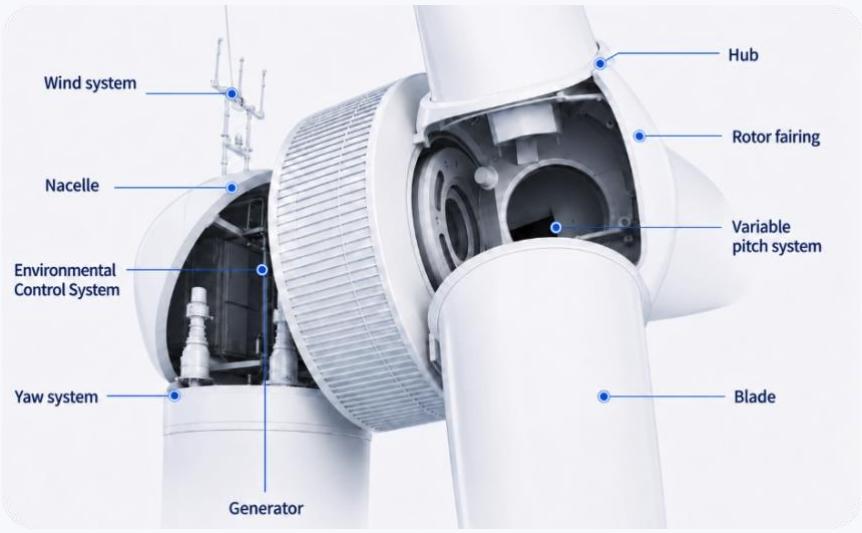
HE175-5.X MW

Onshore direct-drive wind turbine platform



Product overview

The HE175-5.X MW is a permanent-magnet -direct-drive wind turbine platform designed for IEC S wind conditions. Available in 5.0 MW, 5.3 MW and 5.6 MW rated power options, it features a 175 m rotor and adopts a horizontal-axis, three-blade, upwind configuration with variable-speed and variable-pitch power regulation. The gearbox-free drivetrain reduces mechanical complexity, lowers transmission losses, and supports long-term maintainability. Grid connection is achieved through a full-power converter, enabling smooth integration and active/reactive power regulation.

RATED POWER	ROTOR DIAMETER	WIND CLASS	HUB HEIGHT
5.0 / 5.3 / 5.6 MW	175 m	IEC S / Class S	106 m / customize

Key design highlights

Permanent-Magnet-Direct-Drive	High-reliability drivetrain	Adaptive thermal management
Adaptive turbine control	Environmental adaptability	Grid adaptability & maintainability

Onshore	
Turbine type	HE175-5.X MW
Rated power [MW]	5.0 / 5.3 / 5.6

Operational data	
Cut-in wind speed [m/s]	3
Cut-out wind speed [m/s]	22
Rated wind speed [m/s]	10.5
Wind class	IEC S / Turbulence class B Extreme wind speed 52.5 m/s (3s max, 50-year return)

Rotor	
Diameter [m]	175
Speed [rpm]	Variable
Power regulation	Variable blade pitching
Blade material	Reinforced Glass Fiber

Generator	
Type	Permanent magnet Direct drive synchronous generator
Cooling	Air cooling
Main Bearing	Three-row cylindrical roller bearing

Converter	
Type	AC-DC-AC / IGBT Back-to-Back dual PWM
Voltage [V]	1380 / 1140 (input / output voltage)
Grid coupling	AC-DC-AC

Tower	
Material	Steel
Hub height [m]	106 / customized design

Masses [ton] (estimates)	
Rotor (hub + blades)	141.9
Generator	145
Nacelle	55