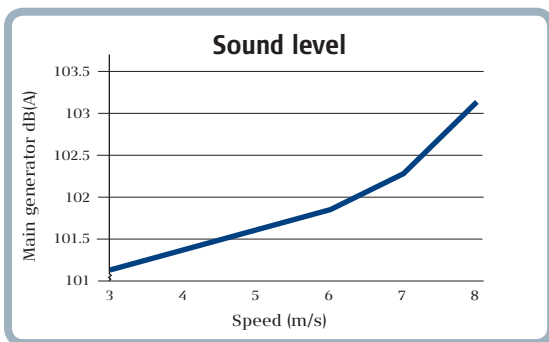
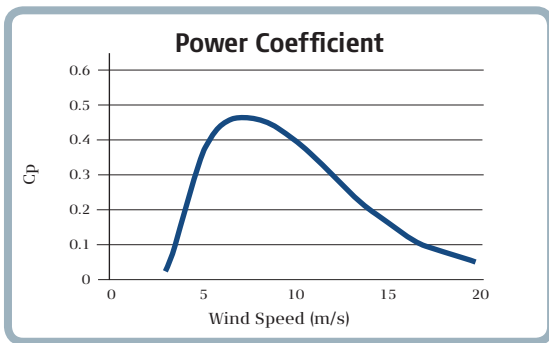
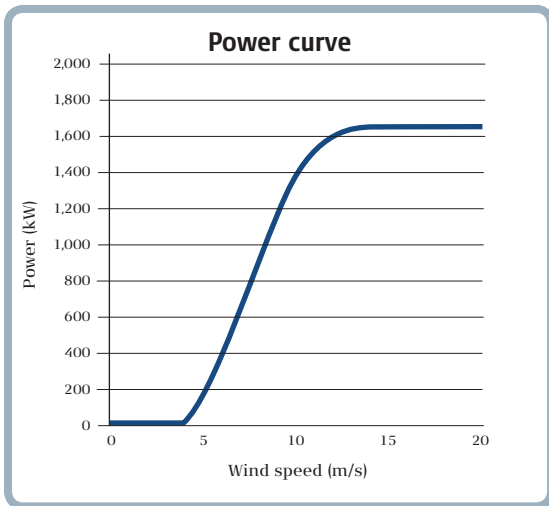
We spend months testing and documenting these performance areas for all Vestas turbines. When we are finally satisfied, we ask an independent testing organisation to verify the results – a practice we call Proven Performance. At Vestas we do not just talk about quality. We prove it.

Technical specifications



- 1 Cooler
- 2 Generator
- 3 Nacelle controller
- 4 Anemometer windvanes
- 5 Coupling
- 6 Mechanical brake
- 7 Gearbox
- 8 Main shaft
- 9 Yaw gears
- 10 Machine foundation
- 11 Main bearing
- 12 Hub controller
- 13 Pitch system
- 14 Blade
- 15 Main panel
- 16 Phase compensation
- 17 Ground controller

Example of tower internal configuration.



Rotor

Diameter:	82 m
Area swept:	5,281 m ²
Nominal revolutions:	14.4 rpm
Number of blades:	3
Power regulation:	Active-Stall®
Air brake:	Full blade pitch by three separate hydraulic pitch cylinders.

Tower

50Hz, 230V:	Hub height (approx.) 78 m
60Hz, 110V:	Hub height (approx.) 70 m, 80 m

Operational data

Cut- in wind speed:	3.5 m/s
Nominal wind speed:	13 m/s
Cut-out wind speed (10 minutes):	20 m/s

Generator

Type:	Asynchronous water cooled
Nominal output:	1,650 kW
Operational data:	50/60 Hz 690/600V

Gearbox

Type:	Planetary/helical stages
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Control

Type:	Microprocessor-based monitoring of all turbine functions with the option of remote monitoring. Output regulation and optimisation via Active-Stall®.
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Weight

Nacelle:	52 t
Rotor:	43 t
Towers:	
50Hz, 230V	
Hub height:	IEC IIA
78 m	115 t
60Hz, 110V	
Hub height:	IEC IIA
70 m	105 t
80 m	125 t

t = metric tonnes.

All specifications subject to change without notice.

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With the V82 wind turbine, Vestas has created a turbine well suited for large wind farms, where grid compliance issues are solved at the substation level. This means that investments in grid equipment at the turbine level can be avoided.

The V82 is an extremely competitive turbine in its class in areas with low and medium winds. A stall-

regulated wind turbine, it has been optimised for sites with an average wind speed of just 6.5 m/s at hub height, while a breeze of as little as 3.5 m/s is all that is needed to start production. The V82 operates in ambient temperatures ranging from -30 to +40 celsius degrees.

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